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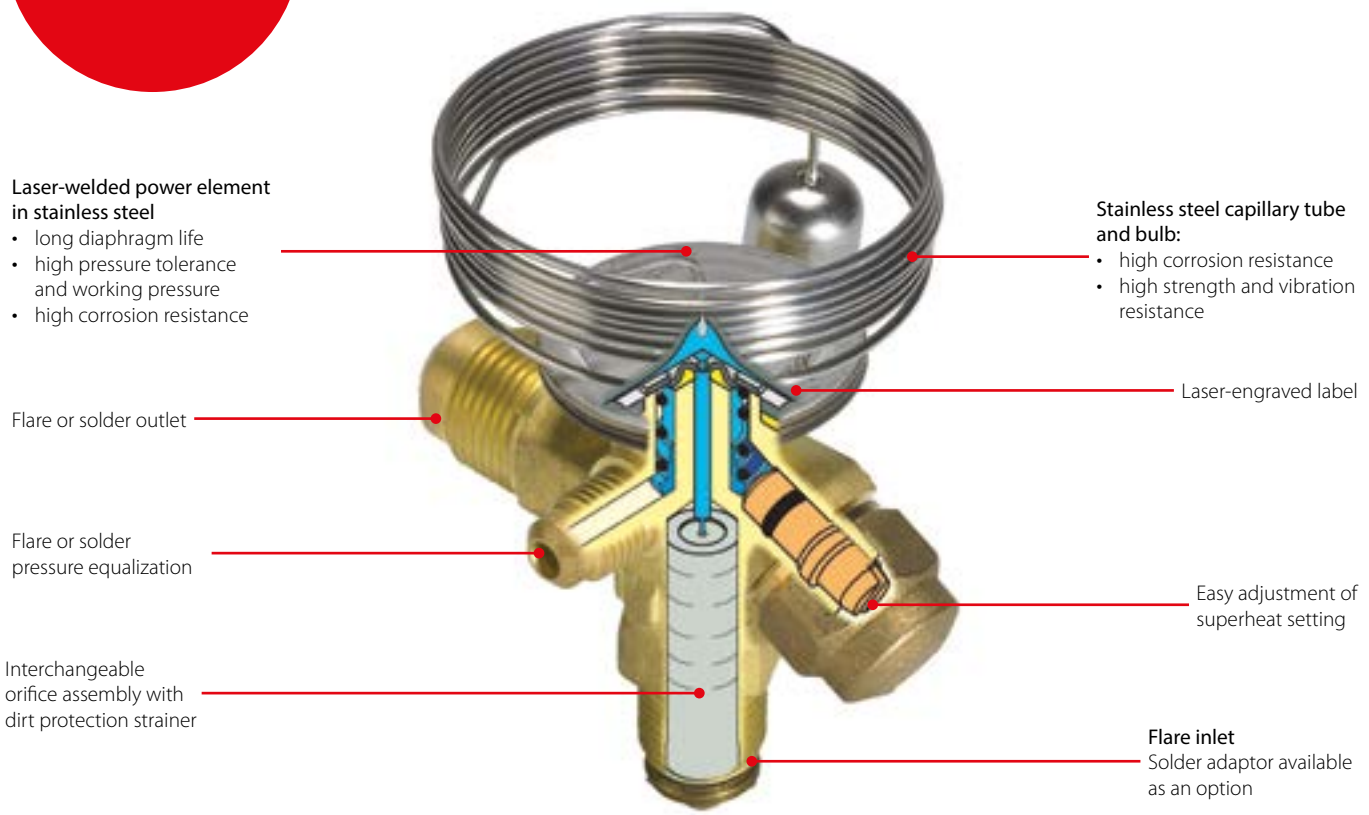
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T 2 / TE 2 - Thermostatic expansion valves

T 2 / TE 2 thermostatic expansion valves are used for liquid injection into evaporators on both refrigeration and air conditioning systems using fluorinated refrigerants e.g. R407C / R22, R134a, R404A / R507, R407C, R407F and R407A.

T 2 / TE 2 valves are supplied as a parts programme, with separate thermostatic element/valve body and orifice assembly. Available as angleway valves with flare x flare or flare x solder connections, with internal and external equalisation.





Facts

Applications:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Transport refrigeration

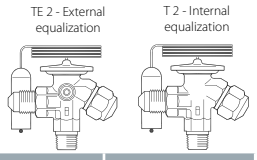
- Large temperature range
- Equally applicable to freezing, refrigeration and air conditioning applications
- Interchangeable orifice assembly
  - easy stocking
  - easy capacity matching
  - better service

- Can be supplied with MOP (Max. Operating Pressure)
- Protects the compressor motor against excessive evaporating pressure during normal operation
- Valves for special temperature ranges and refrigerants can be supplied
- Flare / solder adaptor can be supplied

Technical data and ordering



Thermostatic element + *Orifice*



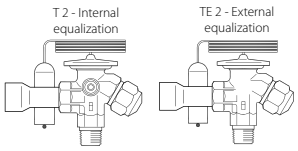
T 2 / TE 2

Thermostatic element with bulb strap (flare x flare)

Refrigerant	Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Pressure equalization Flare [in]	Connection flare inlet × outlet		Code no.
							[in]	[mm]	
R22/R407C	TX 2	-40 – 10	-40 – 50	–	–	–	3/8 × 1/2	10 × 12	068Z3206
	TX 2	-40 – 10	-40 – 50	15	60	–	3/8 × 1/2	10 × 12	068Z3208
	TX 2	-40 – -5	-40 – 25	0	32	–	3/8 × 1/2	10 × 12	068Z3224
	TX 2	-40 – -15	-40 – 5	-10	14	–	3/8 × 1/2	10 × 12	068Z3226
	TX 2	-60 – -25	-75 – -15	–	–	–	3/8 × 1/2	10 × 12	068Z3207
	TX 2	-60 – -25	-75 – -15	-20	-5	–	3/8 × 1/2	10 × 12	068Z3228
	TEX 2	-40 – 10	-40 – 50	–	–	1/4	3/8 × 1/2	10 × 12	068Z3209
	TEX 2	-40 – 10	-40 – 50	15	60	1/4	3/8 × 1/2	10 × 12	068Z3211
	TEX 2	-40 – -5	-40 – 25	0	32	1/4	3/8 × 1/2	10 × 12	068Z3225
	TEX 2	-40 – -15	-40 – 5	-10	14	1/4	3/8 × 1/2	10 × 12	068Z3227
	TEX 2	-60 – -25	-75 – -15	–	–	1/4	3/8 × 1/2	10 × 12	068Z3210
	TEX 2	-60 – -25	-75 – -15	-20	-5	1/4	3/8 × 1/2	10 × 12	068Z3229
R407C	TZ 2	-40 – 10	-40 – 50	–	–	–	3/8 × 1/2	10 × 12	068Z3496
	TZ 2	-40 – 10	-40 – 50	15	60	–	3/8 × 1/2	10 × 12	068Z3516
	TEZ 2	-40 – 10	-40 – 50	–	–	1/4	3/8 × 1/2	10 × 12	068Z3501
	TEZ 2	-40 – 10	-40 – 50	15	60	1/4	3/8 × 1/2	10 × 12	068Z3517
R134a	TN 2	-40 – 10	-40 – 50	–	–	–	3/8 × 1/2	10 × 12	068Z3346
	TN 2	-40 – 10	-40 – 50	15	60	–	3/8 × 1/2	10 × 12	068Z3347
	TN 2	-40 – -5	-40 – 25	0	32	–	3/8 × 1/2	10 × 12	068Z3393
	TN 2	-40 – -15	-40 – 5	-10	14	–	3/8 × 1/2	10 × 12	068Z3369
	TEN 2	-40 – 10	-40 – 50	–	–	1/4	3/8 × 1/2	10 × 12	068Z3348
	TEN 2	-40 – 10	-40 – 50	15	60	1/4	3/8 × 1/2	10 × 12	068Z3349
	TEN 2	-40 – -5	-40 – 25	0	32	1/4	3/8 × 1/2	10 × 12	068Z3392
	TEN 2	-40 – -15	-40 – 5	-10	14	1/4	3/8 × 1/2	10 × 12	068Z3370
R404A/R507	TS 2	-40 – 10	-40 – 50	–	–	–	3/8 × 1/2	10 × 12	068Z3400
	TS 2	-40 – 10	-40 – 50	15	60	–	3/8 × 1/2	10 × 12	068Z3402
	TS 2	-40 – -5	-40 – 25	0	32	–	3/8 × 1/2	10 × 12	068Z3406
	TS 2	-40 – -15	-40 – 5	-10	14	–	3/8 × 1/2	10 × 12	068Z3408
	TS 2	-60 – -25	-75 – -15	–	–	–	3/8 × 1/2	10 × 12	068Z3401
	TS 2	-60 – -25	-75 – -15	-20	-5	–	3/8 × 1/2	10 × 12	068Z3410
	TES 2	-40 – 10	-40 – 50	–	–	1/4	3/8 × 1/2	10 × 12	068Z3403
	TES 2	-40 – 10	-40 – 50	15	60	1/4	3/8 × 1/2	10 × 12	068Z3405
	TES 2	-40 – -5	-40 – 25	0	32	1/4	3/8 × 1/2	10 × 12	068Z3407
	TES 2	-40 – -15	-40 – 5	-10	14	1/4	3/8 × 1/2	10 × 12	068Z3409
	TES 2	-60 – -25	-75 – -15	–	–	1/4	3/8 × 1/2	10 × 12	068Z3404
	TES 2	-60 – -25	-75 – -15	-20	-5	1/4	3/8 × 1/2	10 × 12	068Z3411
R407F/R407A	T2	-40 – 10	-40 – 50	–	–	–	3/8 × 1/2	10 × 12	068Z3715
	TE2	-40 – 10	-40 – 50	–	–	1/4	3/8 × 1/2	10 × 12	068Z3714

Capillary tube: 1.5 m / 59 in

Technical data and ordering



T 2 / TE 2

Thermostatic element with bulb strap (flare x solder)

Refrigerant	Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Pressure equalization solder		Connection inlet (Flare) × outlet (Solder)		Code no.
						[in]	[mm]	[in]	[mm]	
R22/R407C	TX 2	-40 – 10	-40 – 50	–	–	–	–	3/8 × 1/2	–	068Z3281
	TX 2	-40 – 10	-40 – 50	–	–	–	–	–	10 × 12	068Z3302
	TX 2	-40 – 10	-40 – 50	15	60	–	–	3/8 × 1/2	–	068Z3287
	TX 2	-40 – 10	-40 – 50	15	60	–	–	–	10 × 12	068Z3308
	TX 2	-60 – -25	-75 – -15	–	–	–	–	3/8 × 1/2	–	068Z3357
	TX 2	-60 – -25	-75 – -15	–	–	–	–	–	10 × 12	068Z3361
	TEX 2	-40 – 10	-40 – 50	–	–	1/4	–	3/8 × 1/2	–	068Z3284
	TEX 2	-40 – 10	-40 – 50	–	–	–	6	–	10 × 12	068Z3305
	TEX 2	-40 – 10	-40 – 50	15	60	1/4	–	3/8 × 1/2	–	068Z3290
	TEX 2	-40 – 10	-40 – 50	15	60	–	6	–	10 × 12	068Z3311
	TEX 2	-40 – -15	-40 – -5	-10	-15	–	6	–	10 × 12	068Z3367
	TEX 2	-60 – -25	-75 – -15	–	–	1/4	–	3/8 × 1/2	–	068Z3359
	TEX 2	-60 – -25	-75 – -15	–	–	–	6	–	10 × 12	068Z3363
R407C	TZ 2	-40 – 10	-40 – 50	–	–	–	–	–	10 × 12	068Z3502
	TZ 2	-40 – 10	-40 – 50	15	60	–	–	3/8 × 1/2	–	068Z3329
	TZ 2	-40 – 10	-40 – 50	15	60	–	–	–	10 × 12	068Z3514
	TEZ 2	-40 – 10	-40 – 50	–	–	1/4	–	3/8 × 1/2	–	068Z3446
	TEZ 2	-40 – 10	-40 – 50	–	–	–	6	–	10 × 12	068Z3503
	TEZ 2	-40 – 10	-40 – 50	15	60	1/4	–	3/8 × 1/2	–	068Z3447
	TEZ 2	-40 – 10	-40 – 50	15	60	–	6	–	10 × 12	068Z3515
R134a	TN 2	-40 – 10	-40 – 50	–	–	–	–	3/8 × 1/2	–	068Z3383
	TN 2	-40 – 10	-40 – 50	–	–	–	–	–	10 × 12	068Z3384
	TN 2	-40 – 10	-40 – 50	15	60	–	–	3/8 × 1/2	–	068Z3387
	TN 2	-40 – 10	-40 – 50	15	60	–	–	–	10 × 12	068Z3388
	TEN 2	-40 – 10	-40 – 50	–	–	1/4	–	3/8 × 1/2	–	068Z3385
	TEN 2	-40 – 10	-40 – 50	–	–	–	6	–	10 × 12	068Z3386
	TEN 2	-40 – 10	-40 – 50	15	60	1/4	–	3/8 × 1/2	–	068Z3389
	TEN 2	-40 – 10	-40 – 50	15	60	–	6	–	10 × 12	068Z3390
R404A/R507	TS 2	-40 – 10	-40 – 50	–	–	–	–	3/8 × 1/2	–	068Z3414
	TS 2	-40 – 10	-40 – 50	–	–	–	–	–	10 × 12	068Z3435
	TS 2	-40 – 10	-40 – 50	15	60	–	–	3/8 × 1/2	–	068Z3416
	TS 2	-40 – 10	-40 – 50	15	60	–	–	–	10×12	068Z3423
	TS 2	-40 – -15	-40 – -5	-10	-15	–	–	3/8 × 1/2	–	068Z3429
	TS 2	-40 – -15	-40 – -5	-10	-15	–	–	–	10×12	068Z3436
	TS 2	-60 – -25	-75 – -15	–	–	–	–	3/8 × 1/2	–	068Z3418
	TS 2	-60 – -25	-75 – -15	–	–	–	–	–	10 × 12	068Z3425
	TS 2	-60 – -25	-75 – -15	-20	-5	–	–	3/8 × 1/2	–	068Z3420
	TS 2	-60 – -25	-75 – -15	-20	-5	–	–	–	10 × 12	068Z3427
	TES 2	-40 – 10	-40 – 50	–	–	1/4	–	3/8 × 1/2	–	068Z3415
	TES 2	-40 – 10	-40 – 50	–	–	–	6	–	10 × 12	068Z3422
	TES 2	-40 – 10	-40 – 50	15	60	1/4	–	3/8 × 1/2	–	068Z3417
	TES 2	-40 – 10	-40 – 50	15	60	–	6	–	10×12	068Z3424
	TES 2	-40 – -15	-40 – -5	-10	-15	1/4	–	3/8 × 1/2	–	068Z3430
	TES 2	-40 – -15	-40 – -5	-10	-15	–	6	–	10×12	068Z3437
	TES 2	-60 – -25	-75 – -15	–	–	1/4	–	3/8 × 1/2	–	068Z3419
	TES 2	-60 – -25	-75 – -15	–	–	–	6	–	10 × 12	068Z3426
	TES 2	-60 – -25	-75 – -15	-20	-5	1/4	–	3/8 × 1/2	–	068Z3421
	TES 2	-60 – -25	-75 – -15	-20	-5	–	6	–	10 × 12	068Z3428
R407F/R407A	T2	-40 – 10	-40 – 50	–	–	–	–	3/8 × 1/2	–	068Z3716
	TE2	-40 – 10	-40 – 50	–	–	1/4		3/8 × 1/2	–	068Z3713

For R407C plants, please select valves from the dedicated R407C program

Capillary tube: 1.5 m / 59 in

Technical data and ordering

T 2 / TE 2



Orifice assembly for flare version
Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice	R134a		R404A/R507		R407C		R407F		R407A		R22		Code no.
		[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
T 2 / TE 2	0X	0.68	0.19	0.64	0.18	0.92	0.26	1.0	0.3	0.9	0.2	0.90	0.25	068-2002
	00	1.2	0.34	1.3	0.37	1.8	0.51	2.0	0.6	1.7	0.5	1.8	0.51	068-2003
	01	2.1	0.59	2.6	0.75	3.5	1.0	3.9	1.1	3.4	1.0	3.5	0.99	068-2010
	02	2.5	0.73	3.7	1.1	4.8	1.4	5.4	1.5	4.7	1.3	4.7	1.3	068-2015
	03	4.3	1.2	6.3	1.8	8.1	2.3	9.2	2.6	8.0	2.3	8.0	2.3	068-2006
	04	6.4	1.8	9.9	2.8	12.4	3.5	14.3	4.1	12.4	3.5	12.1	3.5	068-2007
	05	8.4	2.3	13.0	3.7	16.5	4.7	19.0	5.4	16.3	4.6	16.7	4.8	068-2008
	06	10.1	2.9	15.5	4.4	19.7	5.6	22.9	6.5	19.6	5.6	19.7	5.6	068-2009

The rated capacity is based on:
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Refrigerant temperature ahead of valve t_l = 37 °C / 98 °F

T 2 / TE 2

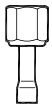


Orifice assembly for solder adapter version
Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice	R134a		R404A/R507		R407C		R407F		R407A		R22		Code no.
		[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
T 2 / TE 2	0X	0.68	0.19	0.64	0.18	0.92	0.26	1.0	0.3	0.9	0.2	0.90	0.25	068-2089
	00	1.2	0.34	1.3	0.37	1.8	0.51	2.0	0.6	1.7	0.5	1.8	0.51	068-2090
	01	2.1	0.59	2.6	0.75	3.5	1.0	3.9	1.1	3.4	1.0	3.5	0.99	068-2091
	02	2.5	0.73	3.7	1.1	4.8	1.4	5.4	1.5	4.7	1.3	4.7	1.3	068-2092
	03	4.3	1.2	6.3	1.8	8.1	2.3	9.2	2.6	8.0	2.3	8.0	2.3	068-2093
	04	6.4	1.8	9.9	2.8	12.4	3.5	14.3	4.1	12.4	3.5	12.1	3.5	068-2094
	05	8.4	2.3	13.0	3.7	16.5	4.7	19.0	5.4	16.3	4.6	16.7	4.8	068-2095
	06	10.1	2.9	15.5	4.4	19.7	5.6	22.9	6.5	19.6	5.6	19.7	5.6	068-2096

The rated capacity is based on:
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Refrigerant temperature ahead of valve t_l = 37 °C / 98 °F

Solder adaptor without orifice assembly



Connection – ODF solder	Code no.
¼ in	068-2062
6 mm	068-2063
6 mm	068-4101 [1])
⅜ in	068-2060
10 mm	068-2061
10 mm	068-4100 [1])

[1]) *Including filter.*

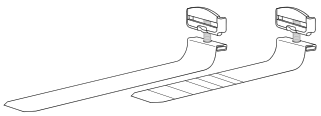
Filter as accessories



Filter type	Code no.
For flare connection	068-0003
For solder adaptor	068-0015

The solder adaptor is for use with thermostatic expansion valves T 2 and TE 2.
When the solder adaptor is fitted correctly it meets the sealing requirements of DIN 8964. The flare orifice in T 2 and TE 2 can be used with a solder adaptor when the orifice filter is replaced with a specific filter intended for solder adaptors. Only in this way the sealing requirements of DIN 8964 can be fulfilled.
Solder adaptors for filter driers (FSA) must not be used on the T 2 inlet.

Bulb strap as accessories

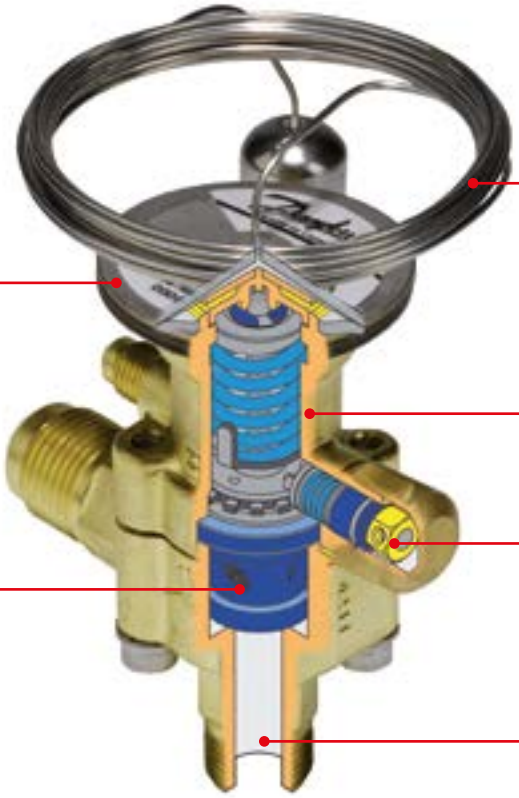


Type	Length	Max. diameter of suction line		Code no.
	[mm]	[in]	[mm]	
T 2 / TE 2 Accessories	110 mm	1 1/8	28	068U3507
	190 mm	2	50	068U3508

TE 5 – TE 55, Thermostatic expansion valves

TE 5 – TE 55 thermostatic expansion valves regulate the injection of refrigerant liquid into evaporators for medium sized plants. Injection is controlled by the refrigerant superheat. Therefore the valves are especially suitable for liquid injection in "*dry*" evaporators where the superheat at the evaporator outlet should always be kept constant. TE 5 – TE 55 valves are supplied as parts programme, built up of three main components - thermostatic element, orifice assembly, and valve body with connections, and have external pressure equalization.
Refrigerants: R22, R134a, R404A, R507, R407A, R407F and R407C.





Laser-welded power element in stainless steel
- longer diaphragm life
- high pressure tolerance and working pressure
- high corrosion resistance

Stainless steel capillary tube and bulb
- high corrosion resistance
- high strength and vibration resistance

Large parts programme ensures minimal stocks

To ensure long operating life, the valve cone and seat are made of a special alloy with particularly good wear qualities

Easy adjustment of superheat setting

More connection possibilities
- solder × solder
- flare × flare
- flanges
- straightway or angleway

Facts

Applications:
- Traditional refrigeration
- Air conditioning units
- Water chillers

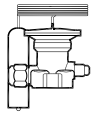
- Interchangeable orifice assembly designed for:
  - easy assembly and mounting
  - optimised capacity matching
  - balanced port (TE 55 only)
- Large temperature range: -60 – 10 °C / -75 – 50 °F

- Available with MOP (Max. Operating Pressure)
- Wide capacity range
- Refrigerants: R22, R134a, R404A, R507, R407A, R407F and R407C
- Maximum Working Pressure PS / MWP: 28 bar / 400 psig

Technical data and ordering



Thermostatic element + Orifice + Valve body



TE 5 – TE 55, R407C

Thermostatic element – including bulb strap

Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Capillary tube		Code no.
					[in]	[mm]	[m]	[in]	
TEZ 5	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3278
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3277
TEZ 12	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3366
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3367
TEZ 20	-40 – 10	-40 – 50	–	–	1/4	6	5	196	067B3371
	-40 – 10	-40 – 50	15	60	1/4	6	5	196	067B3372
TEZ 55	-40 – 10	-40 – 50	–	–	1/4	6	5	196	067G3240
	-40 – 10	-40 – 50	15	60	1/4	6	5	196	067G3241

For R407C plants, please select valves from the dedicated R407C program.

TE 5 – TE 55, R134a

Thermostatic element – including bulb strap

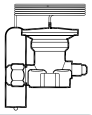
Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Capillary tube		Code no.
					[in]	[mm]	[m]	[in]	
TEN 5	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3297
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3298
TEN 12	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3232
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3233
	-40 – 10	-40 – 50	0	32	1/4	6	5	196	067B3363
TEN 20	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3292
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3293
	-40 – 10	-40 – 50	0	32	1/4	6	5	196	067B3370
TEN 55	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067G3222
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067G3223
	-40 – 10	-40 – 50	0	32	1/4	6	5	196	067G3230

TE 5 – TE 55, R404A/R507

Thermostatic element – including bulb strap

Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Capillary tube		Code no.
					[in]	[mm]	[m]	[in]	
TES 5	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3342
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3357
	-40 – -15	-40 – 5	-10	15	1/4	6	3	118	067B3358
	-60 – -25	-75 – -15	–	–	1/4	6	3	118	067B3344
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3343
TES 12	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3347
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3345
	-40 – -15	-40 – 5	-10	15	1/4	6	3	118	067B3348
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3349
	-40 – 10	-40 – 50	–	–	1/4	6	5	196	067B3346
	-60 – -25	-75 – -15	-20	-5	1/4	6	5	196	067B3350
TES 20	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3352
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3351
	-40 – -15	-40 – 5	-10	15	1/4	6	3	118	067B3353
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3354
	-40 – 10	-40 – 50	–	–	1/4	6	5	196	067B3356
	-60 – -25	-75 – -15	-20	-5	1/4	6	5	196	067B3355
TES 55	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067G3302
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067G3303
	-40 – -15	-40 – 5	-10	15	1/4	6	3	118	067G3304
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067G3305
	-40 – 10	-40 – 50	–	–	1/4	6	5	196	067G3301
	-60 – -25	-75 – -15	-20	-5	1/4	6	5	196	067G3306

Technical data and ordering

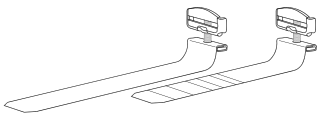


TE 5 – TE 55, R22/R407C

Thermostatic element - including bulb strap

Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Capillary tube		Code no.
					[in]	[mm]	[m]	[in]	
TEX 5	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3250
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3267
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3249
	-40 – -15	-40 – 5	-10	-15	1/4	6	3	118	067B3253
	-60 – -25	-75 – -15	–	–	1/4	6	3	118	067B3263
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3251
TEX 12	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3210
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3227
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3207
	-40 – -15	-40 – 5	-10	-15	1/4	6	3	118	067B3213
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3211
	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3209
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3212
TEX 20	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3274
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067B3286
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3273
	-40 – -15	-40 – 5	-10	-15	1/4	6	3	118	067B3275
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3276
	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3290
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067B3287
TEX 55	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067G3205
	-40 – 10	-40 – 50	15	60	1/4	6	3	118	067G3220
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067G3206
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067G3207
	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067G3209
	-60 – -25	-75 – -15	-20	-5	1/4	6	3	118	067G3217

For R407C plants, please select valves from the dedicated R407C program.



Bulb strap (delivered with the element)

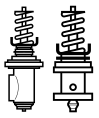
Type	Length		Max. diameter of suction line		Code no.
	[mm]	[in]	[in]	[mm]	
TE 20 / TE 55	350	13.77	3 1/8	78	067N0559

TE 5 – TE 55, R407F/R407A

Thermostatic element - including bulb strap

Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Capilary tube		Code no.
					[in]	[mm]	[m]	[in]	
TE 5	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3501
	-40 – 10	-40 – 50	–	–	1/4 (ODF solder)	6 (ODF solder)	3	118	067B3504
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3502
	-40 – -15	-40 – 25	-10	15	1/4	6	3	118	067B3503
TE 12	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3532
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3531
	-40 – -15	-40 – 25	-10	15	1/4	6	3	118	067B3533
TE 20	-40 – 10	-40 – 50	–	–	1/4	6	3	118	067B3561
	-40 – -5	-40 – 25	0	32	1/4	6	3	118	067B3560
	-40 – -15	-40 – 25	-10	15	1/4	6	3	118	067B3562

Technical data and ordering



TE 5 – TE 55

Orifice assembly

Rated capacity. Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice	R407F		R407A		R134a		R404A/R507		R407C		R22		Code no.
		[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
TE5	0.5	11.1	3.14	10.3	2.92	6.68	1.9	8.17	2.32	10.7	3.04	10.4	2.96	067B2788
	1	20.3	5.76	18.8	5.35	12.2	3.47	14.9	4.24	19.6	5.57	19.1	5.43	067B2789
	2	28.1	8.00	25.9	7.37	17.0	4.83	20.5	5.83	27.2	7.73	26.3	7.48	067B2790
	3	35.8	10.2	33.3	9.48	21.8	6.2	26.3	7.48	34.8	9.9	33.8	9.61	067B2791
	4	49.0	13.9	45.3	12.9	29.7	8.45	35.7	10.2	47.4	13.5	46.0	13.1	067B2792
TE12	5	71.0	20.3	56.0	16.1	37.7	10.7	50	14.4	55	15.9	57	16.3	067B2708
	6	95.0	27.1	75.0	21.4	50	14.2	64	18.2	73	21	76	21.7	067B2709
	7	115	32.7	96.0	27.5	65	18.7	81	23.1	94	26.8	97	27.8	067B2710
TE20	8	141	40.0	126	36.0	77	22.1	87	24.8	118	33.6	128	36.4	067B2771
	9	161	45.9	148	42.1	92	26.2	102	29	136	38.7	150	42.7	067B2773
TE 55 [1])	9B	124	35.3	112	31.8	77	21.9	84	24,1	112	38.1	113	32.1	067G2705
TE 55	10	173	49.1	166	47.4	111	31.6	128	36.4	161	45.8	169	48.1	067G2701
	11	188	53.0	181	52.0	122	34.7	138	39.2	175	49.8	184	52	067G2704
	12	207	59.0	199	57.0	134	38.1	152	43.2	191	54	202	57	067G2707
	13	250	71.0	242	69.0	166	47.2	182	51	232	66	245	69	067G2710

The rated capacity is based on:
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F

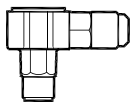
[1]) *For specifications, please contact Danfoss.*

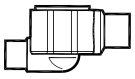
Technical data and ordering

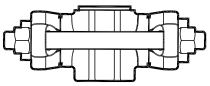
TE 5 – TE 55

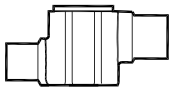
Valve body

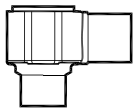
Type	Version	Connection Type	Connection inlet × outlet		Code no.
			[in]	[mm]	
TE 5	Flare angleway	–	1/2 × 5/8	12 × 16	067B4013
	Solder angleway	ODF × ODF	1/2 × 5/8	–	067B4009
	Solder angleway	ODF × ODF	1/2 × 7/8	–	067B4010
	Solder angleway	ODF × ODF	5/8 × 7/8	–	067B4011
	Solder angleway	ODF × ODM	7/8 × 1 1/8	–	067B4034
	Solder angleway	ODF × ODF	–	12 × 16	067B4004
	Solder angleway	ODF × ODF	–	12 × 22	067B4005
	Solder angleway	ODF × ODF	–	16 × 22	067B4012
	Solder angleway	ODF × ODM	–	22 × 28	067B4037
	Solder straightway	ODF × ODF	1/2 × 5/8	–	067B4007
	Solder straightway	ODF × ODF	1/2 × 7/8	–	067B4008
	Solder straightway	ODF × ODF	5/8 × 7/8	–	067B4032
	Solder straightway	ODF × ODM	7/8 × 1 1/8	–	067B4033
	Solder straightway	ODF × ODF	–	12 × 16	067B4002
	Solder straightway	ODF × ODF	–	12 × 22	067B4003
	Solder straightway	ODF × ODF	–	16 × 22	067B4035
	Solder straightway	ODF × ODM	–	22 × 28	067B4036
TE 12	Solder angleway	ODF × ODM	7/8 × 1 1/8	–	067B4023
	Solder angleway	ODF × ODM	–	22 × 28	067B4017
	Solder straightway	ODF × ODF	5/8 × 7/8	–	067B4020
	Solder straightway	ODF × ODM	7/8 × 1 1/8	–	067B4021
	Solder straightway	ODF × ODM	–	16 × 22	067B4016
	Solder flanges	ODF × ODF	5/8 × 7/8	22 × 25	067B4025
	Solder flanges	ODF × ODF	7/8 × 1	22 × 28	067B4026
	Solder flanges	ODF × ODF	–	22 × 28	067B4027
	Solder flanges	ODF × ODF	–	–	067B4015
TE 20	Solder angleway	ODF × ODM	7/8 × 1 1/8	22 × 28	067B4023
	Solder angleway	ODF × ODM	7/8 × 1 1/8	–	067B4017
	Solder straightway	ODF × ODM	7/8 × 1 1/8	–	067B4021
	Solder straightway	ODF × ODM	–	22 × 28	067B4016
TE 55	Solder angleway	ODM × ODM	1 1/8 × 1 3/8	28 × 35	067G4004
	Solder angleway	ODM × ODM	1 1/8 × 1 3/8	28 × 35	067G4002
	Solder straightway	ODM × ODM	1 1/8 × 1 3/8	28 × 35	067G4003
	Solder straightway	ODM × ODM	1 1/8 × 1 3/8	28 × 35	067G4001











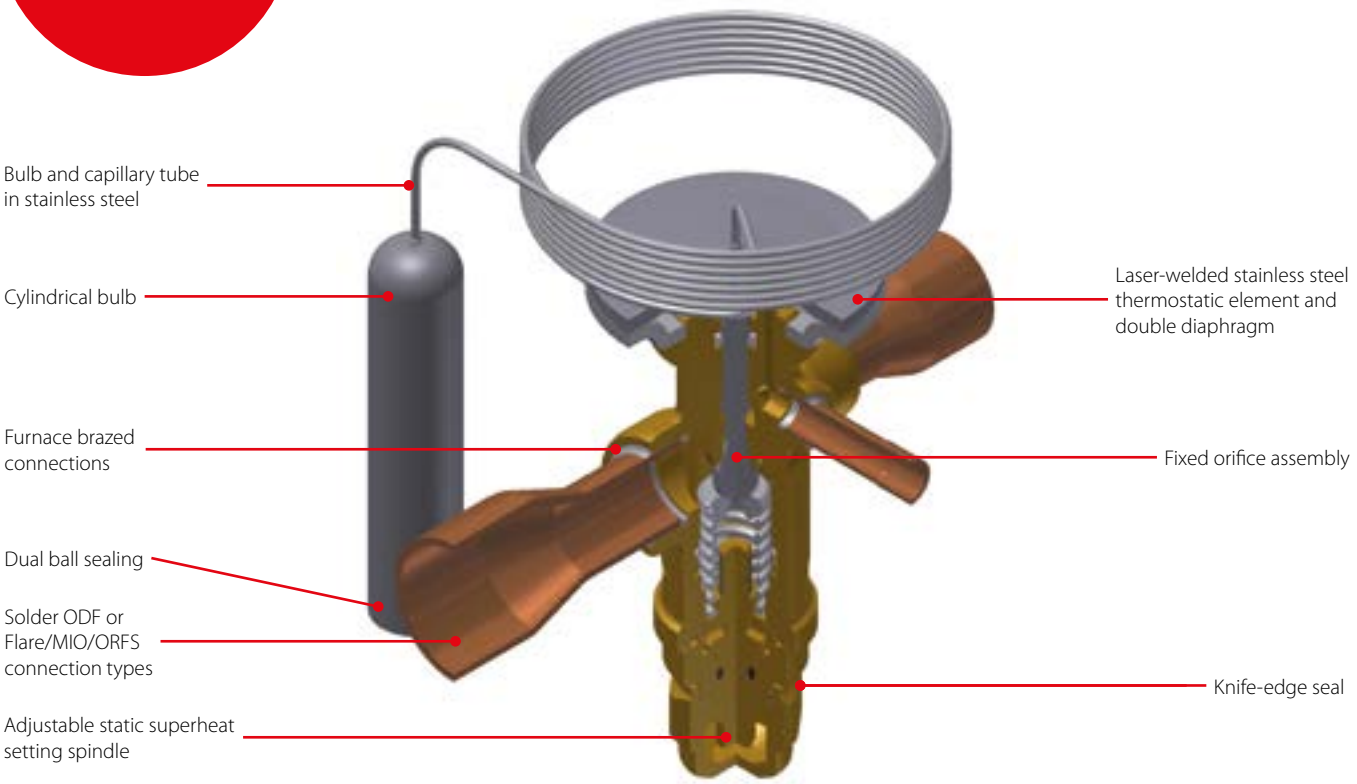
ODF = internal diameter
ODM = External diameter

Quick Selection Notes:

TGE - Thermostatic expansion valves

TGE is an innovatively designed series of thermostatic expansion valves for fluorinated refrigerants.
TGE has copper connections upgraded for high-pressure applications with hermetically tight soldering, and is available with a wide variety of connection types such as solder, flare, MIO, and ORFS, and a wide variety of connection sizes.
TGE is available in versions for R134a, R404A, R507, R407C, R22, R410A, R32 and R290.





Facts

Applications:
- Air conditioning systems
- Heat pumps, water chillers
- Refrigerated containers
- Traditional refrigeration systems and others

- Hermetic TXV for R134a, R404A, R507, R407C, R22, R410A, R32 and R290
- Head pressure independent
- Version with MOP (Max. Operating Pressure)
- Straightway flow
- Balanced port (BP)
- Low hysteresis
- Max. working pressure PS / MWP: 46 bar / 667 psig
- Long lifetime for heat pump application

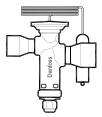
- Cylindrical bulb design with upgraded bulb strap
- Biflow with expansion in both directions
- Adjustable superheat setting
- Laser welded, stainless steel power element/capillary tube
- Available with many different connection types (solder, flare, MIO, ORFS)
- Capacity range: 12 – 182 kW / 3.5 – 52 TR R410A
- Versions with or without bleed function
- Compliance with ATEX hazard zone 2

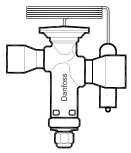
Technical data and ordering

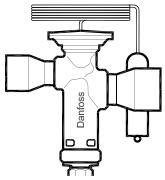
TGE - R22/R407C

Thermostatic expansion valve with bulb strap
Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Solder connection ODF × ODF		Ext. pressure equalization		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEX 10	3	10	3	3/8 × 5/8	–	1/4	6	1.5	59	067N2150
	3	10	3	1/2 × 5/8	–	1/4	6	1.5	59	067N2151
	3	10	3	–	12 × 16	1/4	6	1.5	59	067N2191
	4	14	4	1/2 × 7/8	–	1/4	6	1.5	59	067N2152
	4	14	4	–	12 × 22	1/4	6	1.5	59	067N2192
	6	20	6	1/2 × 5/8	–	1/4	6	1.5	59	067N2153
	6	20	6	1/2 × 7/8	–	1/4	6	1.5	59	067N2154
	6	20	6	5/8 × 7/8	–	1/4	6	1.5	59	067N2155
	6	20	6	–	12 × 16	1/4	6	1.5	59	067N2193
	6	20	6	–	12 × 22	1/4	6	1.5	59	067N2194
	6	20	6	–	16 × 22	1/4	6	1.5	59	067N2195
	8	27	7.5	5/8 × 7/8	–	1/4	6	1.5	59	067N2156
	8	27	7.5	–	16 × 22	1/4	6	1.5	59	067N2196
	11	38	11	5/8 × 7/8	–	1/4	6	1.5	59	067N2157
	11	38	11	5/8 × 1 1/8	–	1/4	6	1.5	59	067N2158
	11	38	11	–	16 × 22	1/4	6	1.5	59	067N2197
	11	38	11	–	16 × 28	1/4	6	1.5	59	067N2198
TGEX 20	12.5	43	12	5/8 × 7/8	–	1/4	6	1.5	59	067N2159
	12.5	43	12	5/8 × 1 1/8	–	1/4	6	1.5	59	067N2160
	16	54	15	5/8 × 1 1/8	–	1/4	6	1.5	59	067N2161
	16	54	15	7/8 × 1 1/8	–	1/4	6	1.5	59	067N2162
	20	63	18	7/8 × 1 1/8	–	1/4	6	1.5	59	067N2163
	20	63	18	7/8 × 1 3/8	–	1/4	6	1.5	59	067N2164
	12.5	43	12	–	16 × 22	1/4	6	1.5	59	067N2199
	12.5	43	12	–	16 × 28	1/4	6	1.5	59	067N2200
	16	54	15	–	16 × 28	1/4	6	1.5	59	067N2201
	20	63	18	–	22 × 28	1/4	6	1.5	59	067N2203
TGEX 40	26	92	26	7/8 × 1 3/8	–	1/4	6	3.0	118	067N2165
	26	92	26	1 1/8 × 1 3/8	–	1/4	6	3.0	118	067N2166
	26	92	26	–	22 × 35	1/4	6	3.0	118	067N2205
	26	92	26	–	28 × 35	1/4	6	3.0	118	067N2206
	30	104	30	7/8 × 1 3/8	–	1/4	6	3.0	118	067N2167
	30	104	30	1 1/8 × 1 3/8	–	1/4	6	3.0	118	067N2168
	30	104	30	–	22 × 35	1/4	6	3.0	118	067N2207
	40	134	38	1 1/8 × 1 3/8	–	1/4	6	3.0	118	067N2169







[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

For R407C plants, please select valves from the dedicated R407C program.

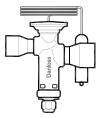
Technical data and ordering

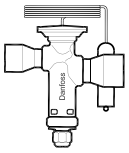
TGE - R407C/R22

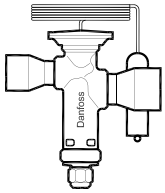
Thermostatic expansion valve with bulb strap

Range: - 25 – 10 °C / -15 – 50 °F with MOP 100 psig / 6.9 bar abs

Type	Orifice no.	Nominal capacity $Q_{nom.}$[1]		External pressure equalization, Solder ODF		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEX 10	3	10	3	1/4	6	3/8 × 5/8	–	1.5	59	067N2000
	3	10	3	1/4	6	1/2 × 5/8	–	1.5	59	067N2001
	3	10	3	1/4	6	–	10 × 16	1.5	59	067N2040
	3	10	3	1/4	6	–	12 × 16	1.5	59	067N2041
	4	14	4	1/4	6	1/2 × 7/8	–	1.5	59	067N2002
	6	20	6	1/4	6	1/2 × 5/8	–	1.5	59	067N2003
	6	20	6	1/4	6	1/2 × 7/8	–	1.5	59	067N2004
	6	20	6	1/4	6	5/8 × 7/8	–	1.5	59	067N2005
	6	20	6	1/4	6	–	12 × 22	1.5	59	067N2044
	6	20	6	1/4	6	–	16 × 22	1.5	59	067N2045
	8	27	7.5	1/4	6	5/8 × 7/8	–	1.5	59	067N2006
	8	27	7.5	1/4	6	–	16 × 22	1.5	59	067N2046
	11	38	11	1/4	6	5/8 × 7/8	–	1.5	59	067N2007
	11	38	11	1/4	6	5/8 × 1 1/8	–	1.5	59	067N2008
	11	38	11	1/4	6	–	16 × 28	1.5	59	067N2048
TGEX 20	12.5	43	12	1/4	6	5/8 × 7/8	–	1.5	59	067N2009
	12.5	43	12	1/4	6	5/8 × 1 1/8	–	1.5	59	067N2010
	12.5	43	12	1/4	6	–	16 × 22	1.5	59	067N2049
	12.5	43	12	1/4	6	–	16 × 28	1.5	59	067N2050
	16	54	15	1/4	6	5/8 × 1/8	–	1.5	59	067N2011
	16	54	15	1/4	6	7/8 × 1 1/8	–	1.5	59	067N2012
	16	54	15	1/4	6	–	16 × 28	1.5	59	067N2051
	16	54	15	1/4	6	–	22 × 28	1.5	59	067N2052
	20	63	18	1/4	6	7/8 × 1 1/8	–	1.5	59	067N2013
	20	63	18	1/4	6	7/8 × 1 3/8	–	1.5	59	067N2014
TGEX 40	26	92	26	1/4	6	7/8 × 1 3/8	–	3.0	118	067N2015
	26	92	26	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N2016
	30	104	30	1/4	6	7/8 × 1 3/8	–	3.0	118	067N2017
	30	104	30	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N2018
	40	134	38	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N2019
	30	104	30	1/4	6	–	22 × 35	3.0	118	067N2057







[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

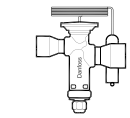
For R407C plants, please select valves from the dedicated R407C program.

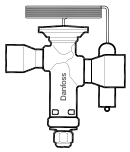
Technical data and ordering

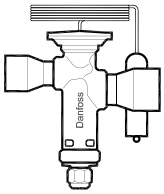
TGE - R22/R407C

Thermostatic expansion valve with bulb strap
Range MAH = -30 – 15 °C / -22 – 60 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Solder connection ODF × ODF [in]	Ext. pressure equalization		Capillary tube length		Code no.
		[kW]	[TR]		[in]	[mm]	[m]	[in]	
TGEX 10	3	10	3	3/8 × 5/8	1/4	6	1.5	59	067N9400
	4	14	4	1/8 × 7/8	1/4	6	1.5	59	067N9402
	6	20	6	1/2 × 5/8	1/4	6	1.5	59	067N9403
	6	20	6	1/2 × 7/8	1/4	6	1.5	59	067N9404
	6	20	6	5/8 × 1 1/8	1/4	6	1.5	59	067N9482
	8	27	7.50	5/8 × 7/8	1/4	6	1.5	59	067N9406
	8	27	7.50	5/8 × 7/8	1/4	6	1.5	59	067N9483
	11	38	11	5/8 × 1 1/8	1/4	6	1.5	59	067N9407
TGEX 20	12.5	43	12	5/8 × 7/8	1/4	6	1.5	59	067N9409
	16	54	15	5/8 × 1 1/8	1/4	6	1.5	59	067N9411
	16	54	15	7/8 × 1 1/8	1/4	6	1.5	59	067N9412
	20	63	18	7/8 × 1 3/8	1/4	6	1.5	59	067N9413
TGEX 40	26	92	26	7/8 × 1 3/8	1/4	6	3.0	118	067N9415
	30	104	30	1 1/8 × 1 3/8	1/4	6	3.0	118	067N9418
	40	134	38	1 1/8 × 1 3/8	1/4	6	3.0	118	067N9419







[1]) The rated capacity is based on:
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

For R407C plants, please select valves from the dedicated R407C program.

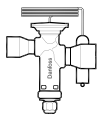
Technical data and ordering

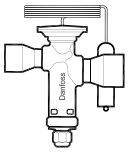
TGE - R134a

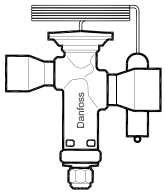
Thermostatic expansion valve with bulb strap

Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		External pressure equalization, Solder ODF		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEN 10	3	6	1.5	1/4	6	3/8 × 5/8	–	1.5	59	067N5150
	3	6	1.5	1/4	6	–	10 × 16	1.5	59	067N5190
	3	6	1.5	1/4	6	–	12 × 16	1.5	59	067N5191
	4	8	2.5	1/4	6	1/2 × 7/8	–	1.5	59	067N5152
	4	8	2.5	1/4	6	–	12 × 22	1.5	59	067N5192
	6	12	3.5	1/4	6	1/2 × 5/8	–	1.5	59	067N5153
	6	12	3.5	1/4	6	1/2 × 7/8	–	1.5	59	067N5154
	6	12	3.5	1/4	6	–	12 × 16	1.5	59	067N5193
	6	12	3.5	1/4	6	–	16 × 22	1.5	59	067N5195
	8	17	4.5	1/4	6	5/8 × 7/8	–	1.5	59	067N5156
	8	17	4.5	1/4	6	–	16 × 22	1.5	59	067N5196
	11	24	7	1/4	6	5/8 × 7/8	–	1.5	59	067N5157
	11	24	7	1/4	6	5/8 × 1 1/8	–	1.5	59	067N5158
	11	24	7	1/4	6	–	16 × 22	1.5	59	067N5197
TGEN 20	12.5	29	8	1/4	6	5/8 × 7/8	–	1.5	59	067N5159
	12.5	29	8	1/4	6	5/8 × 1 1/8	–	1.5	59	067N5160
	16	37	10	1/4	6	5/8 × 1 1/8	–	1.5	59	067N5161
	16	37	10	1/4	6	7/8 × 1 1/8	–	1.5	59	067N5162
	20	44	12	1/4	6	7/8 × 1 1/8	–	1.5	59	067N5163
TGEN 40	26	61	17	1/4	6	7/8 × 1 3/8	–	3.0	118	067N5165
	26	61	17	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N5166
	26	61	17	1/4	6	1 1/8 × 1 1/8	–	3.0	118	067N5254
	30	70	20	1/4	6	1 1/8 × 1 1/8	–	3.0	118	067N5255
	30	70	20	1/4	6	7/8 × 1 3/8	–	3.0	118	067N5167
	30	70	20	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N5168
	30	70	20	1/4	6	–	28 × 35	3.0	118	067N5208
	40	87	25	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N5169







[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

Technical data and ordering

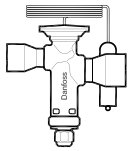
TGE - R134a

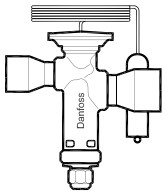
Thermostatic expansion valve with bulb strap

Range: -25 – 10 °C / -15 – 50 °F with MOP 55 psig / 5 bar abs

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		External pressure equalization, Solder ODF		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEN 10	3	6	1.5	1/4	6	3/8 × 5/8	–	1.5	59	067N5000
	4	8	2.5	1/4	6	1/2 × 5/8	–	1.5	59	067N5002
	6	12	3.5	1/4	6	1/2 × 5/8	–	1.5	59	067N5003
	6	12	3.5	1/4	6	1/2 × 7/8	–	1.5	59	067N5004
	6	12	3.5	1/4	6	5/8 × 7/8	–	1.5	59	067N5005
	6	12	3.5	1/4	6	–	12 × 16	1.5	59	067N5043
	8	17	4.5	1/4	6	5/8 × 7/8	–	1.5	59	067N5006
	8	17	4.5	1/4	6	–	16 × 22	1.5	59	067N5046
	11	24	7	1/4	6	5/8 × 7/8	–	1.5	59	067N5007
	11	24	7	1/4	6	5/8 × 1 7/8	–	1.5	59	067N5008
	11	24	7	1/4	6	–	16 × 22	1.5	59	067N5047
	11	24	7	1/4	6	–	16 × 28	1.5	59	067N5048
TGEN 20	12.5	29	8	1/4	6	5/8 × 7/8	–	1.5	59	067N5009
	12.5	29	8	1/4	6	5/8 × 1 1/8	–	1.5	59	067N5010
	16	37	10	1/4	6	5/8 × 1 1/8	–	1.5	59	067N5011
	20	44	12	1/4	6	7/8 × 1 1/8	–	1.5	59	067N5013
	20	44	12	1/4	6	–	22 × 28	1.5	59	067N5053
TGEN 40	26	61	17	1/4	6	7/8 × 1 3/8	–	3.0	118	067N5015
	26	61	17	1/4	6	–	22 × 35	3.0	118	067N5055
	30	70	20	1/4	6	7/8 × 1 3/8	–	3.0	118	067N5017
	30	70	20	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N5018
	30	70	20	1/4	6	–	22 × 35	3.0	118	067N5057
	40	87	25	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N5019
	40	87	25	1/4	6	–	28 × 35	3.0	118	067N5060







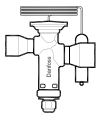
[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

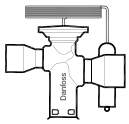
Technical data and ordering

TGE - R134a

Thermostatic expansion valve with bulb strap
Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Ext. pressure equalization	[in] version	Capillary tube length		Code no.
		[kW]	[TR]	[in]	Connection Thread [in]	[m]	[in]	
TGEN 10	3	6	1.5	1/4 MIO	1/2 × 5/8 × 1/4 MIO	1.5	59	067N7150
	4	8	2.5	1/4 MIO	1/2 × 5/8 × 1/4 MIO	1.5	59	067N7152
	4	8	2.5	1/4 Flare	3/8 × 3/8 MIO × 1/4 F	1.5	59	067N7153
	4	8	2.5	1/4 Flare	3/8 × 1/2 × 1/4 F	1.5	59	067N7154
	6	12	3.5	1/4 Flare	3/8 × 5/8 × 1/4 F	1.5	59	067N7157
	6	12	3.5	1/4 Flare	3/8 × 1/2 MIO × 1/4 F	1.5	59	067N7158
	6	12	3.5	1/4 Flare	3/8 × 1/2 × 1/4 F	1.5	59	067N7160
	8	17	4.5	1/4 MIO	1/2 × 5/8 × 1/4 MIO	1.5	59	067N7161
	8	17	4.5	1/4 Flare	1/2 × 5/8 × 1/4 F	1.5	59	067N7163
	8	17	4.5	1/4 Flare	3/8 × 1/2 MIO × 1/4 F	1.5	59	067N7164
	8	17	4.5	1/4 MIO	5/8 × 3/4 × 1/4 MIO	1.5	59	067N7165
	11	24	7	1/4 MIO	5/8 × 3/4 × 1/4 MIO	1.5	59	067N7166
TGEN 20	12.5	29	8	1/4 MIO	5/8 × 3/4 × 1/4 MIO	1.5	59	067N7167
	16	37	10	1/4 Flare	5/8 × 3/4 × 1/4 Flare	1.5	59	067N7168





[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

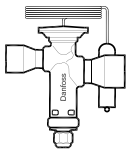
MIO: Male inserts O-ring

TGE - R134a

Thermostatic expansion valve with bulb strap
Range: -25 – 10 °C / -15 – 50 °F with MOP 55 psig / 5 bar abs

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Ext. pressure equalization	[in] version	Capillary tube length		Code no.
		[kW]	[TR]	[in]	Connection Thread [in]	[m]	[in]	
TGEN 10	4	8	2.5	1/4 Flare	3/8 × 1/2 × 1/4 F	1.5	59	067N7000
	6	12	3.5	1/4 Flare	3/8 × 1/2 × 1/4 F	1.5	59	067N7003
	6	12	3.5	1/4 Flare	1/2 × 3/8 × v F	1.5	59	067N7004
	8	17	4.5	1/4 Flare	1/2 × 3/8 × 1/4 F	1.5	59	067N7008
	8	17	4.5	1/4 Flare	5/8 × 3/4 × 1/4 F	1.5	59	067N7013
	11	24	7	1/4 Flare	5/8 × 3/4 × 1/4 F	1.5	59	067N7016
	12.5	29	8	1/4 Flare	5/8 × 3/4 × 1/4 F	1.5	59	067N7018
	16	37	10	1/4 Flare	5/8 × 3/4 × 1/4 F	1.5	59	067N7020
	20	44	12	1/4 Flare	5/8 × 3/4 × 1/4 F	1.5	59	067N7021
	4	8	2.5	1/4 MIO	1/2 × 5/8 × 1/4 MIO	1.5	59	067N7002
	8	17	4.5	1/4 MIO	1/2 × 5/8 × 1/4 MIO	1.5	59	067N7010
	8	17	4.5	1/4 MIO	5/8 × 3/4 × 1/4 MIO	1.5	59	067N7012
	11	24	7	1/4 MIO	5/8 × 3/4 × 1/4 MIO	1.5	59	067N7015
TGEN 20	12.5	29	8	1/4 MIO	5/8 × 3/4 × 1/4 MIO	1.5	59	067N7017
	16	37	10	1/4 MIO	5/8 × 3/4 × 1/4 MIO	1.5	59	067N7019





[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

MIO: Male inserts O-ring.

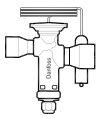
Technical data and ordering

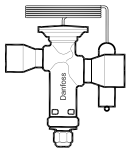
TGE - R407C

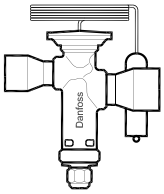
Thermostatic expansion valve with bulb strap

Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		External pressure equalization		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEZ 10	3	9	2.5	1/4	6	1/2 × 5/8	–	1.5	59	067N4151
	3	9	2.5	1/4	6	–	10 × 16	1.5	59	067N4190
	3	9	2.5	1/4	6	–	12 × 16	1.5	59	067N4191
	4	13	3.5	1/4	6	1/2 × 7/8	–	1.5	59	067N4152
	4	13	3.5	1/4	6	–	12 × 22	1.5	59	067N4192
	6	19	5	1/4	6	1/2 × 5/8	–	1.5	59	067N4153
	6	19	5	1/4	6	1/2 × 7/8	–	1.5	59	067N4154
	6	19	5	1/4	6	5/8 × 7/8	–	1.5	59	067N4155
	6	19	5	1/4	6	–	12 × 16	1.5	59	067N4193
	6	19	5	1/4	6	–	12 × 22	1.5	59	067N4194
	6	19	5	1/4	6	–	16 × 22	1.5	59	067N4195
	8	25	7	1/4	6	5/8 × 7/8	–	1.5	59	067N4156
	8	25	7	1/4	6	–	16 × 22	1.5	59	067N4196
	11	36	10	1/4	6	5/8 × 7/8	–	1.5	59	067N4157
	11	36	10	1/4	6	5/8 × 1 1/8	–	1.5	59	067N4158
	11	36	10	1/4	6	–	16 × 22	1.5	59	067N4197
TGEZ 20	12.5	42	12	1/4	6	5/8 × 7/8	–	1.5	59	067N4159
	12.5	42	12	1/4	6	5/8 × 1 1/8	–	1.5	59	067N4160
	12.5	42	12	1/4	6	–	16 × 22	1.5	59	067N4199
	12.5	42	12	1/4	6	–	16 × 28	1.5	59	067N4200
	16	53	15	1/4	6	5/8 × 1 1/8	–	1.5	59	067N4161
	16	53	15	1/4	6	7/8 × 1 1/8	–	1.5	59	067N4162
	16	53	15	1/4	6	–	22 × 28	1.5	59	067N4202
	20	62	18	1/4	6	7/8 × 1 1/8	–	1.5	59	067N4163
	20	62	18	1/4	6	–	22 × 28	1.5	59	067N4203
	20	62	18	1/4	6	–	22 × 35	1.5	59	067N4204
TGEZ 40	26	84	24	1/4	6	7/8 × 3/8	–	3.0	118	067N4165
	26	84	24	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N4166
	26	84	24	1/4	6	–	28 × 35	3.0	118	067N4206
	30	95	27	1/4	6	7/8 × 1 3/8	–	3.0	118	067N4167
	30	95	27	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N4168
	30	95	27	1/4	6	–	28 × 35	3.0	118	067N4208
	40	121	34	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N4169
	40	121	34	1/4	6	–	28 × 35	3.0	118	067N4209







[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

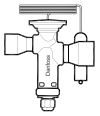
Technical data and ordering

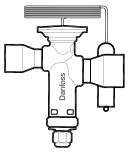
TGE - R407C

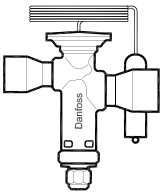
Thermostatic expansion valve with bulb strap

Range: -25 – 10 °C / -15 – 50 °F with MOP 95 psig / 6.6 bar abs

Type	Orifice no.	Nominal capacity $Q_{nom.}$[1]		Ext. pressure equalization		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEZ 10	3	9	2.5	1/4	6	3/8 × 5/8	–	1.5	59	067N4000
	3	9	2.5	1/4	6	–	12 × 16	1.5	59	067N4041
	4	13	3.5	1/4	6	1/2 × 7/8	–	1.5	59	067N4002
	6	19	5	1/4	6	1/2 × 5/8	–	1.5	59	067N4003
	6	19	5	1/4	6	1/2 × 7/8	–	1.5	59	067N4004
	6	19	5	1/4	6	5/8 × 7/8	–	1.5	59	067N4005
	6	19	5	1/4	6	–	12 × 16	1.5	59	067N4043
	8	25	7	1/4	6	5/8 × 7/8	–	1.5	59	067N4006
	8	25	7	1/4	6	–	16 × 22	1.5	59	067N4046
	11	36	10	1/4	6	5/8 × 7/8	–	1.5	59	067N4007
	11	36	10	1/4	6	5/8 × 1 1/8	–	1.5	59	067N4008
	11	36	10	1/4	6	–	16 × 22	1.5	59	067N4047
TGEZ 20	12.5	42	12	1/4	6	5/8 × 7/8	–	1.5	59	067N4009
	12.5	42	12	1/4	6	5/8 × 1 1/8	–	1.5	59	067N4010
	12.5	42	12	1/4	6	–	16 × 22	1.5	59	067N4049
	16	53	15	1/4	6	5/8 × 1 1/8	–	1.5	59	067N4011
	16	53	15	1/4	6	7/8 × 1 1/8	–	1.5	59	067N4012
	20	62	18	1/4	6	7/8 × 1 1/8	–	1.5	59	067N4013
	20	62	18	1/4	6	7/8 × 1 3/8	–	1.5	59	067N4014
	20	62	18	1/4	6	–	22 × 28	1.5	59	067N4053
TGEZ 40	26	84	24	1/4	6	7/8 × 1 3/8	–	3.0	118	067N4015
	30	95	27	1/4	6	7/8 × 1 3/8	–	3.0	118	067N4017
	30	95	27	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N4018
	40	121	34	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N4019







[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

Technical data and ordering

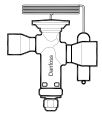
Only solder versions, connection size smaller than 25 mm / 7/8 in are approved for flammable refrigerants.

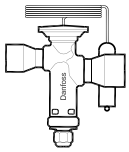
TGE - R410A / R32

Thermostatic expansion valve with bulb strap

Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]				Ext. pressure equalization		Solder connection ODF × ODF		Capillary tube length		Code no.
		R410A		R32								
		[kW]	[TR]	[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEL 10	3	12	3.5	18	5	1/4	6	3/8 × 5/8	–	1.5	59	067N3150
	3	12	3.5	18	5	1/4	6	1/2 × 5/8	–	1.5	59	067N3151
	4	16	4.5	24	7	1/4	6	1/2 × 7/8	–	1.5	59	067N3152
	4	16	4.5	24	7	1/4	6	–	12 × 22	1.5	59	067N3192
	6	24	6.5	35	10	1/4	6	1/2 × 5/8	–	1.5	59	067N3153
	6	24	6.5	35	10	1/4	6	1/2 × 7/8	–	1.5	59	067N3154
	6	24	6.5	35	10	1/4	6	5/8 × 7/8	–	1.5	59	067N3155
	6	24	6.5	35	10	1/4	6	–	12 × 22	1.5	59	067N3194
	6	24	6.5	35	10	1/4	6	–	16 × 22	1.5	59	067N3195
	8	32	9	47	13	1/4	6	5/8 × 7/8	–	1.5	59	067N3156
	8	32	9	47	13	1/4	6	–	16 × 22	1.5	59	067N3196
	11	45	13	68	19	1/4	6	5/8 × 7/8	–	1.5	59	067N3157
	11	45	13	68	19	1/4	6	–	16 × 22	1.5	59	067N3197
TGEL 20	12.5	54	15	81	23	1/4	6	5/8 × 7/8	–	1.5	59	067N3159





[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

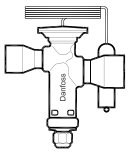
TGE - R410A

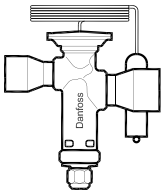
Thermostatic expansion valve with bulb strap

Range: -40 – 10 °C / -40 – 50 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Ext. pressure equalization		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEL 10	11	45	13	1/4	6	5/8 × 1 1/8	–	1.5	59	067N3158
TGEL 20	12.5	54	15	1/4	6	5/8 × 1 1/8	–	1.5	59	067N3160
	16	68	19	1/4	6	5/8 × 1 1/8	–	1.5	59	067N3161
	16	68	19	1/4	6	7/8 × 1 1/8	–	1.5	59	067N3162
	16	68	19	1/4	6	–	22 × 28	1.5	59	067N3202
	20	79	23	1/4	6	7/8 × 1 1/8	–	1.5	59	067N3163
	20	79	23	1/4	6	7/8 × 1 3/8	–	1.5	59	067N3164
	20	79	23	1/4	6	–	22 × 28	1.5	59	067N3203
TGEL 40	26	110	31	1/4	6	7/8 × 1 3/8	–	3.0	118	067N3165
	26	110	31	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N3166
	26	110	31	1/4	6	–	22 × 35	3.0	118	067N3205
	30	125	35	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N3168
	40	161	46	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N3169







[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

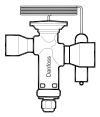
Technical data and ordering

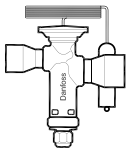
TGE - R410A

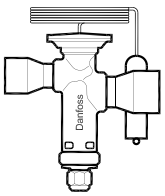
Thermostatic expansion valve with bulb strap

Range: -25 – 10 °C / -15 – 50 °F with MOP 165 psig / 11.5 bar abs

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Ext. pressure equalization		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEL 10	3	12	3.5	1/4	6	3/8 × 5/8	–	1.5	59	067N3000
	3	12	3.5	1/4	6	1/2 × 5/8	–	1.5	59	067N3001
	4	16	4.5	1/4	6	1/2 × 7/8	–	1.5	59	067N3002
	6	24	6.5	1/4	6	1/2 × 5/8	–	1.5	59	067N3003
	6	24	6.5	1/4	6	5/8 × 7/8	–	1.5	59	067N3005
	8	32	9	1/4	6	5/8 × 7/8	–	1.5	59	067N3006
	11	45	13	1/4	6	5/8 × 7/8	–	1.5	59	067N3007
	11	45	13	1/4	6	5/8 × 1 1/8	–	1.5	59	067N3008
TGEL 20	12.5	54	15	1/4	6	5/8 × 7/8	–	1.5	59	067N3009
	12.5	54	15	1/4	6	5/8 × 1 1/8	–	1.5	59	067N3010
	12.5	54	15	1/4	6	–	16 × 22	1.5	59	067N3049
	16	68	19	1/4	6	5/8 × 1 1/8	–	1.5	59	067N3011
	16	68	19	1/4	6	7/8 × 1 1/8	–	1.5	59	067N3012
	20	79	23	1/4	6	7/8 × 1 1/8	–	1.5	59	067N3013
	20	79	23	1/4	6	7/8 × 1 3/8	–	1.5	59	067N3014
TGEL 40	26	110	31	1/4	6	7/8 × 1 3/8	–	3.0	118	067N3015
	26	110	31	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N3016
	30	125	35	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N3018
	40	161	46	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N3019







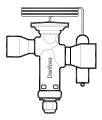
[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

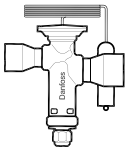
Technical data and ordering

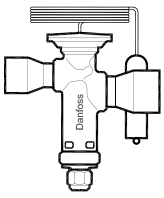
TGE - R410A

Thermostatic expansion valve with bulb strap
Range MAH: -30 – 15 °C / -22 – 60 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Ext. pressure equalization		Solder connection ODF × ODF		Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]	[in]	[mm]	[m]	[in]	
TGEL 10	3	12	3.5	1/4	6	3/8 × 5/8	–	1.5	59	067N9205
	3	12	3.5	1/4	6	1/2 × 5/8	–	1.5	59	067N9201
	3	12	3.5	1/4	6	–	10 × 16	1.5	59	067N9245
	3	12	3.5	1/4	6	–	12 × 16	1.5	59	067N9241
	4	16	4.5	1/4	6	1/2 × 7/8	–	1.5	59	067N9202
	4	16	4.5	1/4	6	–	12 × 22	1.5	59	067N9242
	6	24	6.5	1/4	6	1/2 × 5/8	–	1.5	59	067N9203
	6	24	6.5	1/4	6	5/8 × 5/8	–	1.5	59	067N9200
	6	24	6.5	1/4	6	–	12 × 16	1.5	59	067N9243
	6	24	6.5	1/4	6	–	12 × 22	1.5	59	067N9244
	6	24	6.5	1/4	6	–	16 × 22	1.5	59	067N9240
	8	32	9	1/4	6	5/8 × 7/8	–	1.5	59	067N9206
	8	32	9	1/4	6	–	16 × 22	1.5	59	067N9246
	9	37	11	1/4	6	5/8 × 7/8	–	1.5	59	067N9287
	11	45	13	1/4	6	5/8 × 7/8	–	1.5	59	067N9207
	11	45	13	1/4	6	5/8 × 1 1/8	–	1.5	59	067N9208
	11	45	13	1/4	6	–	16 × 22	1.5	59	067N9247
	11	45	13	1/4	6	–	16 × 28	1.5	59	067N9248
TGEL 20	12.5	54	15	1/4	6	5/8 × 7/8	–	1.5	59	067N9209
	12.5	54	15	1/4	6	7/8 × 1 1/8	–	1.5	59	067N9283
	12.5	54	15	1/4	6	5/8 × 1 1/8	–	1.5	59	067N9210
	12.5	54	15	1/4	6	–	16 × 22	1.5	59	067N9249
	12.5	54	15	1/4	6	–	16 × 28	1.5	59	067N9250
	16	68	19	1/4	6	5/8 × 1 1/8	–	1.5	59	067N9211
	16	68	19	1/4	6	7/8 × 1 1/8	–	1.5	59	067N9212
	16	68	19	1/4	6	–	16 × 28	1.5	59	067N9251
	16	68	19	1/4	6	–	22 × 28	1.5	59	067N9252
	20	79	23	1/4	6	7/8 × 1 1/8	–	1.5	59	067N9213
	20	79	23	1/4	6	1 1/8 × 1 1/8	–	1.5	59	067N9284
	20	79	23	1/4	6	7/8 × 1 3/8	–	1.5	59	067N9214
	20	79	23	1/4	6	–	22 × 28	1.5	59	067N9253
	20	79	23	1/4	6	–	22 × 35	1.5	59	067N9254
	21	91	26	1/4	6	7/8 × 1 1/8	–	1.5	59	067N9288 [2]
TGEL 40	26	110	31	1/4	6	7/8 × 1 3/8	–	3.0	118	067N9215
	26	110	31	1/4	6	7/8 × 1 1/8	–	3.0	118	067N9285
	26	110	31	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N9216
	26	110	31	1/4	6	–	22 × 35	3.0	118	067N9255
	26	110	31	1/4	6	–	28 × 35	3.0	118	067N9256
	30	125	35	1/4	6	7/8 × 1 3/8	–	3.0	118	067N9217
	30	125	35	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N9218
	30	125	35	1/4	6	–	22 × 35	3.0	118	067N9257
	30	125	35	1/4	6	–	28 × 35	3.0	118	067N9258
	40	161	46	1/4	6	1 1/8 × 1 3/8	–	3.0	118	067N9219
	40	161	46	1/4	6	–	28 × 35	3.0	118	067N9259







[1] *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

[2] *Contact Danfoss for more information.*

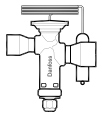
Technical data and ordering

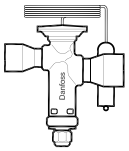
TGE - R404A/R507

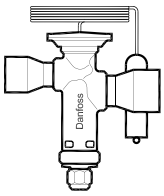
Thermostatic expansion valve with bulb strap

Range: -40 – 10 °C / -40 –50 °F

Type	Orifice no.	Nominal capacity $Q_{nom.}$ [1]		Ext. pressure equalization		Solder connection ODF × ODF [in]	Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]		[m]	[in]	
TGES 10	6	14	4	1/4	6	1/2 × 7/8	1.5	59	067N6151
	8	18	5	1/4	6	1/2 × 7/8	1.5	59	067N6166
	8	18	5	1/4	6	5/8 × 7/8	1.5	59	067N6150
	11	26	7.50	1/4	6	5/8 × 7/8	1.5	59	067N6154
TGES 20	12.5	31	9	1/4	6	5/8 × 7/8	1.5	59	067N6158
	16	39	11	1/4	6	1 5/8 × 1 3/8	1.5	59	067N6188
	16	39	11	1/4	6	5/8 × 1 1/8	1.5	59	067N6155
	16	39	11	1/4	6	7/8 × 1 1/8	1.5	59	067N6181
	20	45	13	1/4	6	7/8 × 1 1/8	1.5	59	067N6162
TGES 40	30	72	21	1/4	6	1 1/8 × 1 3/8	3.0	118	067N6186







[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

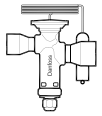
Only solder versions, connection size smaller than 25 mm / 7/8 in are approved for flammable refrigerants.

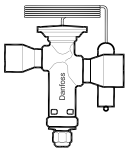
TGE - R290

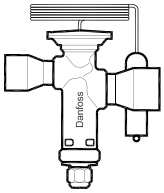
Thermostatic expansion valve with bulb strap

Range: -40 – 10 °C / -40 – 50 °F

Valve type	Orifice no.	Nominal capacity Qnom. [1]		Ext. pressure equalization		Solder connection ODF × ODF [in]	Capillary tube length		Code no.
		[kW]	[TR]	[in]	[mm]		[m]	[in]	
TGE 10	6	19	5	1/4	6	5/8 × 7/8	1.5	59	067N9100
	8	25	7	1/4	6	5/8 × 7/8	1.5	59	067N9101
	11	36	10	1/4	6	5/8 × 7/8	1.5	59	067N9103
TGE 20	12.5	44	12	1/4	6	5/8 × 7/8	1.5	59	067N9104
	20	63	18	1/4	6	7/8 × 7/8	1.5	59	067N9106
TGE 40	30	106	30	1/4	6	7/8 × 7/8	3.0	118	067N9108





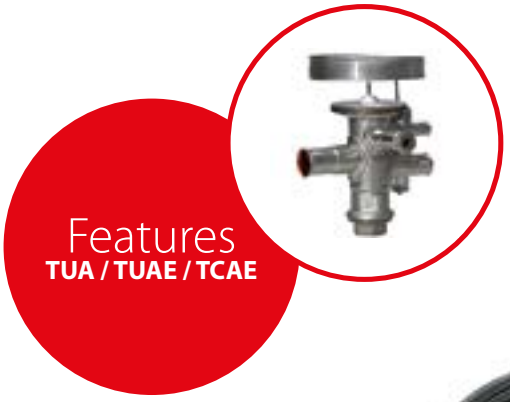


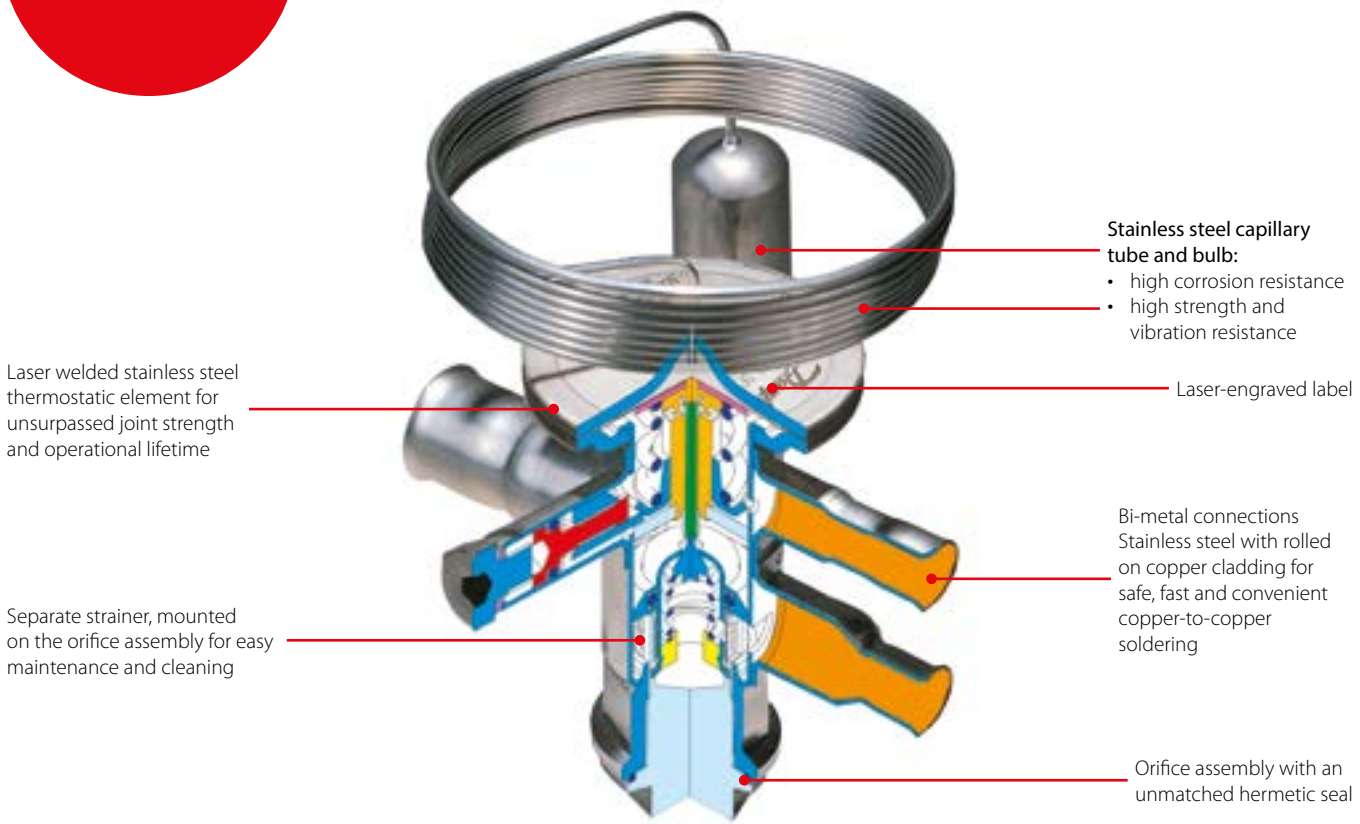
[1]) *The rated capacity is based on:*
Evaporating temperature t_e = 4.4 °C / 40 °F
Condensing temperature t_c = 38 °C / 100 °F
Liquid temperature t_l = 37 °C / 98 °F
Opening superheat OS = 4 K / 7.2 °F

Quick Selection Notes:

TUA / TUAE / TCAE - Thermostatic expansion valves

TUA / TUAE / TCAE stainless steel thermostatic expansion valves are used for liquid injection into evaporators on both refrigeration and air conditioning systems using flourinated refrigerants e.g. R134a, R404A, R407C, R22, R507 and R410A. TUA / TUAE / TCAE valves are compact in design, light weight and have steel/copper bi-metal connections for fast soldering. TUA / TUAE / TCAE valves are supplied as parts programme, with separate thermostatic element/valve body, and orifice assembly. TUA has internal equalization, TUAE / TCAE external equalization. TUA / TUAE / TCAE are straightway valves, and have adjustable superheat setting.





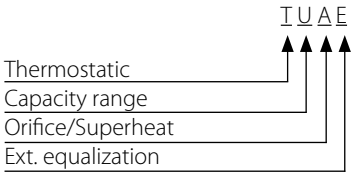
Facts

Applications:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Ice cube machines
- Transport refrigeration

- The use of stainless steel makes the valves light and strong
- Bi-metal connections for safe, fast and convenient soldering
- Stainless steel capillary tube for superior strength and ductility
- Allen key superheat setting screw is convenient and space-saving compared to the standard screwdriver adjustment used in most conventional valves

- Can be supplied with MOP (Max. Operating Pressure) Protects the compressor motor against excessive evaporating pressure during normal operation
- Valves for special temperature ranges can be supplied
- 4 K / 7.2 °F opening superheat
- Bi-flow function (TUAE: only orifice 1 – 8, TCAE: Only orifice 1 and 2)

Technical data

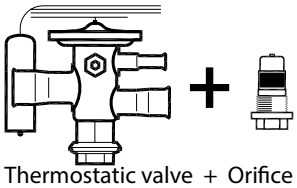


Orifice/Superheat

	Interchangeable	Adjustable
A	YES	YES
B	NO	YES
C	NO	NO

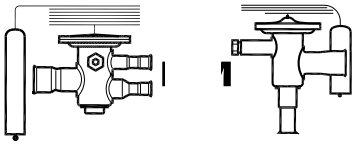
N = -40 °C – 10 °C / -40 – 50 °F
NM = -40 °C – -5 °C MOP 0 °C / -40 – 25 °F MOP 32 °F
NL = -40 °C – -15 °C with MOP - 10 °C / -40 – 5 °F MOP 14 °F
B = -60 °C – -25 °C / -75 – -15 °F

TUA
TUAE
TCAE



Thermostatic valve + Orifice

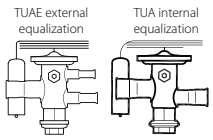
TUB
TUBE
TUC
TUCE
TCBE
TCCE



Thermostatic valve including Orifice

Valve types **TUB / TUBE / TUC / TUCE** and **TCBE / TCCE** can be replaced by **TUA / TUAE** and **TCAE** types

Technical data and ordering



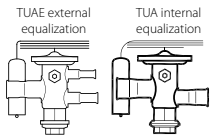
TUA / TUAE - Solder

Thermostatic element with bulb strap

Refrigerant	Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Solder connections inlet × outlet		Code no.
						[in]	[mm]	[in]	[mm]	
R407C / R22	TUA	-40 – 10	-40 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2234
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	–	6 × 12	068U2230
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2235
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 12	068U2231
	TUA	-40 – 10	-40 – 50	15	60	1/4	6	1/4 × 1/2	–	068U2212
	TUA	-40 – 10	-40 – 50	15	60	1/4	6	–	6 × 12	068U2208
	TUA	-40 – 10	-40 – 50	15	60	1/4	6	3/8 × 1/2	–	068U2213
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2236
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2237
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 12	068U2233
	TUAE	-40 – 10	-40 – 50	15	60	1/4	6	3/8 × 1/2	–	068U2245
	TUAE	-40 – 10	-40 – 50	15	60	1/4	6	–	10 × 12	068U2241
R134a	TUA	-40 – 10	-40 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2204
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	–	6 × 12	068U2200
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2205
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 12	068U2201
	TUA	-40 – 10	-40 – 50	15	60	1/4	6	1/4 × 1/2	–	068U2292
	TUA	-40 – 10	-40 – 50	15	60	1/4	6	3/8 × 1/2	–	068U2293
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2206
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	–	6 × 12	068U2202
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2207
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 12	068U2203
	TUAE	-40 – 10	-40 – 50	15	60	1/4	6	1/4 × 1/2	–	068U2214
	TUAE	-40 – 10	-40 – 50	15	60	1/4	6	3/8 × 1/2	–	068U2215
	TUAE	-40 – 10	-40 – 50	15	60	1/4	6	–	10 × 12	068U2211
R404A/R507	TUA	-40 – 10	-40 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2284
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	–	6 × 12	068U2280
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2285
	TUA	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 12	068U2281
	TUA	-60 – -25	-75 – -15	–	–	1/4	6	1/4 × 1/2	–	068U2308
	TUA	-60 – -25	-75 – -15	–	–	1/4	6	3/8 × 1/2	–	068U2309
	TUA	-40 – -5	-40 – 25	0	32	1/4	6	1/4 × 1/2	–	068U2300
	TUA	-40 – -5	-40 – 25	0	32	1/4	6	–	6 × 12	068U2296
	TUA	-40 – 10	-40 – 50	15	60	1/4	6	1/4 × 1/2	–	068U2332
	TUA	-40 – 10	-40 – 50	15	60	1/4	6	3/8 × 1/2	–	068U2333
	TUA	-60 – -25	-75 – -15	-20	-5	1/4	6	1/4 × 1/2	–	068U2316
	TUA	-60 – -25	-75 – -15	-20	-5	1/4	6	–	6 × 12	068U2312
	TUA	-60 – -25	-75 – -15	-20	-5	1/4	6	3/8 × 1/2	–	068U2317
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2286
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	–	6 × 12	068U2282
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2287
	TUAE	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 12	068U2283
	TUAE	-40 – 10	-40 – 50	15	60	1/4	6	3/8 × 1/2	–	068U2295
	TUAE	-40 – -5	-40 – 25	0	32	1/4	6	3/8 × 1/2	–	068U2303
	TUAE	-40 – -5	-40 – 25	0	32	1/4	6	–	10 × 12	068U2299
	TUAE	-60 – -25	-75 – -15	-20	-5	1/4	6	1/4 × 1/2	–	068U2318
	TUAE	-60 – -25	-75 – -15	-20	-5	1/4	6	3/8 × 1/2	–	068U2319
	TUAE	-60 – -25	-75 – -15	-20	-5	1/4	6	–	10 × 12	068U2315

Capillary tube: 1.5 m / 59 in

Technical data and ordering

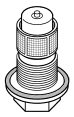


TUA / TUAE - Solder

Thermostatic element with bulb strap

Refrigerant	Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Solder connections inlet × outlet		Code no.
						[in]	[mm]	[in]	[mm]	
R407C	TUA	-50 – 10	-50 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2324
	TUA	-50 – 10	-50 – 50	–	–	1/4	6	–	6 × 12	068U2320
	TUA	-50 – 10	-50 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2325
	TUA	-50 – 10	-50 – 50	–	–	1/4	6	–	10 × 12	068U2321
	TUAE	-50 – 10	-50 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2326
	TUAE	-50 – 10	-50 – 50	–	–	1/4	6	–	6 × 12	068U2322
	TUAE	-50 – 10	-50 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2327
	TUAE	-50 – 10	-50 – 50	–	–	1/4	6	–	10 × 12	068U2323
	TUAE	-50 – 10	-50 – 50	15	60	1/4	6	–	6 × 12	068U2330
	TUAE	-50 – 10	-50 – 50	15	60	1/4	6	3/8 × 1/2	–	068U2335
	TUAE	-50 – 10	-50 – 50	15	60	1/4	6	–	10 × 12	068U2331
R410A	TUA	-50 – 10	-50 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2414
	TUAE	-50 – 10	-50 – 50	–	–	1/4	6	3/8 × 1/2	–	068U1714
	TUAE	-50 – 10	-50 – 50	–	–	1/4	6	–	10 × 12	068U2780
R404A/R507	TUA	-50 – 10	-50 – 50	–	–	1/4	6	1/4 × 1/2	–	068U2308
	TUA	-50 – 10	-50 – 50	–	–	1/4	6	3/8 × 1/2	–	068U2309
	TUA	-60 – -25	-75 – -15	-20	-5	1/4	6	1/4 × 1/2	–	068U2316
	TUA	-60 – -25	-75 – -15	-20	-5	1/4	6	–	6 × 12	068U2312
	TUA	-60 – -25	-75 – -15	-20	-5	1/4	6	3/8 × 1/2	–	068U2317
	TUAE	-60 – -25	-75 – -15	-20	-5	1/4	6	1/4 × 1/2	–	068U2318
	TUAE	-60 – -25	-75 – -15	-20	-5	1/4	6	3/8 × 1/2	–	068U2319
	TUAE	-60 – -25	-75 – -15	-20	-5	1/4	6	–	10 × 12	068U2315

Capillary tube: 1.5 m / 59 in



TUA / TUAE

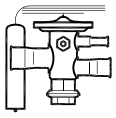
Orifice assembly with filter and gasket

Valve	Orifice no.	Bleed [%]	R134a		R404A/R507		R407C		R22		R410A		Code no.
			[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
TUA / TUAE	0	–	0.42	0.12	0.48	0.14	0.66	0.19	0.63	0.18	0.99	0.28	068U1030
	1	–	0.61	0.18	0.71	0.20	0.94	0.27	0.92	0.26	1.3	0.38	068U1031
	1	15	0.61	0.18	0.71	0.20	0.94	0.27	0.92	0.26	1.3	0.38	068U1131
	2	–	0.72	0.21	0.87	0.25	1.1	0.32	1.1	0.32	1.7	0.48	068U1032
	2	15	0.72	0.21	0.87	0.25	1.1	0.32	1.1	0.32	1.7	0.48	068U1132
	3	–	0.94	0.27	1.1	0.32	1.5	0.42	1.4	0.41	2.1	0.60	068U1033
	3	15	0.94	0.27	1.1	0.32	1.5	0.42	1.4	0.41	2.1	0.60	068U1133
	4	–	1.6	0.46	2.0	0.57	2.5	0.72	2.5	0.72	4.1	1.2	068U1034
	4	15	1.6	0.46	2.0	0.57	2.5	0.72	2.5	0.72	4.1	1.2	068U1134
	5	–	2.1	0.61	2.7	0.76	3.4	0.96	3.4	0.96	5.3	1.5	068U1035
	5	15	2.1	0.61	2.7	0.76	3.4	0.96	3.4	0.96	5.3	1.5	068U1135
	6	–	3.4	0.95	4.2	1.1	5.3	1.5	5.3	1.5	8.5	2.4	068U1036
	6	15	3.4	0.95	4.2	1.1	5.3	1.5	5.3	1.5	8.5	2.4	068U1136
	7	–	4.4	1.3	5.6	1.6	7.0	2.0	7.0	2.0	11.2	3.2	068U1037
	7	15	4.4	1.3	5.6	1.6	7.0	2.0	7.0	2.0	11.2	3.2	068U1137
	8	–	6.5	1.9	8.0	2.3	10.2	2.9	10.1	2.9	15.8	4.5	068U1038
	8	15	6.5	1.9	8.0	2.3	10.2	2.9	10.1	2.9	15.8	4.5	068U1138
	9 [1])	–	9.0	2.6	11.3	3.2	14.0	4.0	14.1	4.0	23.1	6.6	068U1039
	9 [1])	15	9.0	2.6	11.3	3.2	14.0	4.0	14.1	4.0	23.1	6.6	068U1139

The rated capacity is based on:
Evaporating temperature t_e = 4.4 °C / 40 °F
Liquid temperature t_l = 37 °C / 98 °F
Condensing temperature t_c = 38 °C / 100 °F

[1]) TUAE with orifice no. 9 cannot be used for Biflow operation.

Technical data and ordering



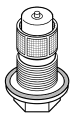
TCAE

Thermostatic element, with bulb strap

Refrigerant	Type	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Ext. pressure equalization		Solder connection inlet × outlet		Code no.
						[in]	[mm]	[in]	[mm]	
R407C/R22	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 5/8	–	068U4280
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	1/2 × 5/8	–	068U4281
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	1/2 × 5/8	–	068U4283
	TCAE	-40 – 10	-40 – 50	0	32	1/4	6	–	12 × 16	068U4291
R134a	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 5/8	–	068U4292
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	1/2 × 5/8	–	068U4293
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 16	068U4296
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	–	12 × 16	068U4297
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	1/2 × 5/8	–	068U4295
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	–	12 × 16	068U4299
R404A/R507	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 5/8	–	068U4304
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	1/2 × 5/8	–	068U4305
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 16	068U4308
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	–	12 × 16	068U4309
R404A/R507	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	1/2 × 5/8	–	068U4307
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	–	10 × 16	068U4310
	TCAE	-40 – -5	-40 – 25	0	32	1/4	6	1/2 × 5/8	–	068U4313
	TCAE	-40 – -5	-40 – 25	0	32	1/4	6	–	10 × 16	068U4314
	TCAE	-40 – -5	-40 – 25	0	32	1/4	6	–	12 × 16	068U4315
	TCAE	-60 – -25	-75 – -15	–	–	1/4	6	1/2 × 5/8	–	068U4317
	TCAE	-60 – -25	-75 – -15	–	–	1/4	6	–	12 × 16	068U4321
	TCAE	-60 – -25	-75 – -15	-20	68	1/4	6	1/2 × 5/8	–	068U4319
	TCAE	-60 – -25	-75 – -15	-20	68	1/4	6	–	10 × 16	068U4322
R407C	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 5/8	–	068U4324
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	1/2 × 5/8	–	068U4325
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	–	10 × 16	068U4328
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	–	12 × 16	068U4329
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	3/8 × 5/8	–	068U4326
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	1/2 × 5/8	–	068U4327
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	–	12 × 16	068U4331
R410A	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	3/8 × 5/8	–	068U4336
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	1/2 × 5/8	–	068U4337
	TCAE	-40 – 10	-40 – 50	–	–	1/4	6	–	12 × 16	068U4341
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	1/2 × 5/8	–	068U4339
	TCAE	-40 – 10	-40 – 50	15	59	1/4	6	–	12 × 16	068U4343

Capillary tube: 1.5 m / 59 in

Technical data and ordering



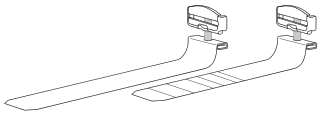
TCAE

Orifice assembly with filter and gasket

Type	Orifice no.	Bleed [%]	R134a		R404A/R507		R407C		R22		R410A		Code no.
			[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
TCAE	1	–	13.0	3.7	13.0	3.7	17.8	5.1	18.3	5.2	21.2	6.0	068U4100
	1	15	13.0	3.7	13.0	3.7	17.8	5.1	18.3	5.2	21.2	6.0	068U4097
	2	–	14.9	4.3	15.1	4.3	20.4	5.8	21.2	6.0	24.5	7.0	068U4101
	2	15	14.9	4.3	15.1	4.3	20.4	5.8	21.2	6.0	24.5	7.0	068U4098
	3 [1])	–	18.6	5.3	18.9	5.4	25.2	7.2	26.7	7.6	30.6	8.7	068U4102
	3 [1])	15	18.6	5.3	18.9	5.4	25.2	7.2	26.7	7.6	30.6	8.7	068U4099

The rated capacity is based on:
Evaporating temperature, t_e = 4.4 °C / 40 °F
Liquid temperature, t_l = 37 °C / 98 °F
Condensing temperature, t_c = 38 °C / 100 °F

[1]) TCAE with orifice no. 3 cannot be used for Biflow operation.



Bulb strap (delivered with the valve) and accessories

Type	Length		Max. diameter of suction line		Code no.
	[mm]	[in]	[mm]	[in]	
TCAE Accessories	110	4 5/16	28	1 1/8	068U3507
	190	7 3/8	50	2	068U3508

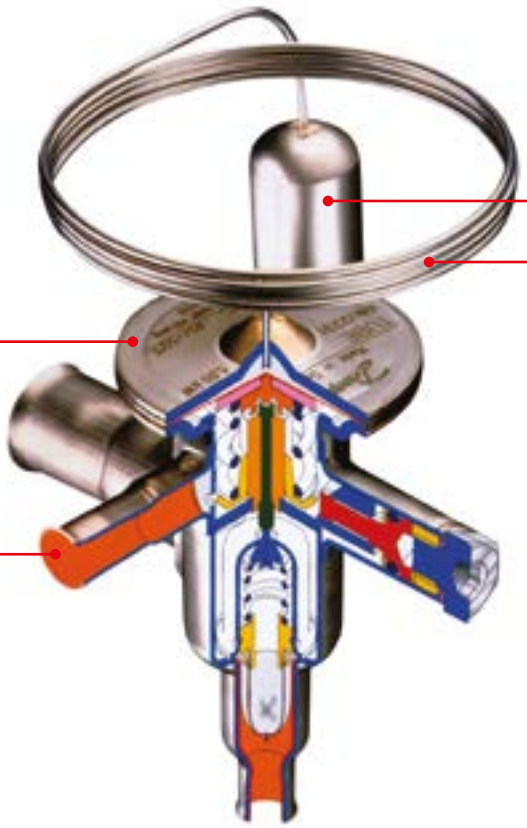
TUB / TUBE / TCBE - Thermostatic expansion valves

TUB / TUBE / TCBE stainless steel thermostatic expansion valves are used for liquid injection into evaporators on both refrigeration and air conditioning systems using fluorinated refrigerants e.g. R134a, R404A, R407C, R22, R507 and R410A.

TUB / TUBE / TCBE valves are compact in design, light weight and have steel/copper bi-metal connections for fast soldering. TUB has internal equalization, TUBE / TCBE external equalization. TUB / TUBE and TCBE are available in straightway or angleway versions, have a fixed orifice and adjustable superheat.



Features
TUB / TUBE / TCBE



Stainless steel capillary tube and bulb:
- high corrosion resistance
- high strength and vibration resistance

Laser welded stainless steel thermostatic element for unsurpassed joint strength and operational lifetime

Bi-metal connections
Stainless steel with rolled on copper cladding for safe, fast and convenient copper-to-copper soldering

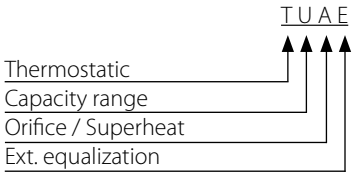
Facts

Applications:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Ice cube machines
- Transport refrigeration

- The use of stainless steel makes the valves light and strong
- Bi-metal connections for safe, fast and convenient soldering
- Stainless steel capillary tube for superior strength and ductility
- Allen key superheat setting screw is convenient and space-saving compared to the standard screwdriver adjustment used in most conventional valves

- Can be supplied with MOP (Max. Operating Pressure) - protects the compressor motor against excessive evaporating pressure during normal operation
- Valves for special temperature ranges can be supplied
- 4 K / 7.2 °F opening superheat
- Bi-flow function
- Can be supplied as non adjustable OEM versions

Technical data

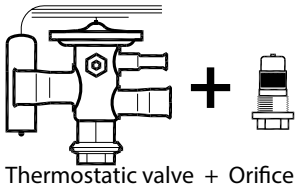


Orifice/Superheat

	Interchangeable	Adjustable
A	YES	YES
B	NO	YES
C	NO	NO

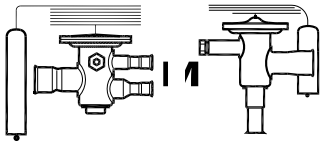
Range N = -40 – 10 °C / -40 – 50 °F
Range NM = -40 – -5 °C with MOP / -40 – 25 °F with MOP
Range NL = -40 – -15 °C with MOP / -40 °C – 5 °F with MOP
Range B = -60 – -25 °C with MOP/ -75 – -15 °F with MOP

TUA
TUAE
TCAE



Thermostatic valve + Orifice

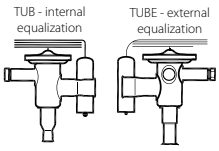
TUB
TUBE
TUC
TUCE
TCBE
TCCE



Thermostatic valve including Orifice

Valve types **TUB / TUBE / TUC / TUCE** and **TCBE / TCCE** can be replaced by **TUA / TUAE** and **TCAE** types.

Technical data and ordering



TUB / TUBE

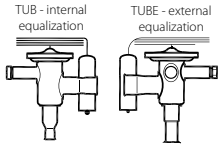
Thermostatic element, angle way, with bulb strap

Refrigerant	Type	Orifice no. [2]	Range [°C]	Range [°F]	Rated capacity $Q_{nom.}$ [1]		Ext. pressure equalization		Connection inlet × outlet		Code no.
					[kW]	[TR]	[in]	[mm]	[in]	[mm]	
R22/R407C	TUB	1	-40 – 10	-40 – 50	0.92	0.26	1/4	6	1/4 × 1/2	–	068U2057
	TUB	2	-40 – 10	-40 – 50	1.1	0.32	1/4	6	1/4 × 1/2	–	068U2058
	TUB	3	-40 – 10	-40 – 50	1.4	0.41	1/4	6	1/4 × 1/2	–	068U2059
	TUB	4	-40 – 10	-40 – 50	2.5	0.72	1/4	6	1/4 × 1/2	–	068U2060
	TUB	5	-40 – 10	-40 – 50	3.4	0.96	1/4	6	1/4 × 1/2	–	068U2061
	TUB	6	-40 – 10	-40 – 50	5.3	1.5	1/4	6	1/4 × 1/2	–	068U2062
	TUB	7	-40 – 10	-40 – 50	7.0	2.0	1/4	6	3/8 × 1/2	–	068U2063
	TUB	8	-40 – 10	-40 – 50	10.1	2.9	1/4	6	3/8 × 1/2	–	068U2064
	TUBE	5	-40 – 10	-40 – 50	3.4	0.96	1/4	6	1/4 × 1/2	–	068U2071
	TUBE	6	-40 – 10	-40 – 50	5.3	1.5	1/4	6	1/4 × 1/2	–	068U2072
	TUBE	7	-40 – 10	-40 – 50	7.0	2.0	1/4	6	3/8 × 1/2	–	068U2073
	TUBE	8	-40 – 10	-40 – 50	10.1	2.9	1/4	6	3/8 × 1/2	–	068U2074
	TUBE	9	-40 – 10	-40 – 50	14.1	4.0	1/4	6	3/8 × 1/2	–	068U2075
R407C	TUB	1	-40 – 10	-40 – 50	0.94	0.27	1/4	6	–	6 × 12	068U1901
	TUB	3	-40 – 10	-40 – 50	1.5	0.42	1/4	6	–	6 × 12	068U1903
	TUB	4	-40 – 10	-40 – 50	2.5	0.72	1/4	6	–	6 × 12	068U1904
	TUB	5	-40 – 10	-40 – 50	3.4	0.96	1/4	6	–	6 × 12	068U1905
	TUB	6	-40 – 10	-40 – 50	5.3	1.5	1/4	6	–	6 × 12	068U1906
	TUB	7	-40 – 10	-40 – 50	7.0	2.0	1/4	6	–	10 × 12	068U1907
	TUB	8	-40 – 10	-40 – 50	10.2	2.9	1/4	6	–	10 × 12	068U1908
	TUB	9	-40 – 10	-40 – 50	14.0	4.0	1/4	6	–	10 × 12	068U1909
	TUBE	2	-40 – 10	-40 – 50	1.1	0.32	1/4	6	–	6 × 12	068U1912
	TUBE	3	-40 – 10	-40 – 50	1.5	0.42	1/4	6	–	6 × 12	068U1913
	TUBE	4	-40 – 10	-40 – 50	2.5	0.72	1/4	6	–	6 × 12	068U1914
	TUBE	5	-40 – 10	-40 – 50	3.4	0.96	1/4	6	1/4 × 1/2	–	068U1935
	TUBE	5	-40 – 10	-40 – 50	3.4	0.96	1/4	6	–	6 × 12	068U1915
	TUBE	6	-40 – 10	-40 – 50	5.3	1.5	1/4	6	1/4 × 1/2	–	068U1936
	TUBE	6	-40 – 10	-40 – 50	5.3	1.5	1/4	6	–	6 × 12	068U1916
	TUBE	7	-40 – 10	-40 – 50	7.0	2.0	1/4	6	3/8 × 1/2	–	068U1937
	TUBE	7	-40 – 10	-40 – 50	7.0	2.0	1/4	6	–	10 × 12	068U1917
	TUBE	8	-40 – 10	-40 – 50	10.2	2.9	1/4	6	3/8 × 1/2	–	068U1938
	TUBE	8	-40 – 10	-40 – 50	10.2	2.9	1/4	6	–	10 × 12	068U1918
	TUBE	9	-40 – 10	-40 – 50	14.0	4.0	1/4	6	3/8 × 1/2	–	068U1939
	TUBE	9	-40 – 10	-40 – 50	14.0	4.0	1/4	6	–	10 × 12	068U1919
R410A	TUB	1	-40 – 10	-40 – 50	1.34	0.38	1/4	6	1/4 × 1/2	–	068U1958
	TUB	2	-40 – 10	-40 – 50	1.7	0.48	1/4	6	1/4 × 1/2	–	068U1959
	TUB	3	-40 – 10	-40 – 50	2.1	0.60	1/4	6	1/4 × 1/2	–	068U1960
	TUB	4	-40 – 10	-40 – 50	4.1	1.2	1/4	6	1/4 × 1/2	–	068U1961
	TUB	5	-40 – 10	-40 – 50	5.3	1.5	1/4	6	1/4 × 1/2	–	068U1962
	TUB	6	-40 – 10	-40 – 50	8.5	2.4	1/4	6	1/4 × 1/2	–	068U1963
	TUBE	7	-40 – 10	-40 – 50	11.2	3.2	1/4	6	3/8 × 1/2	–	068U1973
	TUBE	8	-40 – 10	-40 – 50	15.8	4.5	1/4	6	3/8 × 1/2	–	068U1974
	TUBE	9	-40 – 10	-40 – 50	23.1	6.6	1/4	6	3/8 × 1/2	–	068U1975

[1]) The rated capacity is based on:
Evaporating temperature: t_e = 4.4 °C / 40 °F
Condensing temperature: t_c = 38 °C / 100 °F
Liquid temperature: t_l = 37 °C / 98 °F
[2]) TUBE with orifice 0 and 9 and all TUB (internal pressure equalization) cannot be used for biflow operation.

For R407C plants, please select valves from the dedicated R407C program.

Technical data and ordering



TUB / TUBE

Thermostatic element, angle way, with bulb strap

Refrigerant	Type	Orifice no. [2]	Range [°C]	Range [°F]	Rated capacity $Q_{nom.}$ [1] [kW]	Rated capacity $Q_{nom.}$ [1] [TR]	Ext. pressure equalization [in]	Ext. pressure equalization [mm]	Connection inlet × outlet [in]	Connection inlet × outlet [mm]	Code no.
R134a	TUB	0	-40 – 10	-40 – 50	0.42	0.12	1/4	6	1/4 × 1/2	–	068U2660
	TUB	1	-40 – 10	-40 – 50	0.61	0.17	1/4	6	1/4 × 1/2	–	068U2027
	TUB	1	-40 – 10	-40 – 50	0.61	0.17	1/4	6	–	6 × 12	068U2000
	TUB	2	-40 – 10	-40 – 50	0.72	0.20	1/4	6	1/4 × 1/2	–	068U2028
	TUB	2	-40 – 10	-40 – 50	0.72	0.20	1/4	6	–	6 × 12	068U2001
	TUB	3	-40 – 10	-40 – 50	0.95	0.27	1/4	6	1/4 × 1/2	–	068U2029
	TUB	3	-40 – 10	-40 – 50	0.95	0.27	1/4	6	–	6 × 12	068U2002
	TUB	4	-40 – 10	-40 – 50	1.6	0.46	1/4	6	1/4 × 1/2	–	068U2030
	TUB	4	-40 – 10	-40 – 50	1.6	0.46	1/4	6	–	6 × 12	068U2003
	TUB	5	-40 – 10	-40 – 50	2.1	0.61	1/4	6	1/4 × 1/2	–	068U2031
	TUB	5	-40 – 10	-40 – 50	2.1	0.61	1/4	6	–	6 × 12	068U2004
	TUB	6	-40 – 10	-40 – 50	3.4	0.95	1/4	6	1/4 × 1/2	–	068U2032
	TUB	6	-40 – 10	-40 – 50	3.4	0.95	1/4	6	–	6 × 12	068U2005
	TUBE	1	-40 – 10	-40 – 50	0.61	0.17	1/4	6	–	6 × 12	068U2009
	TUBE	2	-40 – 10	-40 – 50	0.72	0.20	1/4	6	–	6 × 12	068U2010
	TUBE	3	-40 – 10	-40 – 50	0.95	0.27	1/4	6	1/4 × 1/2	–	068U2020
	TUBE	3	-40 – 10	-40 – 50	0.95	0.27	1/4	6	–	6 × 12	068U2011
	TUBE	4	-40 – 10	-40 – 50	1.6	0.46	1/4	6	1/4 × 1/2	–	068U2021
	TUBE	4	-40 – 10	-40 – 50	1.6	0.46	1/4	6	–	6 × 12	068U2012
	TUBE	5	-40 – 10	-40 – 50	2.1	0.61	1/4	6	1/4 × 1/2	–	068U2022
	TUBE	5	-40 – 10	-40 – 50	2.1	0.61	1/4	6	–	6 × 12	068U2013
	TUBE	6	-40 – 10	-40 – 50	3.4	0.95	1/4	6	1/4 × 1/2	–	068U2023
	TUBE	6	-40 – 10	-40 – 50	3.4	0.95	1/4	6	–	6 × 12	068U2014
	TUBE	7	-40 – 10	-40 – 50	4.4	1.3	1/4	6	3/8 × 1/2	–	068U2024
	TUBE	7	-40 – 10	-40 – 50	4.4	1.3	1/4	6	–	10 × 12	068U2015
	TUBE	8	-40 – 10	-40 – 50	6.5	1.9	1/4	6	3/8 × 1/2	–	068U2025
	TUBE	8	-40 – 10	-40 – 50	6.5	1.9	1/4	6	–	10 × 12	068U2016
	TUBE	9	-40 – 10	-40 – 50	9.0	2.6	1/4	6	3/8 × 1/2	–	068U2026
	TUBE	9	-40 – 10	-40 – 50	9.0	2.6	1/4	6	–	10 × 12	068U2017
R404A/ R507	TUB	1	-40 – 10	-40 – 50	0.71	0.20	1/4	6	1/4 × 1/2	–	068U2094
	TUB	1	-40 – 10	-40 – 50	0.71	0.20	1/4	6	–	6 × 12	068U2076
	TUB	2	-40 – 10	-40 – 50	0.87	0.25	1/4	6	1/4 × 1/2	–	068U2095
	TUB	2	-40 – 10	-40 – 50	0.87	0.25	1/4	6	–	6 × 12	068U2077
	TUB	3	-40 – 10	-40 – 50	1.1	0.32	1/4	6	1/4 × 1/2	–	068U2096
	TUB	3	-40 – 10	-40 – 50	1.1	0.32	1/4	6	–	6 × 12	068U2078
	TUB	4	-40 – 10	-40 – 50	2.0	0.57	1/4	6	1/4 × 1/2	–	068U2097
	TUB	4	-40 – 10	-40 – 50	2.0	0.57	1/4	6	–	6 × 12	068U2079
	TUB	5	-40 – 10	-40 – 50	2.7	0.76	1/4	6	1/4 × 1/2	–	068U2098
	TUB	5	-40 – 10	-40 – 50	2.7	0.76	1/4	6	–	6 × 12	068U2080
	TUB	6	-40 – 10	-40 – 50	4.2	1.2	1/4	6	1/4 × 1/2	–	068U2099
	TUBE	1	-40 – 10	-40 – 50	0.71	0.20	1/4	6	1/4 × 1/2	–	068U2103
	TUBE	2	-40 – 10	-40 – 50	0.87	0.25	1/4	6	1/4 × 1/2	–	068U2104
	TUBE	2	-40 – 10	-40 – 50	0.87	0.25	1/4	6	–	6 × 12	068U2086
	TUBE	3	-40 – 10	-40 – 50	1.1	0.32	1/4	6	1/4 × 1/2	–	068U2105
	TUBE	3	-40 – 10	-40 – 50	1.1	0.32	1/4	6	–	6 × 12	068U2087
	TUBE	4	-40 – 10	-40 – 50	2.0	0.57	1/4	6	1/4 × 1/2	–	068U2106
	TUBE	4	-40 – 10	-40 – 50	2.0	0.57	1/4	6	–	6 × 12	068U2088
	TUBE	5	-40 – 10	-40 – 50	2.7	0.76	1/4	6	1/4 × 1/2	–	068U2107
	TUBE	5	-40 – 10	-40 – 50	2.7	0.76	1/4	6	–	6 × 12	068U2089
	TUBE	6	-40 – 10	-40 – 50	4.2	1.2	1/4	6	1/4 × 1/2	–	068U2108
	TUBE	6	-40 – 10	-40 – 50	4.2	1.2	1/4	6	–	6 × 12	068U2090
	TUBE	7	-40 – 10	-40 – 50	5.6	1.6	1/4	6	3/8 × 1/22	–	068U2109
	TUBE	7	-40 – 10	-40 – 50	5.6	1.6	1/4	6	–	10 × 12	068U2091
	TUBE	8	-40 – 10	-40 – 50	8.0	2.3	1/4	6	3/8 × 1/2	–	068U2110
	TUBE	8	-40 – 10	-40 – 50	8.0	2.3	1/4	6	–	10 × 12	068U2092
	TUBE	9	-40 – 10	-40 – 50	11.3	3.2	1/4	6	3/8 × 1/2	–	068U2111
	TUBE	9	-40 – 10	-40 – 50	11.3	3.2	1/4	6	–	10 × 12	068U2093

[1]) The rated capacity is based on:
Evaporating temperature, t_e = 4.4 °C / 40 °F
Liquid temperature, t_l = 37 °C / 98 °F
Condensing temperature, t_c = 38 °C / 100 °F
[2]) TUBE with orifice 0 and 9 and all TUB (internal pressure equalization) cannot be used for biflow operation.

Capillary tube: 0.8 m / 31 in

Technical data and ordering



TCBE

Thermostatic element, Straight way, with bulb strap

Refrigerant	Type	Orifice no.	Range [°C]	Range [°F]	MOP [°C]	MOP [°F]	Rated capacity $Q_{nom.}$ [1]		Pressure equalization		Connection inlet × outlet		Code no.
							[kW]	[TR]	[in]	[mm]	[in]	[mm]	
R22/R407C	TCBE	1	-40 – 10	-40 – 50	–	–	18.3	5.2	1/4	6	1/2 × 5/8	–	068U4201
	TCBE	1	-40 – 10	-40 – 50	15	60	18.3	5.2	1/4	6	3/8 × 5/8	–	068U4204
	TCBE	1	-40 – 10	-40 – 50	15	60	18.3	5.2	1/4	6	1/2 × 5/8	–	068U4205
	TCBE	1	-40 – 10	-40 – 50	15	60	18.3	5.2	1/4	6	–	10 × 16	068U4213
	TCBE	2	-40 – 10	-40 – 50	–	–	21.2	6.0	1/4	6	1/2 × 5/8	–	068U4202
	TCBE	3	-40 – 10	-40 – 50	15	60	26.7	7.6	1/4	6	1/2 × 5/8	–	068U4207
R134a	TCBE	1	-40 – 10	-40 – 50	–	–	13	3.7	1/4	6	1/2 × 5/8	–	068U4217
	TCBE	1	-40 – 10	-40 – 50	–	–	13	3.7	1/4	6	–	12 × 16	068U4241
	TCBE	2	-40 – 10	-40 – 50	–	–	14.9	4.3	1/4	6	1/2 × 5/8	–	068U4218
	TCBE	2	-40 – 10	-40 – 50	–	–	15.1	4.3	1/4	6	–	12 × 16	068U4242
	TCBE	3	-40 – 10	-40 – 50	–	–	18.6	5.3	1/4	6	1/2 × 5/8	–	068U4219
	TCBE	3	-40 – 10	-40 – 50	–	–	19.8	5.4	1/4	6	–	12 × 16	068U4243
R404A/ R507	TCBE	1	-40 – 10	-40 – 50	–	–	13	3.7	1/4	6	–	12 × 16	068U4241
	TCBE	1	-40 – 10	-40 – 50	15	60	13	3.7	1/4	6	–	10 × 16	068U4244
	TCBE	2	-40 – 10	-40 – 50	–	–	15.1	4.3	1/4	6	1/2 × 5/8	–	068U4234
	TCBE	2	-40 – 10	-40 – 50	–	–	15.1	4.3	1/4	6	–	12 × 16	068U4242
	TCBE	2	-40 – 10	-40 – 50	15	60	15.1	4.3	1/4	6	–	12 × 16	068U4246
	TCBE	3	-40 – 10	-40 – 50	–	–	19.8	5.4	1/4	6	1/2 × 5/8	–	068U4235
	TCBE	3	-40 – 10	-40 – 50	–	–	19.8	5.4	1/4	6	–	12 × 16	068U4243
	TCBE	3	-40 – 10	-40 – 50	15	60	19.8	5.,4	1/4	6	–	12 × 16	068U4247
R407C	TCBE	1	-40 – 10	-40 – 50	–	–	17.8	5.1	1/4	6	3/8 × 5/8	–	068U4248
	TCBE	1	-40 – 10	-40 – 50	–	–	17.8	5.1	1/4	6	1/2 × 5/8	–	068U4249
	TCBE	1	-40 – 10	-40 – 50	15	60	17.8	5.1	1/4	6	1/2 × 5/8	–	068U4253
	TCBE	1	-40 – 10	-40 – 50	–	–	17.8	5.1	1/4	6	–	10 × 16	068U4256
	TCBE	1	-40 – 10	-40 – 50	–	–	17.8	5.1	1/4	6	–	12 × 16	068U4257
	TCBE	1	-40 – 10	-40 – 50	15	60	17.8	5.1	1/4	6	–	10 × 16	068U4260
	TCBE	1	-40 – 10	-40 – 50	15	60	17.8	5.1	1/4	6	–	12 × 16	068U4261
	TCBE	2	-40 – 10	-40 – 50	–	–	20.4	5.8	1/4	6	1/2 × 5/8	–	068U4250
	TCBE	2	-40 – 10	-40 – 50	15	60	20.4	5.8	1/4	6	1/2 × 5/8	–	068U4254
	TCBE	2	-40 – 10	-40 – 50	–	–	20.4	5.8	1/4	6	–	12 × 16	068U4258
	TCBE	2	-40 – 10	-40 – 50	15	60	20.4	5.8	1/4	6	–	12 × 16	068U4262
	TCBE	3	-40 – 10	-40 – 50	–	–	25.2	7.2	1/4	6	1/2 × 5/8	–	068U4251
	TCBE	3	-40 – 10	-40 – 50	–	–	25.2	7.2	1/4	6	–	12 × 16	068U4259
	TCBE	3	-40 – 10	-40 – 50	15	60	25.2	7.2	1/4	6	–	12 × 16	068U4263
R410A	TCBE	1	-40 – 10	-40 – 50	–	–	21.2	6	1/4	6	3/8 × 5/8	–	068U4264
	TCBE	1	-40 – 10	-40 – 50	–	–	21.2	6	1/4	6	1/2 × 5/8	–	068U4265
	TCBE	1	-40 – 10	-40 – 50	–	–	21.2	6	1/4	6	–	10 × 16	068U4260
	TCBE	1	-40 – 10	-40 – 50	–	–	21.2	6	1/4	6	–	12 × 16	068U4273
	TCBE	2	-40 – 10	-40 – 50	–	–	24.5	7	1/4	6	1/2 × 5/8	–	068U4266
	TCBE	2	-40 – 10	-40 – 50	15	–	24.5	7	1/4	6	1/2 × 5/8	–	068U4270
	TCBE	2	-40 – 10	-40 – 50	–	–	24.5	7	1/4	6	–	12 × 16	068U4274
	TCBE	3	-40 – 10	-40 – 50	–	–	30.6	8.7	1/4	6	1/2 × 5/8	–	068U4267
	TCBE	3	-40 – 10	-40 – 50	–	–	30.6	8.7	1/4	6	–	12 × 16	068U4275
	TCBE	3	-40 – 10	-40 – 50	15	–	30.6	8.7	1/4	6	–	12 × 16	068U4279

[1]) The rated capacity is based on:
Evaporating temperature, t_e = 4.4 °C / 40 °F
Liquid temperature, t_l = 37 °C / 98 °F
Condensing temperature, t_c = 38 °C / 100 °F

Capillary tube: 0.8 m / 31 in

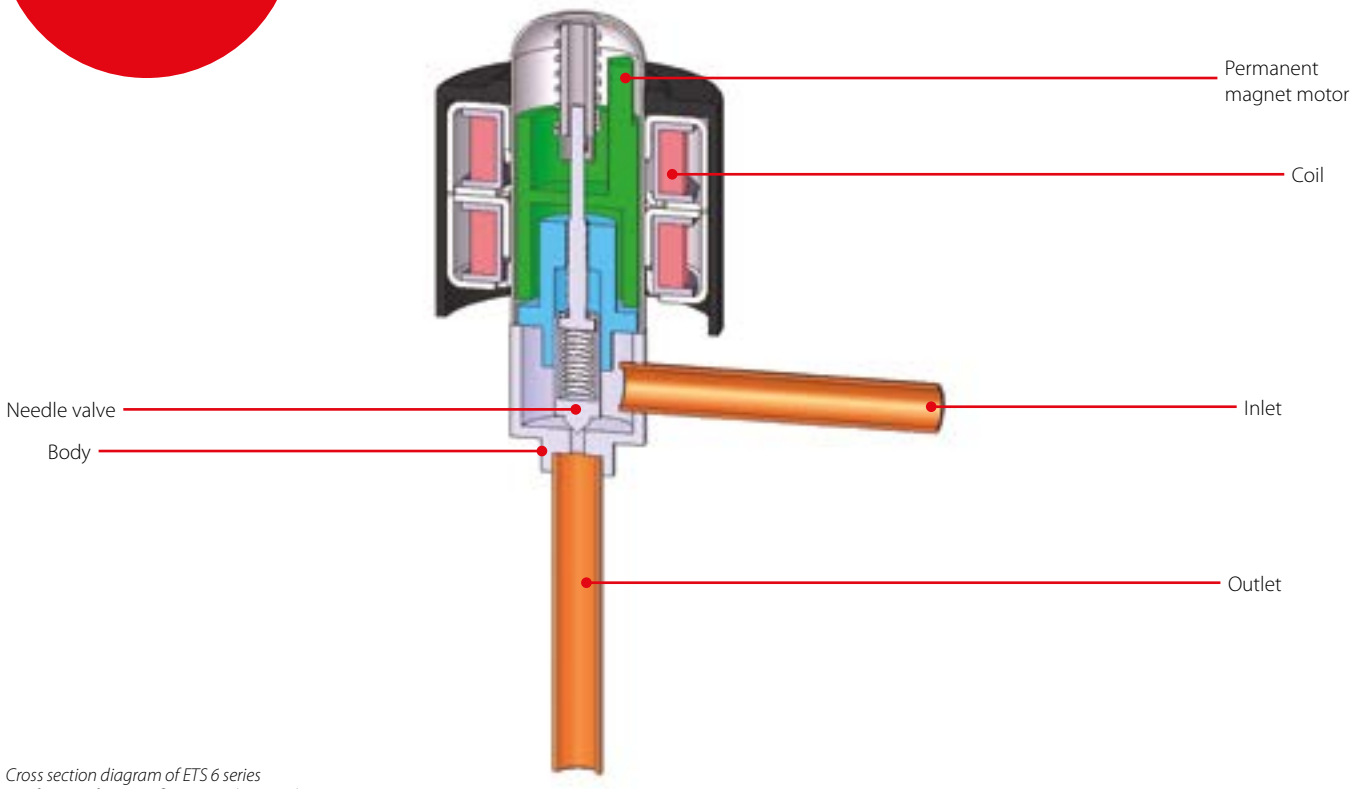
Quick Selection Notes:

ETS 6 - Electric expansion valve

ETS 6 are compact and lightweight electric expansion valves for all common refrigerants: R410A, R407C, R404A, R134a, R22.
Bi-flow operation is possible for heat pump systems.

The valve operation is by means of a unipolar motor, which can be controlled by a number of controllers from Danfoss or third party vendors.
With a Danfoss EKD 316 and EIM 336 (current drivers) and an AKS sensor, an accuracy better than ± 0.5 K can be obtained.





Cross section diagram of ETS 6 series
** Refers to refrigerant flow in cooling mode*

Facts

Applications:
- Heat pumps
- Modular air-cooled chillers
- VRF
- Multi split
- Inverter mini split
- Bus air conditioning
- IT cooling

- Precision flow control
- Proven know-how and high reliability
- Power saving design that enables energy efficiency
- Compact and lightweight hermetic design with removable coil

- Bi-flow operation for reversible systems
- ETS 6 are designed for: R410A, R407C, R404A, R507, R134a, R22 and other refrigerants, for other refrigerants, please contact your local Danfoss representative
- Controller: Danfoss supplies electronic controller (EKD 316), temperature sensors and transmitters

Technical data and ordering

ETS 6

Technical data

Maximum working pressure	47 bar / 681 psig
Compatible refrigerants	R410A, R407C, R404A, R507, R134a, R22. For other refrigerants, please contact your local Danfoss representative.
Refrigerant oil	All mineral oils and ester oils (to lubricate ETS 6 valve)
Ambient temperature	-30 – 70 °C / -22 – 158 °F
Fluid temperature	-30 – 70 °C / -22 – 158 °F
Durability	- Tested for 60 Million total pulses supplied to the valve during partially open valve, which is comparable to 150.000 cycles if the valve is operated between 100 to 300 pulses open - Tested for 30.000 full stroke cycles including 20 pulse overdrive at each closure
Ambient humidity	95% RH or less
Modulation	Permanent magnet type direct operating stepper motor
Excitation method	1 – 2 phase
Electrical connection	JST XHP-6 and JST XHP-5
Excitation speed	min 30 pps (pulses per second) to max. 90 pps, recommended 31.3 pps
Operating range	0 – 480 pulses, no holding power required (NOTE: do not apply more than 520 pulses)
Full motion transit time	e.g. 16 second at 30 pps, 6 second at 80 pps
Installation position Liquid line solenoid valve	With coil on the upper side and the valve / coil assembly within ±15°of the vertical axis. If a liquid line solenoid valve is used, it must be installed in such a way that it does not create liquid hammering in the ETS 6 valve.
Max. coil winding temperature	115 °C / 239 °F
Approvals	CE, UL, RoHS, CQC

ETS 6 - Valve excl. coil



Valve ordering

Type	Orifice no.	Nominal Capacity [kW]					Connection (solder)		Valve tube configuration	MWP	MOPD	Max. Reverse Pressure [1]	Flow direction charact.	Code no.
		R22	R134a	R404A / R507	R407C	R410A	A [mm]	B [mm]		[bar]	[bar]	[bar]		
ETS 6 – 10	10	2.6	2	1.8	2.7	3.1	7.94	7.94	90°	47	35	35	Bi-flow	034G5005
ETS 6 – 14	14	5.8	4.5	4.1	5.9	6.8	7.94	7.94	90°	47	35	20	Bi-flow	034G5015
ETS 6 – 18	18	10.3	8.1	7.3	10.6	12.1	6.35	6.35	90°	47	35	28	Bi-flow	034G5026
ETS 6 – 25	25	19.6	15.3	13.8	20.1	23	7.94	7.94	90°	47	35	22	Bi-flow	034G5035
ETS 6 – 32	32	28.8	22.5	20.3	29.6	33.9	7.94	7.94	90°	47	28	12 [2]	Bi-flow	034G5055
ETS 6 – 40	40	39.1	30.6	27.6	40.2	46	7.94	7.94	90°	47	21	7	Bi-flow	034G5065

The Rated capacity is based on:
Evaporating temperature t_e: 5 °C, Condensing temperature t_c: 38 °C, Subcooling t_{sub}: 0 K, Superheat SH: 0 K
[1]) Max. Reverse Pressure = Pressure at which the valve can still close tightly in reverse direction.
[2]) Please contact Danfoss if higher maximum reverse pressure valve is required.

ETS 6 - Valve excl. coil

Valve ordering

Type	Orifice no.	Nominal Capacity [TR]					Connection (solder)		Valve tube configuration	MWP	MOPD	Max. Reverse Pressure [1]	Flow direction charact.	Code no.
		R22	R134a	R404A / R507	R407C	R410A	A [in]	B [in]		[psig]	[psig]	[psig]		
ETS 6 – 10	10	0.74	0.57	0.51	0.77	0.88	7.94	7.94	90°	681	507	507	Bi-flow	034G5005
ETS 6 – 14	14	1.65	1.28	1.16	1.68	1.93	7.94	7.94	90°	681	507	290	Bi-flow	034G5015
ETS 6 – 18	18	2.93	2.30	2.07	3.01	3.44	6.35	6.35	90°	681	507	406	Bi-flow	034G5026
ETS 6 – 25	25	5.57	4.35	3.92	5.72	6.54	7.94	7.94	90°	681	507	319	Bi-flow	034G5035
ETS 6 – 32	32	8.19	6.40	5.77	8.42	9.64	7.94	7.94	90°	681	406	174 [2]	Bi-flow	034G5055
ETS 6 – 40	40	11.12	8.70	7.85	11.43	13.08	7.94	7.94	90°	681	305	102	Bi-flow	034G5065

The Rated capacity is based on:
Evaporating temperature t_e: 41 °F, Condensing temperature t_c: 100 °F, Subcooling t_{sub}: 32 °F, Superheat SH: 32 °F
[1]) Max. Reverse Pressure = Pressure at which the valve can still close tightly in reverse direction.
Please contact Danfoss if higher maximum reverse pressure valve is required.

Coil for ETS 6



Ordering

Model No.	Voltage (current)	Enclosure	Insulation class	Cable length [m]	Connector	Code no.
Coil ordering for ETS 6, Single pack						
ETS 6 Coil	12 V DC (0.26A / phase)	IP66	Class "E" (UL Class 105 (A))	0.7	JST XHP-6	034G5105
	12 V DC (0.26A / phase)	IP66	Class "E" (UL Class 105 (A))	0.7	JST XHP-5	034G5115
	12 V DC (0.26A / phase)	IP66	Class "E" (UL Class 105 (A))	1.5	JST XHP-5	034G5145
	12 V DC (0.26A / phase)	IP66	Class "E" (UL Class 105 (A))	3.0	JST XHP-5	034G5135

Related products

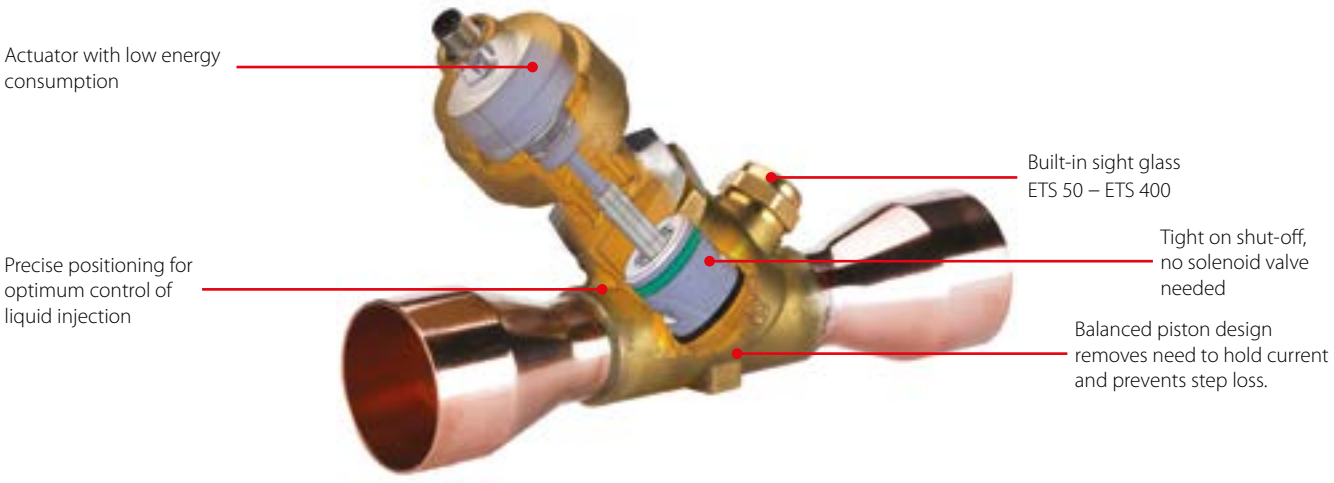
Electronic control
Type EKD 316 and EIM 336 (current drivers)
Temperature sensors and pressure transmitters
Type AKS

ETS 12.5 – ETS 400 - Electric expansion valves

ETS 12.5 - ETS 400 are electric expansion valves for precise liquid injection in evaporators for air conditioning and refrigeration applications.
The valve piston and linear positioning design is fully balanced, providing bi-flow feature as well as solenoid tight shut function in both flow directions.

ETS valves are operated with a current or voltage driver such as Danfoss Controllers EKC 316A, EKC 312 or EKD 316.
ETS valve is compatible with all common refrigerant such as R410A, R407C, R404A, R134a, R22 and R507.
Special ETS versions for systems with R744 (CO_2) are available.





Facts

Applications:
- Heat pumps
- Refrigeration
- Air conditioning
- Chillers

- Balanced design (ETS 12.5 – ETS 400) providing bi-flow operation as well as solenoid tight shut-off function in both flow directions
- Lower energy consumption

- ETS 50 and ETS 100 feature improved process and productivity due to waterless brazing i.e. soldering without wet cloth for cooling
- ETS 50 to ETS 400 are all designed with built-in sight glass with moisture indicator
- Internal and external corrosion resistant design
- ETS valve is compatible with all common refrigerant such as R410A, R407C, R404A, R134a, R22 and R507 Special ETS versions for systems with R744 (CO_2) are available

- Precise positioning for optimum control of liquid injection
- ETS 12.5, ETS 25, ETS 50, ETS 100 provide working pressure of 45.5 bar / 660 psig and ETS 250, ETS 400 provide 34 bar / 493 psig
- EKC 316A and EKD 316 are examples of Danfoss controllers with drivers matching ETS requirements
- Equipped with M12 connector for cable connection (cable and connector assemblies as accessories)

Technical data and ordering

ETS 12.5 – ETS 400

Technical data

Compatibie refrigerants	R410A, R407C, R404A, R507, R134a, R22 and other refrigerants (special valves for R744 (CO_2) are available) For other refrigerants, please contact your local Danfoss representative
Refrigerant oil	All mineral oils and ester oils Full life time of ETS can only be ensured if oil is present in the system
PED compliance	Yes
MOPD normal flow	33 bar / 479 psig
MOPD reverse flow	ETS 12.5, ETS 25, ETS 50, ETS 100: 33 bar / 479 psig ETS 250, ETS 400: 10 bar / 145 psig
Max. working pressure (PS / MWP)	ETS 12.5, ETS 25, ETS 50, ETS 100: 45.5 bar / 660 psig ETS 250, ETS 400: 34 bar / 493 psig
Refrigerant temperature range	-40 – 65 °C / -40 – 150 °F
Ambient temperature	-40 – 60 °C / -40 – 150 °F
Material of construction	ETS 50, ETS 100: Body and AST enclosure in brass, connections in bi-metal (stainless steel / copper) ETS 12.5, ETS 250, ETS 400: Body and AST enclosure in brass, connections in copper

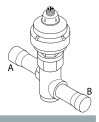
ETS 12.5 – ETS 400

Electrical data

Motor enclosure	IP67	
Stepper motor type	Bi-polar - permanent magnet	
Step mode	2 phase full step	
Phase resistance	52 Ω ±10%	
Phase inductance	85 mH	
Holding current	Depends on application. Full current allowed (100% duty cycle)	
Step angle	7.5° (motor) 0.9° (lead screw) Gearing ratio 8.5:1	
Nominal voltage	(Constant voltage drive) 12 V DC -4% / 15%, 150 steps / second	
Phase current	(Using chopper drive) 100 mA RMS -4% / 15%	
Max. total power	Voltage / current drive: 5.5 / 1.3 W (UL: NEC class 2)	
Step rate	150 steps / sec (constant voltage drive) 0-300 steps / sec 300 recommended (chopper current drive)	
Total steps	ETS 12.5, ETS 25, ETS 50 ETS 100 ETS 250, ETS 400	2625 (160 / 0) steps 3530 (160 / 0) steps 3810 (160 / 0) steps
Full travel time	ETS 12.5, ETS 25, ETS 50 ETS 100 ETS 250 and ETS 400	17 / 8.5 seconds (voltage / current) 23 / 11.5 seconds (voltage / current) 25.4 / 12.7 seconds (voltage / current)
Lifting height	ETS 12.5, ETS 25, ETS 50 ETS 100 ETS 250 and ETS 400	16 mm / 0.63 in 16 mm / 0.63 in 17.2 mm / 0.68 in
Reference position	Overdriving against the full close position	
Electrical connection	M12 connector	

Technical data and ordering

ETS 12.5 / ETS 25 - Valve included actuator (without sight glass)

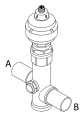


Ordering

Type	Rated capacity [1]										Connection		
	R410A		R407C		R22		R134a		R404A		ODF × ODF (A × B)		Code no.
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	
Straightway, Single pack													
ETS 12.5	70	20	63	18	57	16	45	13	43	12	1/2 × 1/2	–	034G4209
	70	20	63	18	57	16	45	13	43	12	–	12 × 12	034G4208
	70	20	63	18	57	16	45	13	43	12	5/8 × 5/8	16 × 16	034G4210
	70	20	63	18	57	16	45	13	43	12	7/8 × 7/8	22 × 22	034G4211
ETS 25	144	41	129	37	117	34	93	27	88	25	1/2 × 1/2	–	034G4201
	144	41	129	37	117	34	93	27	88	25	–	12 × 12	034G4200
	144	41	129	37	117	34	93	27	88	25	5/8 × 5/8	16 × 16	034G4202
	144	41	129	37	117	34	93	27	88	25	7/8 × 7/8	22 × 22	034G4203
Angleway, Single pack													
ETS 12.5	70	20	63	18	57	16	45	13	43	12	1/2 × 1/2	–	034G4213
	70	20	63	18	57	16	45	13	43	12	–	12 × 12	034G4212
	70	20	63	18	57	16	45	13	43	12	5/8 × 5/8	16 × 16	034G4214
	70	20	63	18	57	16	45	13	43	12	7/8 × 7/8	22 × 22	034G4215
ETS 25	144	41	129	37	117	34	93	27	88	25	1/2 × 1/2	–	034G4205
	144	41	129	37	117	34	93	27	88	25	–	12 × 12	034G4204
	144	41	129	37	117	34	93	27	88	25	5/8 × 5/8	16 × 16	034G4206
	144	41	129	37	117	34	93	27	88	25	7/8 × 7/8	22 × 22	034G4207

[1]) The rated capacity is based on:
Evaporating temperature t_e: 5 °C / 41 °F
Liquid temperature t_l: 28 °C / 82 °F
Condensing temperature t_c: 32 °C / 90 °F
Full stroke opening in normal flow direction.

ETS 50 / ETS 100 - Valve included actuator (with sight glass)

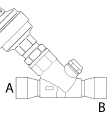


Ordering

Type	Rated capacity [1]										Connection		
	R410A		R407C		R22		R134a		R404A		ODF × ODF (A × B)		Code no.
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	Single pack
ETS 50	262	75	240	69	215	62	170	48	161	46	7/8 × 7/8	22 × 22	034G1708
	262	75	240	69	215	62	170	48	161	46	7/8 × 1 1/8	22 × 28	034G1705
	262	75	240	69	215	62	170	48	161	46	1 1/8 × 1 1/8	28 × 28	034G1706
	262	75	240	69	215	62	170	48	161	46	1 1/8 × 1 3/8	28 × 35	034G1704
ETS 100	488	140	447	128	400	115	316	91	300	86	1 1/8 × 1 1/8	28 × 28	034G0507
	488	140	447	128	400	115	316	91	300	86	1 1/8 × 1 3/8	28 × 35	034G0501
	488	140	447	128	400	115	316	91	300	86	1 3/8 × 1 3/8	35 × 35	034G0508
	488	140	447	128	400	115	316	91	300	86	1 5/8 × 1 5/8	–	034G0505

[1]) The rated capacity is based on:
Evaporating temperature t_e: 5 °C / 41 °F5
Liquid temperature t_l: 28 °C / 82 °F
Condensing temperature t_c: 32 °C / 90 °F
Full stroke opening in normal flow direction.

ETS 250 / ETS 400 - Valve included actuator (with sight glass)

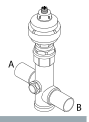


Ordering

Type	Rated capacity [1]								Connection		
	R407C		R22		R134a		R404A		ODF × ODF (A × B)		Code no.
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	Single pack
ETS 250	1212	349	1106	319	874	252	828	239	1 1/8 × 1 1/8	28 × 28	034G2600
	1212	349	1106	319	874	252	828	239	1 3/8 × 1 3/8	35 × 35	034G2601
	1212	349	1106	319	874	252	828	239	1 5/8 × 1 5/8	–	034G2602
	1212	349	1106	319	874	252	828	239	–	42 × 42	034G2611
ETS 400	1933	556	1764	509	1394	402	1320	381	1 5/8 × 1 5/8	–	034G3500
	1933	556	1764	509	1394	402	1320	381	2 1/8 × 2 1/8	54 × 54	034G3501

[1]) The rated capacity is based on:
Evaporating temperature t_e: 5 °C / 41 °F
Liquid temperature t_l: 28 °C / 82 °F
Condensing temperature t_c: 32 °C / 90 °F
Full stroke opening in normal flow direction.

Technical data and ordering



ETS for R744 (CO_2)

Ordering

Type	Connection	Code no. Single pack
	ODF × ODF (A × B) [in]	
ETS 12.5	7/8 × 7/8	034G4220
ETS 25	7/8 × 7/8	034G4219
ETS 50	1 1/8 × 1 1/8	034G1714
ETS 100	1 1/8 × 1 1/8	034G0515

ETS 50 and ETS 100 have integrated sight glass.
ETS for R744 can be used for expansion as well as gas bypass.
ETS for R744 applications (PS / MWP 45.5 bar / 660 psig).
For capacities please contact Danfoss.

M12 Female - Connector Cable

Ordering

Cable quality	Temperature range	Cable length (L)		Design	Code no.
	[°C] / [°F]	[m]	[ft]		
Single pack					
Jacket: PVC	-50 – 80 / -58 – 176	2	6.6	M12 actuator connector to 4 flying wires for driver connection	034G2201
	-50 – 80 / -58 – 176	8	26.2		034G2200
Jacket: CPE	-40 – 80 / -40 – 176	2	6.6		034G2202
	-40 – 80 / -40 – 176	3	9.8		034G2203
	-40 – 80 / -40 – 176	5	16.4		034G2205
Industrial pack (20 pcs)					
Jacket: PVC	-50 – 80 / -58 – 176	2	6.6	M12 actuator connector to 4 flying wires for driver connection	034G2330
	-50 – 80 / -58 – 176	8	26.2		034G2323
Jacket: CPE	-40 – 80 / -40 – 176	2	6.6		034G2331

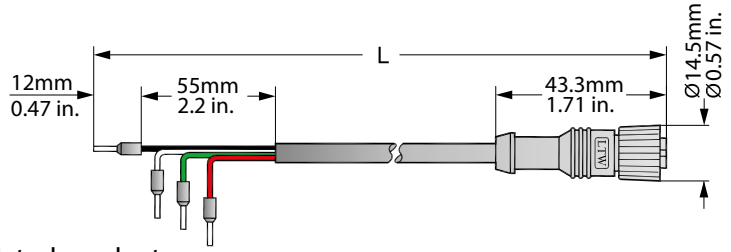
Accessory

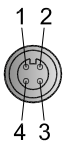
Type	Description	Type designation	Code no. Multi pack (20 pcs)
Cable	Cable filter for ETS valve	AKA 211	084B2238

Cable specifications

Type	Jacket	Colour	UV resistant	Insulation	Connection 4 wires		Outer diameter		M12 connector	Special
					[mm²]	[AWG]	[mm]	[in]		
PVC cables	Half Matt PVC	Black	Yes	SR-PVC	0.33	22	5.0	13/64	PU (polyurethane)	UL VW-1
CPE cables	CPE	Gray	Yes	EPR	0.5	20	6.3	1/4	PU (polyurethane)	Resistant to gear oil, diesel oil, ethylene glycol, propylene glycol

CPE cables are recommended for outdoor application.





1. Red
2. Green
3. White
4. Black

Related products

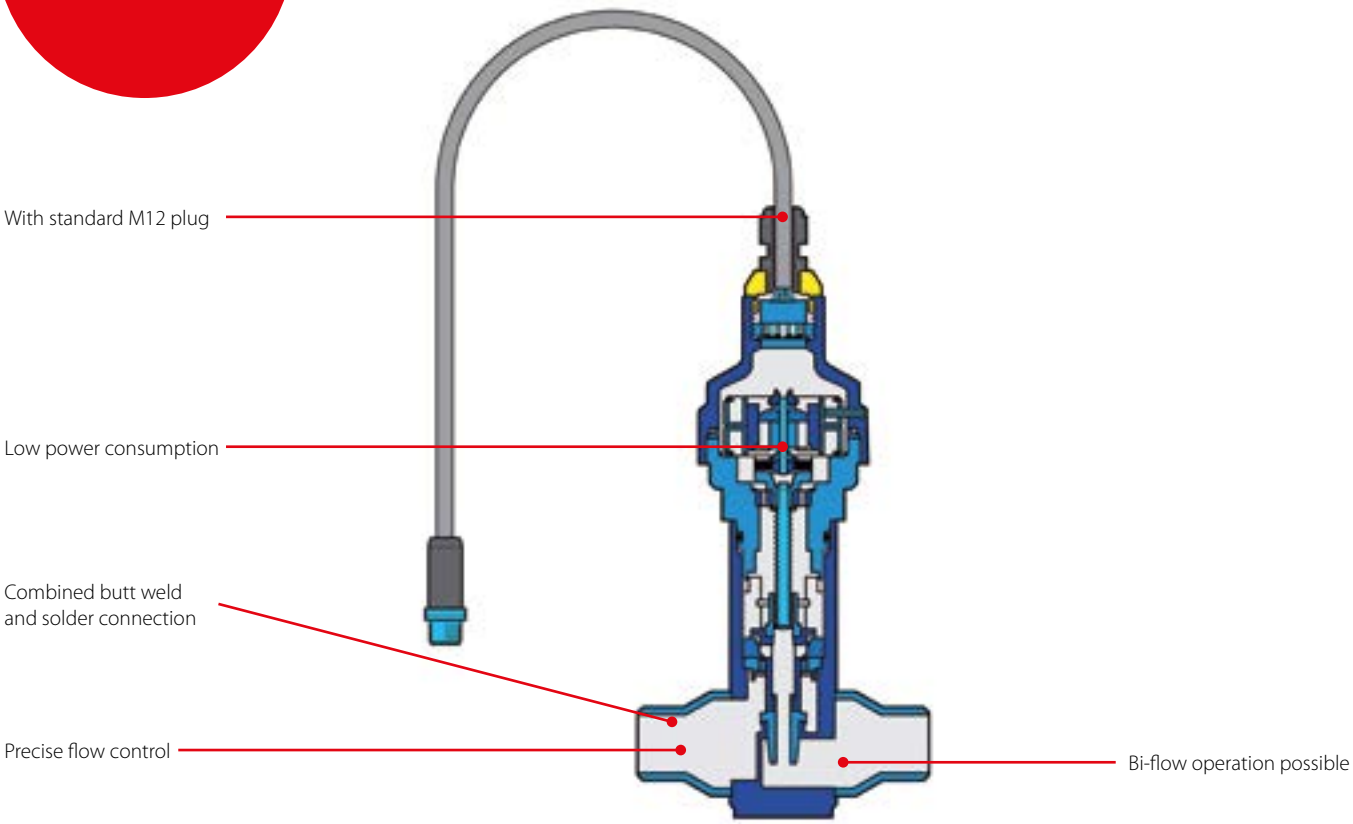
Electronic control
Type EKC 316A, EKC 312 or EKD 316
Temperature sensors and pressure transmitters
Type AKS

CCM - Electric expansion valve

CCM are electric expansion valves designed specifically for operation in R744 (CO_2) systems with working pressures of up to 90 bar / 1305 psig and an MOPD up to 50 bar / 725 psig.
CCM functions both as an expansion valve, and as a gas bypass valve with back-pressure regulation in subcritical applications.

The pressure rating allows for operation in environments where system standby capability is required without the need for auxiliary cooling systems during servicing or power outages.





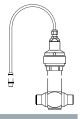
Facts

Application:
- Gas bypass in a transcritical R744 booster system
- Liquid expansion for R744, R744 cascades or R744 evaporators

- Up to 90 bar / 1305 psig working pressure to accommodate R744 system pressures during standstill conditions
- Precise positioning for optimal control of intermediate pressures in transcritical R744 systems or liquid injection in heat exchangers
- Possibility of bi-flow operation
- MOPD up to 50 bar / 725 psig

- Combined stainless steel butt weld / solder connections for installation in copper piped systems (K65 alloy or standard) as well as steel piped systems
- Standard M12 connector for simple and flexible connection to the motor driver
- For manual operation and service of the CCM, an AST-g service driver is available
- UL recognised

Technical data and ordering



CCM

Technical data

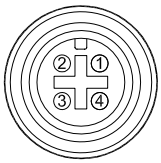
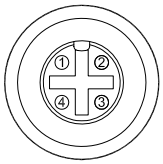
Parameter	CCM
Compatibility	R744 (CO_2)
MOPD	50 bar / 725 psig
Max. working pressure (PS / MWP)	90 bar / 1305 psig
Refrigerant temperature range	-40 – 60 °C / -40 – 140 °F
Ambient temperature	-40 – 60 °C / -40 – 140 °F
Material specification	Stainless steel

CCM

Electrical data

Parameter	CCM
Motor enclosure	IP67
Stepper motor type	Bi-polar - permanent magnet
Step mode	2 phase full step
Phase resistance	52 Ω ± 10%
Phase inductance	85 mH
Holding current	Depends on application Full current allowed (100% duty cycle)
Step angle	7.5° (motor) 0.9° (lead screw) Gearing ratio 8.5:1
Nominal voltage	(Constant voltage drive) 12 V DC -4% / 15%, 150 steps / second
Phase current	(Using chopper drive) 100 mA RMS -4% / 15%
Max. total power	Voltage / current drive: 5.5 / 1.3 W (UL: NEC class 2)
Step rate	150 steps / second. (constant voltage drive) 0–300 steps / second. 300 recommended (chopper current drive)
Total steps	CCM 10, CCM 20, CCM 30 2625 (160 / 0) steps CCM 40 3530 (160 / 0) steps
Full travel time	CCM 10, CCM 20, CCM 30 17 / 8.5 second. (voltage / current) CCM 40 23 / 11.5 second. (voltage / current)
Lifting height	CCM 10, CCM 20, CCM 30 13 mm / 0.51 in CCM 40 16 mm / 0.63 in
Reference position	Overdriving against the full close position
Electrical connection	4 wire 0.5 mm² / 20 AWG, 0.3 m / 12 in long cable
Total stroke	13 mm / 16 mm / 0.51 in / 0.63 in

Stepper motor switch sequence:

CCM				Connector
	4	Black	4	
	3	White	3	
	2	Green	2	
	1	Red	1	
	Connection 1	Wire colour	Connection 2	
		Pin out		

Stepper motor switch sequence:

	STEP	Coil I		Coil II		
		Red	Green	White	Black	
	1	+	–	+	–	
↑ CLOSING ↑	2	+	–	–	+	↓ OPENING ↓
	3	–	+	–	+	
	4	–	+	+	–	
	1	+	–	+	–	

Technical data and ordering

Valve included actuator

Ordering

Type	Connections (Combi)		K_v value [2] [m³/h]	C_v value [2] [gpm]	Code no. single pack
	Weld [1] [in]	Solder ODF × ODF [in]			
CCM 10	1/2 × 1/2	5/8 × 5/8	0.7	0.81	027H7188
CCM 20	3/4 × 3/4	7/8 × 7/8	1.6	1.87	027H7187
CCM 30	1 × 1	1 1/8 × 1 1/8	2.4	2.78	027H7186
CCM 40	1 × 1	1 1/8 × 1 1/8	4.2	4.87	027H7185

[1]) OD according to EN 10220.
[2]) The K_v / C_v value is the water flow in [m³/h] / [gpm] at a pressure drop across the valve of 1 bar. p = 1000 kg/m³ / 62.4 lb/ft³.

Accessories

Type	Description	Code no.
	Cable with M12 connector - 8 meter / 26.2 ft.	034G2323
AST-G	Manual valve driver for service	034G0013

Spare parts

Type	Description	Code no.
AST	Actuator for CCM R744 valve	027H7184
	O-ring spare part kit for CCM / CCMT (2 O-rings)	027H7230

Related products

Electronic control
Type EKD 316
Temperature sensors and pressure transmitters
Type AKS

Quick Selection Notes:

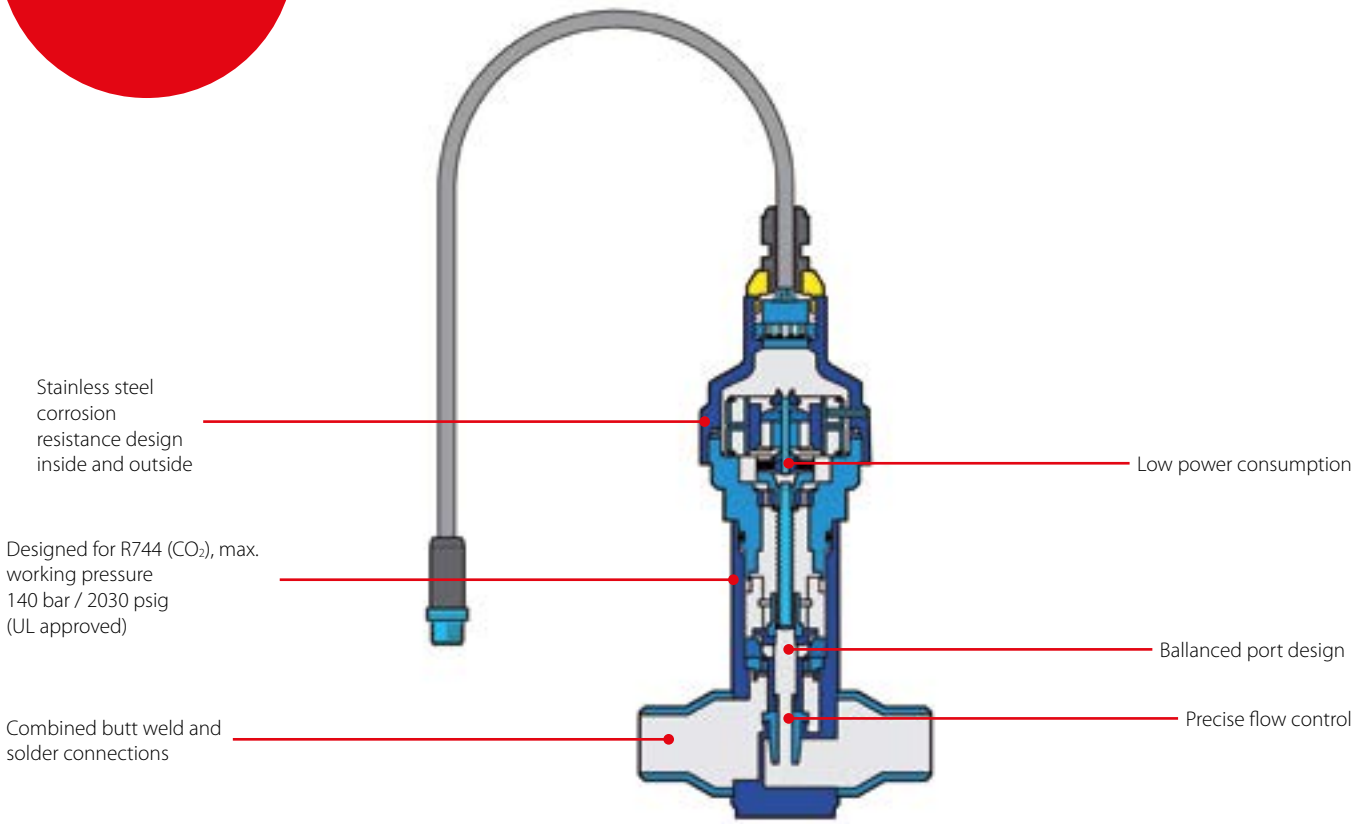
CCMT - Electric expansion valve

CCMT are electric expansion valves designed specifically for operation in R744 (CO_2) systems. CCMT is used as an expansion valve, as a pressure regulator for the gas cooler or as a gas bypass valve with back-pressure regulation in transcritical or subcritical applications.

Designed for R744 systems with maximum working pressure of 140 bar / 2031 psig.
Applicable to R744 (CO_2) and other common refrigerants.
CCMT is compatible with oil types PAG, POE and PVE.



Features
CCMT



Facts

Application:
- High pressure valve
- Gas bypass in a transcritical R744 booster system
- Liquid expansion for R744, R744 cascades or R744 evaporators

- Designed for R744 systems with maximum working pressure of 140 bar
- UL approved
- Applicable to R744 and other common refrigerants. The CCMT is compatible with the oil types PAG, POE and PVE
- Regulating cone ensures optimum regulating accuracy, particularly at part load
- Patented cone and balance design
- The PEEK seat provides excellent valve tightness and robustness
- Combined butt weld and sold connections

- Top part with built-in strainer
- MOPD up to 90 bar / 1305 psi
- Standard M12 connector for simple and flexible connection to the motor drive
- Low weight and compact design
- Easy to service
- Insert easily taken out by removing top part
- For manual operation and service of the CCMT an AST-g service driver is available

Technical data and ordering

CCMT

Technical data

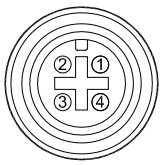
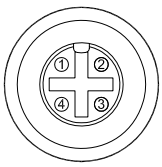
Parameter	CCMT
Compatibility	R744 (CO_2) and other refrigerants Not applicable for flammable refrigerants and Ammonia
MOPD	90 bar / 1305 psig
Max. working pressure (PS / MWP)	140 bar
Refrigerant temperature range	-40 – 60 °C / -40 – 140 °F
Ambient temperature	-40 – 60 °C / -40 – 140 °F
PED compliance	Fluid group 1 / Article 3, paragraph 3
Material specification	Stainless steel
Step angle	7.5° (motor) 0.9° (lead screw) Gearing ratio 8.5:1
Step rate	max. 150 steps / second (constant voltage drive) max. 300 steps / second (chopper current drive)
Total steps	CCMT 2, CCMT 4, CCMT 8: 1100 [80 / 0] steps
Total stroke	4.8 mm / $^{3}/_{16}$ in
Full travel time	CCMT 2, CCMT 4, CCMT 8: 5 second at 220 steps / second
Reference position	Overdriving against the full close position
Approval	CE, UL, RoHS

CCMT

Electrical data

Parameter	CCMT
Stepper motor type	Bi-polar - permanent magnet
Motor enclosure	IP67
Step mode	2 phase full step
Phase resistance	52 Ω ± 10%
Phase inductance	85 mH
Holding current	Depends on application Full current allowed (100% duty cycle)
Nominal voltage	(Constant voltage drive) 12 V DC -4% / 15%, 150 steps / second
Phase current	(Using chopper drive) 100 mA RMS -4% / 15%
Max. total power	Voltage / current drive: 5.5 / 1.3 W (UL: NEC class 2)
Electrical connection	4 wire 0.5 mm², 0.3 m / 1 ft long cable

Stepper motor switch sequence:

CCMT				Connector
	4	Black	4	
	3	White	3	
	2	Green	2	
	1	Red	1	
	Connection 1	Wire colour	Connection 2	
		Pin out		

Stepper motor switch sequence:

	STEP	Coil I		Coil II		
		Red	Green	White	Black	
	1	+	–	+	–	
↑ CLOSING ↑	2	+	–	–	+	↓ OPENING ↓
	3	–	+	–	+	
	4	–	+	+	–	
	1	+	–	+	–	

Technical data and ordering

Valve incl. actuator

Ordering

Type	Connections (Combi)		K_V value [2] [m^3/h]	C_V value [2] [gpm]	Max. working pressure		Code no.
	Weld [1] [in]	Solder ODF × ODF [in]			[bar]	[psig]	
Standard							
CCMT 2	1/2 × 1/2	5/8 × 5/8	0.17	0.20	140	2030	027H7200
CCMT 4	1/2 × 1/2	5/8 × 5/8	0.45	0.52	140	2030	027H7201
CCMT 8	1/2 × 1/2	5/8 × 5/8	0.80	0.93	140	2030	027H7202

[1]) OD according to EN 10220.
[2]) The K_V / C_V value is the water flow in [m^3/h] / [gpm] at a pressure drop across the valve of 1 bar. p = 1000 kg/m^3 / 62.4 lb/ft^3.

Accessories

Type	Description	Code no.
	Cable with M12 connector - 8 meter / 26.2 ft.	034G2323
AST-G	Manual valve driver for service	034G0013
EKD 316	Controller / driver	084B8040
EKA 164A	Display	084B8563
AKA 211	Cable filter	084B2238

Spareparts

Type	Description	Code no.
	O-ring spare part kit for CCM / CCMT (2 O-rings)	027H7230

Related products

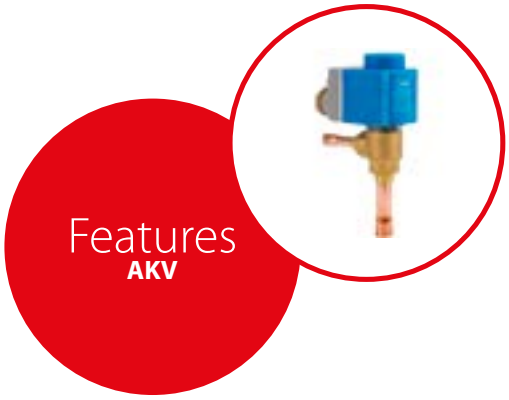
Electronic control
Type EKD 316
Temperature sensors and pressure transmitters
Type AKS

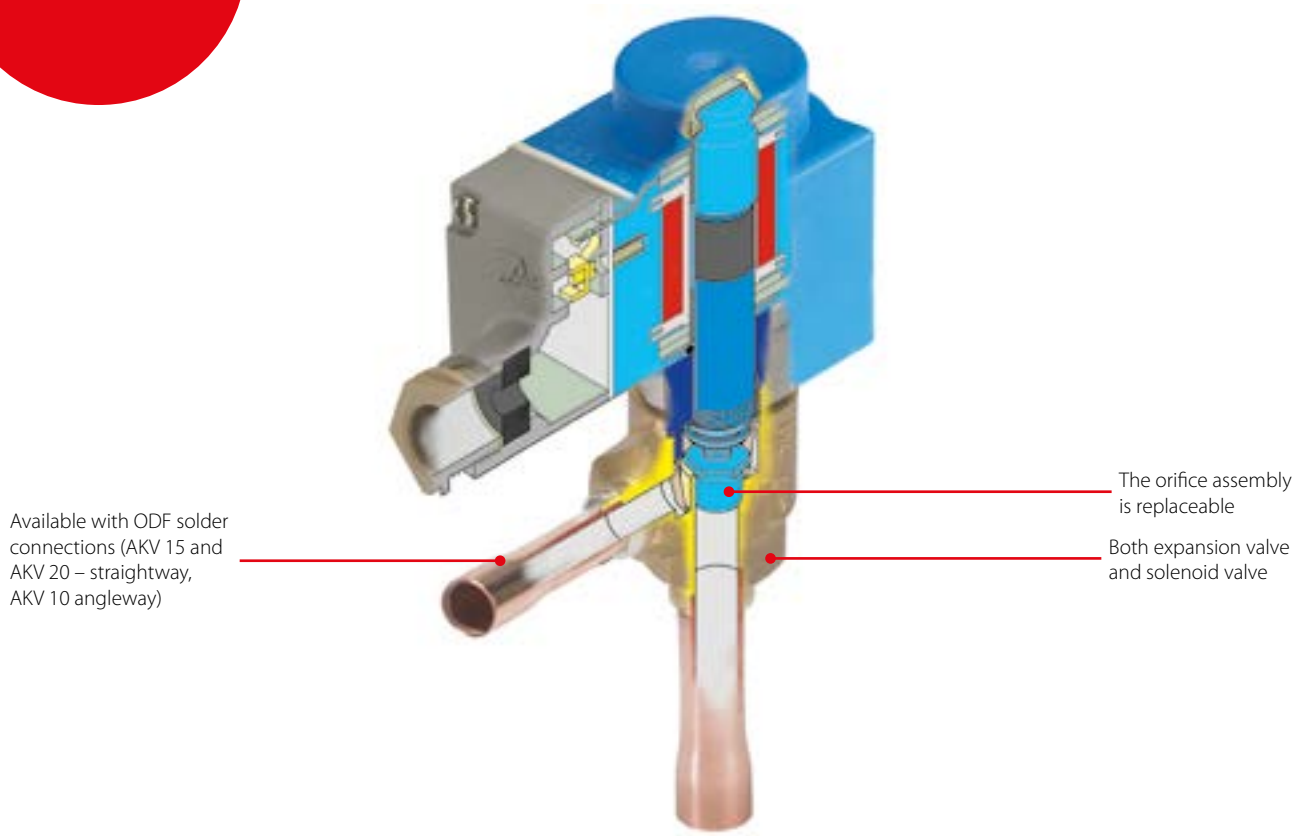
Quick Selection Notes:

AKV - Electric expansion valve

AKV are electrically operated expansion valves designed for refrigeration plants.
The AKV valves are designed for use with a controller from Danfoss' range of ADAP-KOOL® controllers.

The AKV valves are supplied as a parts programme with separate valve body and coil (with terminal box, cable or DIN plug).
AKV has an exchangeable orifice. Refrigerants: R744, R22 / R407C, R404A / R507, R410A, R134a, R407A, R23.





Facts

Applications:
- Traditional refrigeration
- Cold rooms
- Water chillers

- The AKV valves are supplied as a parts programme, as follows:
  - separate valve incl. exchangeable orifice
  - separate coil
- The valve requires no adjustment
- The AKV 10 valves cover a capacity range from 0.6 – 14 kW / 0.17 – 3.98 TR (404A / R507) and are divided into 7 capacity ranges
- The AKV 15 valves cover a capacity range from 14 – 85 kW / 3.98 – 24.1 TR (404A / R507) and are divided into 4 capacity ranges
- The AKV 20 valves cover a capacity range from 56 – 530 kW / 15.9 – 150 TR (404A / R507) and are divided into 5 capacity ranges
- The AKV valves can be used for the following refrigerants: R744, R22 / R407C, R404A / R507, R410A, R134a, R407A, R23. For other refrigerants, please contact Danfoss

Technical data and ordering

AKV

Technical data

Valve type	AKV 10	AKV 15	AKV 20
Tolerance of coil voltage	10% / -15%	10% / -15%	10% / -15%
Enclosure to IEC 529	IP67	IP67	IP67
Working principle	PWM	PWM	PWM
Recommended period of time	6 Seconds	6 Seconds	6 Seconds
Capacity (404A / R507)	0.6 – 14 kW / 0.17 – 3.98 TR	14 – 85 kW / 3.98 – 24.1 TR	56 – 530 kW / 15.9 – 150 TR
Regulation range (Capacity range)	10 – 100%	10 – 100%	10 – 100%
Connection	Solder	Solder	Solder or weld
Evaporating temperature	-50 – 60 °C / -58 – 140 °F	-50 – 60 °C / -58 – 140 °F	-40 – 60 °C / -40 – 140 °F
Ambient temperature	-50 – 50 °C / -58 – 120 °F	-40 – 120 °F / -40 – 50 °C	-40 – 120 °F / -40 – 50 °C
Leak of valve seat	<0.02% of K_V value / C_V value	<0.02% of K_V value / C_V value	<0.02% of K_V value / C_V value
MOPD	18 bar / 260 psig	22 bar / 318 psig	18 bar / 260 psig
Filter, replaceable	Internal 100 µm	External 100 µm	External 100 µm
Max. working pressure	AKV 10 – 1 – 6 PS / MWP = 52 bar g / 754 psig AKV 10 – 7 PS / MWP = 42 bar g / 610 psig	AKV 15 – 1,2,3 PS / MWP = 42 bar g / 610 psig AKV 15 – 4 PS / MWP = 28 bar g / 400 psig	PS / MWP = 28 bar g / 400 psig

Ordering

AKV 10 - Valve excluded coil

Valve type	Rated capacity [1]								K_V value	C_V value	Connections Solder ODF	
	R22 / R407C		R134a		R404A / R507		R407C					
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[m³/h]	[gpm]	Inlet × outlet [in]	Code no.
Solder ODF [in]												
AKV 10 – 1	1.0	0.28	0.9	0.25	0.8	0.22	1.1	0.31	0.01	0.01	3/8 × 1/2	068F1161
AKV 10 – 2	1.6	0.45	1.4	0.39	1.3	0.36	1.7	0.48	0.01	0.02	3/8 × 1/2	068F1164
AKV 10 – 3	2.6	0.73	2.1	0.59	2.0	0.56	2.5	0.71	0.02	0.02	3/8 × 1/2	068F1167
AKV 10 – 4	4.1	1.16	3.4	0.96	3.1	0.88	4.0	1.13	0.04	0.05	3/8 × 1/2	068F1170
AKV 10 – 5	6.4	1.81	5.3	1.50	4.9	1.39	6.4	1.81	0.06	0.07	3/8 × 1/2	068F1173
AKV 10 – 6	10.2	2.90	8.5	2.41	7.8	2.21	10.1	2.87	0.11	0.13	3/8 × 1/2	068F1176
AKV 10 – 7	16.3	4.63	13.5	3.83	12.5	3.55	17.0	4.83	0.20	0.20	3/8 × 1/2	068F1179
Solder ODF [mm]												
AKV 10 – 1	1.0	0.28	0.9	0.25	0.8	0.22	1.1	0.31	0.01	0.01	10 × 12	068F1162
AKV 10 – 2	1.6	0.45	1.4	0.39	1.3	0.36	1.7	0.48	0.01	0.02	10 × 12	068F1165
AKV 10 – 3	2.6	0.73	2.1	0.59	2.0	0.56	2.5	0.71	0.02	0.02	10 × 12	068F1168
AKV 10 – 4	4.1	1.16	3.4	0.96	3.1	0.88	4.0	1.13	0.04	0.05	10 × 12	068F1171
AKV 10 – 5	6.4	1.81	5.3	1.50	4.9	1.39	6.4	1.81	0.06	0.07	10 × 12	068F1174
AKV 10 – 6	10.2	2.90	8.5	2.41	7.8	2.21	10.1	2.87	0.11	0.13	10 × 12	068F1177
AKV 10 – 7	16.3	4.63	13.5	3.83	12.5	3.55	17.0	4.83	0.20	0.24	12 × 16	068F1180

AKV 15 - Valve excluded coil

Solder ODF [in]												
AKV 15 – 1	25.5	7.25	21.2	6.02	19.6	5.57	25.2	7.16	0.25	0.28	3/4 × 3/4	068F5000
AKV 15 – 2	40.8	11.6	33.8	9.61	31.4	8.92	40.4	11.4	0.40	0.46	3/4 × 3/4	068F5005
AKV 15 – 3	64	18.2	53	15.1	49.4	14.0	63	18.1	0.63	0.72	7/8 × 7/8	068F5010
AKV 15 – 4	102	29.0	84	24.0	78	22.2	101	28.7	1.0	1.15	1 1/8 × 1 1/8	068F5015
Solder ODF [mm]												
AKV 15 – 1	25.5	7.25	21.2	6.02	19.6	5.57	25.2	7.16	0.25	0.28	18 × 18	068F5001
AKV 15 – 2	40.8	11.6	33.8	9.61	31.4	8.92	40.4	11.4	0.40	0.46	18 × 18	068F5006
AKV 15 – 3	64	18.2	53	15.1	49.4	14.0	63	18.1	0.63	0.72	22 × 22	068F5010
AKV 15 – 4	102	29.0	84	24.0	78	22.2	101	28.7	1.0	1.15	28 × 28	068F5016

AKV 20 - Valve excluded coil

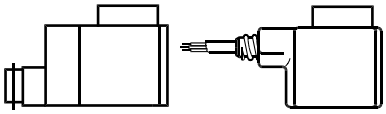
Solder ODF [in]												
AKV 20 – 1	102	29.0	84	24.0	78	22.2	101	28.7	1.0	1.15	1 3/8 × 1 3/8	042H2020
AKV 20 – 2	163	46.3	135	38.3	125	35.5	170	48.3	1.6	1.85	1 3/8 × 1 3/8	042H2022
AKV 20 – 3	255	72	212	60	196	55	252	71	2.5	2.89	1 5/8 × 1 5/8	042H2024
AKV 20 – 4	408	116	338	96	314	89	404	114	4.0	4.62	2 1/8 × 2 1/8	042H2027
AKV 20 – 5	643	182	533	151	494	140	637	181	6.3	7.28	2 1/8 × 2 1/8	042H2029
Solder ODF [mm]												
AKV 20 – 1	102	29.0	84	24.0	78	22.2	101	28.7	1.0	1.15	35 × 35	042H2020
AKV 20 – 2	163	46.3	135	38.3	125	35.5	170	48.3	1.6	1.85	35 × 35	042H2022
AKV 20 – 3	255	72	212	60	196	55	252	71	2.5	2.89	42 × 42	042H2025
AKV 20 – 4	408	116	338	96	314	89	404	114	4.0	4.62	54 × 54	042H2027
AKV 20 – 5	643	182	533	151	494	140	637	181	6.3	7.28	54 × 54	042H2029
Weld [in]												
AKV 20 – 1	102	29.0	84.6	24.0	78	22.2	101	28.7	1.0	1.15	1 1/4 × 1 1/4	042H2021
AKV 20 – 2	163	46.3	135	38.3	125	35.5	170	48.3	1.6	1.85	1 1/4 × 1 1/4	042H2023
AKV 20 – 3	255	72	212	60	196	55	252	71	2.5	2.89	1 1/4 × 1 1/4	042H2026
AKV 20 – 4	408	116	338	96	314	89	404	114	4.0	4.62	1 1/2 × 1 1/2	042H2028
AKV 20 – 5	643	182	533	151	494	140	637	181	6.3	7.28	2 × 2	042H2030

[1]) The Rated capacity is based on:
Evaporating temperature t_e: 5 °C / 41 °F
Liquid temperature t_l: 28 °C / 82 °F
Condensing temperature t_c: 32 °C / 90 °F

Technical data and ordering

Coils for AKV valves

Ordering



Terminal box | Cable | DIN spade + cap

DC coils	Connection	Valve size and orifice no.						Code no.
		AKV 10 – 1 AKV 10 – 2 AKV 10 – 3 AKV 10 – 4 AKV 10 – 5	AKV 10 – 6	AKV 10 – 7	AKV 15 – 1 AKV 15 – 2 AKV 15 – 3 AKV 15 – 4	AKV 20 – 1 AKV 20 – 2 AKV 20 – 3	AKV 20 – 4 AKV 20 – 5	
220 V DC 20 W, standard	Terminal box	+	+	+	+	+	+	018F6851
100 V DC 18 W, special	Terminal box	+	+	+	+	+	+	018F6780
230 V DC 18 W, special	Terminal box	+	+	+	+	+	+	018F6781 [1]
	DIN spade + cap	+	+	+	+	+	+	018F6991 [1]
230 V DC 18 W, special	2.5 m / 8.2 ft cable	+	+	+	+	+	+	018F6288 [1]
	4.0 m / 13.0 ft cable	+	+	+	+	+	+	018F6278 [1]
	8.0 m / 26.0 ft cable	+	+	+	+	+	+	018F6279 [1]

[1]) *Recommended for commercial refrigeration plant.*

AC coils	Connection							Code no.
240 V AC 10 W, 50 Hz	Terminal box	+	+	–	+	–	–	018F6702
	DIN spade + cap	+	+	–	+	–	–	018F6177
240 V AC 10 W, 60 Hz	Terminal box	+	+	–	+	–	–	018F6713
240 V AC 12 W, 50 Hz	Terminal box	+	+	+	+	+	–	018F6802
230 V AC 10 W, 50 Hz	Terminal box	+	+	–	+	–	–	018F6701
	DIN spade + cap	+	+	–	+	–	–	018F6176
230 V AC 10 W, 60 Hz	Terminal box	+	+	–	+	–	–	018F6714
	DIN spade + cap	+	+	–	+	–	–	018F6189
230 V AC 10 W, 50 / 60 Hz	Terminal box	+	+	–	+	–	–	018F6732
	DIN spade + cap	+	+	–	+	–	–	018F6193
230 V AC 12 W, 50 Hz	Terminal box	+	+	–	+	+	–	018F6801
230 V AC 12 W, 60 Hz	Terminal box	+	+	–	+	+	–	018F6814
230 V AC 20 W, 50 Hz	Terminal box	+	+	+	+	+	+	018F6905
115 V AC 10 W, 50 Hz	Terminal box	+	+	–	+	–	–	018F6711
115 V AC 10 W, 60 Hz	Terminal box	+	+	–	+	–	–	018F6710
	DIN spade + cap	+	+	–	+	–	–	018F6185
110 V AC 12 W, 50 Hz	Terminal box	+	+	–	+	+	–	018F6811
110 V AC 12 W, 60 Hz	Terminal box	+	+	–	+	+	–	018F6813
24 V AC 10 W, 50 Hz	Terminal box	+	–	–	+	–	–	018F6707
	DIN spade + cap	+	–	–	+	–	–	018F6182
24 V AC 10 W, 60 Hz	Terminal box	–	–	–	+	–	–	018F6715
24 V AC 12 W, 50 Hz	Terminal box	+	–	–	+	+	+	018F6807
24 V AC 12 W, 60 Hz	Terminal box	+	–	–	+	+	+	018F6815
24 V AC 20 W, 50 Hz	Terminal box	+	+	+	+	+	+	018F6901
24 V AC 20 W, 60 Hz	Terminal box	+	+	+	+	+	+	018F6902

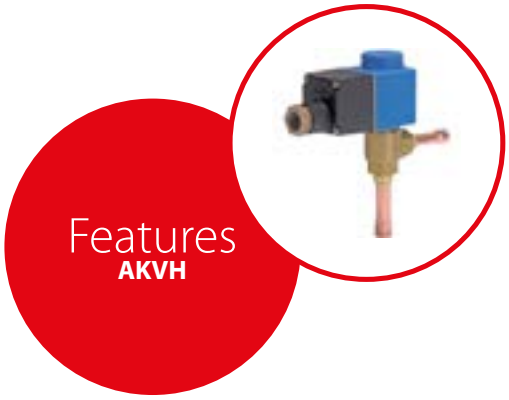
Related products

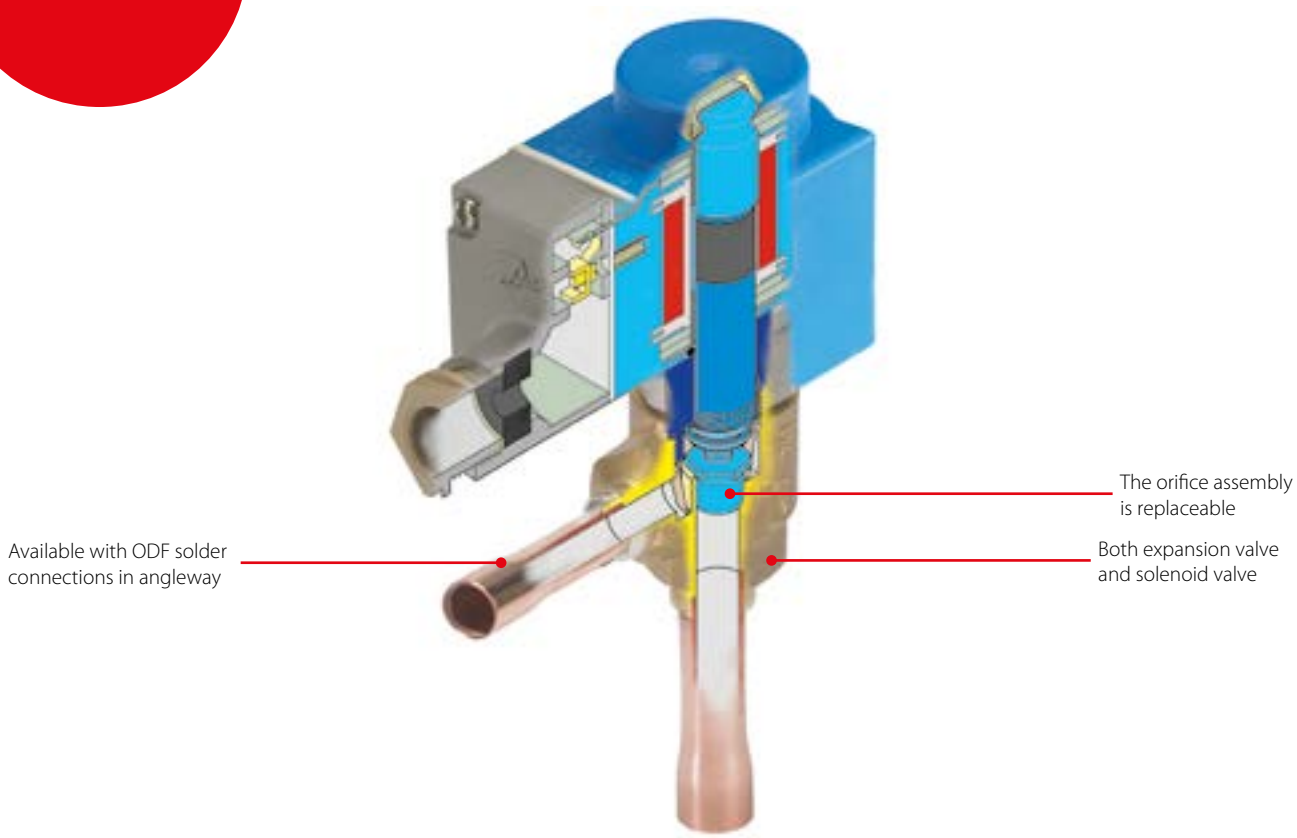
Electric suction modulating valves
Type AK-CC 550 / EKC 315 / EKC 414A
Temperature sensors and pressure transmitters
Type AKS

Quick Selection Notes:

AKVH - Electric expansion valve

AKVH are electrically operated expansion valves designed for refrigeration plants using R744 refrigerant.
The AKVH valves are designed for use with a controller from Danfoss range of ADAP- KOOL® controllers.
The AKVH valves are supplied as a parts programme with separate valve body and coil with electronic controller, for lower valve noise level and power consumption, higher valve MOPD, and longer valve lifetime.
AKVH has an exchangeable orifice.
The AKVH 10 valves cover a capacity ranges:
0.4 – 11 kW / 0.11 – 3.12 TR in refrigeration applications
0.8 – 22 kW / 0.82 – 6.26 TR in freezing applications





Facts

Applications:
- Traditional refrigeration using R744 (CO_2) as refrigerant
- Cold rooms
- Water chillers

- The AKV valves are supplied as a parts programme, as follows:
  - separate valve incl. exchangeable orifice
  - separate coil
- The valve requires no adjustment
- Coil with electronic coil controller for lower valve noise level, energy saving, higher valve MOPD and longer valve lifetime

- The AKVH 10 valve covers a capacity range from 0.4 – 11 kW / 0.11 – 3.13 TR (refrigeration) and 0.8 – 22 kW / 0.23 – 6.26 TR (for freezing) and is divided into 7 capacity ranges
- The AKVH is used for R744 (CO_2) refrigerant

Technical data and ordering

AKVH

Technical data

Valve type	AKVH 10
Tolerance of coil voltage	10 / -15%
Enclosure to IEC 529	IP67
Working principle	PWM
Recommended period of time	6 seconds
Capacity (R744)	0.4 – 11 kW / 0.11 – 3.13 TR
Freezing capacity (R744)	0.8 – 22 kW / 0.23 – 6.26 TR
Regulation range (Capacity range)	10 – 100%
Connection	Solder
Evaporating temperature	-60 – 60 °C / -76 – 140 °F
Ambient temperature	-50 – 50 °C / -58 – 120 °F
Leak of valve seat	<0.02% of K_V value / C_V value
MOPD	35 bar / 505 psig
Filter, replaceable	Internal 100 µm
Max. working pressure	AKVH10-0 to 6 PS = 90 barg / 1305 psig [3]

[1] Refrigeration
[2] Freezing
[3] 90 barg under stand still conditions, but under normal operating conditions, there must be liquid to the inlet of the valve.

Coil with electronic coil controller

Technical data

Noise level	Minimum 5 dB
Soft start	Yes
Nominal voltage	208 – 240 V AC 50 / 60 Hz
Power	4 W
Ambient temperature	During operation: -20 – 55 °C / -4 – 131 °F
Enclosure to IEC 529	IP67
Wire dimension	1 – 1.5 mm² / 16 AWG
Approvals	CE: Low voltage and EMC directives
Neutral, phase and earth in socket	Yes

Coil must only be used together with electronic coil controller.
Tolerance of supply voltage: 10 – -15%.

AKVH 10 - Valve excl. coil

Rated capacity and Ordering

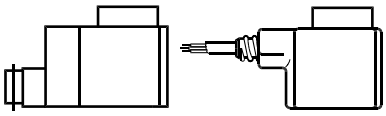
Valve type / orifice no.	Rated capacity (R744)				K_V value [1]	C_V value [1]	Code no.
	[kW]	[TR]	[kW]	[TR]			
	Refrigeration		Freezing		[m³/h]	[gpm]	
Connections, Solder ODF, Single pack 1 valve each, ⅜ × ½ [inch.]							
AKVH 10 – 0	0.4	0.1	0.8	0.2	0.003	0.132	068F4078
AKVH 10 – 1	1.1	0.3	2.2	0.6	0.010	0.044	068F4079
AKVH 10 – 2	1.7	0.5	3.5	1.0	0.017	0.074	068F4080
AKVH 10 – 3	2.6	0.7	5.4	1.5	0.025	0.110	068F4081
AKVH 10 – 4	4.3	1.2	8.7	2.5	0.046	0.202	068F4082
AKVH 10 – 5	6.7	1.9	13.6	3.8	0.064	0.282	068F4083
AKVH 10 – 6	10.7	3.0	21.7	6.1	0.114	0.502	068F4084
Connections, Solder ODF, Single pack 1 valve each, 10 × 12 [mm]							
AKVH 10 – 0	0.4	0.1	0.8	0.2	0.003	0.132	068F4088
AKVH 10 – 1	1.1	0.3	2.2	0.6	0.010	0.044	068F4089
AKVH 10 – 2	1.7	0.5	3.5	1.0	0.017	0.074	068F4090
AKVH 10 – 3	2.6	0.7	5.4	1.5	0.025	0.110	068F4091
AKVH 10 – 4	4.3	1.2	8.7	2.5	0.046	0.202	068F4092
AKVH 10 – 5	6.7	1.9	13.6	3.8	0.064	0.282	068F4093
AKVH 10 – 6	10.7	3.0	21.7	6.1	0.114	0.502	068F4094

[1] The K_V / C_V value is the water flow in [m³/h] / [gph] at a pressure drop across valve of 1 bar / 14.5 psi.

Technical data and ordering

Coils for AKVH valves

Ordering



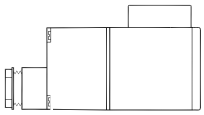
Terminal box | Cable | DIN spade + cap

		Valve size and orifice no.				
		18 bar		35 bar [2]		
		AKVH 10 – 1 AKVH 10 – 2 AKVH 10 – 3 AKVH 10 – 4 AKVH 10 – 5	AKVH 10 – 6	AKVH 10 – 0 AKVH 10 – 1 AKVH 10 – 2 AKVH 10 – 3 AKVH 10 – 4 AKVH 10 – 5	AKVH 10 – 6	
DC coils	**Connection**					**Code no.**
220 V DC 20 W, standard	**Terminal box**	+	+	+	+	018F6851
100 V DC 18 W, special	**Terminal box**	+	+	+	–	018F6780
230 V DC 18 W, special	**Terminal box**	+	+	+	–	018F6781 [1]
	DIN spade + cap	+	+	+	–	018F6991 [1]
230 V DC 18 W, special	**2.5 m / 8.2 ft cable**	+	+	+	–	018F6288 [1]
	4.0 m / 13.0 ft cable	+	+	+	–	018F6278 [1]
	8.0 m / 26.0 ft cable	+	+	+	–	018F6279 [1]
AC coils	**Connection**					**Code no.**
115 V AC 10 W, 50 Hz	**Terminal box**	+	+	–	–	018F6711
115 V AC 10 W, 60 Hz	**Terminal box**	+	+	–	–	018F6710
	DIN spade + cap	+	+	–	–	018F6185
110 V AC 12 W, 50 Hz	**Terminal box**	+	+	+	–	018F6811
110 V AC 12 W, 60 Hz	**Terminal box**	+	+	–	–	018F6813
24 V AC 10 W, 50 Hz	**Terminal box**	+	–	–	–	018F6707
	DIN spade + cap	+	–	–	–	018F6182
24 V AC 12 W, 50 Hz	**Terminal box**	+	–	–	–	018F6807
24 V AC 12 W, 60 Hz	**Terminal box**	+	–	–	–	018F6815
24 V AC 20 W, 50 Hz	**Terminal box**	+	+	+	+	018F6901
24 V AC 20 W, 60 Hz	**Terminal box**	+	+	+	+	018F6902

[1]) Recommended for commercial refrigeration plant.
[2]) If operated consistently at or near MOPD, the service interval will decrease.

For voltage supply of 208 – 240 V AC always use coil with electronic coil

EEC - Coil with electronic coil controller



Ordering

AC coil	18 bar		35 bar [2]		Code no.
208 – 240 VAC, 50 / 60 Hz, 4 W	+	+	+	+	018F6783

Coil with electronic coil controller type EEC is delivered as multipack.
[1]) If operated consistently at or near MOPD, the service interval will decrease.

AKVH 10 - Spare parts

Ordering

Orifice no.	Contents	Code no.
0	4 pc. orifice - 4 pc. gasket	068F5283
1	4 pc. orifice - 4 pc. gasket	068F5283
2	4 pc. orifice - 4 pc. gasket	068F5283
3	4 pc. orifice - 4 pc. gasket	068F5283
4	3 pc. orifice - 3 pc. gasket	068F5284
5	3 pc. orifice - 3 pc. gasket	068F5284
6	3 pc. orifice - 3 pc. gasket	068F5284

Capacities

R744

Valve type	Capacity in [kW] with pressure drop across valve Δp [bar] [1]								
	2	4	6	8	10	12	14	16	18
AKVH 10 – 0	0.33	0.44	0.53	0.59	0.65	0.70	0.73	0.76	0.78
AKVH 10 – 1	0.9	1.2	1.5	1.6	1.8	1.9	2.0	2.1	2.1
AKVH 10 – 2	1.4	2.0	2.3	2.6	2.8	3.1	3.2	3.3	3.4
AKVH 10 – 3	2.2	3.1	3.7	4.1	4.4	4.8	5.0	5.2	5.4
AKVH 10 – 4	3.6	4.9	5.8	6.5	7.1	7.7	8.0	8.3	8.5
AKVH 10 – 5	5.6	7.7	9.2	10.2	11.1	12.0	12.6	13.0	13.5
AKVH 10 – 6	9.0	12.3	14.6	16.3	17.6	19.1	20.0	20.8	21.5

R744

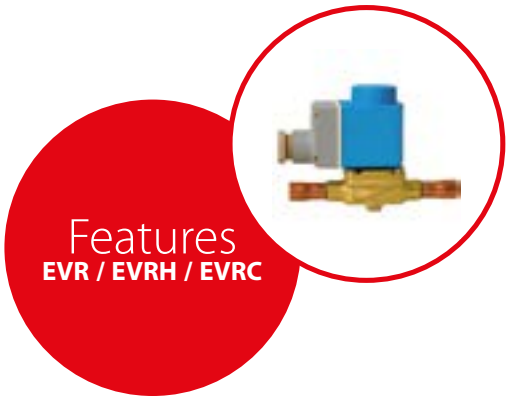
Valve type	Capacity in [kW] with pressure drop across valve Δp [bar] [1]								
	20	22	24	26	28	30	32	34	35
AKVH 10 – 0	0.80	0.81	0.82	0.84	0.85	0.85	0.86	0.87	0.87
AKVH 10 – 1	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4
AKVH 10 – 2	3.5	3.6	3.7	3.7	3.8	3.8	3.8	3.8	3.8
AKVH 10 – 3	5.5	5.6	5.7	5.8	5.9	5.9	6.0	6.0	6.0
AKVH 10 – 4	8.8	8.9	9.1	9.3	9.4	9.5	9.5	9.6	9.6
AKVH 10 – 5	13.8	14.1	14.4	14.6	14.8	14.9	15.0	15.0	15.0
AKVH 10 – 6	22.0	22.4	22.9	23.3	23.5	23.7	23.9	23.9	24.0

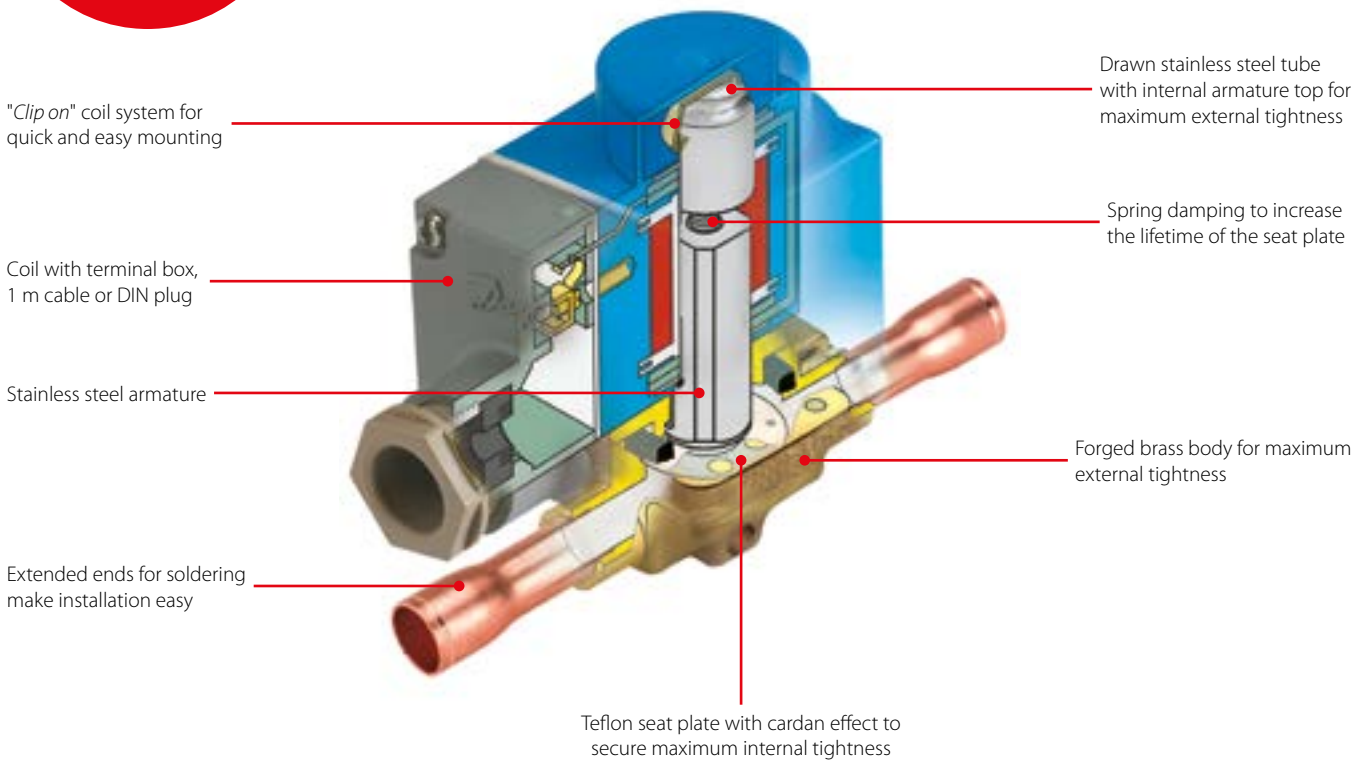
[1]) *Rated capacities are based on:*
Subcooling: t_{sub} *= 4 K*
Evaporating temperature: t_e *= -25 °C*
Superheating: t_{sup} *=5 K*

EVR / EVRH / EVRC - Solenoid valves

EVR / EVRH solenoid valves are direct or servo-operated solenoid valves for liquid, suction and hot gas lines. They are suitable for condensing units and power packs in all refrigeration, freezing and air conditioning applications and are compatible with fluorinated refrigerants R22 / R407C, R404A / R507, R410A, R134a and R407C. Versions are also available for high pressure refrigerants such as R410A and R744 (CO_2) with a max working pressure of 45 bar g. EVR 2 – EVR 20 with solder connections and without manual stem are suitable for the flammable refrigerants R32, R290, R600 and R600a.

The valves can be delivered as normally open or normally closed valves and with or without manual operation. EVR valves are available with flare, solder or flange connections. EVRC is a servo operated solenoid valve for use in liquid lines in refrigeration plant. EVRC allows flow in both directions and can therefore be used in liquid lines in refrigeration plant with hot gas or gas defrost. During the refrigeration period EVRC works as a normal solenoid valve, while during the defrost it allows the condensed liquid to return to the liquid manifold.





Facts

Application:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Transport refrigeration

- Complete programme of valves and coils for every application
- Wide range of coils for AC and DC
- Wide range of connection types and sizes
- Normally open or normally closed
- With or without manual operation
- High reliability and durability due to maximum internal and external tightness
- Can be used for all fluorinated refrigerants (CFC, HCFC and HFC)
- Temperature range: -40 – 105 °C / -40 – 221 °F

- Max. working pressure (PS / MWP): 32 bar / 460 psi (EVR 2 / EVR 6: 45.2 bar / 655 psi EVR 10: 35 bar / 500 psi EVR 15 / EVR 40: 32 bar / 460 psi EVRH 10 / EVRH 40: 45.2 bar / 655 psi)
- MOPD up to 25 bar / 365 psi with 12 W AC coil
- 100% test of functionality, internal / external leakage and electrical characteristics

Technical data and ordering

EVR

Technical data

Type	Opening differential pressure with standard coil Δp [bar]				Temperature of medium [°C]
	Min.	Max. (= MOPD) liquid [1]			
		10 W AC	12 W AC	20 W DC	
EVR 2	0.00	25	–	18	-40 – 105
EVR 3	0.00	21	25	18	-40 – 105
EVR 6	0.05	21	25	18	-40 – 105
EVR 6 NO	0.05	21	21	21	-40 – 105
EVR 10	0.05	21	25	18	-40 – 105
EVR 10 NO	0.05	21	21	21	-40 – 105
EVR 15	0.05	21	25	18	-40 – 105
EVR 15 NO	0.05	21	21	21	-40 – 105
EVR 20 with AC coil	0.05	21	25	13	-40 – 105
EVR 20 with DC coil	0.05	–	–	16	-40 – 105
EVR 20 NO	0.05	19	19	19	-40 – 105
EVR 22	0.05	21	25	13	-40 – 105
EVR 22 NO	0.05	19	19	19	-40 – 105
EVR 25 [2]	0.20	21	25	18	-40 – 105
EVR 32 [2]	0.20	21	25	18	-40 – 105
EVR 40 [2]	0.20	21	25	18	-40 – 105

[1] MOPD (Max. Opening Pressure Differential) for media in gas form is approx. 1 bar greater.
[2] Min. diff. pressure 0.07 bar is needed to stay open.

Technical data and capacities

EVR

Rated capacity [kW] – Liquid

Type	R22 / R407C	R134a	R404A / R507	R32	R290	R600	R600a
EVR 2	3.22	2.98	2.18	4.51	3.58	4.06	3.61
EVR 3	5.43	5.02	3.68	7.61	6.05	6.84	6.09
EVR 6	16.09	14.89	10.9	22.55	17.91	20.28	18.04
EVR 10	38.22	35.36	25.88	53.55	42.54	48.15	42.84
EVR 15	52.3	48.38	35.41	73.28	58.22	65.89	58.62
EVR 20	100.57	93.04	68.1	140.92	111.96	126.72	112.74
EVR 22	120.68	111.65	81.72	–	–	–	–
EVR 25	152.42	141.01	103.21	–	–	–	–
EVR 32	243.83	225.57	165.11	–	–	–	–
EVR 40	380.9	352.39	257.92	–	–	–	–

Rated capacity [kW] – Suction vapour

Type	R22 / R407C	R134a	R404A / R507	R32	R290	R600	R600a
EVR 2	0.35	0.26	0.31	0.57	0.44	0.2	0.24
EVR 3	0.6	0.44	0.52	0.96	0.74	0.34	0.41
EVR 6	1.8	1.3	1.6	2.86	2.18	0.99	1.21
EVR 10	4.3	3.1	3.9	6.79	5.18	2.36	2.86
EVR 15	5.9	4.2	5.3	9.29	7.09	3.23	3.92
EVR 20	11.4	8.1	10.2	17.87	13.64	6.21	7.53
EVR 22	13.7	9.7	12.2	–	–	–	–
EVR 25	22.8	16.3	20.4	–	–	–	–
EVR 32	36.5	26.1	32.6	–	–	–	–
EVR 40	57	40.8	51	–	–	–	–

Rated capacity [kW] – Hot gas

Type	R22 / R407C	R134a	R404A / R507	R32	R290	R600	R600a
EVR 2	1.48	1.17	1.21	2.32	1.64	0.88	0.99
EVR 3	2.49	1.98	2.03	3.91	2.77	1.48	1.68
EVR 6	7.4	5.86	6.02	11.58	8.2	4.39	4.97
EVR 10	17.5	13.9	14.3	27.5	19.48	10.43	11.82
EVR 15	24	19	19.6	37.63	26.66	14.27	16.17
EVR 20	46.2	36.6	37.7	72.37	51.26	27.44	31.09
EVR 22	55.4	43.9	45.2	–	–	–	–
EVR 25	92.3	73.2	75.3	–	–	–	–
EVR 32	148	117	120	–	–	–	–
EVR 40	231	183	188	–	–	–	–

Rated liquid and suction vapour capacity is based on:
evaporating temperature t_e = -10 °C / 50 °F
liquid temperature ahead of valve t_l = 25 °C / 77 °F
pressure drop in valve Δp = 0.15 bar / 2.18 psi

Rated hot gas capacity is based on:
condensing temperature t_c = 40 °C / 104 °F
pressure drop across valve Δp = 0.8 bar / 11.6 psi
hot gas temperature t_h = 65 °C / 149 °F
subcooling of refrigerant Δt_{sub} = 4 K

Technical data and capacities

EVRH

Rated capacity [kW]

Type	Liquid	Suction vapour	Hot gas
	R410A [1])	R410A	R410A
EVRH 10	36.92	5.31	20.97
EVRH 15	50.52	7.27	28.69
EVRH 20	97.15	13.98	55.51
EVRH 25	194.31	27.96	110.35
EVRH 32	310.89	44.74	176.55
EVRH 40	485.77	69.90	275.86

[1]) Calculated values.
Rated liquid and suction vapour is based on evaporating temperature t_c = -10 °C / 50 °F, liquid temperature ahead of valve t_l = 25 °C / 77 °F, pressure drop in valve Δp = 0.15 bar / 2.18 psi. Rated hot gas capacity is based on condensing temperature t_c = 40 °C / 104 °F, pressure drop across valve Δp = 0.8 bar / 11.6 psi, hot gas temperature t_h = 25 °C / 77 °F, and subcooling of refrigerant Δt_{sub} = 4 K.

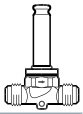
EVRC

Rated capacity [kW]

Type	Rated capacity with normal flow direction [1]) [kW]				Opening differential pressure with standard coil Δp [bar]			
						Max. (= MOPD) liquid		
	R22/R407C	R134A	R507	R407C	Min.	10 W AC	12 W AC	20 W DC
EVRC 10	38.2	35.3	26.7	35.9	0.05	21	25	18
EVRC 15	52.3	48.3	36.5	49.2	0.05	21	25	18
EVRC 20	94.6	87.2	66.1	88.9	0.05	21	25	13

[1]) Rated capacity is based on evaporating temperature t_e = -10 °C / 50 °F, liquid temperature ahead of valve t_l = 25 °C / 77 °F, and pressure drop across valve Δp = 0.15 bar / 2.18 psi.

EVR flare connections, Normally Closed (NC) - separate valve bodies



Ordering

Type	Current type	Connection size		Manual operation	Max. working pressure		K_v value [m^3/h]	C_v value [gal/min]	Code no.
		[mm]	[in]		[bar]	[psi]			
EVR 2	AC	6	1/4	No	45.2	655	0.16	0.19	032F8056
EVR 3	AC / DC	6	1/4	No	45.2	655	0.27	0.32	032F8107
	AC / DC	10	3/8	No	45.2	655	0.27	0.32	032F8116
EVR 6	AC / DC	10	3/8	No	45.2	655	0.80	0.92	032F8072
	AC / DC	12	1/2	No	45.2	655	0.80	0.92	032F8079
EVR 10	AC / DC	12	1/2	No	35	500	1.9	2.2	032F8095
	AC / DC	16	5/8	No	35	500	1.9	2.2	032F8098
EVR 15	AC / DC	16	5/8	No	32	460	2.6	3.0	032F8101
	AC / DC	16	5/8	Yes	32	460	2.6	3.0	032F8100

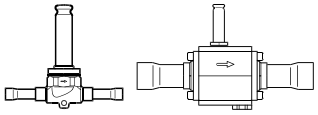
EVR flare connections, Normally Open (NO) - separate valve bodies

Ordering

Type	Current type	Connection size		Manual operation	Max. working pressure		K_v value [m^3/h]	C_v value [gal/min]	Code no.
		[in]	[mm]		[bar]	[psi]			
EVR 6	AC / DC	3/8	10	No	45.2	655	0.80	0.92	032F8085
EVR 10	AC / DC	1/2	12	No	35	500	1.9	2.2	032F8090

Technical data and ordering

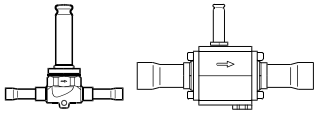
EVR solder connections, Normally Closed (NC) - separate valve bodies



Ordering

Type	Current type	Connection size		Manual operation	Max. working pressure		K_v value [m^3/h]	C_v value [gal/min]	Code no.
		[mm]	[in]		[bar]	[psi]			
EVR 2	AC	–	1/4	No	45.2	655	0.16	0.19	032F1201
	AC	6	–	No	45.2	655	0.16	0.19	032F1202
EVR 3	AC / DC	–	1/4	No	45.2	655	0.27	0.32	032F1206
	AC / DC	–	3/8	No	45.2	655	0.27	0.32	032F1204
	AC / DC	6	–	No	45.2	655	0.27	0.32	032F1207
	AC / DC	10	–	No	45.2	655	0.27	0.32	032F1208
EVR 6	AC / DC	–	1/2	No	45.2	655	0.80	0.92	032F1209
	AC / DC	–	3/8	No	45.2	655	0.80	0.92	032F1212
	AC / DC	10	–	No	45.2	655	0.80	0.92	032F1213
	AC / DC	12	–	No	45.2	655	0.80	0.92	032F1236
EVR 10	AC / DC	–	1/2	No	35	500	1.9	2.2	032F1217
	AC / DC	12	–	No	35	500	1.9	2.2	032F1218
	AC / DC	16	5/8	No	35	500	1.9	2.2	032F1214
EVR 15	AC / DC	22	7/8	No	32	460	2.6	3.0	032F1225
	AC / DC	16	–	Yes	32	460	2.6	3.0	032F1227
	AC / DC	16	5/8	No	32	460	2.6	3.0	032F1228
EVR 20	AC	22	7/8	No	32	460	5.0	5.8	032F1240
	AC	–	7/8	Yes	32	460	5.0	5.8	032F1254
	AC	–	1 1/8	No	32	460	5.0	5.8	032F1244
	AC	28	–	No	32	460	5.0	5.8	032F1245
	DC	22	7/8	No	32	460	5.0	5.8	032F1264
	DC	–	7/8	Yes	32	460	5.0	5.8	032F1274
EVR 22	AC	35	1 3/8	No	32	460	6.0	6.9	032F3267
EVR 25	AC / DC	–	1 1/8	Yes	32	460	10.0	11.6	032F2200
	AC / DC	–	1 1/8	No	32	460	10.0	11.6	032F2201
	AC / DC	28	–	Yes	32	460	10.0	11.6	032F2205
	AC / DC	28	–	No	32	460	10.0	11.6	032F2206
	AC / DC	–	1 3/8	Yes	32	460	10.0	11.6	032F2207
	AC / DC	–	1 3/8	No	32	460	10.0	11.6	032F2208
EVR 32	AC / DC	–	1 5/8	Yes	32	460	16.0	18.5	042H1103
	AC / DC	–	1 5/8	No	32	460	16.0	18.5	042H1104
	AC / DC	35	–	Yes	32	460	16.0	18.5	042H1105
	AC / DC	35	–	No	32	460	16.0	18.5	042H1106
	AC / DC	42	–	Yes	32	460	16.0	18.5	042H1107
	AC / DC	42	–	No	32	460	16.0	18.5	042H1108
EVR 40	AC / DC	–	1 5/8	Yes	32	460	25.0	28.9	042H1109
	AC / DC	–	1 5/8	No	32	460	25.0	28.9	042H1110
	AC / DC	–	2 1/8	Yes	32	460	25.0	28.9	042H1111
	AC / DC	–	2 1/8	No	32	460	25.0	28.9	042H1112
	AC / DC	42	–	Yes	32	460	25.0	28.9	042H1113
	AC / DC	42	–	No	32	460	25.0	28.9	042H1114

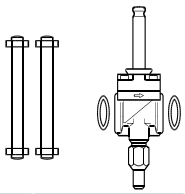
EVR solder connections, Normally Open (NO) - separate valve bodies



Ordering

Type	Current type	Connection size		Manual operation	Max. working pressure		K_v value [m^3/h]	C_v value [gal/min]	Code no.
		[mm]	[in]		[bar]	[psi]			
EVR 6	AC / DC	–	3/8	No	45.2	655	0.80	0.92	032F1290
	AC / DC	10	–	No	45.2	655	0.80	0.92	032F1295
EVR 10	AC / DC	–	1/2	No	35	500	1.9	2.2	032F1291
	AC / DC	12	–	No	35	500	1.9	2.2	032F1296
EVR 15	AC / DC	16	–	No	32	460	2.6	3.0	032F1299
	AC / DC	–	7/8	No	32	460	2.6	3.0	032F3270
EVR 20	AC / DC	–	7/8	No	32	460	5.0	5.8	032F1260
	AC / DC	–	1 1/8	No	32	460	5.0	5.8	032F1269
	AC / DC	28	–	No	32	460	5.0	5.8	032F1279
EVR 22	AC	–	1 3/8	No	32	460	6.0	6.9	032F3268

Technical data and ordering



EVR flange connection, Normally Closed (NC)

Ordering

Type	Current type	Connection	Manual operation	Code no. Valve body + gaskets + bolts; without coil and flanges
EVR 15	AC / DC	Flanges	yes	032F1234
	AC / DC	Flanges	no	032F1224
EVR 20	AC	Flanges	yes	032F1253
	AC	Flanges	no	032F1243
	DC	Flanges	yes	032F1273

EVR- Flange sets

Ordering

Type	Connection size		Connection type			Code no.
	[mm]	[in]	Solder [mm]	Solder [in]	Weld [in]	
EVR 15	–	1/2	–	–	yes	027N1115
	–	5/8	–	yes	–	027L1117
	16	–	yes	–	–	027L1116
	–	3/4	–	–	yes	027N1120
	–	7/8	–	yes	–	027L1123
	22	–	yes	–	–	027L1122
EVR 20	–	3/4	–	–	yes	027N1220
	–	7/8	–	yes	–	027L1223
	22	–	yes	–	–	027L1222
	–	1	–	–	yes	027N1225
	–	1 1/8	–	yes	–	027L1229
	28	–	yes	–	–	027L1228

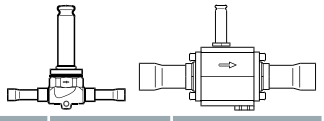
Example:
EVR 15 without manual operation - code no. ***032F1224****. - 1/2 in weld flange set. - code no.* ***027N1115****. - + coil with terminal box, 220 V, 50 Hz, - code no.* ***018F6701****.*
See separate data sheet for coils.

EVR

Accessories – Ordering

Description	Code no.
Mounting bracket for EVR 2, EVR 3, EVR 6 and EVR 10	032F0197
Strainer FA for direct mounting	See "FA"

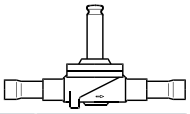
EVRH – Normally closed (NC)
Soldering ODF without manual stem – separate valve bodies



Ordering

Type	Current type	Connection size		Manual operation	Max. working pressure		K_v value [m^3/h]	C_v value [gal/min]	Code no.
		[mm]	[in]		[bar]	[psi]			
EVRH 10	AC / DC	–	1/2	No	45.2	655	1.9	2.2	032G1054
	AC / DC	12	–	No	45.2	655	1.9	2.2	032G1055
EVRH 15	AC / DC	16	5/8	No	45.2	655	2.6	3.0	032G1056
EVRH 20	AC	22	7/8	No	45.2	655	5.0	5.8	032G1057
	DC	22	7/8	No	45.2	655	5.0	5.8	032G1058
EVRH 25	AC / DC	–	1 1/8	No	45.2	655	10.0	11.6	032G1059
EVRH 32	AC / DC	35	–	No	45.2	655	16.0	18.5	032G1081
EVRH 40	AC / DC	–	1 5/8	No	45	650	25.0	28.9	032G1062

EVRC – Normally closed (NC)
Soldering ODF without manual stem – separate valve bodies



Ordering

Type	Required current type	Connection Solder		Max. working pressure		K_v value [m^3/h]		C_v value [gal/min]		Code no.
		[mm]	[in]	[bar]	[psi]	Flow in arrow direction	Flow against arrow direction	Flow in arrow direction	Flow against arrow direction	Valve housing without coil
EVRC 10	AC DC	–	1/2	35	500	1.9	1.1	2.2	1.3	032F1216
EVRC 15		16	5/8	32	460	2.6	1.2	3.0	1.4	032F1255
EVRC 20		22	7/8	32	460	5.0	4.7	5.8	5.4	032F1258

Technical data and ordering

EVR, UL listed

Technical data

Type	Opening differential pressure Δp [PSI]			Medium Temperature	Maximum working pressure MWP
	Min.	Max. (= MOPD) liquid [1]			
		AC	DC	[°F]	[psig]
EVR 2	0.0	350	260	-40 – 220	665
EVR 3	0.0	300	260	-40 – 220	665
EVR 4	0.7	300	260	-40 – 220	665
EVR 6	0.7	300	260	-40 – 220	665
EVR 6 NO	0.7	300	300	-40 – 220	665
EVR 8	0.7	300	260	-40 – 220	665
EVR 10	0.7	300	260	-40 – 220	500
EVR 10 NO	0.7	300	300	-40 – 220	500
EVR 15	0.7	300	260	-40 – 220	460
EVR 15 NO	0.7	300	300	-40 – 220	460
EVR 18	0.7	300	260	-40 – 220	460
EVR 20	0.7	300	190	-40 – 220	460
EVR 20	0.7	275	190	-40 – 220	460
EVR 22	0.7	275	190	-40 – 220	460
EVR 25	1.0	300	260	-40 – 220	460
EVR 32	1.0	300	260	-40 – 220	460
EVR 40	1.0	300	260	-40 – 220	460

[1]) *MOPD (Max. Opening Pressure Differential) for media in gas form is approx. 14 psi greater.*

Technical data and capacities

EVR, UL listed

Rated capacity [TR] - Liquid

Type	R22 / R407C	R134a	R404A / R507
EVR 2	1.17	0.89	0.80
EVR 3	2.03	1.55	1.40
EVR 4	4.15	3.16	2.86
EVR 6	5.83	4.43	4.01
EVR 8	8.01	6.09	5.52
EVR 10	13.8	10.5	9.53
EVR 15	18.9	14.4	13.0
EVR 18	24.6	18.7	17.0
EVR 20	36.4	27.7	25.1
EVR 22	43.7	33.3	30.1
EVR 25	72.8	55.4	50.2
EVR 32	116.5	88.7	80.3
EVR 40	182.0	138.5	125.4

Rated capacity [TR] - Suction vapour

Type	R22 / R407C	R134a	R404A / R507
EVR 2	0.10	0.07	0.09
EVR 3	0.17	0.13	0.15
EVR 4	0.34	0.26	0.30
EVR 6	0.48	0.37	0.43
EVR 8	0.66	0.51	0.58
EVR 10	1.15	0.88	1.01
EVR 15	1.57	1.20	1.38
EVR 18	2.04	1.56	1.80
EVR 20	3.02	2.31	2.66
EVR 22	3.62	2.78	3.19
EVR 25	6.04	4.63	5.32
EVR 32	9.66	7.40	8.51
EVR 40	16.1	11.6	13.3

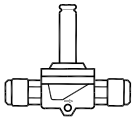
Rated capacity [TR] - Hot gas

Type	R22 / R407C	R134a	R404A / R507
EVR 2	0.22	0.18	0.17
EVR 3	0.38	0.31	0.30
EVR 4	0.77	0.63	0.62
EVR 6	1.08	0.88	0.87
EVR 8	1.49	1.21	1.19
EVR 10	2.57	2.10	2.06
EVR 15	3.52	2.87	2.82
EVR 18	4.57	3.73	3.67
EVR 20	6.76	5.51	5.43
EVR 22	8.11	6.62	6.52
EVR 25	13.5	11.0	10.9
EVR 32	21.6	17.7	17.4
EVR 40	33.8	27.6	27.2

¹) Rated liquid and suction vapor capacity are based on:
Evaporating temperature te= 40 °F
Liquid temperature ahead of valve tl= 100 °F
Pressure drop Δp across valve
– with liquid Δp = 3 psi
– with suction vapor Δp = 1 psi (EVR 25, 32, 40 = 2 psi)

Technical data and ordering

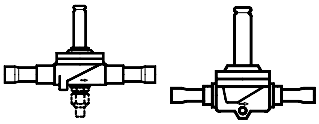
EVR flare connections, Normally Closed (NC) - separate valve bodies, UL listed



Ordering

Type	Connection [in]	Port size [in]	Manual stem	C_v value [gal/min]	Code nos. valve body excl. coil
EVR 3	1/4	1/8	No	0.32	032F8106
EVR 3	3/8	1/8	No	0.32	032F8115
EVR 6	3/8	15/64	No	0.93	032F8071

EVR solder ODF connections, Normally Closed (NC) - separate valve bodies, UL listed



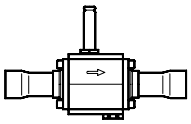
Ordering

Type	Connection [in]	Port size [in]	Manual stem	C_v value [gal/min]	Code nos. valve body excl. coil
EVR 2	1/4	3/32	No	0.19	032F7100
EVR 3	1/4	1/8	No	0.32	032F7105
	3/8	1/8	No	0.32	032F1157
EVR 4	3/8	5/32	No	0.66	032F7110
EVR 6	3/8	15/64	No	0.93	032F7115
	3/8	15/64	Yes	0.93	032F7116
	1/2	15/64	No	0.93	032F1162
	1/2	15/64	No	0.93	032F7144
	5/8	15/64	No	0.93	032F7117
EVR 8	1/2	5/16	No	1.3	032F7121
	1/2	5/16	Yes	1.3	032F7148
	5/8	5/16	No	1.3	032F7122
EVR 10	3/8	3/8	No	2.2	032F7125
	1/2	3/8	No	2.2	032F1166
	1/2	3/8	Yes	2.2	032F1188
	5/8	3/8	No	2.2	032F1168
	5/8	3/8	Yes	2.2	032F7149
EVR 15	5/8	9/16	No	3.0	032F1171
	5/8	9/16	Yes	3.0	032F1172
	7/8	9/16	No	3.0	032F7130
EVR 18	7/8	19/32	Yes	3.9	032F1004
EVR 20	7/8	7/8	No	5.8	032F1176
	7/8	7/8	Yes	5.8	032F1177
EVR 22	1 1/8	15/16	No	6.9	032F7145
	1 1/8	15/16	Yes	6.9	032F7137
	1 3/8	15/16	No	6.9	032F7146

Metric conversions

1 psi = 0.07 bar
5/9 (t_1 °F - 32) = t_2 °C
1 TR = 3.5 kW
1 in = 25.4 mm
US gal/min = 0.86 m^3/h

EVR solder ODF connections, Normally Closed (NC) - separate valve bodies, UL listed



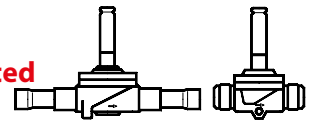
Ordering

Type	Connection [in]	Port size [in]	Manual stem	C_v value [gal/min]	Code nos. valve body excl. coil
EVR 25	1 1/8	1	No	12.0	032F1189
	1 1/8	1	Yes	12.0	032F1190
	1 3/8	1	No	12.0	032F1193
	1 3/8	1	Yes	12.0	032F1194
EVR 32	1 3/8	7/8	No	18.0	042H1176
	1 3/8	7/8	Yes	18.0	042H1177
	1 5/8	7/8	No	18.0	042H1178
	1 5/8	7/8	Yes	18.0	042H1179
	2 1/8	7/8	No	18.0	042H1180
	2 1/8	7/8	Yes	18.0	042H1181
EVR 40	2 1/8	1	Yes	29.0	042H1188

Metric conversions

1 psi = 0.07 bar
1 TR = 3.5 kW
US gal/min = 0.86 m³/h
5/9 (t_1 °F - 32) = t_2 °C
1 in = 25.4 mm

EVR solder ODF connections, Normally Open (NO) - separate valve bodies, UL listed



Ordering

Type	Connection [in]	Port size [in]	C_v value [gal/min]	Code nos. valve body excl. coil
EVR 6	3/8	1/4	0.93	032F1164
EVR 10	1/2	3/8	2.2	032F1169
EVR 15	5/8	9/16	3.0	032F1174

Metric conversions

1 psi = 0.07 bar
1 TR = 3.5 kW
US gal/min = 0.86 m³/h
5/9 (t_1 °F - 32) = t_2 °C
1 in = 25.4 mm

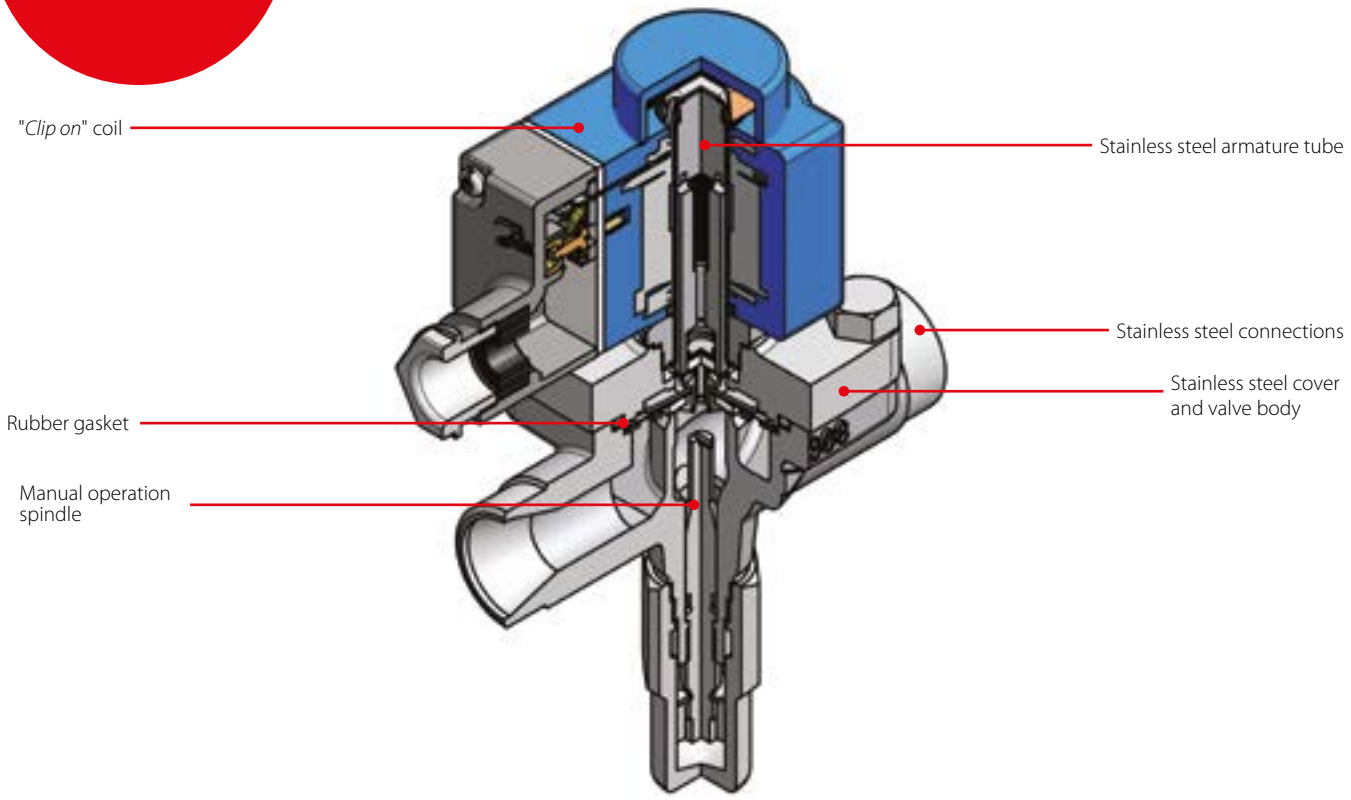
EVRS / EVRST - Solenoid valves

EVRS and EVRST solenoid valves are made in stainless steel.
EVRS 3 is direct operated, EVRS 10 / EVRS 15 / EVRS 20 are servo operated.
EVRST 10 / EVRST 15 / EVRST 20 are forced servo operated valves.
EVRS and EVRST are used in liquid, suction, hot gas and oil return lines with HCFC, HFC, R717 (Ammonia) or R744 (CO_2) refrigerants.

EVRS and EVRST are supplied as a parts programme, i. e. separate valve, body and coil. EVRS / EVRST 10, EVRS / EVRST 15, EVRS / EVRST 20 are equipped with spindle for manual opening.



Features
EVRS / EVRST



Facts

- Stainless steel valve body and connections
- Max. working pressure 50 bar (suitable for CO_2 subcritical)
- Applicable to HCFC, HFC, R717 (Ammonia) and R744 (CO_2)
- MOPD up to 38 bar with 20 watt AC coil
- Wide choice of AC and DC coils
- Designed for temperatures of media up to 105 °C
- Manual system on EVRS 10 / EVRS 15 / EVRS 20 and EVRST 10 / EVRST 15 / EVRST 20

Technical data and ordering

EVRS / EVRST solenoid valves, Normally closed (NC)

Technical data

Type	Opening differential pressure Δp [bar]					K_v value [2] [m³/h]	Max. working pressure PS [bar]
	Min. [bar]	Max. (MOPD) liquid [1] [bar]					
		10 W AC	12 W AC	20 W AC	20 W DC		
EVRS 3	0.0	21	25	38	14	0.23	50.0
EVRS 10	0.05	21	25	38	18	1.5	50.0
EVRST 10	0.0	14	21	38	16	1.5	50.0
EVRS 15	0.05	21	25	38	18	2.7	50.0
EVRST 15	0.0	14	21	38	18	2.7	50.0
EVRS 20	0.05	21	25	38	13	4.5	50.0
EVRST 20	0.0	14	21	38	13	4.5	50.0

[1]) MOPD for media in gas form is approx. 1 bar greater.
[2]) The K_v value is the water flow in [m³/h] with a pressure drop across the valve of 1 bar, ρ = 1000 kg/m³.

EVRS / EVRST solenoid valves, Normally Closed (NC)

Technical data

Type	Rated capacity [1] [kW]														
	Liquid					Suction vapour					Hot gas [2]				
	R717	R22	R134a	R404A/ R507	R410A	R717	R22	R134a	R404A/ R507	R410A	R717	R22	R134a	R404A/ R507	R410A
EVRS 3	21.8	4.6	4.3	3.2	4.5	–	–	–	–	–	6.5	2.1	1.7	1.7	2.3
EVRS / EVRST 10	142.0	30.2	27.8	21.1	29.7	9.0	3.4	2.5	3.1	4.3	42.6	13.9	11.0	11.3	14.9
EVRS / EVRST 15	256.0	54.4	50.1	38.0	53.5	16.1	6.2	4.4	5.5	7.7	76.7	24.9	19.8	20.3	26.7
EVRS / EVRST 20	426.0	90.6	83.5	63.3	89.1	26.9	10.3	7.3	9.2	12.0	128.0	41.5	32.9	33.9	44.5

[1]) Rated liquid and suction vapour capacity is based on evaporating temperature t_e = -10 °C, liquid temperature ahead of valve t_l = 25 °C, and pressure drop across valve Δp = 0.15 bar.
[2]) Rated hot gas capacity is based on condensing temperature t_c = 40 °C, pressure drop across valve Δp = 0.8 bar, hot gas temperature t_h = 60 °C, and subcooling of refrigerant Δt_{sub} = 4 K.

EVRS / EVRST solenoid valves, Normally Closed (NC)

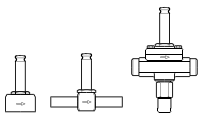
Technical data

Type	R 744 Rated capacity [kW] [1]	
	Liquid	Suction
EVRS 3	6.65	–
EVRS / EVRST 10	43.3	6.9
EVRS / EVRST 15	78.0	12.4
EVRS / EVRST 20	130.0	20.7

[1]) Rated liquid and suction vapour capacity is based on evaporating temperature t_e = -40 °C, liquid temperature ahead of the valve t_l = -8 °C and pressure drop across the valve Δp = 0.15 bar.

EVRS / EVRST solenoid valves, Normally Closed (NC)

Ordering



Type	Max. working pressure PS	Connection		Manual stem	Code no.
	[bar g]	Weld [in]	Pipe thread ISO 228/1	[with / without]	
EVRS 3	50	3/8	–	without	032F3080
EVRS 3	50	–	G 1/4	without	032F3081
EVRS 10	50	1/2	–	with	032F3082
EVRST 10	50	1/2	–	with	032F3083
EVRS 15	50	3/4	–	with	032F3084
EVRST 15	50	3/4	–	with	032F3085
EVRS 20	50	1	–	with	032F5437
EVRST 20	50	1	–	with	032F5438

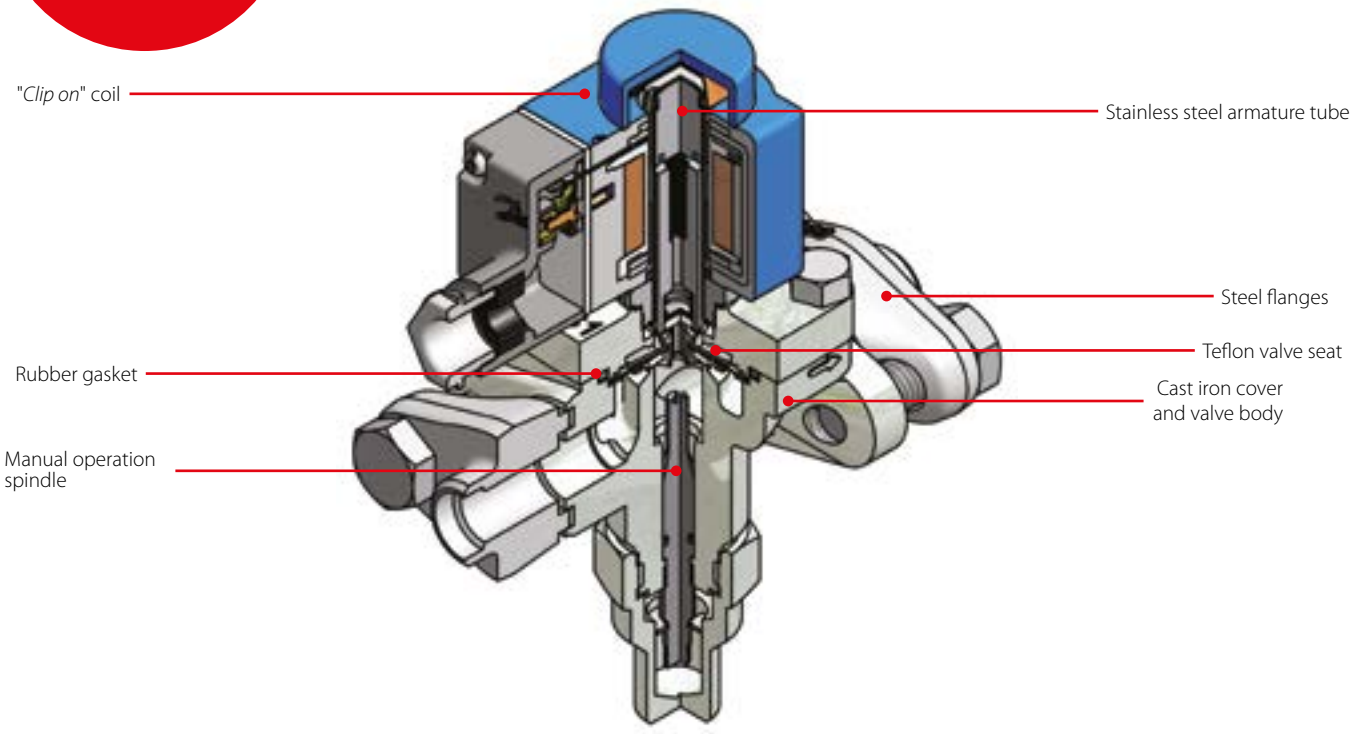
EVRA / EVRAT - Solenoid valves

EVRA and EVRAT are solenoid valves for liquid, suction and hot gas lines with HCFC, HFC or R717 (Ammonia). EVRA is a direct or servo operated valve, EVRAT is an assisted lift, servo operated valve.
EVRA valves are supplied complete or as a parts programme, i.e. valve body, coil and flanges can be ordered separately.
EVRAT is specially designed to open – and stay open – at a pressure drop of 0 bar.

The EVRAT solenoid valve is thus suitable for use in all plants where the required opening differential pressure is 0 bar.
EVRAT is available as a parts programme, i.e. separate valve body, flanges and coil.
EVRAT 10 / EVRAT 15 / EVRAT 20 all have a spindle for manual operation.



Features
EVRA / EVRAT



Facts

- EVRA and EVRAT valves are applicable to HCFC, HFC and R717 (Ammonia)
- EVRA and EVRAT valves use a teflon gasket which ensures great tightness across the valve seat
- EVRA valves have a low pressure drop
- EVRAT valves have a minimum opening differential pressure of 0 (zero)
- EVRA and EVRAT valve range can be used with the wide range of standard Danfoss coils
- Strainer type FA can be mounted directly on the valve body except for EVRA 32 / EVRA 40
- EVRA 3 – EVRA 25 and EVRAT 10 / EVRAT 20 valves offer a wide range of flange connection dimensions in accordance with connection standards DIN, ANSI, SOC, Solder and FPT, and a wide range of connection types
- Butt welding DIN (DIN 2448)
- Butt welding ANSI (ANSI B36.10 schedule 80) (3/8 – 1 1/2 in valve sizes)
- Butt welding ANSI (ANSI B36.10 schedule 40) (2 in valve sizes)
- Socket welding ANSI (ANSI B 16.11)
- Solder connection DIN (DIN 2856)
- Solder connection ANSI (ANSI B 16.22)
- FPT internal thread, NPT (ANSI / ASME B 1.20.1)
- EVRA 32 and EVRA 40 are supplied with integrated flanges for either:
  - Welding DIN (DIN 2448)
  - Welding ANSI (ANSI B 36.10)

Technical data and ordering

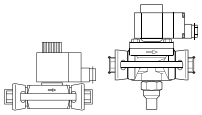
EVRA / EVRAT Solenoid valves, Normally Closed (NC) - separate valve bodies

Technical data

Type	Opening differential pressure with standard coil Δp [bar]				Temperature of medium [°C]	Max. working pressure PS [bar]	K_v value [1] [m³/h]
	Min. [bar]	Max. (=MOPD) liquid [2] [bar]					
		10 W AC	12 W AC	20 W DC			
EVRA 3	0.00	21	25	14	-40 – 105	42	0.23
EVRA 10	0.05	21	25	18	-40 – 105	42	1.5
EVRAT 10	0.00	14	21	16	-40 – 105	42	1.5
EVRA 15	0.05	21	25	18	-40 – 105	42	2.7
EVRAT 15	0.00	14	21	16	-40 – 105	42	2.7
EVRA 20	0.05	21	25	13	-40 – 105	42	4.5
EVRAT 20	0.00	14	21	13	-40 – 105	42	4.5
EVRA 25	0.20	21	25	14	-40 – 105	42	10.0
EVRA 32	0.20	21	25	14	-40 – 105	42	16.0
EVRA 40	0.20	21	25	14	-40 – 105	42	25.0

[1] The K_v value is the water flow in [m³/h] with a pressure drop across the valve of 1 bar, ρ = 1000 kg/m³.
[2] MOPD for media in gas form is approx. 1 bar greater.

EVRA / EVRAT Solenoid valves, Normally Closed (NC) - separate valve bodies



Ordering complete valves without flanges

Type	Connection	Manual stem [with / without]	Coil	Code no. [1]
EVRA 3	See table "*Flange set*"	without	10 W coil with 1 m cable	032F3102xx *)
	See table "*Flange set*"	without	10 W coil with terminal box	032F3103xx *)
EVRA 10	See table "*Flange set*"	without	10 W coil with terminal box	032F6208xx *)
	See table "*Flange set*"	with	10 W coil with 1 m cable	032F6212xx *)
	See table "*Flange set*"	with	10 W coil with terminal box	032F6213xx *)
EVRA 15	See table "*Flange set*"	with	10 W coil with 1 m cable	032F6217xx *)
	See table "*Flange set*"	with	10 W coil with terminal box	032F6213xx *)
EVRA 20	See table "*Flange set*"	with	10 W coil with 1 m cable	032F6222xx *)
	See table "*Flange set*"	with	10 W coil with terminal box	032F6223xx *)

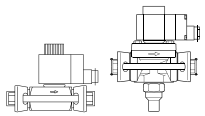
[1] Valve body with gaskets, bolts and 10 W AC coil. Please specify code no., voltage and frequency.
**) Voltage and frequency are given in the form of an appendix number, see table "Appendix numbers".*

Appendix numbers

Voltage [V]	Frequency [Hz]	Energy consumption [W]	Appendix no.
12	50	10	15
24	50	10	16
42	50	10	17
48	50	10	18
115	50	10	22
220 – 230	50	10	31
240	50	10	33
380 – 400	50	10	37
420	50	10	38
24	60	10	14
115	60	10	20
220	60	10	29
240	60	10	30
110	50/60	10	21
220 – 230	50/60	10	32

Technical data and ordering

EVRA / EVRAT



Ordering separate valve bodies

Type	Connection	Manual stem [with / without]	Required coil type	Code no.
EVRA 3	See table "*Flange set*"	without	AC / DC	032F3050
EVRA 10	See table "*Flange set*"	without	AC / DC	032F6211
	See table "*Flange set*"	with	AC / DC	032F6210
EVRAT 10	See table "*Flange set*"	with	AC / DC	032F6214
EVRA 15	See table "*Flange set*"	with	AC / DC	032F6215
EVRAT 15	See table "*Flange set*"	with	AC / DC	032F6216
EVRA 20	See table "*Flange set*"	with	AC	032F6220
	See table "*Flange set*"	with	AC / DC	032F6221
EVRAT 20	See table "*Flange set*"	with	AC / DC	032F6219
EVRA 25	See table "*Flange set*"	without	AC / DC	032F6226
	See table "*Flange set*"	with	AC / DC	032F6225

EVRA

Ordering separate valve bodies with butt weld connections

Type	Connection		Code no.
	DIN [in]	ANSI [in]	
EVRA 32	1 1/4	–	042H1126
	1 1/2	–	042H1131
	–	1 1/4	042H1140
	–	1 1/2	042H1141
EVRA 40	1 1/2	–	042H1128
	2	–	042H1132
	–	1 1/2	042H1142
	–	2	042H1143

EVRA / EVRAT, tongue flange set

Ordering

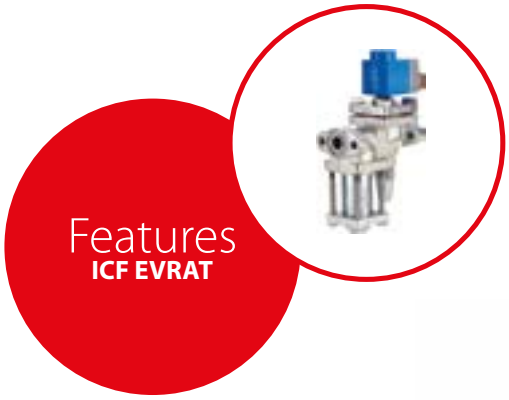
Type	Description	Connection size		Code no.
		[mm]	[in]	
EVRA 3 / EVRA 10 / EVRA 15 EVRAT 10 / EVRAT 15	Butt welding DIN (2448)	10	3/8	027N1112
	Butt welding DIN (2448)	15	1/2	027N1115
	Butt welding DIN (2448)	20	3/4	027N1120
	Butt welding ANSI (B 36.10)	10	3/8	027N2020
	Butt welding ANSI (B 36.10)	15	1/2	027N2021
	Butt welding ANSI (B 36.10)	20	3/4	027N2022
	Socket welding ANSI (B 16.11)	10	3/8	027N2010
	Socket welding ANSI (B 16.11)	15	1/2	027N2011
	Solder DIN (2856)	16	–	027L1116
	Solder DIN (2856)	22	–	027L1122
	Solder ANSI (B 16.22)	–	5/8	027L1117
	Solder ANSI (B 16.22)	–	7/8	027L1123
	FPT internal thread, NPT (ANSI / ASME B 1.20.1)	10	3/8	027G1005
	FPT internal thread, NPT (ANSI / ASME B 1.20.1)	15	1/2	027G1006
EVRA 20 / EVRA 25 / EVRAT 20	Butt welding DIN (2448)	20	3/4	027N1220
	Butt welding DIN (2448)	25	1	027N1225
	Butt welding DIN (2448)	32	1 1/4	027N1230
	Butt welding ANSI (B 36.10)	20	3/4	027N3031
	Butt welding ANSI (B 36.10)	25	1	027N3032
	Butt welding ANSI (B 36.10)	32	1 1/4	027N3033
	Socket welding ANSI (B 16.11)	20	3/4	027N2001
	Socket welding ANSI (B 16.11)	25	1	027N2002
	Soldering DIN (2856)	22	–	027L1222
	Soldering DIN (2856)	28	–	027L1228
	Soldering ANSI (B 16.22)	–	7/8	027L1223
	Soldering ANSI (B 16.22)	–	1 1/8	027L1229
	FPT internal thread, NPT (ANSI / ASME B 1.20.1)	20	3/4	027G1001
	FPT internal thread, NPT (ANSI / ASME B 1.20.1)	25	1	027G1002

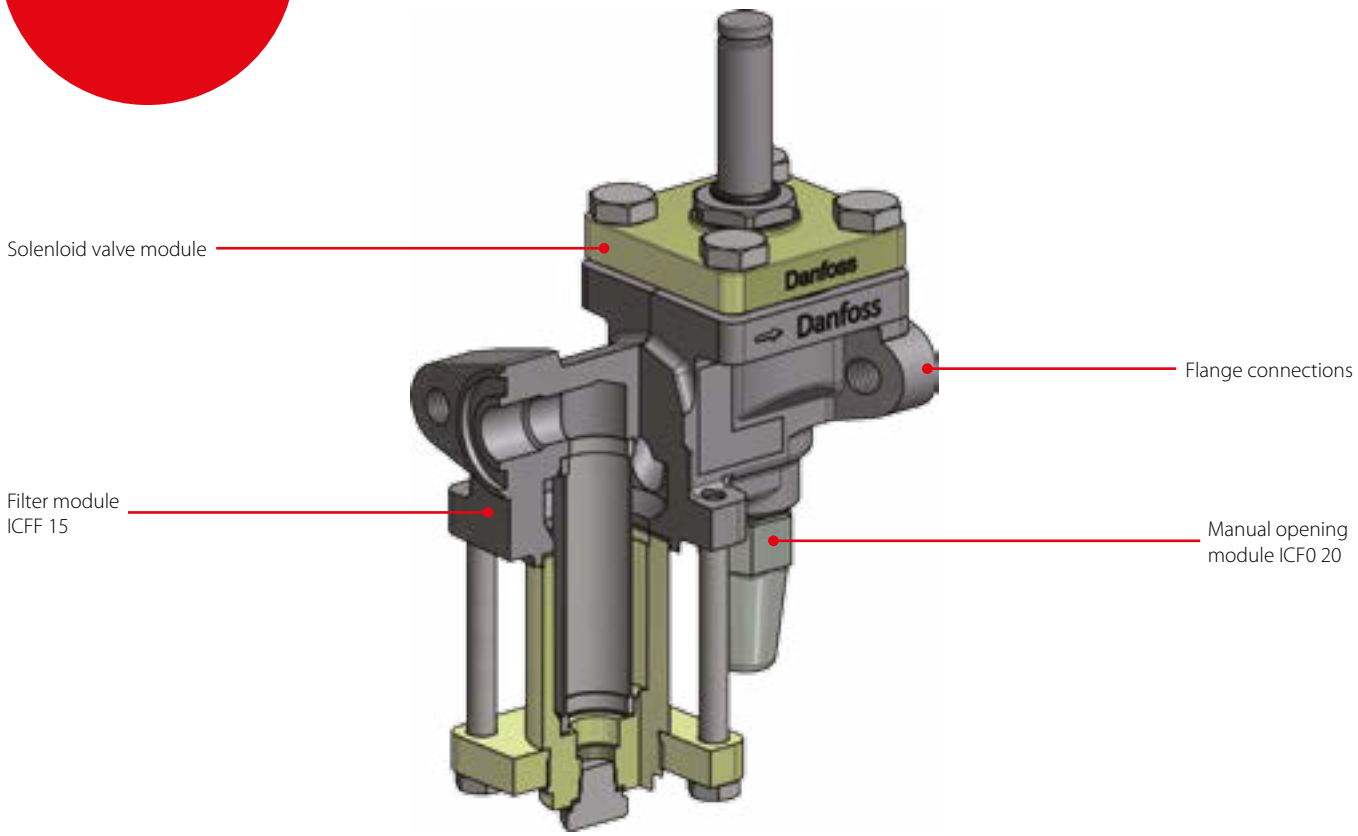
Quick Selection Notes:

ICF EVRAT - FA + solenoid valve

Based on advanced technology the ICF EVRAT retrofit valve incorporates three functions in one housing, which can replace the widely used direct coupled FA + EVRAT, as a drop-in solution.

The two function modules - solenoid valve and manual opener are identical to the function modules in the ICF 20 valve station concept thus facilitating logistics and service.

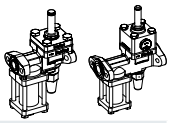




Facts

- Applicable to HCFC, non flammable HFC and R717 (Ammonia)
  The use of ICF EVRAT with flammable hydrocarbons is not recommended
- Designed for industrial refrigeration applications for a maximum working pressure of 42 bar / 610 psig
- Low temperature steel housing
- Low weight and compact design
- The solenoid valve ICFE 20 is designed to open - and stay open at a pressure drop of 0 bar thus suitable for lines with low pressure drop
- UL approved

Technical data and ordering



ICF EVRAT

Technical data

Refrigerants	Applicable to HCFC, non flammable HFC and R717 (Ammonia). The use of ICF EVRAT with flammable hydrocarbons is not recommended
Temperature range	-40 – 105 °C / -40 – 221 °F
Presssure range	The ICF EVRAT is designed for a max. working pressure of 42 bar g / 610 psig
Ambient temperature	-30 °C – 50 °C / -22 °F – 122 °F
Surface protection	The external surface is zinc-TLP treated to provide corrosion protection according to EN ISO 2081:2009 Additional on-site corrosion protection is recommended

Ordering

ICF EVRAT valves are intended as drop-in replacement valves.
To identify the correct code number simply select the same size as the replaced valve.

Type	Solenoid	K_v value [m³/h]	C_v value [US gal/min]	Code no.
ICF 15 EVRAT	ICFE 20	2.4	2.8	027L4517
ICF 20 EVRAT	ICFE 20	3.0	3.5	027L4518
ICF 20 EVRAT	ICFE 20H	3.7	4.3	027L4519

Solenoid coils

The coils are specially designed to operate in the aggressive environment of high humidity and temperature fluctuations that you find in most refrigeration systems.

The Clip-on fastening system ensures a faultless installation and makes the coils easy to mount and dismount. A Danfoss Clip-on coil can be mounted without any tools at all, and it is simple to dismount the coil by means of a screwdriver.

The Clip-on coils are available for the entire range of Danfoss solenoid valves for refrigeration, freezing and air conditioning purposes.





Clip-on system for easy and fast mounting and demounting

Many voltage and frequency combinations for flexible installation worldwide

Many power versions for high MOPD performance on different valve types

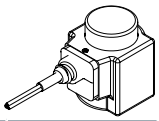
Terminal box, DIN plug or cable for flexible electrical installation

Facts

- Encapsulated coils with long operating life, even under extreme conditions.
- Standard coils for AC or DC
- Standard coils available with 3-core cable, terminal box or DIN plugs.
- Standard coils from 12 V to 420 V, 50, 60 or 50 / 60 Hz.
- Coil version for max. opening differential pressure (MOPD) of up to 38 bar.
- Coils can be fitted without the use of tools.
- ATEX approved coil version for use in EX zone 2

Technical data and ordering

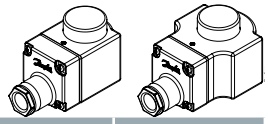
Solenoid coil with 1m 3 - core cable IP67



Ordering

Coil type	Valve type	Power consumption	Frequency [Hz]	Voltage [V] AC	Voltage [V] DC	Code no.
BF	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVRH 40 EVRC EVRA EVRAT EVRS / EVRST EVM (NC)	Holding: 10 W 21 VA Inrush: 44 VA	50	24	–	018F6257
			50	220 / 230	–	018F6251
			50	240	–	018F6252
			50	380 / 400	–	018F6253
			60	24	–	018F6265
			60	115	–	018F6260
			60	220	–	018F6264
			50/60	110	–	018F6280
			50/60	220 / 230	–	018F6282

Solenoid coil with terminal box IP67



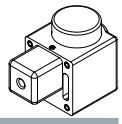
Ordering

Coil type	Valve type	Power consumption	Frequency [Hz]	Voltage [V] AC	Voltage [V] DC	Code no.
BE	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVRH 40 EVRC EVRA EVRAT EVRS / EVRST EVM (NC)	Holding: 10 W 21 VA Inrush: 44 VA	50	12	–	018F6706
			50	24	–	018F6707
			50	42	–	018F6708
			50	48	–	018F6709
			50	115	–	018F6711
			50	220 / 230	–	018F6701
			50	240	–	018F6702
			50	380 / 400	–	018F6703
			50	420	–	018F6704
			60	24	–	018F6715
			60	115	–	018F6710
			60	220	–	018F6714
			60	240	–	018F6713
			50 / 60	110	–	018F6730
			50 / 60	220 / 230	–	018F6732
BG	EVR 3 – EVR 40 EVRC EVRA EVRAT EVRS / EVRST EVM (NC / NO)	Holding: 12 W 26 VA Inrush: 55 VA	50	24	–	018F6807
			50	48	–	018F6809
			50	110	–	018F6811
			50	220 / 230	–	018F6801
			50	240	–	018F6802
			50	380 / 400	–	018F6803
			60	24	–	018F6815
			60	110	–	018F6813
			60	220	–	018F6814
	EVR 2 – EVR 15 (NC) EVR 25 – EVR 40 (NC/NO) EVR 6 – EVR 15 (NO) EVRC 10 – EVRC 15 EVRA 3 – EVRA 15 (NC) EVRA 25 – EVRA 40 (NC) EVRAT 10 – EVRAT 15 (NC) EVRS / EVRST 3 – EVRS 15 EVM (NC / NO)	20 W	–	–	12	018F6856
			–	–	24	018F6857
			–	–	48	018F6859
			–	–	110	018F6860
			–	–	115	018F6861
			–	–	220	018F6851
	EVR 20 – EVR 22 (NC / NO) EVRC 20 EVRA 20 EVRAT 20 EVRST 20	20 W	–	–	12	018F6886
			–	–	24	018F6887
			–	–	48	018F6889
			–	–	110	018F6890
			–	–	220	018F6881

See "Opening differential pressure" under "Technical data" for the valve concerned.
When replacing a coil with terminal box, it is sufficient to change the coil unit itself. Therefore, order coil with DIN plugs and protective cap.

Technical data and ordering

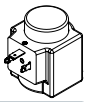
Solenoid coil with DIN spade and protection cap IP20



Ordering

Coil type	Valve type	Power consumption	Frequency [Hz]	Voltage [V] AC	Voltage [V] DC	Code no.
BE	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVRH 40 EVRC EVRA EVRAT EVRS / EVRST EVM (NC)	Holding: 10 W 21 VA Inrush: 44 VA	50	24	–	018F6182
			50	220 / 230	–	018F6176
			50	240	–	018F6177
			50	420	–	018F6179
			60	115	–	018F6185
			60	220	–	018F6189
			50/60	110	–	018F6192
			50/60	220 / 230	–	018F6193

Solenoid coil with DIN spade IP00*)

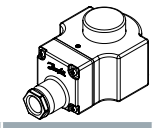


Ordering

Coil type	Valve type	Power consumption	Frequency [Hz]	Voltage [V] AC	Voltage [V] DC	Code no.
BB	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVRH 40 EVRC EVRA EVRAT EVRS / EVRST EVM (NC)	Holding: 10 W 21 VA Inrush: 44 VA	50	24	–	018F7358
			50	115	–	018F7361
			50	220 / 230	–	018F7351
			50	240	–	018F7352
			50 / 60	110	–	018F7360
			50 / 60	220 / 230	–	018F7363

See "Opening differential pressure" under "Technical data" for the valve concerned.
When replacing a coil with terminal box, it is sufficient to change the coil unit itself. Therefore, order coil with DIN plugs and protective cap.
**) Can only be used with DIN plug.*

Special solenoid coil with terminal box IP67

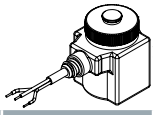


Ordering

Coil type	Valve type	Power consumption	Frequency [Hz]	Voltage [V] AC	Voltage [V] DC	Code no.
BN	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 4 – EVR 40 EVRC / EVRA / EVRAT / EVRS / EVRST / EVM (NC)	Holding: 20 W 45 VA Inrush: 65 VA	50	24	–	018F6901 [1])
			60	24	–	018F6902 [1])
			50	230	–	018F6905 [1])

[1]) *Recommended use for EVRH with high MOPD (38 bar).*

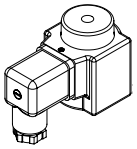
Solenoid coils with ATEX (Zone 2) approval IP65



Ordering

Coil type	Coil for valve type	Power consumption	Frequency [Hz]	Voltage [V] AC	Code no. With 1 m cable
BV	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRC EVRA / EVRAT EVRS / EVRST EVM (NC / NO)	Holding: 11 W 21 VA Inrush: 44 VA	50	24	018Z6120
			50	110	018Z6121
			50	230	018Z6122
			50	240	018Z6123
			60	24	018Z6125
			60	230	018Z6127

Coil with DIN plug



Ordering

Terminal box	With built-in light emitting indicator diode for solenoid valves (only for AC)	018Z0089
DIN plug	Enclosure IP65, EN 175301-803A	042N0156

Technical data and ordering



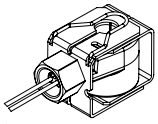
BJ coils - Junction box NEMA 2 ~ (UL listed) IP12 – IP32

Ordering

Coil type	Valve type	Power consumption [W]	Frequency [Hz]	Voltage [V] AC	Wire length		Code no.
					[in]	[cm]	
BJ	AKV / EVR EVRH / EVRA EVRAT / EVRS EVRST / EVM EV220B 6-50 EV210B EV215B EV225B EV250B	14	50 / 60	24	7	18	018F4100
		16 15	50 / 60 60	110 120	7	18	018F4110
		14 17	60 50	208 – 240 230	7	18	018F4120
	AKVH / EVRH	16	60	120	7	18	018F4130
		16	60	208	7	18	018F4132
		16	60	240	7	18	018F4134

Permissible voltage variation
Alternating current (AC):
50 Hz and 60 Hz: -10% – 15%
50/60 Hz: +/- 10%

Insulation of coil wire
Class H according to IEC 85
Enclosure. IEC 60529
Ambient temperature:
-40 – 50 °C / -40 – 122 °F



BX coils - Conduit boss NEMA 4 ~ (UL listed) IP54

Ordering

Coil type	Valve type	Power consumption [W]	Frequency [Hz]	Voltage [V] AC	Wire length		Code no.
					[in]	[cm]	
BX	AKV / EVR EVRH / EVRA EVRAT / EVRS EVRST / EVM EV220B 6-50 EV210B EV215B EV225B EV250B	14	50 / 60	24	18	46	018F4102
		14	50 / 60	24	71	180	018F4103
		14	50 / 60	24	98	250	018F4104
		16 15	50 / 60 60	110 120	18	46	018F4112
					36	91	018F4113
					71	180	018F4114
					98	250	018F4115
		14 17	60 50	208 – 240 230	18	46	018F4122
					98	250	018F4123
	AKVH / EVRH	16	60	120	98	250	018F4131
		16	60	208	98	250	018F4133
		16	60	240	98	250	018F4135

Permissible voltage variation
Alternating current (AC):
50 Hz and 60 Hz: -10% – 15%
50/60 Hz: +/- 10%

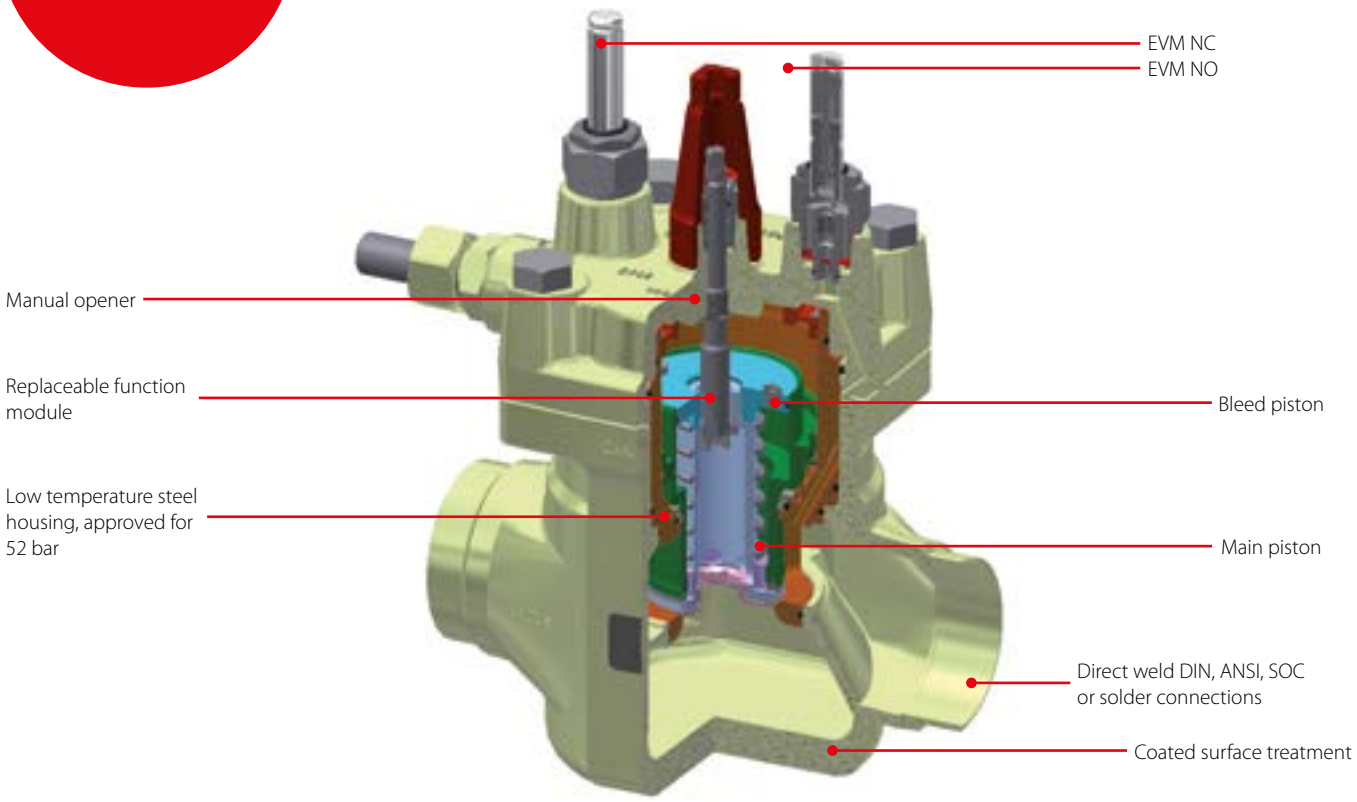
Insulation of coil wire
Class H according to IEC 85
Enclosure. IEC 60529
Ambient temperature:
-40 – 50 °C / -40 – 122 °F

ICLX, 2-step solenoid valve

ICLX 2-step solenoid valves are used in suction lines for opening against a high differential pressure, e.g. after hot gas defrost in large industrial refrigeration systems with ammonia, fluorinated refrigerants or CO_2. ICLX can be used in chemical and petro-chemical applications.
ICLX servo valves belong to the ICV (Industrial Control Valve) family.
The ICLX valve is factory configured to open in 2 steps.
By following a simple procedure the valve can be configured to open in 1 step only.

In 2-step configuration, step 1 opens to approx. 10% of the capacity after the pilot solenoid valves are energised.
Step 2 opens automatically when the pressure differential across the valve has decreased to approx. 1.25 bar / 18 psig.
The ICLX servo valve is based on five main components:
Valve body, top cover, function module and 2 pilot solenoid valves.
The top cover and function module are factory-assembled.





Facts

- Designed for industrial refrigeration applications for a maximum working pressure of 52 bar / 754 psig
- Modular concept
  - Each valve body is available with several different connection types and sizes
  - Valve overhaul is performed by replacing the function module
  - Possible to convert ICLX servo to ICM motor valve
- Low weight and compact design
- Low temperature steel body
- Direct coupled connections
- Connection types include butt weld, socket weld, solder and threaded connections
- Easy change from 2 to 1 step opening
- Manual operating spindle
- Only one signal needed to control both EVM NC and EVM NO coils
- Refrigerants:
  - Applicable to all common refrigerants including R717 and R744 (CO_2) and non-corrosive gases / liquids. Use with flammable hydrocarbons is not recommended; please contact Danfoss
- Temperature range:
  -60 – 120 °C / -76 – 248 °F
- Surface protection
  - The external surface is zinc-plated to provide good corrosion protection

The ICLX concept

The ICLX concept has been developed on a modular principle. This makes it possible to combine function modules and top covers with valve bodies, which are available in many different sizes and with a variety of connection options.

The valve body

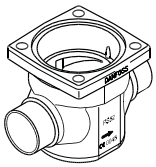
There are seven valve bodies available.



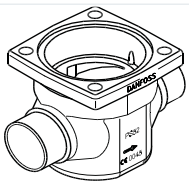
ICV 32



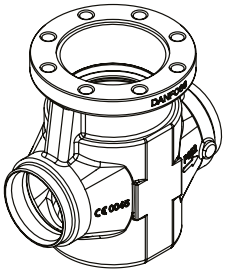
ICV 40



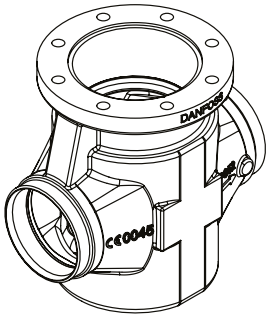
ICV 50



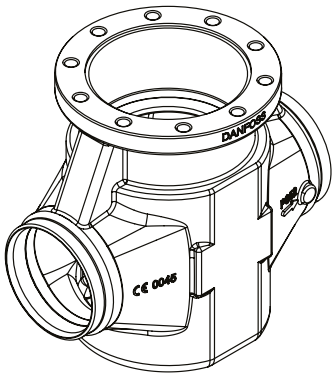
ICV 65



ICV 100



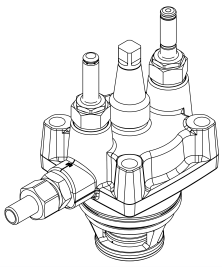
ICV 125



ICV 150

Top / function module

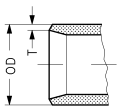
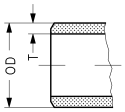
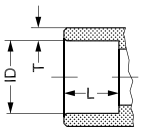
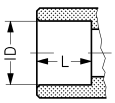
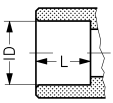
Top covers are fitted with external connector, EVM NC and EVM NO pilots and a complete function module.



Coils

Both coils to be IP67.
EVM NC: 10 W AC (or higher) for MOPD up to 21 bar - EVM NC: 20W AC for MOPD 21– 40 bar.
EVM NO: 10 W AC (or higher).

Valve bodies in the sizes ICV 32–ICV 65 are available with a range of nominal through oversized connection sizes and types.
ICV 100-ICV 150 are available in butt-weld DIN and butt-weld ANSI nominal sizes.

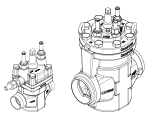
D	A	SOC	SD	SA
				
Butt-weld DIN	Butt-weld ANSI	Socket weld ANSI	Solder DIN	Solder ANSI

Capacities

	ICLX 32	ICLX 40	ICLX 50	ICLX 65	ICLX 100	ICLX 125	ICLX 150
K_v value [m³/h]	22	29	47	82	151	225	390
C_v value [US gal/min]	25.5	33.6	54.5	95	175	261	452

Ordering

ICLX



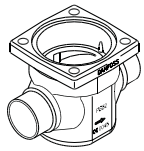
Ordering factory assembled valve including external connector, EVM NC and EVM NO pilot

Type	Available connections		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICLX 32	1 ¼	32	Butt weld, EN 10220	D	027H3040
	1 ¼	32	Butt weld, ANSI (B 36.10)	A	027H3041
	1 ¼	32	Socket weld, ANSI (B 16.11)	SOC	027H3042
ICLX 40	1 ½	40	Butt weld, EN 10220	D	027H4040
	1 ½	40	Butt weld, ANSI (B 36.10)	A	027H4041
	1 ½	40	Socket weld, ANSI (B 16.11)	SOC	027H4042
ICLX 50	2	50	Butt weld, EN 10220	D	027H5040
	2	50	Butt weld, ANSI (B 36.10)	A	027H5041
	2	50	Socket weld, ANSI (B 16.11)	SOC	027H5042
ICLX 65	2 ½	65	Butt weld, EN 10220	D	027H6040
	2 ½	65	Butt weld, ANSI (B 36.10)	A	027H6041
	2 ½	65	Socket weld, ANSI (B 16.11)	SOC	027H6042
ICLX 80	3	80	Butt weld, EN 10220	D	027H8040
	3	80	Butt weld, ANSI (B 36.10)	A	027H8042
ICLX 100	4	100	Butt weld, EN 10220	D	027H7147
	4	100	Butt weld, ANSI (B 36.10)	A	027H7148
ICLX 125	5	125	Butt weld, EN 10220	D	027H7157
	5	125	Butt weld, ANSI (B 36.10)	A	027H7158
ICLX 150	6	150	Butt weld, EN 10220	D	027H7167
	6	150	Butt weld, ANSI (B 36.10)	A	027H7168

Ordering

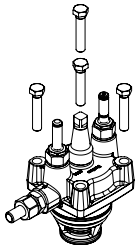
Ordering from the parts programme (valve body + top / function module)

Example:



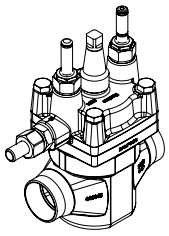
Valve body 50 D (2 in)
027H5120
Table I

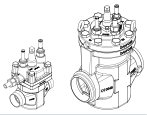
+



Top / function module
ICLX 50
027H5204
Table II

=





ICLX 32

ICV 32 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 32	1 1/4	32	Butt weld, EN 10220	D	027H3120
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H3121
	1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	027H3122
	1 3/8	35	Solder connection, DIN (2856)	SD	027H3123
	1 1/2	40	Butt weld, EN 10220	D	027H3125
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H3126
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H3127
	1 5/8	42	Solder connection, DIN (2856)	SD	027H3128

ICLX 32 top / function module [1])

Type		Code no.
ICLX 32		027H3204

ICLX 40

ICV 40 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 40	1 1/2	40	Butt weld, EN 10220	D	027H4120
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H4121
	1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	027H4122
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H4124
	1 5/8	42	Solder connection, DIN (2856)	SD	027H4123
	2	50	Solder connection, DIN (2856)	D	027H4126
	2	50	Butt weld, ANSI (B 36.10)	A	027H4127

ICLX 40 top/function module [1])

Type		Code no.
ICLX 40		027H4204

ICLX 50

ICV 50 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 50	2	50	Butt weld, EN 10220	D	027H5120
	2	50	Butt weld, ANSI (B 36.10)	A	027H5121
	2	50	Socket weld, ANSI (B 16.11)	SOC	027H5122
	2 1/8	54	Solder connection, DIN (2856)	SD	027H5123
	2 1/2	65	Butt weld, EN 10220	D	027H5124
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H5125

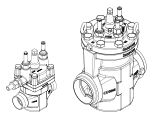
ICLX 50 top / function module [1])

Type		Code no.
ICLX 50		027H5204

[1]) Top / function module includes external connector, EVM N C and EVM N O pilots, gaskets and O-rings.

Ordering

ICLX 65



ICV 65 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 65	2 1/2	65	Butt weld, EN 10220	D	027H6120
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H6121
	2 1/2	65	Socket weld, ANSI (B 16.11)	SOC	027H6123
	2 5/8	67	Solder connection, ANSI (B 16.22)	SA	027H6125
	3	76	Solder connection, DIN (2856)	SD	027H6124
	3	80	Butt weld, EN 10220	D	027H6126
	3	80	Butt weld, ANSI (B 36.10)	A	027H6127

ICLX 65 top / function module [1])

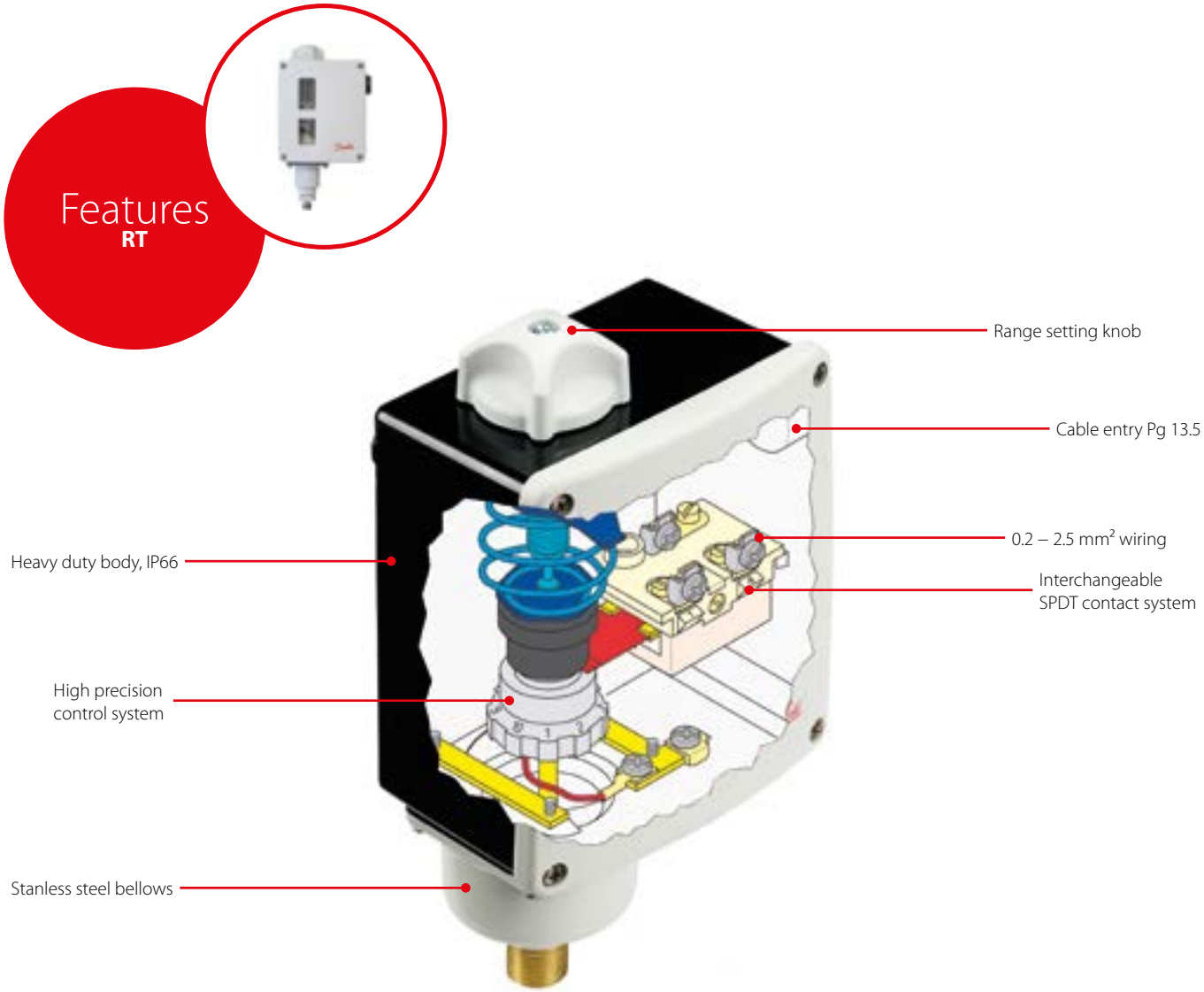
Type		Code no.
ICLX 65		027H6204

[1]) Top / function module includes external connector, EVM N C and EVM N O pilots, gaskets and O-rings.

Quick Selection Notes:

RT - Pressure switch

RT pressure switches contain a pressure operated single-pole changeover contact, the position of which depends on the pressure in the inlet connection and the set scale value.
The RT series includes pressure switches for general applications within industrial and maritime refrigeration, as well as differential pressure switches for neutral zone regulation, and special pressure switches with gold-plated contact surfaces for PLC applications. Versions of RT are available for R717, HCFC and non-flammable HFC refrigerants.



Facts

Application:
- General applications within industrial and marine refrigeration

- Pressure switches for fluorinated refrigerants and R717 (NH_3)
- Wide regulating range
- Suitable for both alternating and direct current (AC and DC)
- Interchangeable contact system
- Special versions with gold plated contact surfaces for PLC applications
- Versions for neutral zone regulation
- High stability and accuracy
- Long operating life time

- Enclosure: IP66 to EN 60529 / IEC 60529, except for versions with ext. reset which are IP54
- Insulation 400 V
- Ambient temperature: -50 – 70 °C for housing
- Cable connection: Pg 13.5
- Cable diameter: 6 – 14 mm

Technical data and ordering

RT pressure switches for HCFC and non-flammable HFC refrigerants

Ordering

Type	Pressure	Regulation range [bar]	Differential Δp [bar]	Reset	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Code no.
RT 1	Low	-0.8 – 5	0.5 – 1.6	Auto	22	25	1/4 in / 6 mm flare	017-524566
	Low	-0.8 – 5	0.5	Man. (Min.)	22	25	1/4 in / 6 mm flare	017-524666
RT 200	Low	0.2 – 6	0.25 – 1.2	Auto	22	25	G 3/8 A [1]	017-523766
RT 117L	High	10 – 30	1 – 4	Auto	42	47	G 3/8 A [1]	017-529566

[1]) G ext. thread, ISO 228-1

RT safety pressure switches for R717 (NH_3), HCFC and non-flammable HFC refrigerants

Ordering

Type	Pressure	Regulation range [bar]	Differential Δp [bar]	Reset	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Code no.
RT 1A	Low	-0.8 – 5	0.5 – 1.6	Auto	22	25	1/4 in / 6 mm flare	017-501966
	Low	-0.8 – 5	0.5 – 1.6	Auto	22	25	G 3/8 A [1]	017-500166
	Low	-0.8 – 5	0.5	Man. (Min.)	22	25	1/4 in / 6 mm flare	017-502766
	Low	-0.8 – 5	0.5	Man. (Min.)	22	25	G 3/8 A [1]	017-500266
	Low	-0.8 – 5	1.3 – 2.4	Auto	22	25	G 3/8 A [1]	017-500766
RT 5A	High	4 – 17	1.2 – 4	Auto	22	25	1/4 in / 6 mm flare	017-505266
	High	4 – 17	1.2 – 4	Auto	22	25	G 3/8 A [1]	017-504666
	High	4 – 17	1.3	Man. (Max.)	22	25	1/4 in / 6 mm flare	017-506166
	High	4 – 17	1.3	Man. (Max.)	22	25	G 3/8 A [1]	017-504766

[1]) G external thread, ISO 228-1

RT safety pressure switches with adjustable neutral zone for R717 (NH_3) *), HCFC and non-flammable HFC refrigerants

Ordering

Type	Pressure	Regulation range [bar]	Mechanical differential Δp [bar]	Neutral zone Δp [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Code no.
RT 1AL	Low	-0.8 – 5	0.2	0.2 – 0.9	22	25	cutting ring ø6 mm	017L001666
	Low	-0.8 – 5	0.2	0.2 – 0.9	22	25	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017L003366
RT 200L	Low	0.2 – 6	0.25	0.25 – 0.7	22	25	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017L003266
RT 5AL	High	4 – 17	0.35	0.35 – 1.4	22	25	cutting ring ø6 mm	017L001766 [2])
	High	4 – 17	0.35	0.35 – 1.4	22	25	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017L004066 [2])
RT 117L	High	10 – 30	1	1 – 3	42	47	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017L004266 [2])

[1]) G external thread, ISO 228-1
[2]) Without nipple
*) Only types with letter A are suitable for R717.

RT differential pressure switches for R 717(NH_3) *), HCFC and non-flammable HFC refrigerants

Ordering

Type	Regulation range [bar]	Mechanical differential Δp [bar]	Operating range for LP bellows [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Code no.
RT 260A	0.5 – 4	0.3	-1 – 18	22	25	cutting ring ø6 mm	017D001466
	0.5 – 4	0.3	-1 – 18	22	25	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017D002166
	0.5 – 4	0.3	-1 – 18	22	25	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017D002266 [2])
	0.5 – 6	0.5	-1 – 36	42	47	cutting ring ø6 mm	017D001566
	0.5 – 6	0.5	-1 – 36	42	47	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017D002366
	1.5 – 11	0.5	-1 – 31	42	47	cutting ring ø6 mm	017D001666
	1.5 – 11	0.5	-1 – 31	42	47	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017D002466
RT 262A	0.1 – 1.5	0.1	-1 – 9	11	13	cutting ring ø6 mm	017D001366
	0.1 – 1.5	0.1	-1 – 9	11	13	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017D002566
RT 265 [3])	1 – 6	0.5	-1 – 36	42	47	G 3/8 A [1] + weld nipple ø6.5 / 10 mm	017D007266

[1]) G external thread, ISO 228-1
[2]) Manual reset
[3]) Filter monitor: Alarm Δp = 0.8 bar, cut-out Δp = 1 bar (factory setting)
*) Only types with letter A are suitable for R717.

Technical data and ordering

RT differential pressure switches with adjustable neutral zone for R 717(NH_3), HCFC and non-flammable HFC refrigerants

Ordering

Type	Regulation range [bar]	Mechanical differential Δp [bar]	Adjustable Neutral zone [bar]	Operating range for LP bellows [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Code no.
RT 262 AL	0.1 – 1.5	0.1	1 – 0.33	-1 – 9	11	13	G 1/2 A [1]) + weld nipple ø6.5 / 10 mm	017D004366

[1]) G external thread, ISO 228-1

RT safety pressure switches with EN 12263 approval and CE marked according to PED, Pressure Equipment Directive

Ordering

Type	Pressure	Regulation range [bar]	Differential (fixed) Δp [bar]	Reset	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Code no.
RT 6W [2])	High	5 – 25	3	Auto	28 [4])	38	1/4 in / 6 mm flare	017-503166
RT 6B [2])	High	10 – 28	1	Man. (Max.)	28 [4])	38	1/4 in / 6 mm flare	017-503466
RT 6S [2])	High	10 – 28	1	Man. (Max.)	28 [4])	38	1/4 in / 6 mm flare	017-507566
RT30AW [3])	High	1 – 10	0.8	Auto	22	25	G 1/2 A [1])	017-518766
RT30AB [3])	High	1 – 10	0.4	Man. (Max.)	22	25	G 1/2 A [1])	017-518866
RT30AS [3])	High	1 – 10	0.4	Man. (Max.)	22	25	G 1/2 A [1])	017-518966
RT6AW [3])	High	5 – 25	3	Auto	28 [4])	38	cutting ring ø6 mm	017-513166
	High	5 – 25	3	Auto	28 [4])	38	G 3/8 A [1]) + weld nipple ø6.5 / 10 mm	017-503266
RT6AB [3])	High	10 – 28	1.5	Man. (Max.)	28 [4])	38	cutting ring ø6 mm	017-513366
	High	10 – 28	1.5	Man. (Max.)	28 [4])	38	G 3/8 A [1]) + weld nipple ø6.5 / 10 mm	017-503566
RT6AS [3])	High	10 – 28	1.5	Man. (Max.)	28 [4])	38	cutting ring ø6 mm	017-514666
	High	10 – 28	1.5	Man. (Max.)	28 [4])	38	G 3/8 A [1]) + weld nipple ø6.5 / 10 mm	017-507666

[1]) G external thread, ISO 228-1
[2]) Pressure controls for fluorinated refrigerants
[3]) Pressure controls for HCFC and non-flammable HFC refrigerants
[4]) Max. working pressure acc. to PED is limited to 28 bar. If the unit is going to be used outside PED regulation, then MWP may be increased to 34 bar.

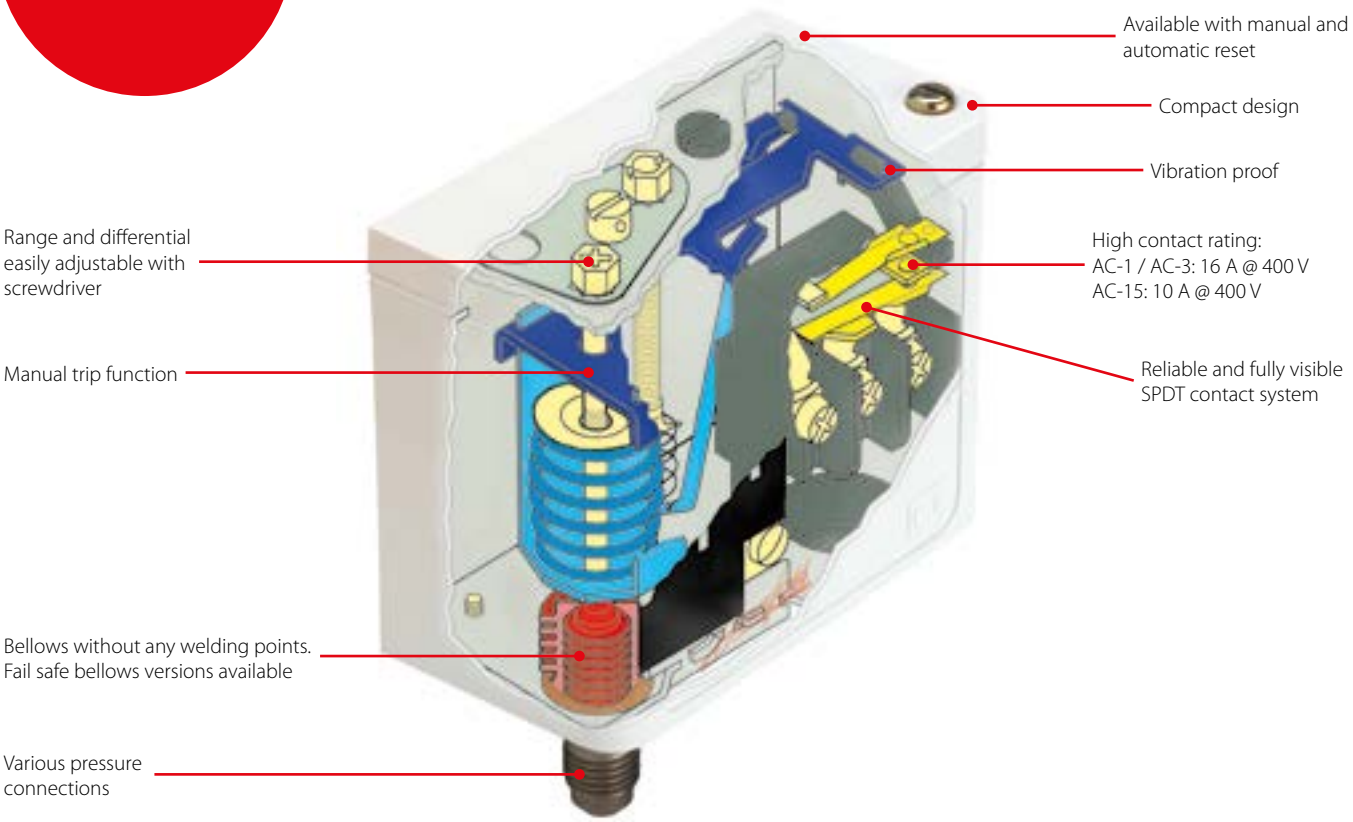
Quick Selection Notes:

KP - Pressure switch

KP pressure switches are designed to protect refrigeration systems from excessively high discharge pressures, excessively low suction pressures, to start / stop compressors or to operate fans of aircooled condensers.

The enhanced contact system for 16 A makes it possible to operate electrical motors up to 2 kW directly, without the use of contactors. KP pressure switches are available in IP30 and IP44 enclosures. Versions of KP are available for applications with HCFC and non-flammable HFC refrigerants, ammonia or hydrocarbons.



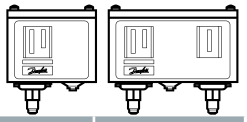


Facts

Application: Food Retail, Heavy Commercial Refrigeration, Light Commercial Refrigeration, Commercial Air Conditioning, Food Processing and Storage.

- Easy to handle compact design with large and visible scale plates
- Vibration and shock resistant
- Accurate and reliable compressor operation due to excellent electro-mechanical function
- High reliability both electrically and mechanically-a KP switch can be connected directly to a single-phase AC motor of up to approximately 2 kW or installed in the control circuit of DC motors and large AC motors
- Easy to install electrical connection which also facilitates rack mounting
- Bellows without any welding points, which makes them stress free and completely tight
- Wide range of approvals - Danfoss offers a wide range of approval suited for specific applications and geographical markets
- The KP pressure switches can be used for all HCFC and non-flammable HFC refrigerants
- The KP-A pressure switches can be used for R717 and all above refrigerants
- The KP-E pressure switches can be used for HC, HCFC and HFC refrigerants
- Available with flare, solder or capillary tube connections
- Pressure switches PED 97 / 23 / EC approved available
- Wide pressure ranges
  The programme covers working ranges:
  -0.9 – 46.5 bar / -1.3 – 674 psi
- Versions with IP30 enclosure rating can be updated to IP44 or IP55 enclosure rating using top plate (IP44) or IP55 enclosure (IP55), available as accessories

Technical data and ordering



KP pressure switches for HCFC and non-flammable HFC refrigerants

Ordering

Type	Pressure	Low pressure (LP)		High pressure (HP)		Reset		Contact System	Connection type	Code no.
		Regulating range [bar]	Differential Δp [bar]	Regulating range [bar]	Differential Δp [bar]	Low pressure LP	High pressure HP			
KP 1	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-110166 [3]
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1/4 in / ODF solder	060-111266 [3]
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	6 mm / ODF solder	060-111066 [3]
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-114166 [1] [3]
	Low	-0.9 – 7.0	0.7	–	–	Man. (Min.)	–	SPDT	1/4 in / 6 mm flare	060-110366
	Low	-0.9 – 7.0	0.7	–	–	Man. (Min.)	–	SPDT	1/4 in / ODF solder	060-111166
	Low	-0.9 – 7.0	0.7	–	–	Man. (Min.)	–	SPDT	6 mm / ODF solder	060-110966
KP 2	Low	-0.2 – 5.0	0.4 – 1.5	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-112066 [3]
	Low	-0.2 – 5.0	0.4 – 1.5	–	–	Auto	–	SPDT	6 mm / ODF solder	060-112366 [3]
KP 5	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	1/4 in / 6 mm flare	060-117166 [3]
	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	1/4 in / ODF solder	060-117966 [3]
	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	6 mm / ODF solder	060-117766 [3]
	High	–	–	8 – 32	3	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-117366
	High	–	–	8 – 32	3	–	Man. (Max.)	SPDT	1/4 in / ODF solder	060-118066
KP 15	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP signal	1/4 in / 6 mm flare	060-124166 [3]
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP signal	1/4 n / ODF solder	060-125466 [3]
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP signal	1/4 in / 6 mm flare	060-124366
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP signal	1/4 in / 6 mm flare	060-114866 [1]
	Dual	-0.9 – 7.0	0.7	8 – 32	4	Man. (Min.)	Man. (Max.)	SPDT+LP signal	1/4 in / 6 mm flare	060-124566
	Dual	-0.9 – 7.0	0.7	8 – 32	4	Conv. [2]	Conv. [2]	SPDT+LP signal	1/4 in / 6 mm flare	060-126166
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-126566 [3]
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	1/4 n / ODF solder	060-129966 [3]
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-126466
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP and HP signal	1/4 n / ODF solder	060-128466
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Conv. [2]	Conv. [2]	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-115466 [3]
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Conv. [2]	Conv. [2]	SPDT+LP and HP signal	1/4 n / ODF solder	060-001066 [3]
	Dual	-0.9 – 7.0	0.7	8 – 32	4	Conv. [2]	Conv. [2]	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-122066
KP 6W [4]	High	–	–	8 – 42	4 – 10	–	Auto	SPDT	1/4 in / 6 mm flare	060-519066 [3]
KP 6B [4]	High	–	–	8 – 42	4	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-519166
KP 7W [4]	High	–	–	8 – 32	4 – 10	–	Auto	SPDT	1/4 in / 6 mm flare	060-119066 [3]
	High	–	–	8 – 32	4 – 10	–	Auto	SPDT	6 mm / ODF solder	060-120366 [3]
KP 7B [4]	High	–	–	8 – 32	4	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-119166
KP 7S [4]	High	–	–	8 – 32	4	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-119266 [3]
KP 7BS [4]	Dual	–	–	8 – 32	4	–	Man. (Max.)	SPST	1/4 in / 6 mm flare	060-120066
KP 17W [4]	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-127566 [3]
	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	6 mm / ODF solder	060-127666 [3]
KP 17W [4]	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Auto	SPDT+LP signal	1/4 in / 6 mm flare	060-126766 [3]
KP 17B [4]	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-126866
	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Man. (Max.)	SPDT	6 mm / ODF solder	060-127466
KP 17WB [4]	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Conv. [2]	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-539766 [3] [5]

[1] Pressure switches with gold-plated contacts
[2] Conv.: optional automatic or manual reset
[3] Enclosure IP44
[4] W = PSH (pressure switch), B = PZH (pressure switch with ext. reset), S = PZHH (pressure switch with int. reset)
[5] Factory setting: LP side: range = 1 bar P_e, diff. = 1 bar; HP side: range = 18 bar P_e, diff. = 4 bar fixed

Technical data and ordering

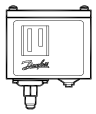
KP pressure switches for R717, HCFC and non-flammable HFC refrigerants

Ordering

Type	Pressure	Low pressure (LP)		High pressure (HP)		Reset		Contact System	Connection type	Code no.
		Regulating range [bar]	Differential Δp [bar]	Regulating range [bar]	Differential Δp [bar]	Low pressure LP	High pressure HP			
KP 1A	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	M10 × 0.75	060-116266
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1 m cap. tube with M10 × 0.75	060-116066 [2]
	Low	-0.9 – 7.0	0.7	–	–	Man. (Min.)	–	SPDT	1 m cap. tube with M10 × 0.75	060-116166
KP 5A	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	1 m cap. tube with M10 × 0.75	060-123066 [2]
	High	–	–	8 – 32	3	–	Man. (Max.)	SPDT	M10 × 0.75	060-115366
	High	–	–	8 – 32	3	–	Man. (Max.)	SPDT	1 m cap. tube with M10 × 0.75	060-123166
KP 15A	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	M10 × 0.75	060-129566
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	1 m cap. tube with M10 × 0.75	060-129366 [2]
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP and HP signal	M10 × 0.75	060-129666
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP and HP signal	1 m cap. tube with M10 × 0.75	060-129466
	Dual	-0.9 – 7.0	0.7	8 – 32	4	Conv. [1]	Conv. [1]	SPDT+LP signal	1 m cap. tube with M10 × 0.75	060-128366
KP 7ABS	Dual	–	–	8 – 32	Fixed 4	Man. (Max.)	Man. (Max.)	SPST	1 m cap. tube with M10 × 0.75	060-120566

[1]) Conv.: optional automatic or manual reset
[2]) Enclosure IP44

KP pressure switches for HCFC, HFC and HC refrigerants



Ordering

Type	Pressure	Low pressure (LP)		High pressure (HP)		Reset		Contact System	Function *)	Code no.
		Regulating range [bar]	Differential Δp [bar]	Regulating range [bar]	Differential Δp [bar]	Low pressure LP	High pressure HP			Connection ¼ in ODF solder
KP 1E	Low	- 0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	PSL	060-530066
KP 1E	Low	- 0.9 – 7.0	0.7	–	–	Man. (Min.)	–	SPDT	PZL	060-530266
KP 7EW	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	PSH	060-530466
KP 7EB	High	–	–	8 – 32	4	–	Man. (Max.)	SPDT	PZH	060-530666

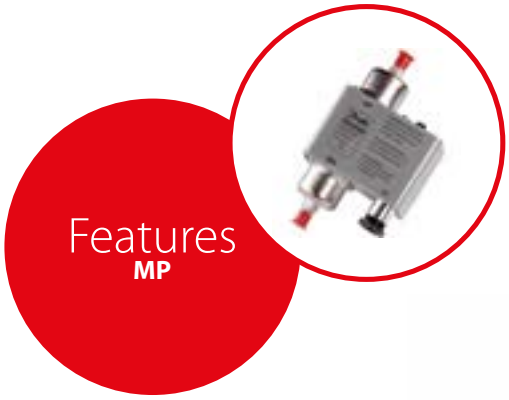
**) PSL, PZL, PSH, PZH according to EN12266: 1998*

Quick Selection Notes:

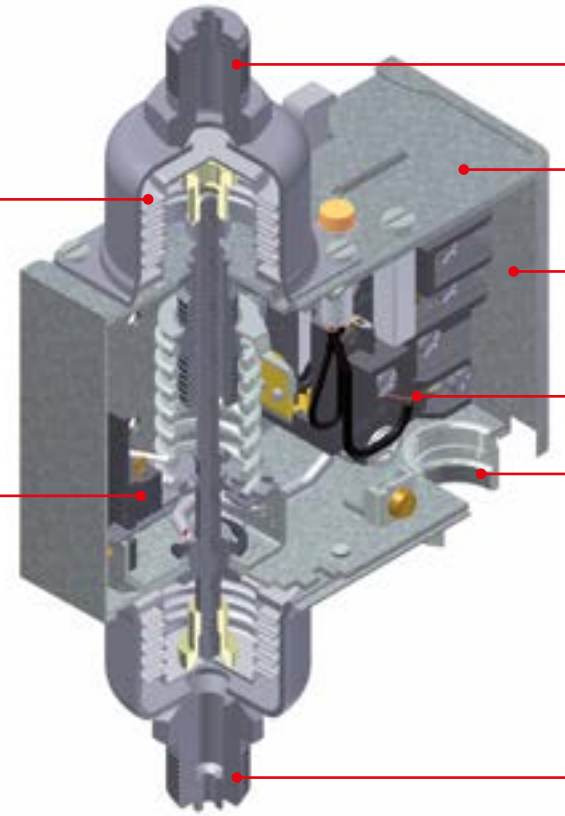
MP - Differential pressure switch

MP 54 and MP 55 oil differential pressure switches are used as safety switches to protect refrigeration compressors against low lubricating oil pressure. If the oil pressure fails, the oil differential pressure switch stops the compressor after a certain time period.
MP 54 and MP 55 are used in refrigerating systems using HCFC and non-flammable HFC refrigerants.

MP 55A is designed for use in refrigerating systems with R717 (ammonia), and can also be used in systems with HCFC and non-flammable HFC refrigerants.
MP 54 has a fixed differential pressure setting. It also incorporates a thermal time relay with a fixed release time setting.
MP 55 and MP 55A have adjustable differential pressure and are available both with and without thermal time relay.



Features
MP



Facts

Application:
- Food Retail
- Heavy Commercial Refrigeration
- Light Commercial Refrigeration
- Commercial Air Conditioning
- Food Processing and Storage

- Suitable for both alternating and direct current (AC and DC)
- Small contact differential
- Can be used for wide range of refrigerants:
  - HCFC and non-flammable HFC refrigerants (MP 54, MP 55)
  - R717, HCFC and non-flammable HFC refrigerants (MP 55A)
  - HCFC, HFC and HC refrigerants (MP 55E)

- Bellows without any welding points, which makes them stress free and completely tight
- Wide regulating range
- Screwed cable entry for cables: 6 – 14 mm diameter
- Electrical connection at the front of the unit
- Wide range of approvals - Danfoss offers a wide range of approvals suited for specific applications and geographical markets

Technical data and ordering

MP differential pressure switches for HCFC and non-flammable HFC refrigerants



Ordering

Type	Differential Δp [bar]	Operation range, LP side [bar]	Relay release time [s]	Connection type	Code no.
MP 54	0.65	-1 – 12	0 [2]	1/4 in / Flare	060B029766
	0.65	-1 – 12	45	1/4 in / Flare	060B016666
	0.9	-1 – 12	60	1/4 in / Flare	060B016766
	0.65	-1 – 12	90	1/4 in / Flare	060B016866
	0.65	-1 – 12	120	1/4 in / Flare	060B016966
MP 55	0.3 – 4.5	-1 – 12	45	1/4 in / Flare	060B017066
	0.3 – 4.5	-1 – 12	45	1 m cap.tube 1/4 in / ODF solder	060B013366
	0.3 – 4.5	-1 – 12	60	1/4 in / Flare	060B017166
	0.3 – 4.5	-1 – 12	60	1/4 in / Flare	060B017866 [1]
	0.3 – 4.5	-1 – 12	90	1/4 in / Flare	060B017266
	0.3 – 4.5	-1 – 12	120	1/4 in / Flare	060B017366
	0.3 – 4.5	-1 – 12	0 [2]	1/4 in / Flare	060B029966

[1]) *With glow lamp that remains on during normal operation.*
Note: If the operational light goes out, the compressor should not run longer than the release time.
[2]) *MP without time relay.*
Versions without time relay are for applications where an external time relay is required - perhaps with a different release time than the one specified.

MP differential pressure switches for HCFC and non-flammable HFC refrigerants

Ordering

Type	Control differential Δp [bar]	Regulation range LP side [inHg] – [psig]	Time relay delay time [s]	Connection type	Code no.
MP 54	6.0	29 inHg – 175 psi	45	1/4 in / Flare	060B200866
	6.0	29 inHg – 175 psi	45	1/4 in / flare nut with 36 in capillary tube	060B205066
	9.0	29 inHg – 175 psi	90	1/4 in / Flare	060B200266
	9.0	29 inHg – 175 psi	120	1/4 in / Flare	060B200366 [2]
	9.0	29 inHg – 175 psi	120	1/4 in / flare nut with 36 in capillary tube	060B205366 [2]
MP 55	4.3-65	29 inHg – 175 psi	45	1/4 in / flare nut with 36 in capillary tube	060B205466
	4.3-65	29 inHg – 175 psi	60	1/4 in / Flare	060B201266 [1]
	4.3-65	29 inHg – 175 psi	90	1/4 in / Flare	060B200666
	4.3-65	29 inHg – 175 psi	120	1/4 in / Flare	060B200766
	4.3-65	29 inHg – 175 psi	120	1/4 in / flare nut with 36 in capillary tube	060B205766

[1]) *With glow lamp that remains on during normal operation of compressor.*
Note: When time delay is energized which also means that min. permisible oil pressure (differential Δp) is reached, light goes out.
[2]) *Three-wire hook-up.*

MP differential pressure switches for R717, HCFC and non-flammable HFC refrigerants

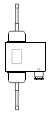
Ordering

Type	Differential Δp [bar]	Operation range, LP side [bar]	Relay release time [s]	Connection type	Code no.
MP 55A	0.3 – 4.5	-1 – 12	45	G 3/8 A supplied with ø6.5 / 10 mm weld nipple	060B017466
	0.3 – 4.5	-1 – 12	45	M12×1.5 with 6 mm cutting ring	060B018266
	0.3 – 4.5	-1 – 12	60	G 3/8 A supplied with ø6.5 / 10 mm weld nipple	060B017566
	0.3 – 4.5	-1 – 12	60	M12×1.5 with 6 mm cutting ring	060B018366
	0.3 – 4.5	-1 – 12	60	G 3/8 A supplied with ø6.5 / 10 mm weld nipple	060B017966 [1]
	0.3 – 4.5	-1 – 12	90	G 3/8 A supplied with ø6.5 / 10 mm weld nipple	060B017666
	0.3 – 4.5	-1 – 12	90	M12×1.5 with 6 mm cutting ring	060B018466
	0.3 – 4.5	-1 – 12	120	G 3/8 A supplied with ø6.5 / 10 mm weld nipple	060B017766
	0.3 – 4.5	-1 – 12	120	M12×1.5 with 6 mm cutting ring	060B018566
	0.3 – 4.5	-1 – 12	0 [2]	G 3/8 A supplied with ø6.5 / 10 mm weld nipple	060B029866 [2]
	0.3 – 4.5	-1 – 12	0 [2]	M12×1.5 with 6 mm cutting ring	060B029666

[1]) *With glow lamp that remains on during normal operation.*
Note: If the operational light goes out, the compressor should not run longer than the release time.
[2]) *MP without time relay.*
Versions without time relay are for applications where an external time relay is required - perhaps with a different release time than the one specified.

Technical data and ordering

MP differential pressure switches for HCFC, HFC and HC refrigerants



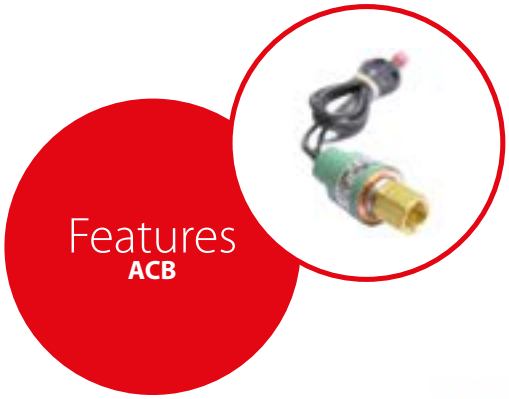
Ordering

Type	Differential range Δp [bar]	Switch differential max. Δp [bar]	Operation range, LP side [bar]	Connection type	Code no.
MP 55E	0.3 – 4.5	0.2	-1 – 12	1/4 inch ODF solder	060B530066

Quick Selection Notes:

ACB - Cartridge pressure switch

ACB cartridge pressure switches are small diaphragm type pressure switches for use in refrigeration and air conditioning systems.
ACB is as standard equipped with a 6A contact system with automatic or manual reset. ACB is robust and reliable in use, and the small size, lightness and high degree of protection means that it can be mounted directly on the refrigeration system where pressure monitoring is required.
ACB is available in many different versions with different pressure settings and pressure connections.



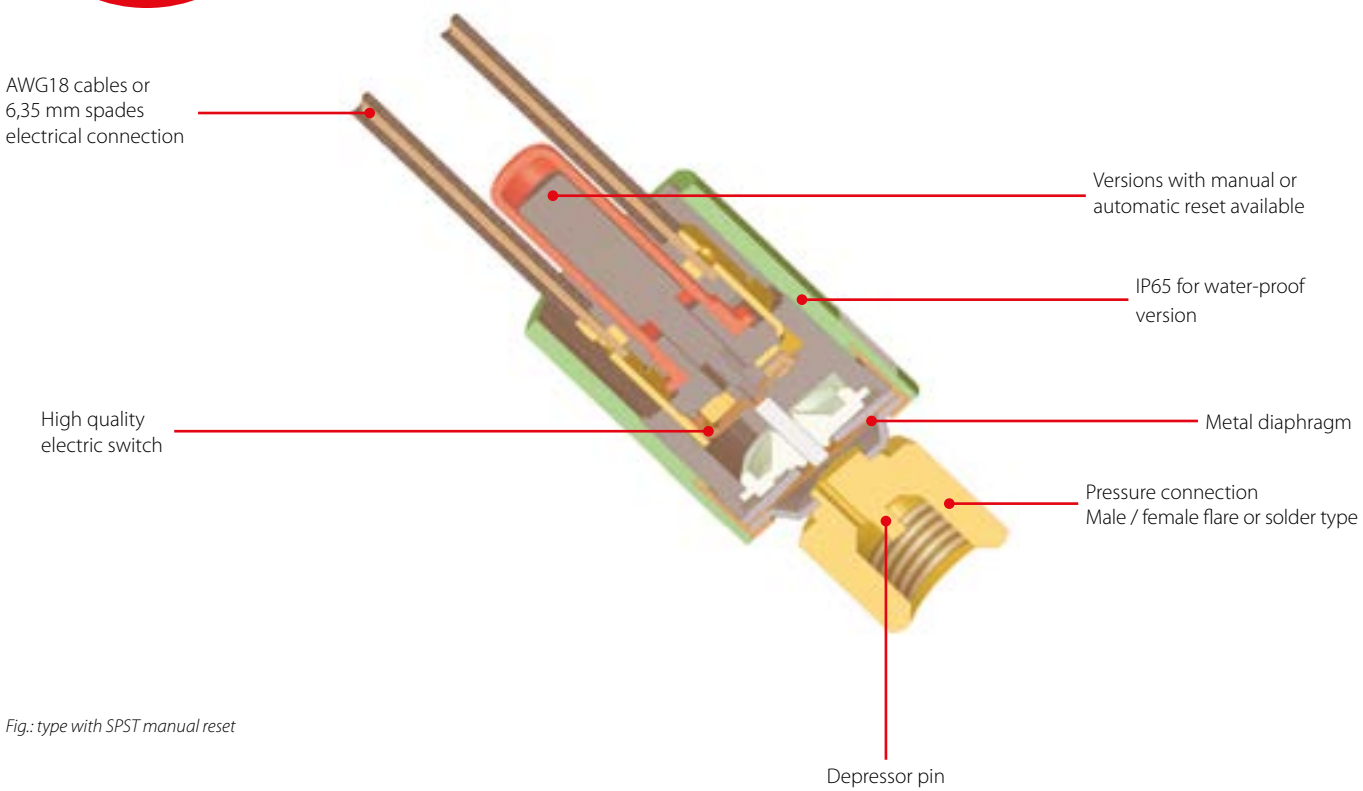


Fig.: type with SPST manual reset

Facts

Application:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Transport refrigeration

- Refrigerants HFC, but also air, water, oil
- Compact and easy to install
- Metal diaphragm:
  - excellent reliability and repeatability
  - lifetime of 100 000 cycles minimum
  - no contact chattering during changeover
- Flexible order quantity due to European production with short lead times
- Wide choice of specifications:
  - set-point
  - pressure connection
  - electrical connection
- Global coverage and widespread use by major OEMs
- Over 100 million pcs installed in the field
- CE, TÜV, VDE, UL and C-UL approvals (SPDT man. only CE appovals)
- Additional information about special versions: 1 A (250 V AC); 4 A (250 V AC), and gold plated contact system 0.05 A (12 / 24 V DC)
- Normally Closed (NC), Normally Open (NO) or SPDT contact system
- Convenient electrical connection - spades or cables (1.5 m cable for standard version)
- Pressure range: -0.6 – 46 bar
- Automatic or manual reset
- IP65 (water proof version with cables) and IP40 (version with spade connectors) available

Technical data and ordering

ACB cartridge pressure switches

Technical data

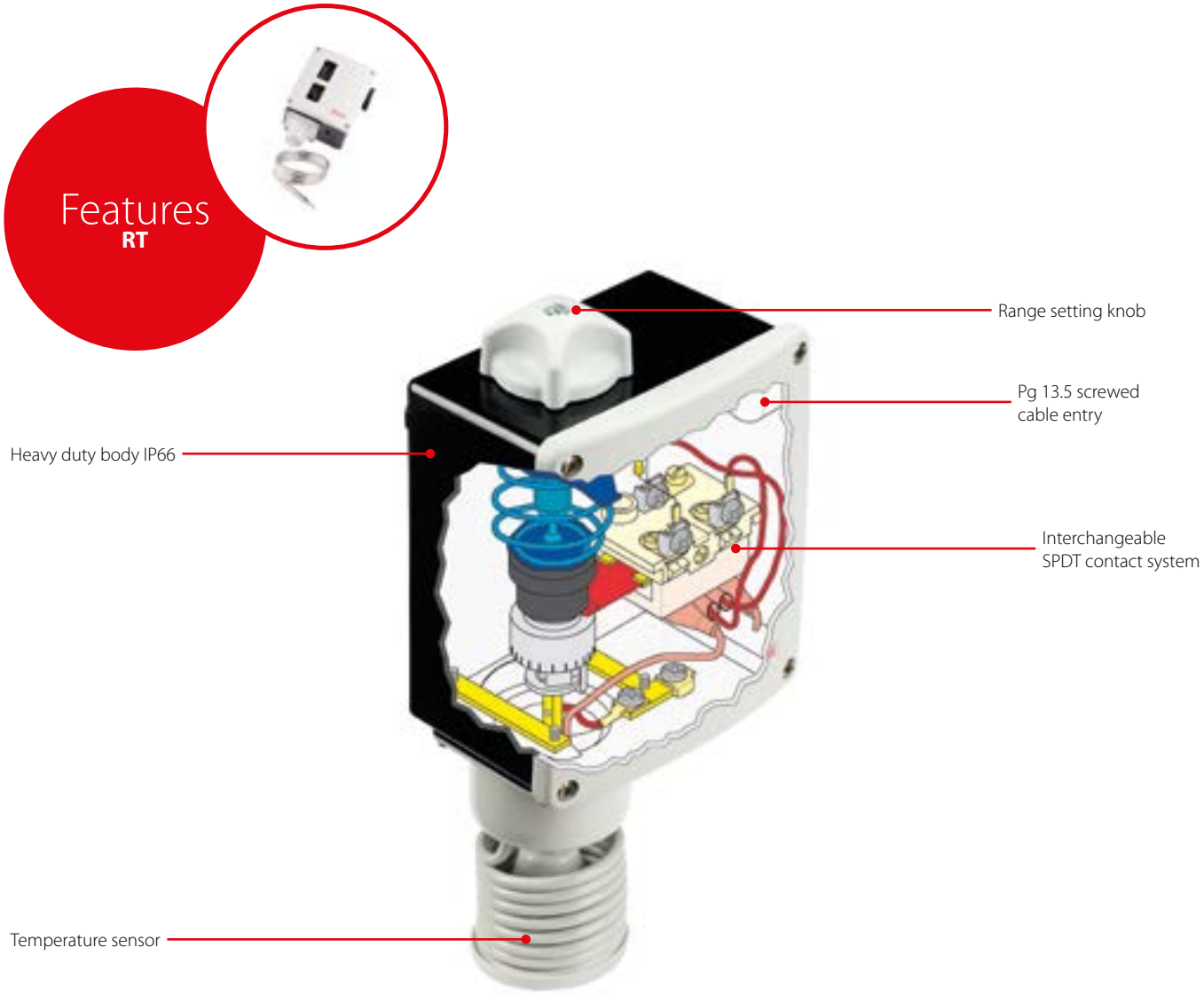
Application	Reset	Cut out [bar]	Cut in [bar]	Contact system	Enclosure type W-waterproof [1] S-with spades [2]	Connection type	Code no.
High pressure cut-out	Auto	18 ± 0.7	13 ± 1.2	SPST-NC	W	6 mm / solder	061F7504
	Auto	18 ± 0.7	13 ± 1.2	SPST-NC	W	1/4 in / solder	061F7505
	Auto	18 ± 0.7	13 ± 1.2	SPST-NC	W	1/4 in / female flare	061F7506
	Auto	18 ± 0.7	13 ± 1.2	SPDT	W	1/4 in / female flare	061F9057
	Auto	20 ± 1.0	16 ± 1.5	SPST-NC	S	1/4 in / solder	061F8710
	Auto	20 ± 1.0	16 ± 1.5	SPST-NC	S	1/4 in / female flare	061F8708
	Auto	23 ± 1.0	19 ± 1.5	SPST-NC	S	1/4 in / solder	061F8707
	Auto	23 ± 1.0	19 ± 1.5	SPST-NC	S	1/4 in / female flare	061F8703
	Auto	23 ± 0.7	19 ± 1.2	SPST-NC	W	1/4 in / female flare	061F8494
	Auto	23 ± 0.7	19 ± 1.2	SPDT	W	1/4 in / female flare	061F9056
	Manual	23 ± 0.7	19 ± 1.2	SPDT	W	1/4 in / female flare	061F9243
	Auto	26 ± 1.0	20 ± 1.5	SPST-NC	W	6 mm / solder	061F7507
	Auto	26 ± 1.0	20 ± 1.5	SPST-NC	W	1/4 in / solder	061F7508
	Auto	26 ± 1.0	20 ± 1.5	SPST-NC	W	1/4 in / female flare	061F7509
	Auto	26 ± 1.0	20 ± 1.5	SPST-NC	S	1/4 in / solder	061F8705
	Auto	26 ± 1.0	20 ± 1.5	SPST-NC	S	1/4 in / female flare	061F8701
	Auto	26 ± 1.0	20 ± 1.5	SPDT	W	1/4 in / female flare	061F9055
	Manual	26 ± 1.0	20 ± 2.0	SPST-NC	W	6 mm / solder	061F9703
	Manual	26 ± 1.0	20 ± 2.0	SPST-NC	W	1/4 in / solder	061F9714
	Manual	26 ± 1.0	20 ± 2.0	SPST-NC	W	1/4 in / female flare	061F9713
	Auto	28 ± 1.0	21 ± 1.5	SPST-NC	W	6 mm / solder	061F7510
	Auto	28 ± 1.0	21 ± 1.5	SPST-NC	W	1/4 in / solder	061F7513
	Auto	28 ± 1.0	21 ± 1.5	SPST-NC	W	1/4 in / female flare	061F7514
	Auto	28 ± 1.0	21 ± 1.5	SPST-NC	S	1/4 in / solder	061F8704
	Auto	28 ± 1.0	21 ± 1.5	SPST-NC	S	1/4 in / female flare	061F8700
	Auto	28 ± 1.0	21 ± 1.5	SPDT	W	1/4 in / female flare	061F9054
	Manual	28 ± 1.0	21 ± 1.5	SPDT	W	1/4 in / female flare	061F9242
	Manual	28 ± 1.0	21 ± 2.0	SPST-NC	W	1/4 in / female flare	061F9522
	Auto	31 ± 1.0	24 ± 1.5	SPST-NC	W	6 mm / solder	061F8493
	Auto	31 ± 1.0	24 ± 1.5	SPST-NC	W	1/4 in / female flare	061F8492
	Auto	31 ± 1.0	24 ± 1.5	SPST-NC	S	1/4 in / solder	061F8706
	Auto	31 ± 1.0	24 ± 1.5	SPST-NC	S	1/4 in / female flare	061F8702
	Auto	31 ± 1.0	24 ± 1.5	SPDT	W	1/4 in / female flare	061F9053
	Auto	42 ± 1.2	33 ± 2.0	SPST-NC	W	6 mm / solder	061F7515
	Auto	42 ± 1.2	33 ± 2.0	SPST-NC	W	1/4 in / solder	061F7516
	Auto	42 ± 1.2	33 ± 2.0	SPST-NC	W	1/4 in / female flare	061F7517
	Manual	42 ± 1.2	33 ± 2.0	SPST-NC	W	1/4 in / female flare	061F9575
	Auto	42 ± 1.2	33 ± 2.0	SPDT	W	1/4 in / female flare	061F9052
Low pressure cut-out	Auto	0.5 ± 0.4	1.5 ± 0.3	SPST-NO	W	6 mm / solder	061F7518
	Auto	0.5 ± 0.4	1.5 ± 0.3	SPST-NO	W	1/4 in / solder	061F7519
	Auto	0.5 ± 0.4	1.5 ± 0.3	SPST-NO	W	1/4 in / female flare	061F7520
	Auto	0.5 ± 0.5	1.5 ± 0.5	SPST-NO	S	1/4 in / solder	061F7402
	Auto	0.5 ± 0.5	1.5 ± 0.5	SPST-NO	S	1/4 in / female flare	061F7400
	Auto	0.5 ± 0.5	1.5 ± 0.5	SPDT	S	1/4 in / solder	061F9106
	Auto	0.5 ± 0.5	1.5 ± 0.5	SPDT	S	1/4 in / female flare	061F9102
	Auto	0.7 ± 0.5	1.7 ± 0.4	SPST-NO	W	6 mm / solder	061F7521
	Auto	0.7 ± 0.5	1.7 ± 0.4	SPST-NO	W	1/4 in / solder	061F7522
	Auto	0.7 ± 0.5	1.7 ± 0.4	SPST-NO	W	1/4 in / female flare	061F7523
	Auto	0.7 ± 0.5	1.7 ± 0.4	SPDT	W	1/4 in / female flare	061F9058
	Auto	1.7 ± 0.5	2.7 ± 0.4	SPST-NO	W	6 mm / solder	061F7524
	Auto	1.7 ± 0.5	2.7 ± 0.4	SPST-NO	W	1/4 in / solder	061F7525
	Auto	1.7 ± 0.5	2.7 ± 0.4	SPST-NO	W	1/4 in / female flare	061F7526
Fan Control	Auto	8.5 ± 1.2	11 ± 0.8	SPST-NO	W	6 mm / solder	061F8491
	Auto	8.5 ± 1.2	11 ± 0.8	SPST-NO	W	1/4 in / female flare	061F8490
	Auto	13 ± 1.5	16 ± 1.0	SPST-NO	W	6 mm / solder	061F8334
	Auto	13 ± 1.5	16 ± 1.0	SPST-NO	W	1/4 in / female flare	061F8333

[1]) Waterproof models (IP65) with 1.5 m wires AWG18, packed per 20 pcs.
[2]) Models with spade connectors (IP40), packed per 50 pcs.

RT - Thermostat

RT thermostats are fitted with a single-pole changeover switch. The position of the contacts depends on the bulb temperature and the set scale value. The RT series includes thermostats for general applications within industrial and marine refrigeration.

The RT series also includes differential thermostats, thermostats for neutral zone regulation, and special thermostats with gold-plated contact surface for PLC applications.



Facts

Application:
- General applications within industrial and marine refrigeration

- Wide regulating range
- Suitable for both alternating and direct current (AC and DC)
- Interchangeable contact system
- High stability and accuracy
- Long operating life time
- Enclosure: IP66 to EN 60529 / IEC 60529, except for versions with ext. reset which are IP54

- Insulation 400 V
- Ambient temperature: -50 – 70 °C for housing
- Special versions for PLC applications
- Cable connection: Pg 13.5
- Cable diameter: 6 – 14 mm

Technical data and ordering

RT thermostats

Ordering

Type	Charge type	Sensor type	Regulation range [°C]	Differential Δt		Reset	Max. sensor temp. [°C]	Capillary tube length [m]	Code no.
				Lowest temp. setting [°C]	Highest temp. setting [°C]				
RT 9	State Vapour [1]	A	-45 – -15	2.2 – 10	1 – 4.5	Auto	150	2	017-506666
RT 3	State Vapour [1]	A	-25 – 15	2.8 – 10	1 – 4	Auto	150	2	017-501466
RT 17	State Vapour [1]	B	-50 – -15	2.2 – 7	1.5 – 5	Auto	100	–	017-511766
RT 11	State Vapour [1]	B	-30 – 0	1.5 – 6	1 – 3	Auto	66	–	017-508366
RT 4	State Vapour [1]	B	-5 – 30	1.5 – 7	1.2 – 4	Auto	75	–	017-503666 017-503766 [4]
RT 13	State Vapour [1]	A	-30 – 0	1.5 – 6	1 – 3	Auto	150	2	017-509766
RT 2	Adsorption [2]	A	-25 – 15	5 – 18	6 – 20	Auto	150	2	017-500866
RT 8	Adsorption [2]	A	-20 – 12	1.5 – 7	1.5 – 7	Auto	145	2	017-506366
RT 12	Adsorption [2]	A	-5 – 10	1 – 3.5	1 – 3	Auto	65	2	017-508966
RT 23	Adsorption [2]	A	5 – 22	1.1 – 3	1 – 3	Auto	85	2	017-527866
RT 15	Adsorption [2]	A	8 – 32	1.6 – 8	1.6 – 8	Auto	150	2	017-511566
RT 24	Adsorption [2]	A	15 – 34	1.4 – 4	1.4 – 3.5	Auto	105	2	017-528566
RT 140	Adsorption [2]	C	15 – 45	1.8 – 8	2.5 – 11	Auto	240	2	017-523666
RT 102	Adsorption [2]	D	25 – 90	2.4 – 10	3.5 – 20	Auto	300	2	017-514766
RT 34	Adsorption [2]	B	-25 – 15	2 – 10	2 – 12	Auto	100	–	017-511866
RT 7	Adsorption [2]	A	-25 – 15	2 – 10	2.5 – 14	Auto	150	2	017-505366
RT 14	Adsorption [2]	A	-5 – 30	2 – 8	2 – 10	Auto	150	2	017-509966
RT 101	Adsorption [2]	A	25 – 90	2.4 – 10	3.5 – 20	Auto	300	2	017-500366
RT 107	Partial [3]	A	70 – 150	6 – 25	1.8 – 8	Auto	215	2	017-513566

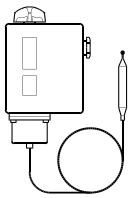
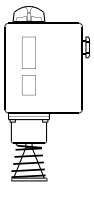
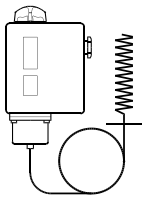
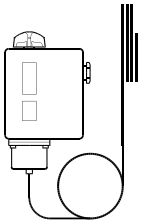
[1] The sensor must be located colder than thermostat housing and capillary tube.
[2] The sensor can be located warmer or colder than thermostat housing.
[3] The sensor must be located warmer than thermostat housing and capillary tube.
[4] With built-in heating coil, reduces the thermal differential.

RT thermostats with adjustable neutral zone

Ordering

Type	Charge	Sensor type	Regulation range [°C]	Mechanical differential [K]	Neutral zone NZ		Max. sensor temp. [°C]	Capillary tube length [m]	Code no.
					At min. range setting [K]	At max. range setting [K]			
RT 16L	Vapour	B	0 – 38	1.5 – 0.7	1.5 – 5	0.7 – 1.9	100	–	017L002466
RT 8L	Adsorption	A	-20 – 12	1.5	1.5 – 4.4	1.5 – 4.9	145	2	017L003066
RT 14L	Adsorption	A	-5 – 30	1.5	1.5 – 5	1.5 – 5	150	2	017L003466
RT 140L	Adsorption	C	15 – 45	1.8 – 2	1.8 – 4.5	2.0 – 5	240	2	017L003166
RT 101L	Adsorption	A	25 – 90	2.5 – 3.5	2.5 – 7	3.5 – 12.5	300	2	017L006266

Type of sensor

A	B	C	D
			
Cylindrical remote sensor	Room sensor	Duct sensor	Capillary tube sensor

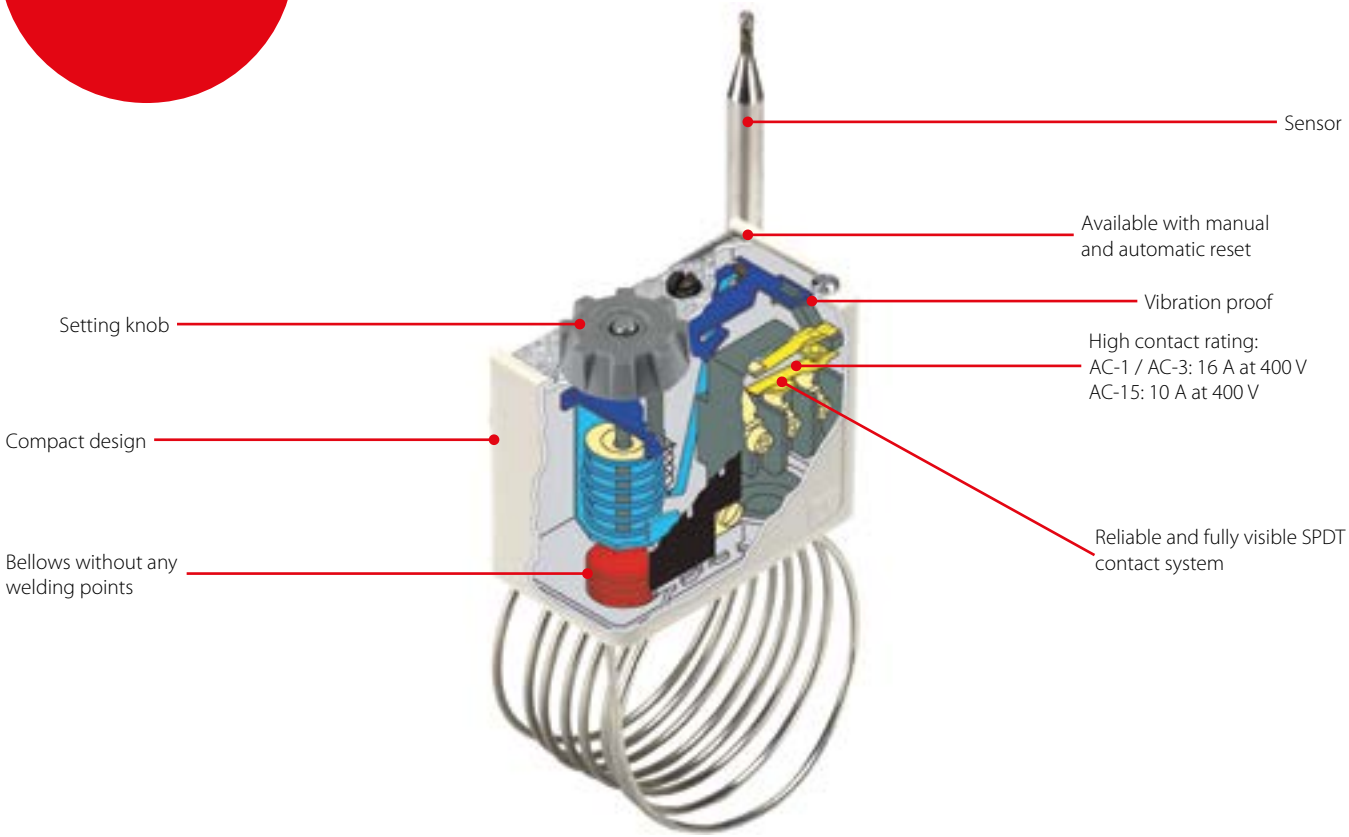
KP - Thermostat

KP thermostats are single-pole, double-throw (SPDT) temperature-operated electric switches.
KP thermostats can be connected directly to a single-phase AC motor of up to approximately 2 kW or installed in the control circuit of DC motors and large AC motors.

KP thermostats are used primarily for regulation, but also for safety monitoring systems, and are available with vapour charge or with adsorption charge. With vapour charge the differential is very small. KP thermostats with adsorption charge are widely used to give frost protection.



Features
KP



Facts

Application:
- Frost protection
- Defrost control
- Case and Room control

- Easy to handle compact design with large and visible scale plates
- Vibration and shock resistant
- High reliability both electrically and mechanically – a KP control can be connected directly to a single-phase AC motor of up to approximately 2 kW or installed in the control circuit of DC motors and large AC motors
- Wide range of approvals - Danfoss offers a wide range of approvals suited for specific applications and geographical markets
- Available with capillary sensor, air sensor or cylindrical pocket sensor
- Different sensing elements - As experts in charging technologies Danfoss offers temperature switches that operate in a wide temperature range
- Available with vapour charge or with adsorption charge
- IP30 can be increased to IP44 or IP55 using top plate or IP55 enclosure available as accessories

Technical data and ordering

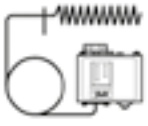
KP thermostats

Ordering

Sensor type	Charge	Bulb type	Regulation range [°C]	Differential Δt		Reset	Max. bulb temp. [°C]	Capillary tube length [m]	Code no.
				Lowest temperature [°C]	Lowest temperature [°C]				
KP 61	Vapour [1]	A	-30 – 15	5.5 – 23	1.5 – 7	Auto	120	2	060L110066
	Vapour [1]	A	-30 – 15	5.5 – 23	1.5 – 7	Auto	120	5	060L110166
	Vapour [1]	B	-30 – 13	4.5 – 23	1.2 – 7	Auto	120	2	060L110266
	Vapour [1]	B	-30 – 15	5.5 – 23	1.5 – 7	Auto	120	2	060L110366 [3]
	Vapour [1]	B	-30 – 15	5.5 – 23	1.5 – 7	Auto	120	2	060L112866 [3] [4]
	Vapour [1]	A	-30 – 15	Fixed 6	Fixed 2	Min.	120	5	060L110466
	Vapour [1]	B	-30 – 15	Fixed 6	Fixed 2	Min.	120	2	060L110566
KP 62	Vapour [1]	C 1	-30 – 15	6.0 – 23	1.5 – 7	Auto	120	–	060L110666
KP 63	Vapour [1]	A	-50 – 10	10.0 – 70	2.7 – 8	Auto	120	2	060L110766
	Vapour [1]	B	-50 – 10	10.0 – 70	2.7 – 8	Auto	120	2	060L110866
KP 68	Vapour [1]	C 1	-5 – 35	4.5 – 25	1.8 – 7	Auto	120	–	060L111166
KP 69	Vapour [1]	B	-5 – 35	4.5 – 25	1.8 – 7	Auto	120	2	060L111266
KP 62	Adsorbtion [2]	C 2	-30 – 15	5.0 – 20	2.0 – 8	Auto	80	–	060L111066 [3] [4]
KP 71	Adsorbtion [2]	E 2	-5 – 20	3.0 – 10	2.2 – 9	Auto	80	2	060L111366
	Adsorbtion [2]	E 2	-5 – 20	Fixed 3	Fixed 3	Min.	80	2	060L111566
KP 73	Adsorbtion [2]	E 1	-25 – 15	12.0 – 70	8.0 – 25	Auto	80	2	060L111766
	Adsorbtion [2]	D 1	-25 – 15	4.0 – 10	3.5 – 9	Auto	80	2	060L111866 [3]
	Adsorbtion [2]	D 1	-25 – 15	Fixed 3.5	Fixed 3.5	Min.	80	2	060L113866
	Adsorbtion [2]	D 2	-20 – 15	4.0 – 15	2.0 – 13	Auto	55	3	060L114066
	Adsorbtion [2]	D 1	-25 – 15	3.5 – 20	3.25 – 18	Auto	80	2	060L114366
KP 75	Adsorbtion [2]	F	0 – 35	3.5 – 16	2.5 – 12	Auto	110	2	060L112066
	Adsorbtion [2]	E 2	0 – 35	3.5 – 16	2.5 – 12	Auto	110	2	060L113766
KP 77	Adsorbtion [2]	E 3	20 – 60	3.5 – 10	3.5 – 10	Auto	130	2	060L112166
	Adsorbtion [2]	E 3	20 – 60	3.5 – 10	3.5 – 10	Auto	130	3	060L112266
	Adsorbtion [2]	E 2	20 – 60	3.5 – 10	3.5 – 10	Auto	130	5	060L116866
KP 79	Adsorbtion [2]	E 3	50 – 100	5.0 – 15	5.0 – 15	Auto	150	2	060L112666
KP 81	Adsorbtion [2]	E 3	80 – 150	7.0 – 20	7.0 – 20	Auto	200	2	060L112566
	Adsorbtion [2]	E 3	80 – 150	Fixed 8	Fixed 8	Max.	200	2	060L115566
KP 98	Adsorbtion [2]	E 2	OIL: 60 – 120	OIL: Fixed 14	OIL: Fixed 14	Max.	150	1	060L113166
	Adsorbtion [2]	E 2	HT: 100 – 180	HT: Fixed 25	HT: Fixed 25	Max.	250	2	

[1] Sensor must always be placed colder than the thermostat housing and capillary tube. The thermostat will then regulate independent of ambient temperature.
[2] Sensor can be placed warmer or colder than thermostat housing and capillary tube, but variations from 20 °C ambient temperature will influence the scale accuracy.
[3] With manual switch, not isolating switch.
[4] Panel mounting model with top plate.

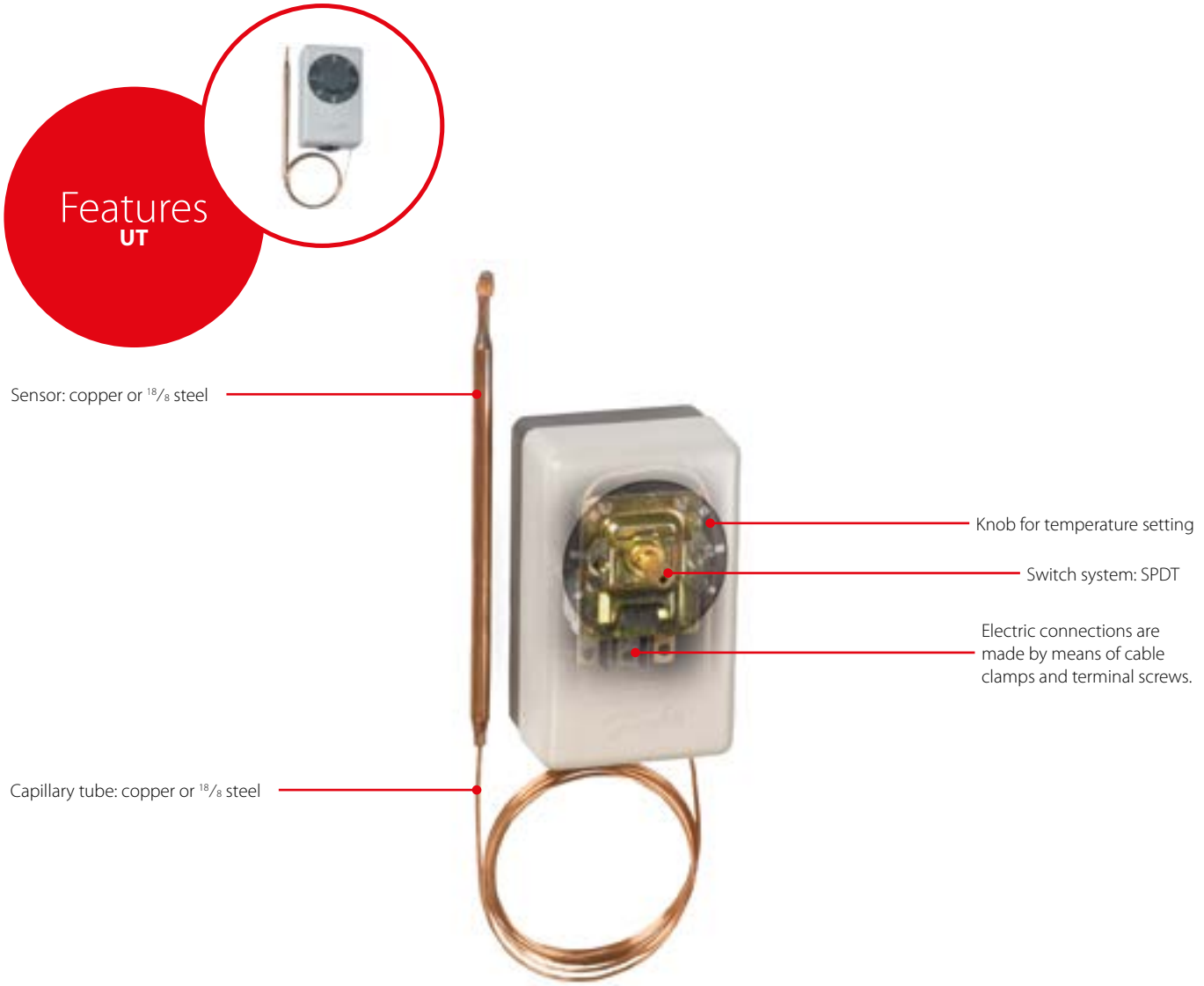
Thermostat sensor types

A	B	C	D	E	F
					
Straight capillary tube	ø9.5 × 70 mm remote air coil	C1: ø40 × 30 mm air coil C2: ø25 × 67 mm air coil (integral with thermostat)	D1: ø10 × 85 mm double contact remote sensor D2: ø16 × 170 mm double contact remote sensor Note! Cannot be used in sensor pocket	E1: ø6.4 × 95 mm remote sensor E2: ø9.5 × 115 mm remote sensor E3: ø9.5 × 85 mm remote sensor	ø25×125 mm remote duct coil

UT - Thermostat

UT thermostats are temperature controlled electric switches with stainless steel $^{18}/_{8}$ or copper capillary tube and sensor.
The temperature can be set easily and accurately using the large knob on the front of the thermostat.

The temperature must be set to correspond to the required mean temperature.
The thermostat has a fixed differential.



Facts

Application:
- Cold rooms
- Beverage coolers
- Ice cream makers
- Milk coolers
- Air conditioning plant
- Heat recovery systems

- UT is available for wall or panel mounting
- UT for wall mounting:
  IP20 to EN 60529 / IEC 52
- UT for panel mounting:
  IP00 to EN 60529 / IEC 529
- UT 72 for universal purposes:
  -30 – 30 °C

- UT 73 for frost protection:
  0 – 40 °C
- Differential is fixed 2.3 °C
- Automatic reset
- Contact load:
  - AC 1: 10 A, 250 / 380 V

Technical data and ordering

UT thermostats

Ordering

Type	Version	Regulation range [°C]	Differential [°C]	Reset	Max. sensor temperature [°C]	Capillary tube length [m]	Connection type	Code no.
UT 72	Wall mounting	-30 – 30	2.3	Auto	60	1.5	Copper	060H1101
	Wall mounting	-30 – 30	2.3	Auto	60	1.5	18/8 steel	060H1106
	Wall mounting	-30 – 30	2.3	Auto	60	1.5	Copper	060H1103 [1])
	Wall mounting	-30 – 30	2.3	Auto	60	1.5	Copper	060H1104
	Wall mounting	-30 – 30	2.3	Auto	60	3.0	Copper	060H1105
	Panel mounting	-30 – 30	2.3	Auto	60	1.5	Copper	060H1201
	Panel mounting	-30 – 30	2.3	Auto	60	3.0	Copper	060H1205
UT 73	Wall mounting	0 – 40	2.3	Auto	90	1.5	Copper	060H1102
	Panel mounting	0 – 40	2.3	Auto	90	1.5	Copper	060H1202

[1]) Included bulb clamps.

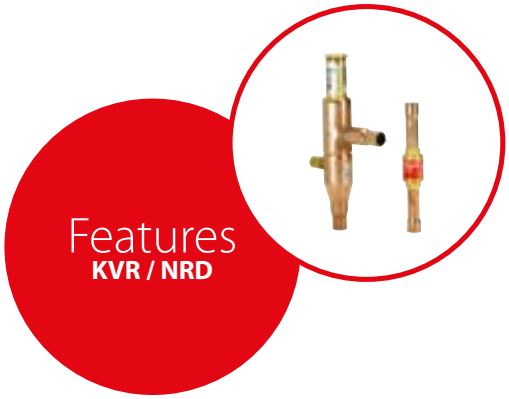
Accessories

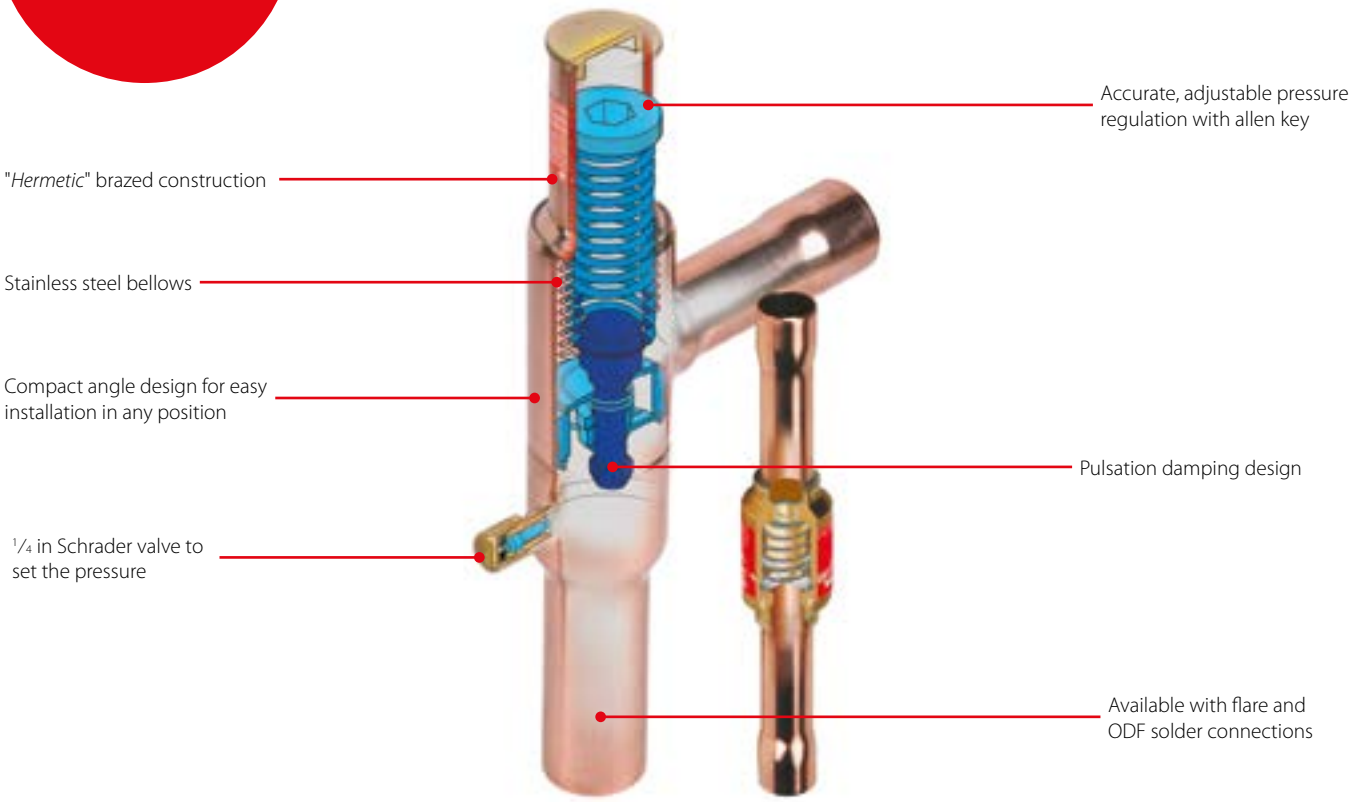
Version	UT 72	UT 73
Setting knob	060-1067	060-1096
Bulb clamp	060-1090	060-1090

KVR / NRD - Condensing pressure regulator / Differential pressure valve

KVR condensing pressure regulator valves can be mounted on either the gas or liquid side of the condenser in refrigeration and air conditioning systems.

They are used to maintain a constant and sufficiently high condensing pressure with systems using air-cooled condensers. KVR condensing pressure regulators can also be used with valve types NRD or KVD to assure that adequate pressure is maintained on the receiver.



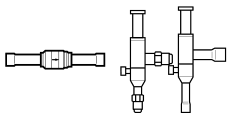


Facts

Application:
- Traditional refrigeration
- Air conditioning units
- Transport refrigeration

- The regulators are the most compact on the market
- Excellent performance because of balanced port design (equalization of force on port)
- The refrigeration system can operate with very large load variations
- Very easy to adjust the KVR
- The NRD is non-adjustable
  - it is activated when pressure differential between discharge line and receiver exceeds 1.4 bar
- Reliable design
- KVR can be installed either in discharge line or liquid line
- Wide capacity and operating range
- Regulation range:
  5 – 17.5 bar / 73 – 254 psig
- KVR 12 – 22: for use with HCFC, HFC and HC
- KVR 12 – 22: compliant with ATEX hazard zone 2
- KVR 28 – 35: for use with HCFC and non flammable HFC
- Maximum working pressure
  KVR: PS / MWP = 28 bar / 406 psig
  NRD: PS / MWP = 46 bar / 667 psig

Technical data and ordering



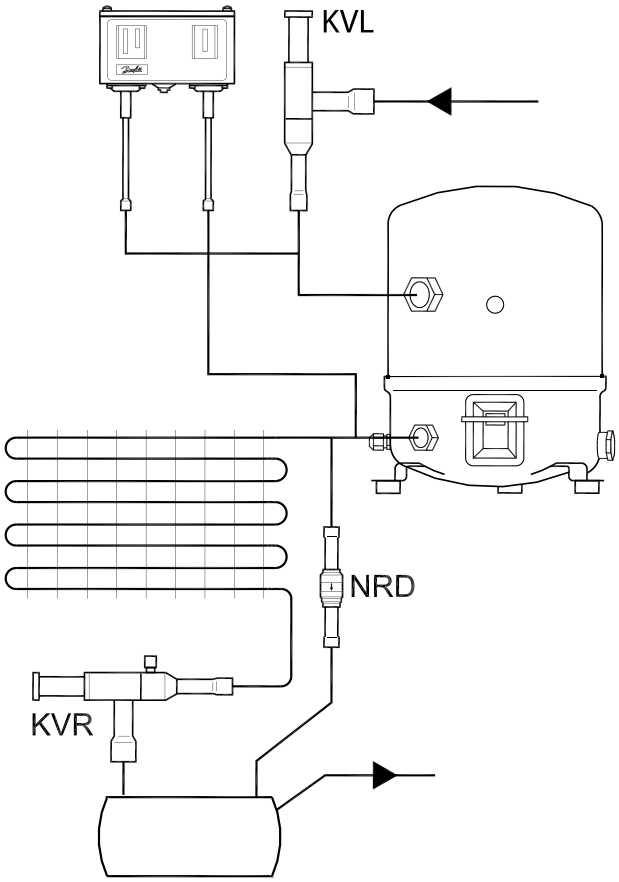
KVR / NRD - Condensing pressure regulator / Differential pressure valve

Ordering

Type	Rated liquid capacity in [kW] / [TR] [1]								Rated hot gas capacity in [kW] / [TR] [1]								Connection type	Connection size		Code no.
	R22		R134a		R404A / R507		R407C		R22		R134a		R404A / R507		R407C					
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]		[in]	[mm]	
KVR 12	50.4	12.7	47.3	11.8	36.6	8.2	54.4	13.8	13.2	4.13	11.6	3.03	12.0	3.27	14.3	4.50	Flare [2] [3]	1/2	12	034L0091
	50.4	12.7	47.3	11.8	36.6	8.2	54.4	13.8	13.2	4.13	11.6	3.03	12.0	3.27	14.3	4.50	Solder, ODF [3]	1/2	–	034L0093
	50.4	12.7	47.3	11.8	36.6	8.2	54.4	13.8	13.2	4.13	11.6	3.03	12.0	3.27	14.3	4.50	Solder, ODF [3]	–	12	034L0096
KVR 15	50.4	12.7	47.3	11.8	36.6	8.2	54.4	13.8	13.2	4.13	11.6	3.03	12.0	3.27	14.3	4.50	Flare [2] [3]	5/8	16	034L0092
	50.4	12.7	47.3	11.8	36.6	8.2	54.4	13.8	13.2	4.13	11.6	3.03	12.0	3.27	14.3	4.50	Solder, ODF [3]	5/8	16	034L0097
KVR 22	50.4	12.7	47.3	11.8	36.6	8.2	54.4	13.8	13.2	4.13	11.6	3.03	12.0	3.27	14.3	4.50	Solder, ODF [3]	7/8	22	034L0094
KVR 28	129	32.6	121	30.2	93.7	20.9	139.3	35.5	34.9	10.93	30.6	8.04	34.9	8.66	37.7	11.91	Solder, ODF [3]	1 1/8	–	034L0095
	129	32.6	121	30.2	93.7	20.9	139.3	35.5	34.9	10.93	30.6	8.04	34.9	8.66	37.7	11.91	Solder, ODF [3]	–	28	034L0099
KVR 35	129	32.6	121	30.2	93.7	20.9	139.3	35.5	34.9	10.93	30.6	8.04	34.9	8.66	37.7	11.91	Solder, ODF [3]	1 3/8	35	034L0100
NRD	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Solder, ODF [3]	1/2	–	020-1132
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Solder, ODF [3]	–	12	020-1136

[1]) Rated capacity is based on:
– evaporating temperature t_e = -10 °C / 14 °F
– condensing temperature t_c = 30 °C / 110 °F
– pressure drop across the valve Δp = 0.2 bar / 3 psi for liquid capacity, Δp = 0.4 bar / 6 psi for hot gas capacity, offset = 3 bar / 45 psi
[2]) KVR are delivered without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - code no. 011L1103, 5/8 in / 16 mm – code no. 011L1167.
[3]) The connection dimensions chosen must not be too small, as gas velocities in excess of 130 ft/s at the inlet of the regulator can give flow noise.

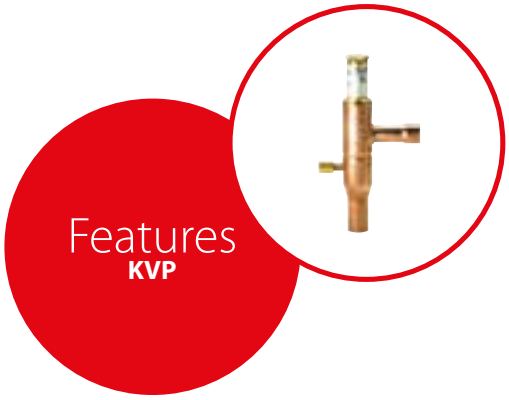
Application example

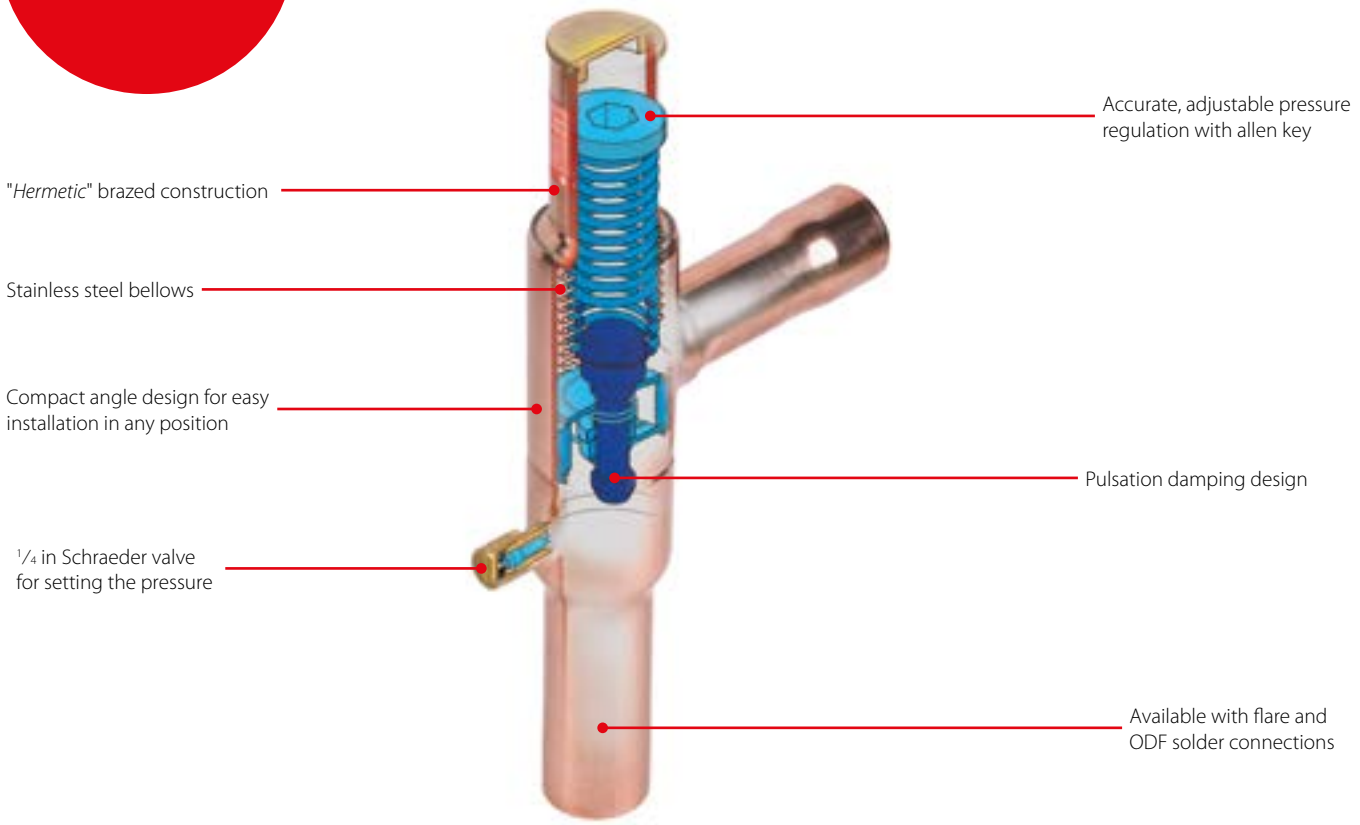


KVP - Evaporator pressure regulator

KVP evaporating pressure regulators are mounted in the suction line of refrigeration and air conditioning systems.
They are used to maintain a constant pressure corresponding to a constant temperature on the evaporator.

They also protect against too low an evaporating pressure by throttling down when the pressure falls below the set value.





Facts

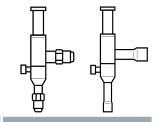
Application:
- Traditional refrigeration
- Air conditioning units
- Cold rooms
- Display cabinets

- The KVP can be used to differentiate the evaporating pressures in two or more evaporators in systems with one compressor
- Protection against a too low evaporating pressure: the regulator closes when the pressure in the evaporator falls below the set value
- Wide capacity and operating range

- Regulation range: 0 – 5.5 bar / 0 – 80 psig
- KVP 12 – 22: for use with HCFC, HFC and HC
- KVP 12 – 22: compliant with ATEX hazard zone 2
- KVP 28 – 35: for use with HCFC and non flammable HFC
- Maximum working pressure: PS / MWP = 18 bar / 260 psig

Technical data and ordering

KVP - Evaporator pressure regulator

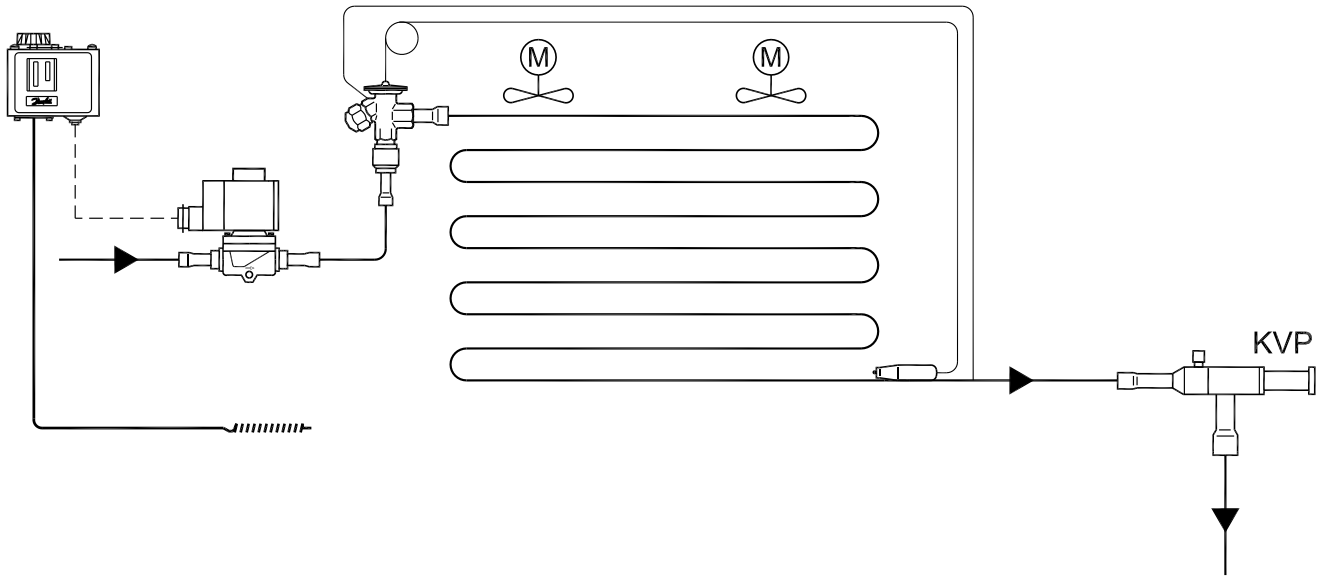


Ordering

Type	Rated capacity in [kW] / [TR] [1]								Connection type	Connection size		Code no.
	R22		R134a		R404A / R507		R407C					
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]		[in]	[mm]	
KVL 12	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Flare [2] [3]	1/2	12	034L0021
	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Solder, ODF [3]	1/2	–	034L0023
	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Solder, ODF [3]	–	12	034L0028
KVL 15	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Flare [2] [3]	5/8	16	034L0022
	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Solder, ODF [3]	5/8	16	034L0029
KVL 22	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Solder, ODF [3]	7/8	22	034L0025
KVL 28	8.6	2.8	6.1	1.9	7.7	2.6	7.9	2.6	Solder, ODF [3]	1 1/8	–	034L0026
	8.6	2.8	6.1	1.9	7.7	2.6	7.9	2.6	Solder, ODF [3]	–	28	034L0031
KVL 35	8.6	2.8	6.1	1.9	7.7	2.6	7.9	2.6	Solder, ODF [3]	1 3/8	35	034L0032

[1]) Rated capacity is the capacity of the regulator at
– Evaporating temperature t_e = -10 °C / 14 °F
– Condensing temperature t_c = 25 °C / 100 °F
– Pressure drop in regulator Δp = 0.2 bar / 2 psi, offset = 0.6 bar / 9 psi
[2]) Supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - code no. 011L1103, 5/8 in / 16 mm - code no. 011L1167.
[3]) The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m/s at the inlet of the regulator can give flow noise.

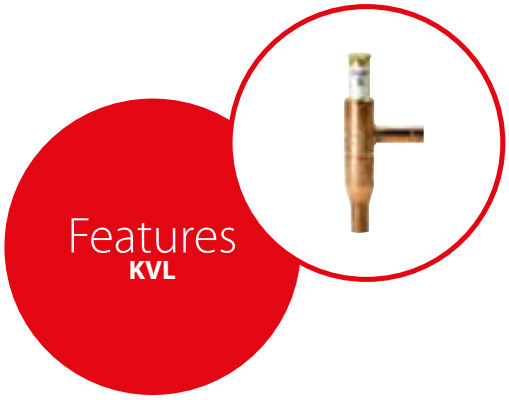
Application example

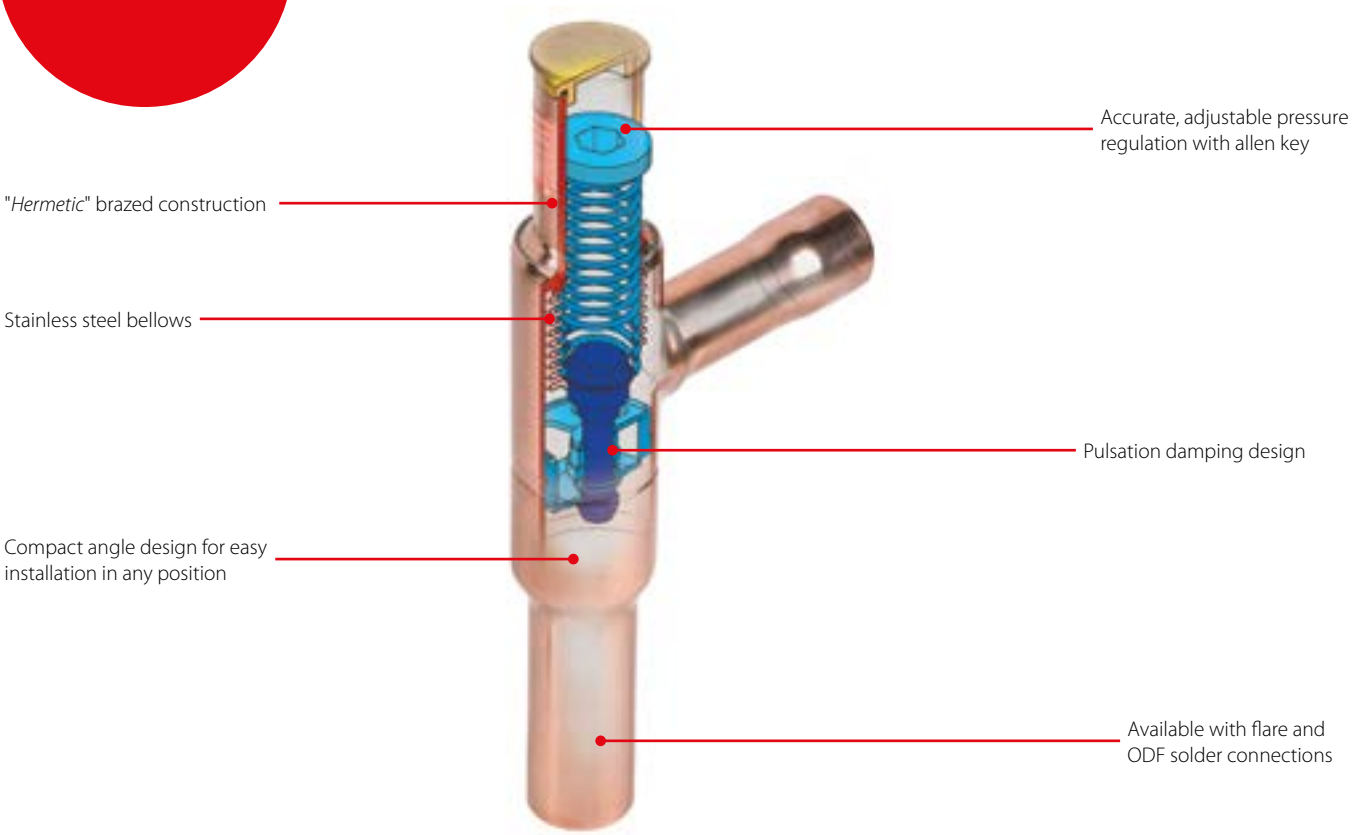


KVL – Crankcase pressure regulator

KVL crankcase pressure regulators valves are installed in the suction line ahead of the compressor.

KVL protects the compressor motor against overload during start-up after long standstill periods or after defrost periods (high pressure in evaporator).





Facts

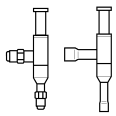
Application:
- Traditional refrigeration
- Air conditioning units
- Transport refrigeration

- Unaffected by ambient pressure variations
- Bellows welded to the body for long lifetime
- Accurate, adjustable pressure regulation
- Easy adjustment before start up
- Protects the compressor against electrical motor overloading
- Wide capacity and operating range
- Regulation range: 0.2 – 6 bar / 3 – 87 psig

- KVL 12 – 22: for use with HCFC, HFC and HC
- KVL 12 – 22: compliant with ATEX hazard zone 2
- KVL 28 – 35: for use with HCFC and non flammable HFC
- Maximum working pressure: PS / MWP = 18 bar / 261 psig

Technical data and ordering

KVL - Crankcase pressure regulator

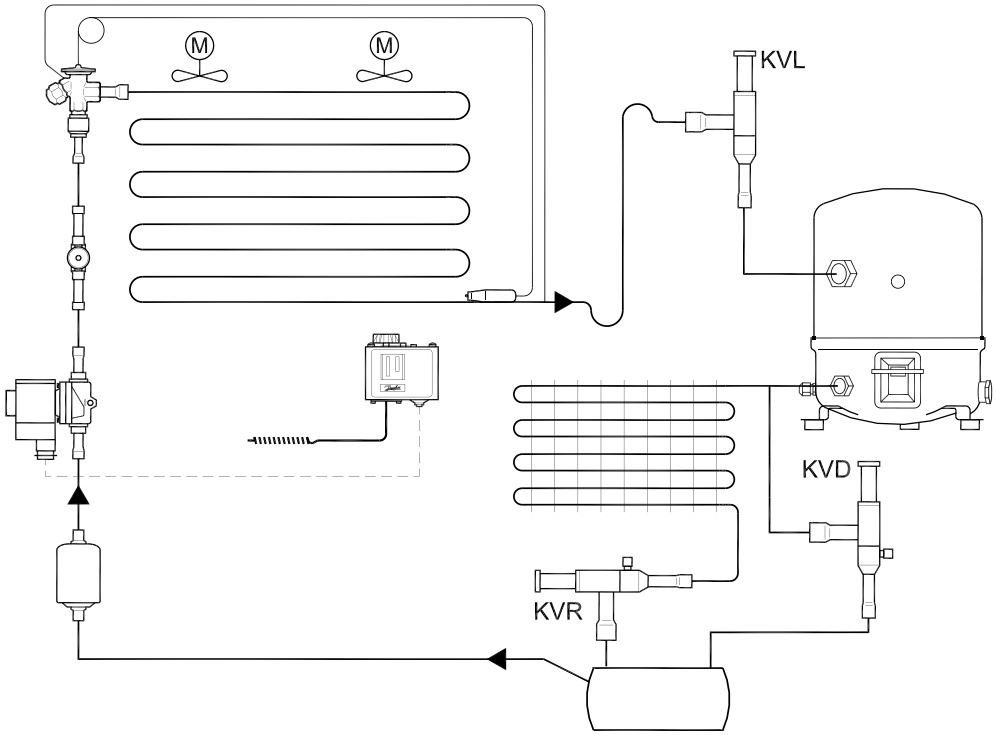


Ordering

Type	Rated capacity in [kW] / [TR] [1]								Connection type	Connection size		Code no.
	R22		R134a		R404A / R507		R407C					
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]		[in]	[mm]	
KVL 12	7.1	1.2	5.3	0.8	6.3	1.0	6.4	1.1	Flare [2][3]	1/2	12	034L0041
	7.1	1.2	5.3	0.8	6.3	1.0	6.4	1.1	Solder, ODF [3]	1/2	–	034L0043
	7.1	1.2	5.3	0.8	6.3	1.0	6.4	1.1	Solder, ODF [3]	–	12	034L0048
KVL 15	7.1	1.2	5.3	0.8	6.3	1.0	6.5	1.1	Flare [2][3]	5/8	16	034L0042
	7.1	1.2	5.3	0.8	6.3	1.0	6.5	1.1	Solder, ODF [3]	5/8	16	034L0049
KVL 22	7.1	1.2	5.3	0.8	6.3	1.0	6.5	1.1	Solder, ODF [3]	7/8	22	034L0045
KVL 28	17.8	4.1	13.2	2.6	15.9	3.4	16.4	3.8	Solder, ODF [3]	1 1/8	–	034L0046
	17.8	4.1	13.2	2.6	15.9	3.4	16.4	3.8	Solder, ODF [3]	–	28	034L0051
KVL 35	17.8	4.1	13.2	2.6	15.9	3.4	16.4	3.8	Solder, ODF [3]	1 3/8	35	034L0052

[1]) Rated capacity is the capacity of the regulator at
– Evaporating temperature t_e = -10 °C / 14 °F
– Condensing temperature t_c = 25 °C / 100 °F
– Pressure drop in regulator Δp = 0.2 bar / 2 psi
[2]) Supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - code no. 011L1103, 5/8 in / 16 mm - code no. 011L1167.
[3]) The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m / s at the inlet of the regulator can give flow noise.

Application example

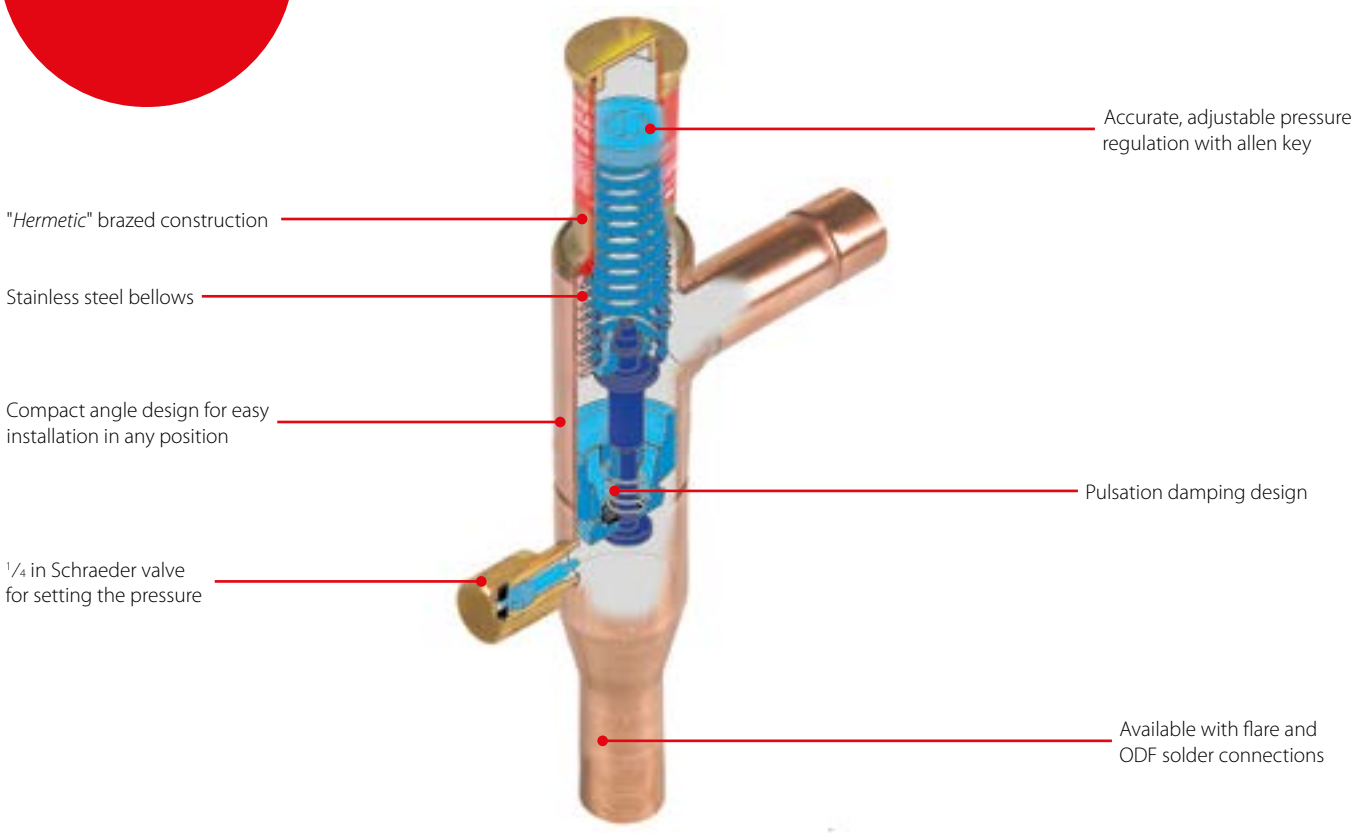


KVD - Receiver pressure regulator

KVD receiver pressure regulators open on falling receiver pressure and bypasses hot gas to maintain the receiver pressure at the regulator setting (adjustable).
KVD is for use with HCFC, HFC and HC refrigerants.

KVD and KVR form a regulating system, used to maintain constant and adequately high condensing and receiver pressure in plant with heat-recovery, and in refrigeration and air conditioning plant with air-cooled condensers.





Facts

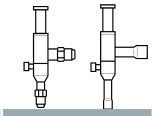
Application:
- Traditional refrigeration
- Air conditioning units
- Commercial refrigeration

- The regulator is equipped with an effective damping device against pulsations which can normally arise in a refrigeration plant
- KVD regulations is only dependent upon the outlet pressure. Pressure variations on the inlet side of the regulator do not affect the degree of opening since KVD is equipped with an equalization bellows

- Wide capacity and operating range
- Regulation range:
  3 – 20 bar / 44 – 290 psig
- Max. working pressure
  PS MWP = 28 bar / 406 psig
- Can be used as a relief valve from high pressure to suction side
- For use with HCFC, HFC and HC
- Compliant with ATEX hazard zone 2

Technical data and ordering

KVD - Receiver pressure regulator

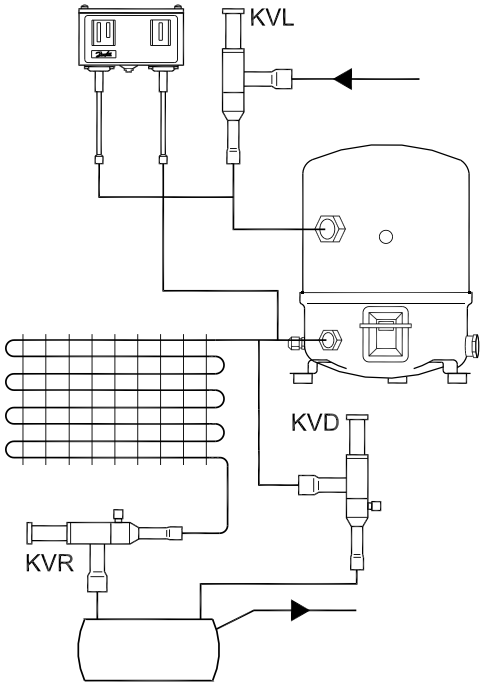


Ordering

Type	K_v value [m^3/h] [1]	Connection type	Connection size		Code no.
			[in]	[mm]	
KVD 12	1.75	Flare [2] [3]	1/2	12	034L0171
	1.75	Solder, ODF [3]	1/2	–	034L0173
	1.75	Solder, ODF [3]	–	12	034L0176
KVD 15	1.75	Flare [2] [3]	5/8	16	034L0172
	1.75	Solder, ODF [3]	5/8	16	034L0177

[1] The K_v value is the flow of water in [m^3/h] at a pressure drop across valve of 1 bar, ρ = 1000 kg / m^3.
[2] Supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - code no. 011L1103, 5/8 in / 16 mm - code no. 011L1167.
[3] The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m/s at the inlet of the regulator can give flow noise.

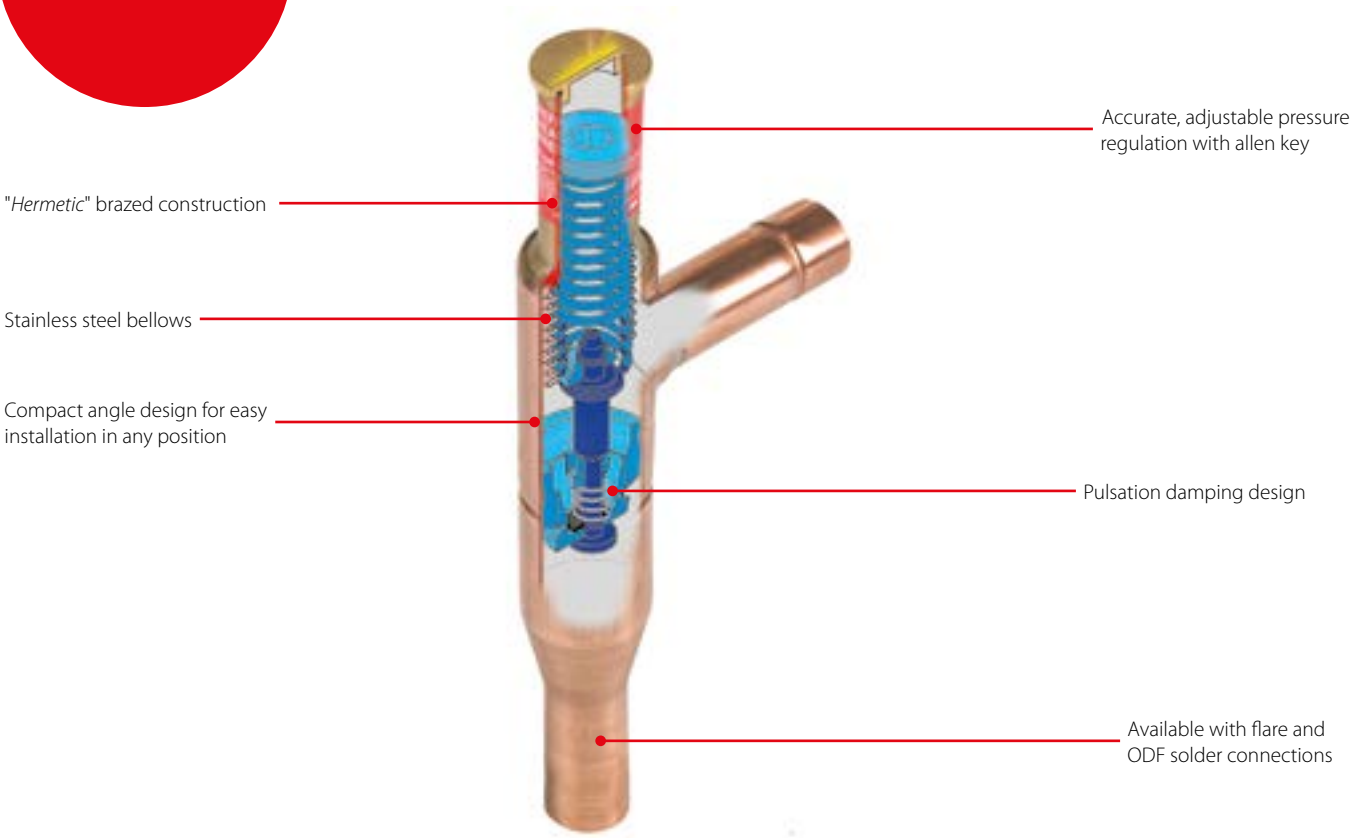
Application example



KVC - Hot gas bypass regulator

KVC are hot gas bypass regulators used for the adaption of the compressor capacity to the actual evaporator load.
Placed in a bypass between high and low pressure sides of the refrigeration system, KVC imposes a lower limit on the compressor suction pressure by supplying the low pressure side with replacement capacity in the form of hot gas/cool gas from the high pressure side.
KVC is for HCFC, HFC and HC refrigerants.





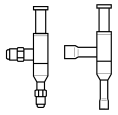
Facts

Application:
- Traditional refrigeration
- Air conditioning units
- Transport refrigeration
- Commercial refrigeration
- Compressed air driers

- KVC regulations is only dependent upon the outlet pressure. Pressure variations on the inlet side of the regulator do not affect the degree of opening since KVC is equipped with an equalization bellows
- The regulator is also equipped with an effective damping device against pulsations which can normally arise in a refrigeration plant

- Compact angle design for easy installation
- Wide capacity and operating range
- Regulation range: 0.2 – 6 bar / 3 – 87 psig
- Maximum working pressure PS / MWP = 28 bar / 406 psig
- For use with HCFC, HFC and HC
- Compliant with ATEX hazard zone 2
- Medium temperature: -45 – 130 °C / -49 – 266 °F

Technical data and ordering



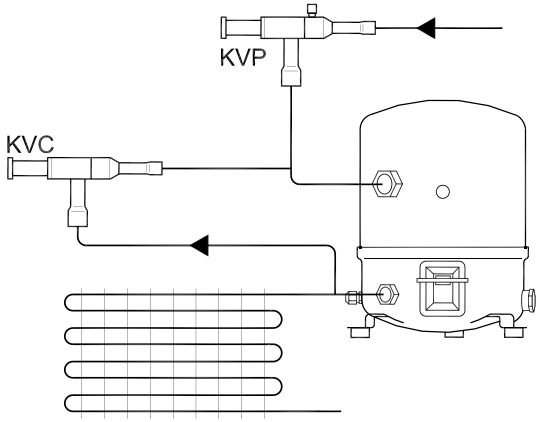
KVC - Hot gas bypass regulator

Ordering

Type	Rated capacity in [kW] / [TR] [4]								Connection type	Connection size		Code no.
	R22		R134a		R404A / R507		R407C					
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]		[in]	[mm]	
KVC 12 [3]	7.6	2.14	4.8	1.36	6.9	2.02	8.4	2.31	Flare [2] [3]	1/2	12	034L0141
	7.6	2.14	4.8	1.36	6.9	2.02	8.4	2.31	Solder, ODF [3]	1/2	–	034L0143
	7.6	2.14	4.8	1.36	6.9	2.02	8.4	2.31	Solder, ODF [3]	–	12	034L0146
KVC 15 [3]	14.9	4.17	9.4	2.65	13.6	3.93	16.4	4.50	Flare [2] [3]	5/8	16	034L0142
	14.9	4.17	9.4	2.65	13.6	3.93	16.4	4.50	Solder, ODF [3]	5/8	16	034L0147
KVC 22 [3]	19.1	5.35	12.0	3.41	17.4	5.04	21.0	5.78	Solder, ODF [3]	7/8	22	034L0144

[1] Supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - code no. 011L1103, 5/8 in / 16 mm - code no. 011L1167.
[2] The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m/s at the inlet of the regulator can give flow noise.
[3] If the discharge temperature becomes too high in relation to the compressor specification, the installation of an injection valve in a bypass between liquid line and compressor suction line is recommended.
[4] Rated capacity is the capacity of the regulator at:
– Evaporating temperature t_e = -10 °C / 14 °F
– Condensing temperature t_c = 25 °C / 77 °F

Application example

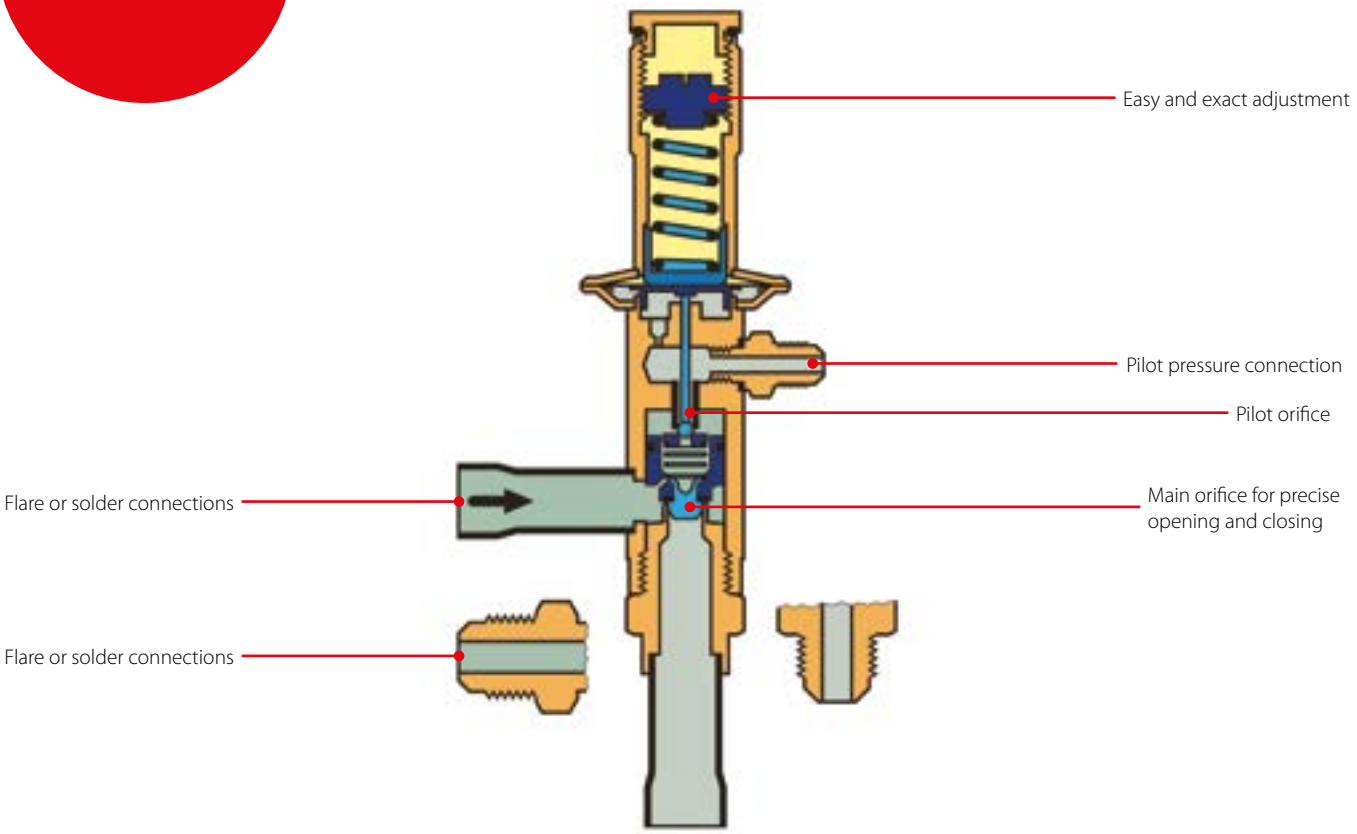


CPCE - Hot gas bypass regulator

CPCE hot gas bypass regulators adapt compressor capacity to actual evaporator load, and are designed for installation in a bypass line between the low and high pressure sides of the refrigeration system, for hot gas injection between evaporator and thermo-static expansion valve.

CPCE is for HCFC, HFC and HC refrigerants. Injection is through an LG liquid-gas mixer.





Facts

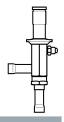
Application:
- Traditional refrigeration
- Air conditioning units
- Commercial refrigeration
- Compressed air dryers
- Transport refrigeration

- Prevents high suction superheats by combining hot gas injection with expansion valve characteristics
- Can also protect against too low an evaporating temperature, i.e. to prevent evaporator icing
- LG Liquid-gax mixer can be used for hot gas defrosting or reverse cycle systems
- Superior control accuracy
- The regulator increases evaporator gas velocity thus ensuring better oil return to compressor

- Direct connection to system suction line regulates hot gas injection independent of evaporator pressure drop
- LG Liquid-gax mixer provides homogenous mixing of the liquid and hot gas refrigerant injected into the evaporator
- For use with HCFC, HFC and HC
- Complaint with ATEX hazard zone 2
- Max. working pressure:
  PS / MWP = 28 bar / 406 psig

Technical data and ordering

CPCE - Hot gas bypass regulator



Ordering

Type	Rated capacity in [kW] / [TR] [1]								Connection type	Connection size		Code no.
	R22		R134a		R404A / R507		R407C					
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]		[in]	[mm]	
CPCE 12	17.4	6.2	7.9	4.3	16.4	6.3	19.0	6.7	Flare [2] [3]	1/2	12	034N0081
	17.4	6.2	7.9	4.3	16.4	6.3	19.0	6.7	Solder, ODF [3]	1/2	12	034N0082
CPCE 15	25.6	9.2	11.6	6.3	24.2	9.1	27.9	9.9	Solder, ODF [3]	5/8	16	034N0083
CPCE 22	34.0	12.2	15.2	8.4	32.0	12.1	37.1	13.2	Solder, ODF [3]	7/8	22	034N0084

[1]) *Rated capacity is the capacity of the regulator at:*
– Evaporating temperature t_e = -10 °C / 14 °F
– Condensing temperature t_c = 30 °C / 100 °F
– Reduction of suction temperature / pressure Δt_s = CPCE: 4 K

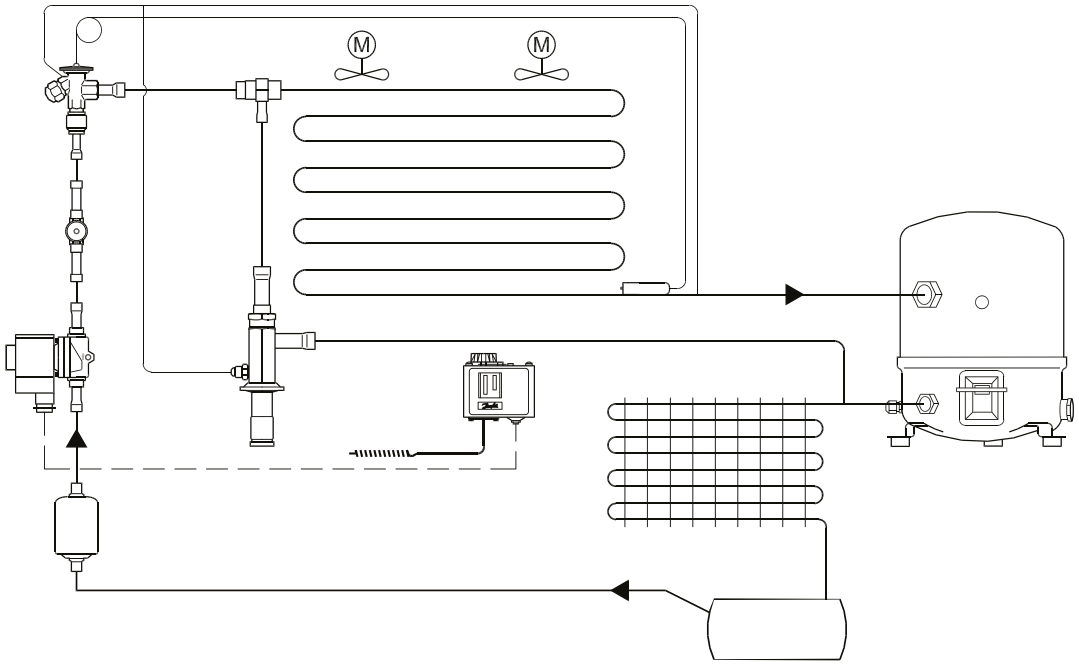
LG - Liquid-gas mixer (accessory)



Ordering

Type	Connection						Code no.
	Expansion valve Solder, ODM		Hot gas Solder, ODF		Liquid distributor Solder, ODF		
	[in]	[mm]	[in]	[mm]	[in]	[mm]	
LG 12 – LG 16	5/8	16	1/2	12	5/8	16	069G4001
LG 12 – LG 22	7/8	22	1/2	12	7/8	22	069G4002
LG 16 – LG 28	1 1/8	28	5/8	16	1 1/8	28	069G4003
LG 22 – LG 35	1 3/8	35	7/8	22	1 3/8	35	069G4004

Application example

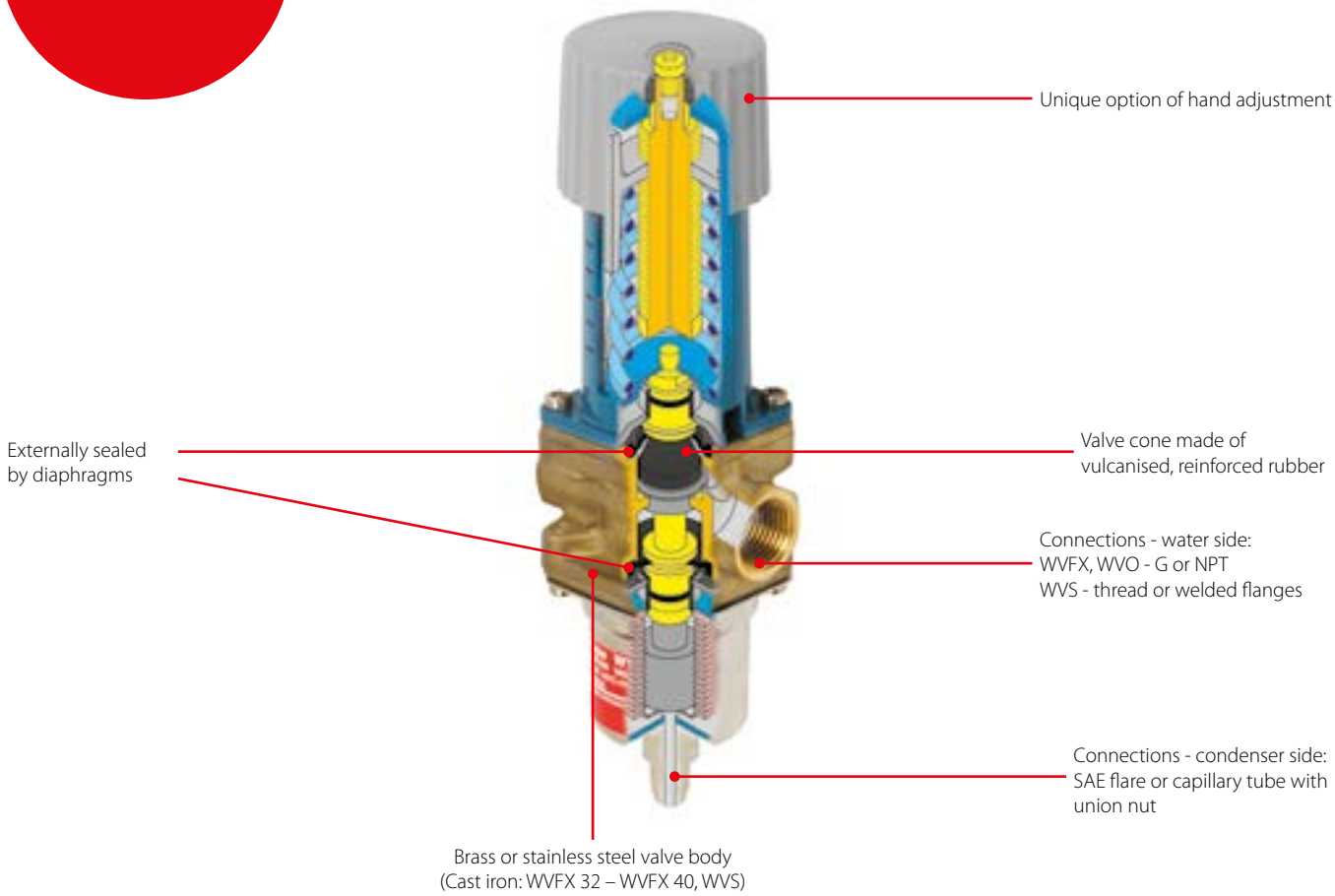


WVFX / WVO / WVS - Pressure operated water valve

WVFX, WVO and WVS pressure operated water valves are used to regulate the flow of water in HCFC, HFC and HC refrigeration plant with water-cooled condensers in order to ensure constant proportional regulation of condensing pressure. The water valve modulates the water flow to maintain the condensing pressure at a constant level during operation.

When the refrigeration plant is stopped, the cooling water flow is shut off automatically. Media: fresh water and neutral brine.
For use with aggressive media such as sea water, WVFX 15, WVFX 20 and WVFX 25 are available in stainless steel versions.





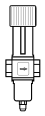
Facts

Applications:
- Traditional refrigeration
- Air conditioning units
- Other applications with water-cooled condenser
- Ice making machines
- Ice cream machines
- IT cooling
- Water chillers

- WVFX 10 – WVFX 25 can be supplied in stainless steel housing for sea water applications
- Exact pressure control - high accuracy of WVO valves up to 0.2 bar
- Reliable design - factory setting is maintained during whole life cycle
- Insensitive to dirt - fit and forget solution
- High permissible water pressure (PS) = 16 bar - can be used with water towers
- Low flow version - 0.63 m³/h (available on request)

- WVFX 10 – WVFX 40 are direct actuated valves
- WVS 32 – WVS 100 are servo-operated valves
- Version for R410A available
- Very wide media temperature range: -25 – 130 °C
- Versions with capillary tube available on request
- For use with HCFC, HFC and HC
- Compliant with ATEX hazard zone 2

Technical data and ordering



WVFX - Pressure operated water valves, commercial applications

Ordering

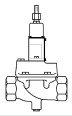
Type	Connection			Range (refrigerant) [bar]	Code no.
	Water side ISO 228-1	Condenser side			
		[in]	[mm]		
WVFX 10	G 3/8	1/4	6 flare	3.5 – 16	003N1100
	G 3/8	1/4	6 flare	4.0 – 23	003N1105
	G 3/8	1/4	6 flare	15.0 – 29.0	003N1410
WVFX 15	G 1/2	1/4	6 flare	3.5 – 16	003N2100
	G 1/2	1/4	6 flare nut	4.0 – 23	003N2205
	G 1/2	1/4	6 flare	4.0 – 23	003N2105
	G 1/2	1/4	6 flare	15.0 – 29.0	003N2410
WVFX 20	G 3/4	1/4	6 flare	3.5 – 16	003N3100
	G 3/4	1/4	6 flare	4.0 – 23	003N3105
	G 3/4	1/4	6 flare nut	4.0 – 23	003N3205
	G 3/4	1/4	6 flare	15.0 – 29.0	003N3410
WVFX 25	G 1	1/4	6 flare	3.5 – 16	003N4100
	G 1	1/4	6 flare	4.0 – 23	003N4105
	G 1	1/4	6 flare	15.0 – 29.0	003N4410
WVFX 32	G 1 1/4	1/4	6 flare	4.0 – 17	003F1232
WVFX 40	G 1 1/2	1/4	6 flare	4.0 – 17	003F1240

WVFX - Pressure operated water valves, with stainless steel housing

WVFX 15	G 1/2	1/4	6 flare	3.5 – 16	003N2101
	G 1/2	1/4	6 flare	4.0 – 23	003N2104
WVFX 20	G 3/4	1/4	6 flare	4.0 – 23	003N3104
WVFX 25	G 1	1/4	6 flare	3.5 – 16	003N4101
	G 1	1/4	6 flare	4.0 – 23	003N4104

WVO - Pressure operated water valves, commercial applications

WVO 10	G 3/8	1/4	6 flare	8 – 12	003N5203
	G 3/8	1/4	6 flare	14 – 18	003N5206
	G 3/8	1/4	6 flare	16 – 20	003N5207
WVO 15	G 1/2	1/4	6 flare	14 – 18	003N5216



WVS - Pressure operated water valve parts programme

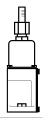
Type	Connection ISO 228-1	Code no.				
		Valve body	Pilot unit [2]	Pilot unit for R410A and R744 (CO_2) [2]	Flange set [3]	Servo spring for differential pressure range: 1 – 10 bar
WVS 32	G 1 1/4	016D5032	016D1017	016D1018	–	016D1327
WVS 40	G 1 1/2	016D5040	016D1017	016D1018	–	016D0575
WVS 50	2 weld flange	016D5050 [1]	016D1017	016D1018	027N3050	016D0576
WVS 65	2 1/2 weld flange	016D5050 [1]	016D1017	016D1018	027N3065	016D0577
WVS 80	3 weld flange	016D5080 [1]	016D1017	016D1018	027N3080	016D0578
WVS 100	4 weld flange	016D5100 [1]	016D1017	016D1018	027N3100	016D0579

[1] Code numbers cover valve body, flange gaskets, flange bolts and screws for pilot valve.
[2] Code numbers cover control element and spring housing.
[3] Code numbers cover an inlet and an outlet flange.

Accessories

Description	Code no.
1 m capillary tube 1/4 in, 6 mm flare coupling nuts at each end	060-017166
Bracket for do WVFX 10 – WVFX 25	003N0388

Technical data



HCFC / HFC / HC

Technical data

Refrigerant	Type				Liquid side			K_v value [1] [m³/h]
		Control press. adjustable closing press. [bar]	Max. working pressure PS [bar]	Max. test pressure PB [bar]	Media	Max. working pressure PS [bar]	Max. test pressure PS [bar]	
HCFC / HFC / HC	WVO 10	4.0 – 22 [2]	26.4	60	Fresh water, neutral brine, sea water	16	24	1.4
	WVFX 10	3.5 – 16	26.4	60		16	24	1.4
		4.0 – 23	26.4	60		16	24	1.4
		15.0 – 29.0	45.2	60		16	24	1.4
	WVO 15	4.0 – 22 [2]	26.4	60		16	24	1.4
	WVFX 15	3.5 – 16.0	26.4	29		16	24	1.9
		4.0 – 23.0	26.4	29		16	24	1.9
		15.0 – 29.0	45.2	60		16	24	1.9
	WVFX 20	3.5 – 16.0	26.4	29		16	24	3.4
		4.0 – 23.0	26.4	29		16	24	3.4
		15.0 – 29.0	45.2	60		16	24	3.4
	WVFX 25	3.5 – 16.0	26.4	29		16	24	5.5
		4.0 – 23.0	26.4	29		16	24	5.5
		15.0 – 29.0	45.2	60		16	24	5.5
	WVFX 32	4.0 – 17.0	24.1	26.5		10	10	11.0
	WVFX 40	4.0 – 17.0	24.1	26.5		10	10	11.0
HCFC / HFC / HC / R717	WVS 32	2.2 – 19.0	26.4	29	Fresh water, neutral brine	10	16	12.5
	WVS 40	2.2 – 19.0	26.4	29		10	16	21.0
	WVS 50	2.2 – 19.0	26.4	29		10	16	32.0
	WVS 65	2.2 – 19.0	26.4	29		10	16	45.0
	WVS 80	2.2 – 19.0	26.4	29		10	16	80.0
	WVS 100	2.2 – 19.0	26.4	29		10	16	125.0

[1]) The K_v value is the flow of water in [m³/h] with a pressure drop across the valve of 1 bar, ρ = 1000 kg/m³.
[2]) Pressure control range width max. 6 bar.

Media temperature range
WVFX 10 – WVFX 25: -25 – 130 °C
WVFX 32 – WVFX 40: -25 – 90 °C
WVS 50 – WVS 100: -25 – 90 °C

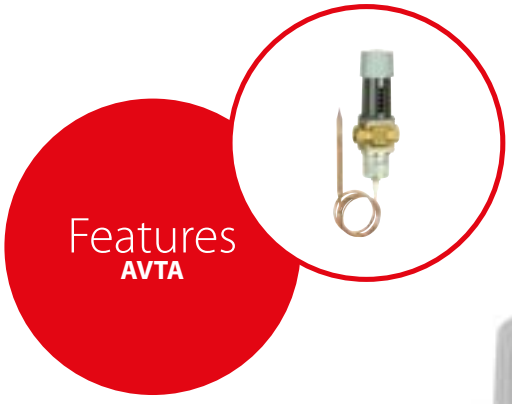
Opening differential pressure
WVO 10 – 25: 0 – 10 bar
WVFX 10 – WVFX 40: 0 – 10 bar
WVS 32 – WVFX 40: 0.5 – 4 bar
WVS 50 – WVS 100: 0.3 – 4 bar

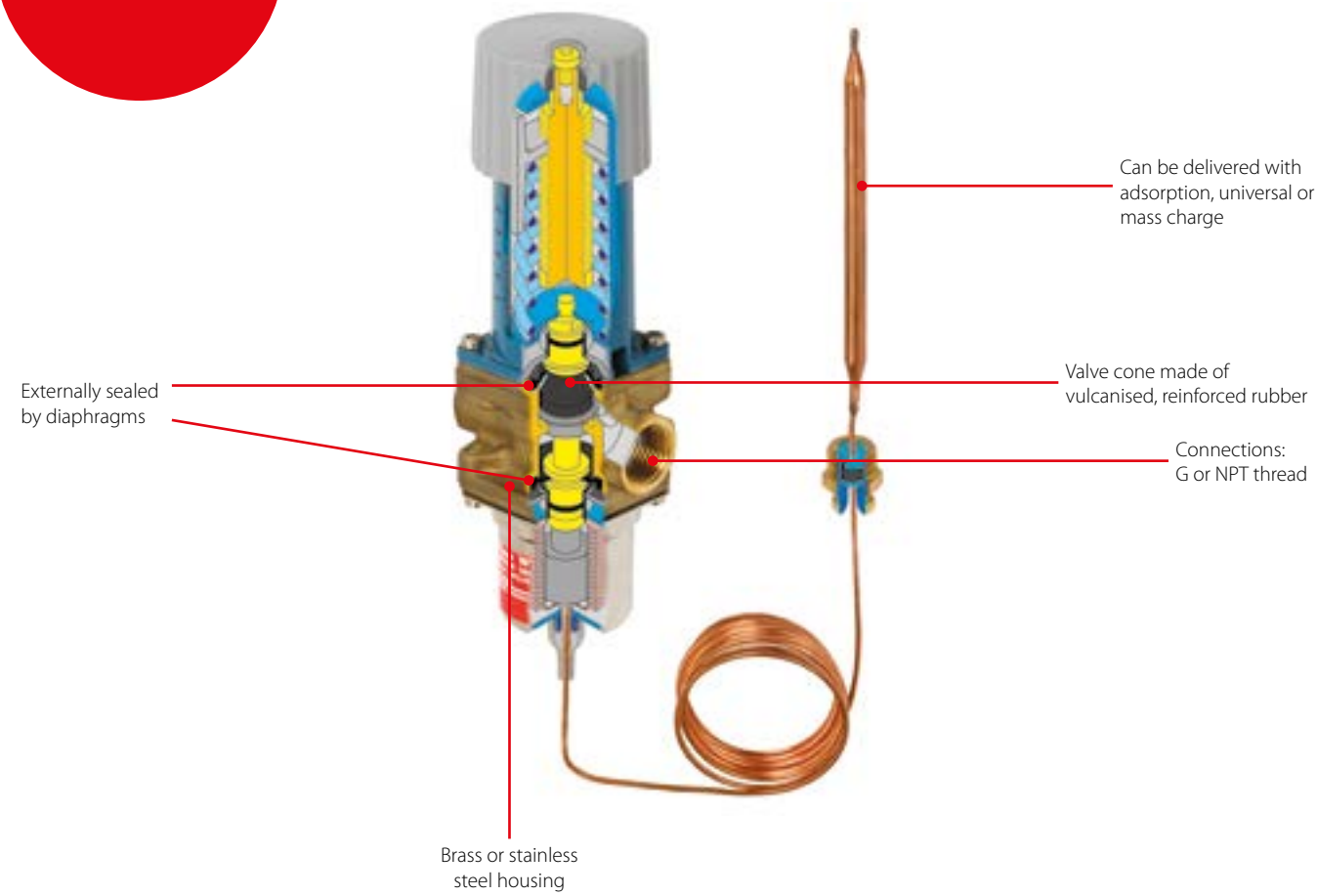
Quick Selection Notes:

AVTA - Pressure operated water valve

AVTA pressure operated water valves are used for proportional regulation of water flow quantity in refrigeration plant with water-cooled condensers for condensing pressure regulation purposes. AVTA valves give modulating regulation of the condensing temperature and so maintain it constant during operation.

When the refrigeration plant is stopped, the cooling water flow is shut off automatically. Media: Fresh water or neutral brine.
For use with aggressive media such as sea water, special versions in stainless steel are available.
AVTA opens on rising bulb temperatures.





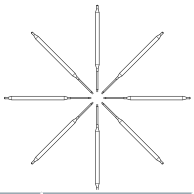
Facts

Applications:
- Traditional refrigeration with water cooled condenser
- Cooling of industrial processes

- Insensitive to dirt – fit and forget solution
- Insensitive to pressure variations
- Needs no power supply - self acting
- The valve can be placed in any position
- Operates from zero differential pressure
- Unique option of hand regulation
- Differential pressure: 0 – 10 bar

- Max. working pressure PS = 16 bar
- Max. pressure on sensor: 25 bar
- Opens on rising sensor temperature
- The regulation range is defined for the point at which the valve begins to open
- AVTA are direct actuated valves

Technical data and ordering

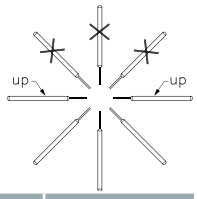


AVTA with adsorption charge (sensor ø9.5 × 150 mm)

Ordering

Type	Connection ISO 228-1	Regulating range [°C]	Max. temperature sensor [°C]	K_v value at Δp = 1 bar [m³/h]	Capillary tube length [m]	Code no. [1]
AVTA 10	G 3/8	10 – 80	130	1.4	2.3	003N1144
AVTA 15	G 1/2	10 – 80	130	1.9	2.3	003N0107
AVTA 20	G 3/4	10 – 80	130	3.4	2.3	003N0108
AVTA 25	G 1	10 – 80	130	5.5	2.3	003N0109

[1]) Code no. covers complete valve including capillary tube gland.

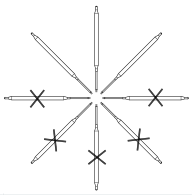


AVTA with universal charge (sensor ø18 × 210 mm)

Ordering

Type	Connection ISO 228-1	Regulating range [°C]	Max. temperature sensor [°C]	K_v value at Δp = 1 bar [m³/h]	Capillary tube length [m]	Code no. [1]
AVTA 10	G 3/8	0 – 30	57	1.4	2.0	003N1132
AVTA 15	G 1/2	0 – 30	57	1.9	2.0	003N2132
AVTA 20	G 3/4	0 – 30	57	3.4	2.0	003N3132
AVTA 25	G 1	0 – 30	57	5.5	2.0	003N4132
AVTA 10	G 3/8	25 – 65	90	1.4	2.0	003N1162
AVTA 15	G 1/2	25 – 65	90	1.9	2.0	003N2162
	G 1/2	25 – 65	90	1.9	2.0 (armoured)	003N0041
AVTA 20	G 3/4	25 – 65	90	3.4	2.0	003N3162
	G 3/4	25 – 65	90	3.4	5.0	003N3165
	G 3/4	25 – 65	90	3.4	2.0 (armoured)	003N0031
AVTA 25	G 1	25 – 65	90	5.5	2.0	003N4162
	G 1	25 – 65	90	5.5	2.0 (armoured)	003N0032
	G 1	25 – 65	90	5.5	5.0	003N4165
AVTA 10	G 3/8	50 – 90	125	1.4	2.0	003N1182
AVTA 15	G 1/2	50 – 90	125	1.9	2.0	003N2182
AVTA 20	G 3/4	50 – 90	125	3.4	2.0	003N3182
AVTA 25	G 1	50 – 90	125	5.5	2.0	003N4182

[1]) Code no. covers complete valve including capillary tube gland.

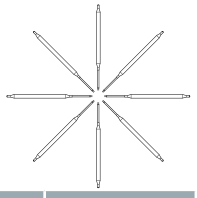


AVTA with mass charge (sensor ø9.5 × 180 mm)

Ordering

Type	Connection ISO 228-1	Regulating range [°C]	Max. temperature sensor [°C]	K_v value at Δp = 1 bar [m³/h]	Capillary tube length [m]	Code no. [1]
AVTA 15	G 1/2	0 – 30	57	1.9	2.0	003N0042
AVTA 20	G 3/4	0 – 30	57	3.4	2.0	003N0043
AVTA 15	G 1/2	25 – 65	90	1.9	2.0	003N0045
	G 1/2	25 – 65	90	1.9	2.0 (armoured)	003N0299
	G 1/2	25 – 65	90	1.9	5.0	003N0034
AVTA 20	G 3/4	25 – 65	90	3.4	2.0	003N0046
AVTA 25	G 1	25 – 65	90	5.5	2.0	003N0047

[1]) Code no. covers complete valve including capillary tube gland.



AVTA in stainless steel with adsorption charge (sensor ø9.5 × 150 mm)

Ordering

Type	Connection ISO 228-1	Regulating range [°C]	Max. temperature sensor [°C]	K_v value at Δp = 1 bar [m³/h]	Capillary tube length [m]	Code no. [1]
AVTA 15	G 1/2	10 – 80	130	1.9	2.3	003N2150
AVTA 20	G 3/4	10 – 80	130	3.4	2.3	003N3150
AVTA 25	G 1	10 – 80	130	5.5	2.3	003N4150

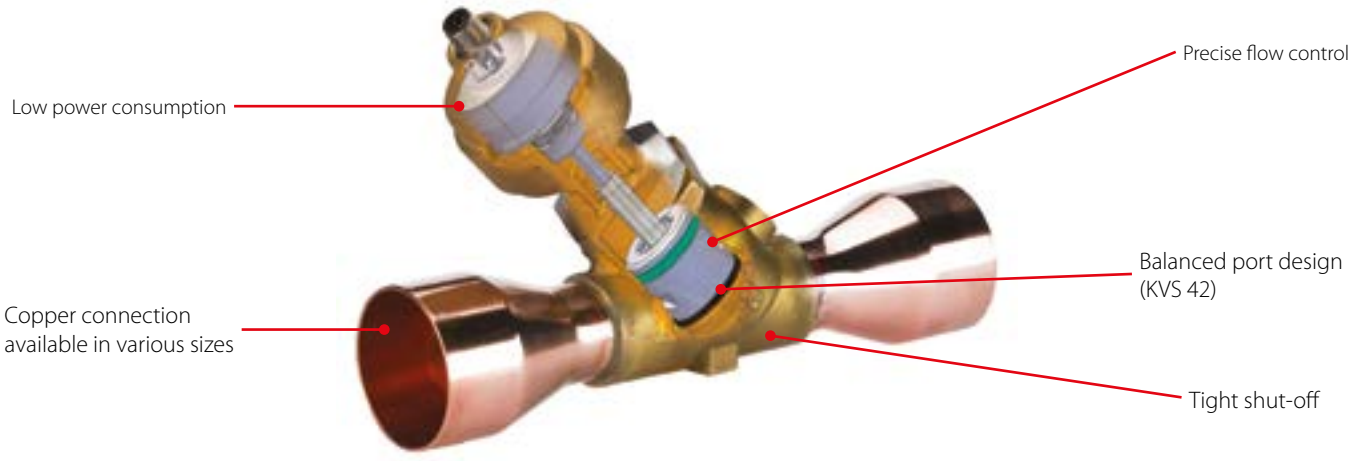
[1]) Code no. covers complete valve including capillary tube gland.

KVS - Electric suction modulating control valve

KVS are electrically operated suction modulating control valves for transport and refrigeration applications. Accurate temperature or pressure control is obtained by modulating the refrigerant flow in the evaporator with a current or voltage driver.

With an EKC 368 controller (current driver) and an AKS sensor placed in the media to be controlled, an accuracy better than ± 0.5 K / ± 0.9 °F can be obtained. The balanced design provides bi-flow operation as well as solenoid shut-off function in both flow directions at MOPD 33 bar / 479 psi. KVS is compatible with R410A, R407C, R404A, R134a, R507, R22 and other refrigerants.





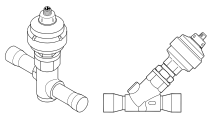
Facts

Application:
- Traditional refrigeration
- Air conditioning units
- Transport refrigeration
- Supermarkets

- Biflow
- High resolution for precise control
- Low power consumption
- Corrosion resistant design external as well as internal
- Solenoid tight shut-off

- KVS is designed for R410A, R407C, R404A, R134a, R507, R22 and other refrigerants
- Balanced port design (KVS 42)
- Cable and connector assemblies as accessories
- Controller: Electronic controller EKC 368, temperature sensors and pressure transmitters

Technical data and ordering



KVS - Electric suction modulating control valve

Technical data

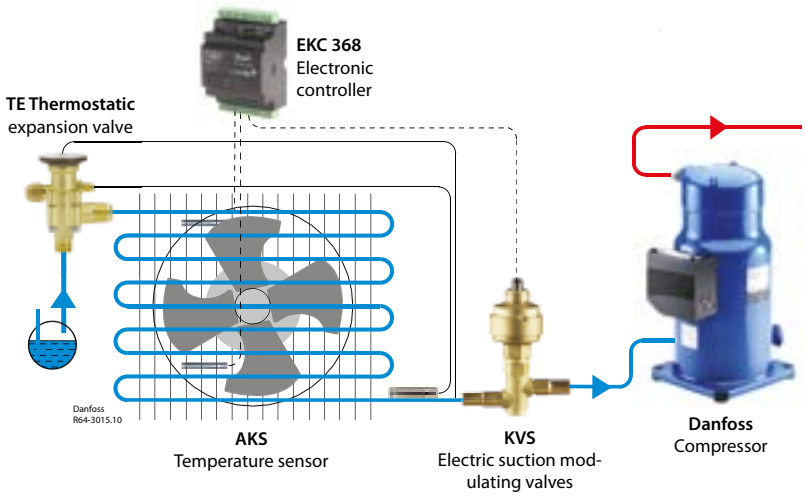
Parameter	KVS 15	KVS 42
Compatible refrigerants	R410A, R407C, R404A, R134a, R507, R22 and other refrigerants	R410A, R407C, R404A, R134a, R507, R22 and other refrigerants
Refrigerant oil	All mineral and ester oils	All mineral and ester oils
CE marking	No	Yes
MOPD	33 bar / 479 psi	33 bar / 479 psi
Max. working pressure	45.5 bar / 660 psi	34 bar / 493 psi
Refrigerant temperature range	-40 – 65 °C / -40 – 149 °F	-40 – 65 °C / -40 – 149 °F
Ambient temperature	-40 – 60 °C / -40 – 140 °F	-40 – 60 °C / -40 – 140 °F
Total stroke	13 mm / 1/2 in	17.2 mm / 11/16 in
Motor enclosure	IP67	IP67
Material of Construction	Body and AST enclosure: Brass; Connector: Copper	Body and AST enclosure: Brass; Connector: Copper

KVS - Electric suction modulating control valve

Electrical data

Parameter	KVS 15 and KVS 42
Stepper motor type	Bi-polar - permanent magnet
Step mode	2 phase full step
Phase resistance	52 Ω ± 10%
Phase inductance	85 mH
Holding current	Depends on application. Full current allowed (100% duty cycle).
Step angle	7.5° (motor), 0.9° (lead screw), Gearing ration 8.5:1. (38 / 13)2:1
Nominal voltage	(Constant voltage drive) 12 V DC -4% – 15%
Phase current	(Using chopper drive) 100 mA RMS -4% – 15%
Max. total power	Voltage/current drive: 5.5 / 1.3 W (UL: NEC class 2)
Step rate	150 steps / second (constant voltage drive) 0 – 300 steps / second 300 recommended (chopper current drive)
Total steps	KVS 15: 2625 (160 – 0) steps KVS 42: 3810 (160 – 0) steps
Full travel time	KVS 15: 17 / 8.5 second (voltage / current) KVS 42: 25.4 / 12.7 second (voltage / current)
Lifting height	KVS 15: 13 mm / 1/2 in KVS 42: 17.2 mm / 5/16 in
Reference position	Overdriving against the full close position
Electrical connection	M12 connector

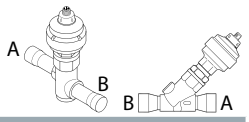
Related products
Electronic controller
Type EKC 368
Temperature sensors
Type AKS
Service driver
Type AST-G



Technical data and ordering

KVS - Electric suction modulating control valve

Ordering, valves in single pack



Type	Rated capacity [1]						KVS valve		
	R22		R134a		R404A/R507		Connection A × B		Code no. single pack
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[mm]	[in]	
KVS 15	5.15	1.31	3.78	0.94	4.58	1.07	16	5/8	034G4252
	5.15	1.31	3.78	0.94	4.58	1.07	22	7/8	034G4253
KVS 42	40.4	11.4	29.3	8.3	35.3	10.0	22	7/8	034G2858
	40.4	11.4	29.3	8.3	35.3	10.0	28	1 1/8	034G2850
	40.4	11.4	29.3	8.3	35.3	10.0	35	1 3/8	034G2851
	40.4	11.4	29.3	8.3	35.3	10.0	–	1 5/8	034G2852

[1]) *Rated capacity is the valve capacity at:*
- evaporating temperature t_e = -10 °C / 14 °F
- condensing temperature t_c = 25 °C / 77 °F
- pressure drop across valve Δp = 0.2 bar / 2.9 psi

M12 Female - Connector Cable

Ordering

Cable quality	Temperature range	Cable length (L)		Design	Code no. single pack
Jacket: PVC	-50 – 80 °C / -58 – 176 °F	2 m	6.6 ft	M12, 4 pins to actuator and flying wires for driver connection	034G2201
	-50 – 80 °C / -58 – 176 °F	8 m	26.2 ft		034G2200
Jacket: CPE	-40 – 80 °C / -40 – 176 °F	2 m	6.6 ft		034G2202

KVS - Electric suction modulating control valve

Accessory

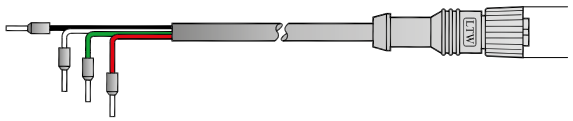
Type	Description	Type designation	Code no. Multipack
Cable filter	Cable filter for KVS valve	AKA 211	084B2238

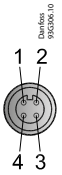
KVS - Electric suction modulating control valve

Cable specification

Cable Specification	Jacket	Colour	UV resistant	Insulation	Connection	Outer diameter	M12 connector	Special
PVC cables	Half / Matt / PVC	Black	Yes	SR-PVC	4 wires (0.33 mm² / 22 AWG)	5.0 mm / 0.19 in	PU (polyurethane)	UL VW-1
CPE cables	CPE	Gray	Yes	EPR	4 wires (0.5 mm² / 20 AWG)	6.3 mm / 0.24 in	PU (polyurethane)	Resistant to gear oil, diesel oil, ethylene glycol, propylene glycol

Note:
CPE cables are recommended for outdoor application.





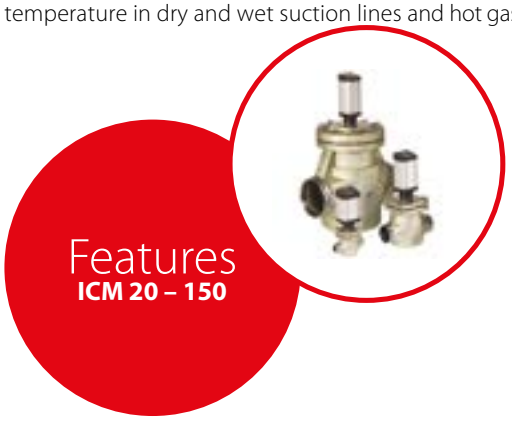
1 - Red
2 - Green
3 - White
4 - Black

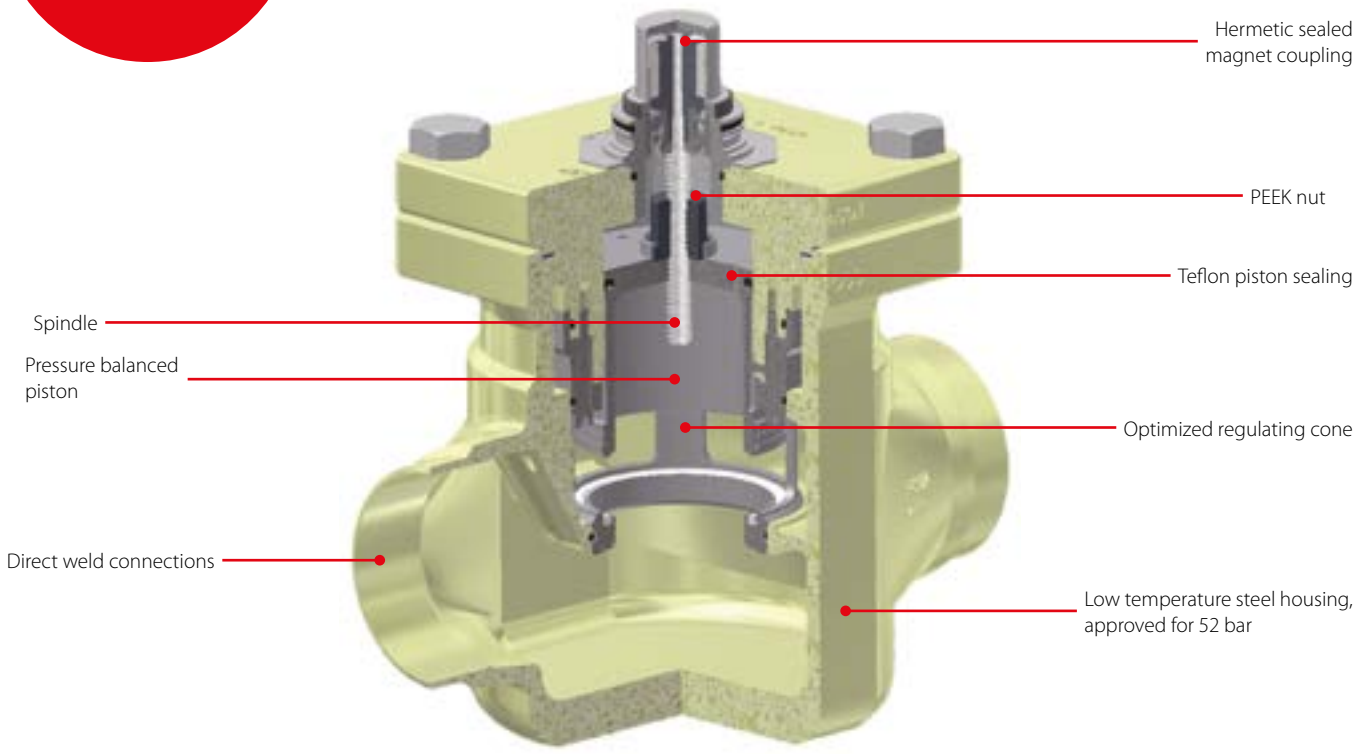
Quick Selection Notes:

ICM 20-150, Motor operated valve

ICM are direct operated motorized valves driven by actuator type ICAD (Industrial Control Actuator with Display).
The motor valve is based on four main components - valve body, top cover, function module and actuator - and is available both as complete valves and as parts programme.
ICM valves are designed to regulate an expansion process in liquid lines with or without phase change or control pressure or temperature in dry and wet suction lines and hot gas lines.

ICM valves are designed so that the opening and closing forces are balanced. Therefore only three sizes of ICAD actuators are needed for the complete range of ICM from DN 20 to DN 150.
The ICM motorized valve and ICAD actuator assembly offers a very compact unit with small dimensions.
ICM is for use with HCFC, HFC, R717 (Ammonia) and R744 (CO_2) refrigerants.





Facts

Application:
- Industrial refrigeration for a maximum working pressure of 52 bar / 754 psig

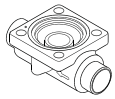
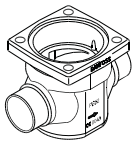
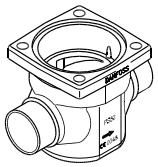
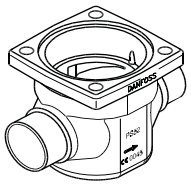
- Modular Concept
  - Each valve body is available with several different connection types and sizes
  - Valve overhaul is performed by replacing the function module
  - Possible to convert ICM motor operated valve to ICS pilot operated servo valve
- Low weight and compact design
- Low temperature steel body
- Direct coupled connections, connection types include butt weld, socket weld, solder and threaded connections
- V-port regulating cone ensures optimum regulating accuracy particularly at part load
- Manual opening possible via ICAD or service tool
- Cavitation resistant valve seat
- Magnet coupling - real hermetic sealing
- Refrigerants: Applicable to HCFC, HFC, R717 (Ammonia) and R744 (CO_2).
  Use with flammable hydrocarbons canot be recommended; please contact Danfoss
- Temperature range:
  -60 – 120 °C / -76 – 248 °F
- Surface protection:
  The external surface is zinc-chromated to provide good corrosion protection
- Max. working pressure: 52 bar g / 754 psig
- Max. opening pressure differential (MOPD):
  - ICM 20 – 32: 52 bar / 750 psi
  - ICM 40: 40 bar / 580 psi
  - ICM 50: 30 bar / 435 psi
  - ICM 65: 20 bar / 290 psi
  - ICM 100: 20 bar / 290 psi
  - ICM 125: 20 bar / 290 psi
  - ICM 150: 20 bar / 290 psi

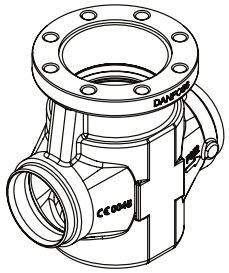
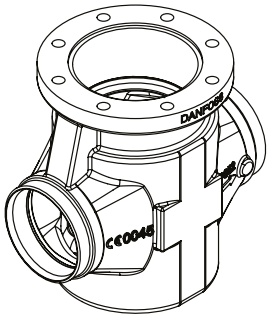
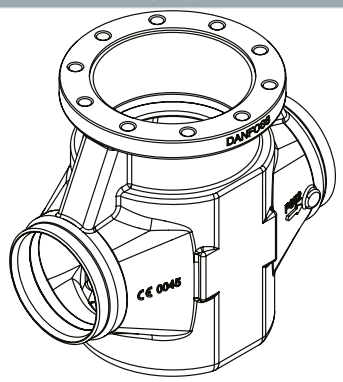
The ICM concept

The ICM concept is developed around a modular principle. This gives the possibility of combining function modules and top covers with special valve body size that is available in a variety of connection possibilities.

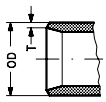
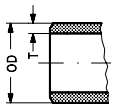
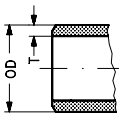
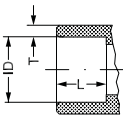
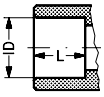
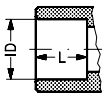
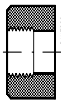
The valve body

There are nine valve bodies available.

ICV 20	ICV 25	ICV 32	ICV 40	ICV 50	ICV 65
					

ICV 100	ICV 125	ICV 150
		

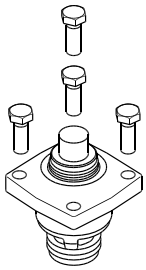
Valve bodies in the sizes ICV 20 – ICV 65 are available with a range of undersizes through oversized connection sizes and types.
ICV 100 – ICV 150 are available in butt-weld DIN and butt-weld ANSI nominal sizes.

D	A	J	SOC	SD	SA	FPT
						
Butt-weld DIN	Butt-weld ANSI	Butt-weld JIS	Socket weld ANSI	Solder DIN	Solder ANSI	Female Pipe Thread

Type	Valve body size	K_V [m^3/h]	C_V [US gal/min]
ICM20A – 33	20	0.2	0.23
ICM 20 – A	20	0.6	0.7
ICM 20 – B66	20	1.6	1.9
ICM 20 – B	20	2.4	2.8
ICM 20 – C	20	4.6	5.3
ICM 25 – A	25	6	7.0
ICM 25 – B	25	12	13.9
ICM 32 – A	32	9	10.4
ICM 32 – B	32	17	20
ICM 40 – A	40	15	17
ICM 40 – B	40	26	30
ICM 50 – A	50	23	27
ICM 50 – B	50	40	46
ICM 65 – A	65	35	41
ICM 65 – B	65	70	81
ICM 100 – B	100	142	167
ICM 125 – B	125	223	260
ICM 150 – B	150	370	430

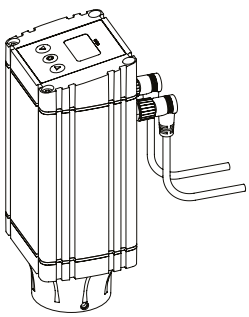
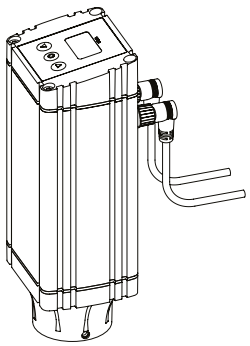
Top / function module

The multiple top / function modules have different capacities.



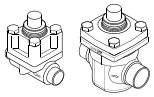
The actuator

A magnetic coupled actuator is easily installed. Two actuators cover the entire ICM program.

ICAD 600A	ICAD 1200A
	

Technical data and ordering

ICM - Motor operated valve



Ordering factory assembled valve (valve body and top / function module)

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICM 20 – A	3/4	20	Butt weld, EN 10220	D	027H1030
	3/4	20	Butt weld, ANSI (B 36.10)	A	027H1035
	3/4	20	Socket weld, ANSI (B 16.11	SOC	027H1040
	7/8	22	Solder connection, ANSI (B 16.22)	SA	027H1050
	7/8	22	Solder connection, DIN (2856)	SD	027H1045
	1	25	Butt weld, EN 10220	D	027H1020
ICM 20 – B	3/4	20	Butt weld, EN 10220	D	027H1031
	3/4	20	Butt weld, ANSI (B 36.10)	A	027H1036
	3/4	20	Socket weld, ANSI (B 16.11	SOC	027H1041
	7/8	22	Solder connection, ANSI (B 16.22)	SA	027H1051
	7/8	22	Solder connection, DIN (2856)	SD	027H1046
	1	25	Butt weld, EN 10220	D	027H1021
ICM 20 – C	3/4	20	Butt weld, EN 10220	D	027H1032
	7/8	22	Solder connection, ANSI (B 16.22)	SA	027H1052
	7/8	22	Solder connection, DIN (2856)	SD	027H1047
	1	25	Butt weld, EN 10220	D	027H1022
	1	25	Butt weld, ANSI (B 36.10)	A	027H1025
ICM 25 – A	7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2010
	7/8	22	Solder connection, DIN (2856)	SD	027H2006
	1	25	Butt weld, EN 10220	D	027H2000
	1	25	Butt weld, ANSI (B 36.10)	A	027H2002
	1	25	Socket weld, ANSI (B 16.11	SOC	027H2004
	1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2012
	1 1/8	28	Solder connection, DIN (2856)	SD	027H2008
	1 1/8	35	Solder connection, DIN (2856)	SD	027H2014
	1 1/2	40	Butt weld, EN 10220	D	027H2016
ICM 25 – B	7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2011
	7/8	22	Solder connection, DIN (2856)	SD	027H2007
	1	25	Butt weld, EN 10220	D	027H2001
	1	25	Butt weld, ANSI (B 36.10)	A	027H2003
	1	25	Socket weld, ANSI (B 16.11	SOC	027H2005
	1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2013
	1 1/8	28	Solder connection, DIN (2856)	SD	027H2009
	1 1/8	35	Solder connection, DIN (2856)	SD	027H2015
ICM 32 – A	1 1/4	32	Butt weld, EN 10220	D	027H3000
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H3002
	1 1/4	32	Socket weld, ANSI (B 16.11	SOC	027H3004
	1 1/8	35	Solder connection, DIN (2856)	SD	027H3006
	1 1/2	40	Butt weld, EN 10220	D	027H3012
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H3008
ICM 32 – B	1 1/4	32	Butt weld, EN 10220	D	027H3001
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H3003
	1 1/4	32	Socket weld, ANSI (B 16.11	SOC	027H3005
	1 3/8	35	Solder connection, DIN (2856)	SD	027H3007
ICM 40 – A	1 1/2	40	Butt weld, EN 10220	D	027H4000
	1 5/8	40	Butt weld, ANSI (B 36.10)	A	027H4002
	1 5/8	40	Socket weld, ANSI (B 16.11	SOC	027H4004
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H4006
	1 5/8	42	Solder connection, DIN (2856)	SD	027H4008
	2	50	Butt weld, EN 10220	D	027H4010
ICM 40 – B	1 1/2	40	Butt weld, EN 10220	D	027H4001
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H4003
	1 1/2	40	Socket weld, ANSI (B 16.11	SOC	027H4005
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H4007
	1 5/8	42	Solder connection, DIN (2856)	SD	027H4009
ICM 50 – A	2	50	Butt weld, EN 10220	D	027H5000
	2	50	Butt weld, ANSI (B 36.10)	A	027H5002
	2	50	Socket weld, ANSI (B 16.11	SOC	027H5004
	2 1/8	54	Solder connection, DIN (2856)	SD	027H5006
	2 1/2	65	Butt weld, EN 10220	D	027H5008
ICM 50 – B	2	50	Butt weld, EN 10220	D	027H5001
	2	50	Butt weld, ANSI (B 36.10)	A	027H5003
	2	50	Socket weld, ANSI (B 16.11	SOC	027H5005
	2 1/8	54	Solder connection, DIN (2856)	SD	027H5007
ICM 65 – A	2 1/2	65	Butt weld, EN 10220	D	027H6010
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H6012
ICM 65 – B	2 1/2	65	Butt weld, EN 10220	D	027H6001
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H6003
	2 1/2	65	Socket weld, ANSI (B 16.11	SOC	027H6005
	2 5/8	67	Solder connection, ANSI (B 16.22)	SA	027H6007
	3	76	Solder connection, DIN (2856)	SD	027H6009

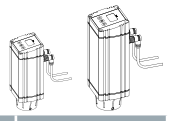
Technical data and ordering

ICM - Motor operated valve

Ordering factory assembled valve (valve body and top / function module)

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICM 100	4	100	Butt weld, EN 10220	D	027H7130
	4	100	Butt weld, ANSI (B 36.10)	A	027H7131
ICM 125	5	125	Butt weld, EN 10220	D	027H7150
	5	125	Butt weld, ANSI (B 36.10)	A	027H7151
ICM 150	6	150	Butt weld, EN 10220	D	027H7170
	6	150	Butt weld, ANSI (B 36.10)	A	027H7171

ICAD actuator



Ordering

Type	Cable	Supply voltage	Load	Analog Input	Digital Input	Output	Code no.
ICAD 600A	1.5 m (60 in)	24 V DC	1.2 A	0 / 4 – 20 mA 0 / 2 – 10 V	ON / OFF Volt free contact	0 / 4 – 20 mA	027H9075
	None	24 V DC	1.2 A	0 / 4 – 20 mA 0 / 2 – 10 V	ON / OFF Volt free contact	0 / 4 – 20 mA	027H9120
ICAD 1200A	1.5 m (60 in)	24 V DC	3.0 A	0 / 4 – 20 mA 0 / 2 – 10 V	ON / OFF Volt free contact	0 / 4 – 20 mA	027H9077
	None	24 V DC	3.0 A	0 / 4 – 20 mA 0 / 2 – 10 V	ON / OFF Volt free contact	0 / 4 – 20 mA	027H9122

ICAD - Service tool



Ordering

Type	Function	Code no.
ICM 20–32	Featuring a magnetic coupling for manual operation of the ICM and a threaded end for dismounting of the ICS function module and other useful functions.	027H0180
ICM 40–150		027H0181

Technical data and ordering

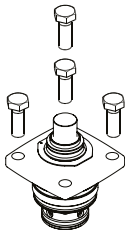
Ordering from the parts programme (valve body + top / function module + actuator)

Example:



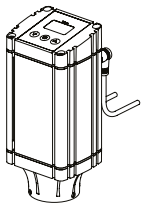
Valve body 32 D (1 ¼ in)
027H2129

+



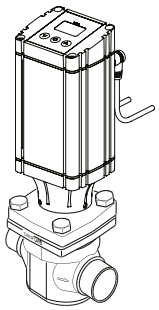
Top / function module
ICM 25-B
027H2181

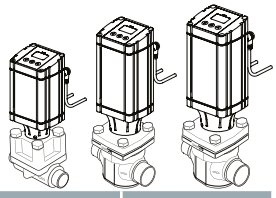
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Actuator
027H9075
(For ICAD code numbers; please see the section "Ordering ICAD actuators)

=





ICM 20 / ICV 20 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 20	⅝	16	Solder connection, ANSI (B 16.22)	SA	027H1129
	⅝	16	Solder connection, DIN (2856)	SD	027H1132
	¾	20	Butt weld, EN 10220	D	027H1145
	¾	20	Butt weld, ANSI (B 36.10)	A	027H1148
	¾	20	Socket weld, ANSI (B 16.11)	SOC	027H1151
	¾	20	Female pipe thread (ANSI/ASME B 1.20.1)	FTP	027H1157
	⅞	22	Solder connection, ANSI (B 16.22)	SA	027H1160
	⅞	22	Solder connection, DIN (2856)	SD	027H1154
	1	25	Butt weld, EN 10220	D	027H1163
	1	25	Butt weld, ANSI (B 36.10)	A	027H1166

ICM 20 top / function module [1)]

Type	C_v value [gal/min]	K_v value [m^3/h]		Code no.
ICM 20 – A33	0.23	0.2		027H1186
ICM 20 – A	0.7	0.6		027H1180
ICM 20 – B66	1.9	1.6		027H1194
ICM 20 – B	2.8	2.4		027H1181
ICM 20 – C	5.3	4.6		027H1182

ICM 25 / ICV 25 Valve body

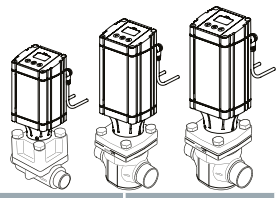
Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 25	¾	20	Butt weld, EN 10220	D	027H2128
	¾	20	Butt weld, ANSI (B 36.10)	A	027H2131
	¾	20	Socket weld, ANSI (B 16.11	SOC	027H2132
	¾	20	Female pipe thread (ANSI/ASME B 1.20.1)	FTP	027H2133
	⅞	22	Solder connection, ANSI (B 16.22)	SA	027H2125
	⅞	22	Solder connection, DIN (2856)	SD	027H2123
	1	25	Butt weld, EN 10220	D	027H2120
	1	25	Butt weld, ANSI (B 36.10)	A	027H2121
	1	25	Socket weld, ANSI (B 16.11	SOC	027H2122
	1	25	Female pipe thread (ANSI/ASME B 1.20.1)	FTP	027H2127
	1 ⅛	28	Solder connection, ANSI (B 16.22)	SA	027H2126
	1 ⅛	28	Solder connection, DIN (2856)	SD	027H2124
	1 ¼	32	Butt weld, EN 10220	D	027H2129
	1 ¼	32	Butt weld, ANSI (B 36.10)	A	027H2130
	1 ⅜	35	Solder connection, DIN (2856)	SD	027H2134
	1 ½	40	Butt weld, EN 10220	D	027H2135

ICM 25 top / function module [2)]

Type	C_v value [gal/min]	K_v value [m^3/h]		Code no.
ICM 25 – A	7	6		027H2180
ICM 25 – B	13.9	12		027H2181

[1)] Including bolts and O-ring (for assembly with ICV valve body). Seat and O-ring (for seat to be mounted in ICV valve body).
[2)] Including gasket and O-rings.

Technical data and ordering



ICM 32 / ICV 32 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 32	1 1/4	32	Butt weld, EN 10220	D	027H3120
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H3121
	1 1/4	32	Socket weld, ANSI (B 16.11	SOC	027H3122
	1 3/8	35	Solder connection, DIN (2856)	SD	027H3123
	1 1/2	40	Butt weld, EN 10220	D	027H3125
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H3126
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H3127
	1 5/8	42	Solder connection, DIN (2856)	SD	027H3128

ICM 32 top / function module [2])

Type	C_v value [gal/min]	K_v value [m³/h]		Code no.
ICM 32 – A	10.4	9		027H3180
ICM 32 – B	20	17		027H3181

ICM 40 / ICV 40 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 40	1 1/2	40	Butt weld, EN 10220	D	027H4120
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H4121
	1 1/2	40	Socket weld, ANSI (B 16.11	SOC	027H4122
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H4124
	1 5/8	42	Solder connection, DIN (2856)	SD	027H4123
	2	50	Butt weld, EN 10220	D	027H4126
	2	50	Butt weld, ANSI (B 36.10)	A	027H4127

ICM 40 top / function module [2])

Type	C_v value [gal/min]	K_v value [m³/h]		Code no.
ICM 40 – A	17	15		027H4180
ICM 40 – B	30	26		027H4181

ICM 50 / ICV 50 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 50	2	50	Butt weld, EN 10220	D	027H5120
	2	50	Butt weld, ANSI (B 36.10)	A	027H5121
	2	50	Socket weld, ANSI (B 16.11	SOC	027H5122
	2 1/8	54	Solder connection, DIN (2856)	SD	027H5123
	2 1/2	65	Butt weld, EN 10220	D	027H5124
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H5125

ICM 50 top / function module [2])

Type	C_v value [gal/min]	K_v value [m³/h]		Code no.
ICM 50 – A	27	23		027H5180
ICM 50 – B	46	40		027H5181

ICM 65 / ICV 65 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 65 – 80	2 1/2	65	Butt weld, EN 10220	D	027H6120
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H6121
	2 1/2	65	Socket weld, ANSI (B 16.11	SOC	027H6123
	2 1/2	65	Butt weld, JIS (B S 602)	J	027H6122
	2 5/8	67	Solder connection, ANSI (B 16.22)	SA	027H6125
	3	76	Solder connection, DIN (2856)	SD	027H6124
	3	80	Butt weld, EN 10220	D	027H6126
	3	80	Butt weld, ANSI (B 36.10)	A	027H6127

ICM 65 top / function module [2])

Type	C_v value [gal/min]	K_v value [m³/h]		Code no.
ICM 65 – A	41	35		027H6180
ICM 65 – B	80	70		027H6181

[1]) Including bolts and O-ring (for assembly with ICV valve body). Seat and O-ring (for seat to be mounted in ICV valve body).
[2]) Including gasket and O-rings.
Note: Converting old PM valve to new ICV solution (ICS, ICM or ICLX) can be done with the ICV PM flanged valve housing.
The ICV PM flanged valve housing is designed for a max. working pressure of 28 bar g / 406 psig and therefore a suitable replacement for PM valves in the service market.
For ordering; please see the spare part documentation on PM valves.

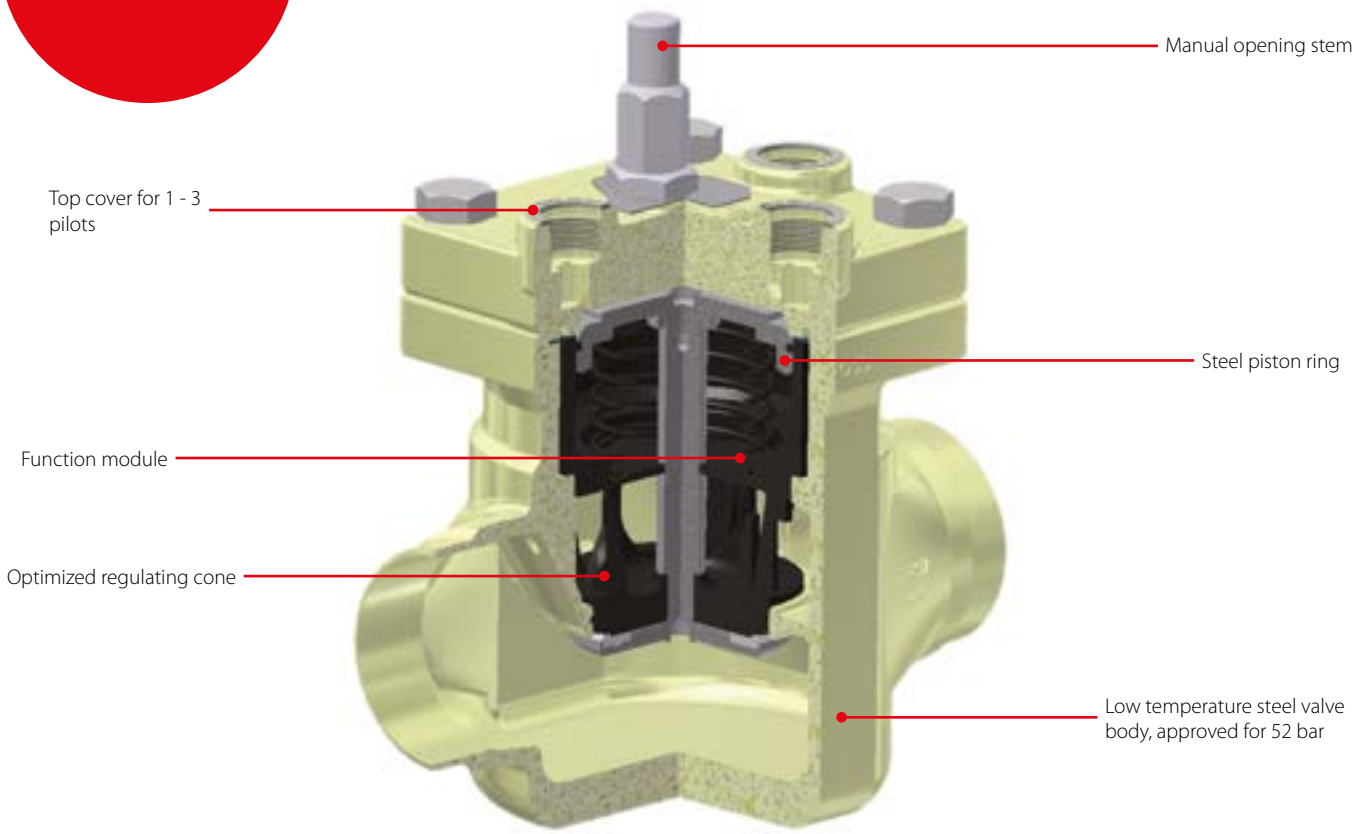
ICS 25-150, Pilot-operated servo valve

ICS are compact, servo operated multi-function control valves based on three main components – valve body, function module and top cover - and are available both as complete valves and as parts programme.
ICS valve functions are defined by the pilot valves connected.
ICS 1 pilot has one pilot pressure connection and ICS 3 pilot has three pilot pressure connections. With pilots, ICS can be used for regulating pressure, temperature and ON / OFF function in refrigeration systems.

ICS valves are designed for low and high-pressure refrigerants, HCFC, HFC, R717 (Ammonia) and R744 (CO_2).
ICS valves can be used on the high and low-pressure sides, in wet and dry suction lines and in liquid lines without phase change (i.e. where no expansion takes place in the valve). The associated Danfoss pilot valves can be either screwed directly into the ICS valve or connected via an external pilot line.



Features
ICS 25 – 150



Facts

Application:
- Industrial refrigeration for a maximum working pressure of 52 bar / 754 psig

- Modular Concept:
  - Each valve body is available with several different connection types and sizes
  - Valve overhaul is performed by replacing the function module
  - Possible to convert ICS pilot-operated servo valve to ICM motor operated valve

- Low weight and compact design
- Low temperature steel body
- Direct coupled connections: connection types include butt weld, socket weld, solder and threaded connections
- V-port regulating cone ensures optimum regulating accuracy particularly at part load
- Manual operating spindle
- The ICS valve is a multifunction valve where 1 or up to 3 pilot valves can be mounted into the pilot ports

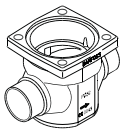
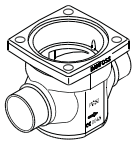
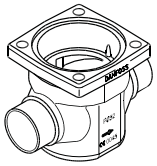
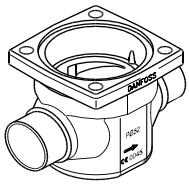
- Refrigerants:
  Applicable to HCFC, HFC, R717 (Ammonia) and R744 (CO_2).
  Use with flammable hydrocarbons cannot be recommended; please contact Danfoss
- Temperature range:
  -60 – 120 °C / -76 – 248 °F
- Surface protection:
  The external surface is zinc-chromated to provide good corrosion protection
- Max. working pressure: 52 bar g / 754 psig

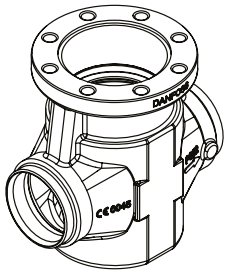
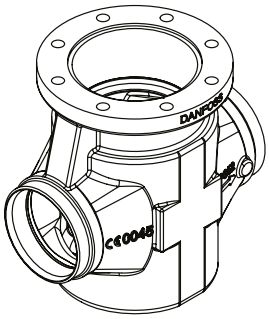
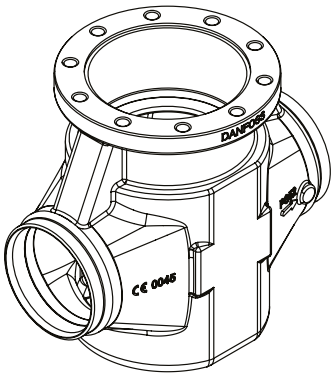
The ICS concept

The ICS concept is developed around a modular principle. This gives the possibility of combining function modules and top covers with valve bodies, which are available in many different sizes and with a variety of connection possibilities.

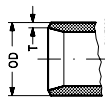
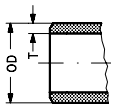
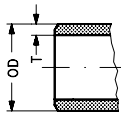
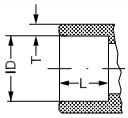
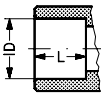
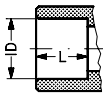
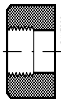
The valve body

There are eight valve bodies available.

ICV 25	ICV 32	ICV 40	ICV 50	ICV 65
				

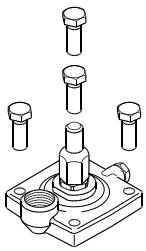
ICV 100	ICV 125	ICV 150
		

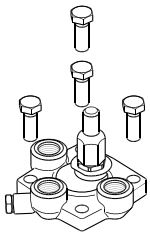
Valve bodies in the sizes ICV 25 – ICV 65 are available with a range of undersizes through oversized connection sizes and types.
ICV 100 – ICV 150 are available in butt-weld DIN and butt-weld ANSI nominal sizes.

D	A	J	SOC	SD	SA	FPT
						
Butt-weld DIN	Butt-weld ANSI	Butt-weld JIS	Socket weld ANSI	Solder DIN	Solder ANSI	Female Pipe Thread

The top cover

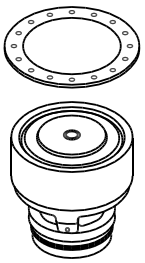
Each valve body may be fitted with a 1 pilot or 3 pilot top cover (except ICS 100 – ICS 150 - only available as 3 pilots version).





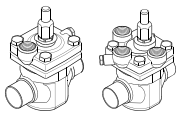
The function module

Multiple function modules are available to give different capacities.



Type	Valve body size	K_v value [m^3/h]
ICS 25 – 5	25	1.7
ICS 25 – 10	25	3.5
ICS 25 – 15	25	6.0
ICS 25 – 20	25	8
ICS 25 – 25	25	11.5
ICS 32	32	17
ICS 40	40	27
ICS 50	50	44
ICS 65	65	70
ICS 80	80	85
ICS 100	100	142
ICS 125	125	207
ICS 150	150	354

Ordering



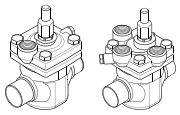
ICS - Pilot-operated servo valve

Ordering factory assembled valve (valve body and top / function module)

Type		Connection size [in]	Connection size [mm]	Connection type	Connection designation	Code no.
ICS 25 – 5	1 pilot	3/4	20	Butt weld, EN 10220	D	027H2028
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2029
		3/4	20	Socket weld, ANSI (B 16.11)	SOC	027H2140
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2025
		7/8	22	Solder connection, DIN (2856)	SD	027H2023
		1	25	Butt weld, EN 10220	D	027H2020
		1	25	Butt weld, ANSI (B 36.10)	A	027H2021
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2026
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2024
	3 pilots [2]	3/4	20	Butt weld, EN 10220	D	027H2078
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2079
		3/4	20	Socket weld, ANSI (B 16.11)	SOC	027H2145
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2075
		7/8	22	Solder connection, DIN (2856)	SD	027H2073
		1	25	Butt weld, EN 10220	D	027H2070
		1	25	Butt weld, ANSI (B 36.10)	A	027H2071
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2076
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2074
ICS 25 – 10	1 pilot	3/4	20	Butt weld, EN 10220	D	027H2038
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2039
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2035
		7/8	22	Solder connection, DIN (2856)	SD	027H2033
		1	25	Butt weld, EN 10220	D	027H2030
		1	25	Butt weld, ANSI (B 36.10)	A	027H2031
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2036
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2034
	3 pilots [2]	3/4	20	Butt weld, EN 10220	D	027H2088
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2089
		3/4	20	Socket weld, ANSI (B 16.11)	SOC	027H2146
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2085
		7/8	22	Solder connection, DIN (2856)	SD	027H2083
		1	25	Butt weld, EN 10220	D	027H2080
		1	25	Butt weld, ANSI (B 36.10)	A	027H2081
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2086
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2084
ICS 25 – 15	1 pilot	3/4	20	Butt weld, EN 10220	D	027H2048
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2049
		3/4	20	Socket weld, ANSI (B 16.11)	SOC	027H2142
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2045
		7/8	22	Solder connection, DIN (2856)	SD	027H2043
		1	25	Butt weld, EN 10220	D	027H2040
		1	25	Butt weld, ANSI (B 36.10)	A	027H2041
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2046
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2044
	3 pilots [2]	3/4	20	Butt weld, EN 10220	D	027H2098
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2099
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2095
		7/8	22	Solder connection, DIN (2856)	SD	027H2093
		1	25	Butt weld, EN 10220	D	027H2090
		1	25	Butt weld, ANSI (B 36.10)	A	027H2091
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2096
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2094
ICS 25 – 20	1 pilot	3/4	20	Butt weld, EN 10220	D	027H2058
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2059
		3/4	20	Socket weld, ANSI (B 16.11)	SOC	027H2143
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2055
		7/8	22	Solder connection, DIN (2856)	SD	027H2053
		1	25	Butt weld, EN 10220	D	027H2050
		1	25	Butt weld, ANSI (B 36.10)	A	027H2051
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2056
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2054
	3 pilots [2]	3/4	20	Butt weld, EN 10220	D	027H2108
		3/4	20	Butt weld, ANSI (B 36.10)	A	027H2109
		3/4	20	Socket weld, ANSI (B 16.11)	SOC	027H2148
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2105
		7/8	22	Solder connection, DIN (2856)	SD	027H2103
		1	25	Butt weld, EN 10220	D	027H2100
		1	25	Butt weld, ANSI (B 36.10)	A	027H2101
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2106
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2104

[1] Including one blanking plug (A)
[2] Including two blanking plugs (A) and one sealing plug (B)

Ordering



ICS - Pilot-operated servo valve

Ordering factory assembled valve (valve body and top / function module) (continued)

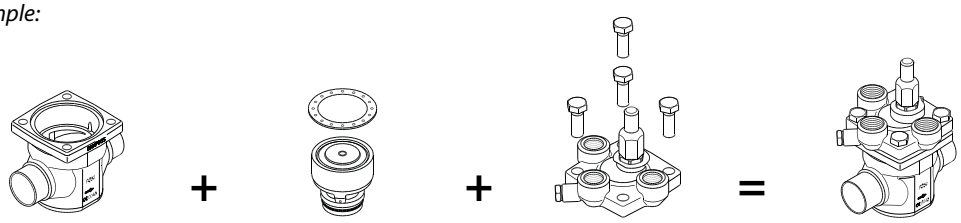
Type		Connection size [in]	Connection size [mm]	Connection type	Connection designation	Code no.
ICS 25 – 25	1 pilot	3/4	20	Butt weld, EN 10220	D	027H2068
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2065
		7/8	22	Solder connection, DIN (2856)	SD	027H2063
		1	25	Butt weld, EN 10220	D	027H2060
		1	25	Butt weld, ANSI (B 36.10)	A	027H2061
		1	25	Socket weld, ANSI (B 16.11)	SOC	027H2062
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2066
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2064
	3 pilots [2]	3/4	20	Butt weld, EN 10220	D	027H2118
		7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2115
		7/8	22	Solder connection, DIN (2856)	SD	027H2113
		1	25	Butt weld, EN 10220	D	027H2110
		1	25	Butt weld, ANSI (B 36.10)	A	027H2111
		1	25	Socket weld, ANSI (B 16.11)	SOC	027H2112
		1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2116
		1 1/8	28	Solder connection, DIN (2856)	SD	027H2114
ICS 32	1 pilot	1 1/4	32	Butt weld, EN 10220	D	027H3020
		1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H3021
		1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	027H3022
		1 3/8	35	Solder connection, DIN (2856)	SD	027H3023
	3 pilots [2]	1 1/4	32	Butt weld, EN 10220	D	027H3030
		1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H3031
		1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	027H3032
		1 3/8	35	Solder connection, DIN (2856)	SD	027H3033
ICS 40	1 pilot	1 1/2	40	Butt weld, EN 10220	D	027H4020
		1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H4021
		1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	027H4022
		1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H4024
		1 5/8	42	Solder connection, DIN (2856)	SD	027H4023
	3 pilots [2]	1 1/2	40	Butt weld, EN 10220	D	027H4030
		1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H4031
		1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	027H4032
		1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H4034
		1 5/8	42	Solder connection, DIN (2856)	SD	027H4033
ICS 50	1 pilot	2	50	Butt weld, EN 10220	D	027H5020
		2	50	Butt weld, ANSI (B 36.10)	A	027H5021
		2	50	Socket weld, ANSI (B 16.11)	SOC	027H5022
		2 1/8	54	Solder connection, DIN (2856)	SD	027H5023
	3 pilots [2]	2	50	Butt weld, EN 10220	D	027H5030
		2	50	Butt weld, ANSI (B 36.10)	A	027H5031
		2	50	Socket weld, ANSI (B 16.11)	SOC	027H5032
		2 1/8	54	Solder connection, DIN (2856)	SD	027H5033
ICS 65	1 pilot	2 1/2	65	Butt weld, EN 10220	D	027H6020
		2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H6021
		2 1/2	65	Socket weld, ANSI (B 16.11)	SOC	027H6023
		2 5/8	67	Solder connection, ANSI (B 16.22)	SA	027H6025
		3	76	Solder connection, DIN (2856)	SD	027H6024
	3 pilots [2]	2 1/2	65	Butt weld, EN 10220	D	027H6030
		2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H6031
		2 1/2	65	Socket weld, ANSI (B 16.11)	SOC	027H6033
		2 5/8	67	Solder connection, ANSI (B 16.22)	SA	027H6035
		3	76	Solder connection, DIN (2856)	SD	027H6034
ICS 80	1 pilot	3	80	Butt weld, EN 10220	D	027H8020
		3	80	Butt weld, ANSI (B 36.10)	A	027H8021
	3 pilots [2]	3	80	Butt weld, EN 10220	D	027H8030
		3	80	Butt weld, ANSI (B 36.10)	A	027H8031
ICS 100 [3]	3 pilots	4	100	Butt weld, EN 10220	D	027H7120
		4	100	Butt weld, ANSI (B 36.10)	A	027H7121
		4	100	Butt weld, ANSI (B 36.10)	A [2]	027H7122
ICS 125 [3]	3 pilots	5	125	Butt weld, EN 10220	D	027H7140
		5	125	Butt weld, ANSI (B 36.10)	A	027H7141
		5	125	Butt weld, ANSI (B 36.10)	A [2]	027H7142
ICS 150 [3]	3 pilots	6	150	Butt weld, EN 10220	D	027H7160
		6	150	Butt weld, ANSI (B 36.10)	A	027H7161
		6	150	Butt weld, ANSI (B 36.10)	A [2]	027H7162

[1] *Including one blanking plug (A).*
[2] *Including two blanking plugs (A) and one sealing plug (B).*

Ordering

Ordering from the parts programme (valve body + function module + top cover)

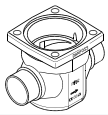
Example:



Valve body 25 D (1 in)
027H2120

Function module
ICS 25 – 15
027H2203

Top cover 3 pilots
027H2173



ICS 25 / ICV 25 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 25	3/4	20	Butt weld, EN 10220	D	027H2128
	3/4	20	Butt weld, ANSI (B 36.10)	A	027H2131
	3/4	20	Socket weld, ANSI (B 16.11)	SOC	027H2132
	3/4	20	Female pipe thread (ANSI/ASME B 1.20.1)	FTP	027H2133
	7/8	22	Solder connection, ANSI (B 16.22)	SA	027H2125
	7/8	22	Solder connection, DIN (2856)	SD	027H2123
	1	25	Butt weld, EN 10220	D	027H2120
	1	25	Butt weld, ANSI (B 36.10)	A	027H2121
	1	25	Socket weld, ANSI (B 16.11)	SOC	027H2122
	1	25	Female pipe thread (ANSI/ASME B 1.20.1)	FTP	027H2127
	1 1/8	28	Solder connection, ANSI (B 16.22)	SA	027H2126
	1 1/8	28	Solder connection, DIN (2856)	SD	027H2124
	1 1/4	32	Butt weld, EN 10220	D	027H2129
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H2130
	1 3/8	35	Solder connection, DIN (2856)	SD	027H2134
	1 1/2	40	Butt weld, EN 10220	D	027H2135

ICS 25 function module

Type	C_v value [gal/min]	K_v value [m^3/h]		Code no.
ICS 25 – 5	13.30	11.500		027H2201 [1]
ICS 25 – 10	2.00	1.700		027H2202 [1]
ICS 25 – 15	4.10	3.500		027H2203 [1]
ICS 25 – 20	7.00	6.000		027H2204 [1]
ICS 25 – 25	13.90	12.000		027H2200 [1]

ICS 25 top cover

Type		Code no.
ICS 25	1 Pilot	027H2172 [2]
	3 Pilots	027H2173 [3]

ICS 32 / ICV 32 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 32	1 1/4	32	Butt weld, EN 10220	D	027H3120
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	027H3121
	1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	027H3122
	1 3/8	35	Solder connection, DIN (2856)	SD	027H3123
	1 1/2	40	Butt weld, EN 10220	D	027H3125
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H3126
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H3127
	1 5/8	42	Solder connection, DIN (2856)	SD	027H3128

ICS 32 function module

Type		Code no.
ICS 32		027H3200 [1]

ICS 32 top cover

Type		Code no.
ICS 32	1 Pilot	027H3172 [2]
	3 Pilots	027H3173 [3]

[1] Including gasket and O-rings
[2] Including bolts
[3] Including bolts and one blanking plug

Ordering

Ordering from the parts programme (valve body + function module + top cover) (continued)



ICS 40 / ICV 40 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 40	1 1/2	40	Butt weld, EN 10220	D	027H4120
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	027H4121
	1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	027H4122
	1 5/8	42	Solder connection, ANSI (B 16.22)	SA	027H4124
	1 5/8	42	Solder connection, DIN (2856)	SD	027H4123
	2	50	Butt weld, EN 10220	D	027H4126
	2	50	Butt weld, ANSI (B 36.10)	A	027H4127

ICS 40 function module

Type		Code no.
ICS 40		027H4200 [1]

ICS 40 top cover

Type		Code no.
ICS 40	1 Pilot	027H4172 [2]
	3 Pilots	027H4173 [3]

ICS 50 / ICV 50 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 50	2	50	Butt weld, EN 10220	D	027H5120
	2	50	Butt weld, ANSI (B 36.10)	A	027H5121
	2	50	Socket weld, ANSI (B 16.11)	SOC	027H5122
	2 1/8	54	Solder connection, DIN (2856)	SD	027H5123
	2 1/2	65	Butt weld, EN 10220	D	027H5124
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H5125

ICS 50 function module

Type		Code no.
ICS 50		027H5200 [1]

ICS 50 top cover

Type		Code no.
ICS 50	1 Pilot	027H5172 [2]
	3 Pilots	027H5173 [3]

ICS 65 – 80 / ICV 65-80 Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
ICV 65 – 80	2 1/2	65	Butt weld, EN 10220	D	027H6120
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	027H6121
	2 1/2	65	Socket weld, ANSI (B 16.11)	SOC	027H6123
	2 1/2	65	Butt weld, JIS (B S 602)	J	027H6122
	2 5/8	67	Solder connection, ANSI (B 16.22)	SA	027H6125
	3	76	Solder connection, DIN (2856)	SD	027H6124
	3	80	Butt weld, EN 10220	D	027H6126
	3	80	Butt weld, ANSI (B 36.10)	A	027H6127

ICS 65 – 80 function module

Type		Code no.
ICS 65		027H6200 [1]
ICS 80		027H8200 [1]

ICS 65 – 80 top cover

Type		Code no.
ICS 65 – 80	1 Pilot	027H6172 [2]
	3 Pilots	027H6173 [3]

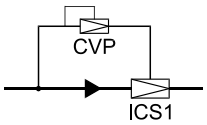
[1]) Including gasket and O-rings.
[2]) Including bolts.
[3]) Including bolts and one blanking plug.
Note: Converting old PM valve to new ICV solution (ICS, ICM or ICLX) can be done with the ICV PM flanged valve housing.
The ICV PM flanged valve housing is designed for a max. working pressure of 28 bar g / 406 psig and therefore a suitable replacement for PM valves in the service market.
For ordering; please see the spare part documentation on PM valves

ICS application examples

There are several combination possibilities; here you will see an overview of the most important ICS application possibillities.

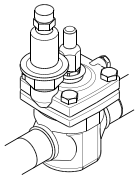
Example no. 1–1

Constant pressure regulation
-0.66 – 7 bar g
(19.5 in Hg – 102 psig)



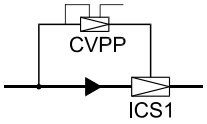
Products

1 × ICS 1 Pilot
1 × CVP (LP)



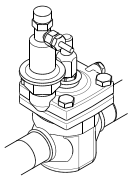
Example no. 1–2

Differential pressure regulation
0 – 7 bar g / 0 – 102 psig



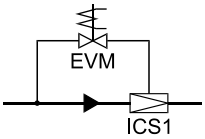
Products

1 × ICS 1 Pilot
1 × CVPP (LP)



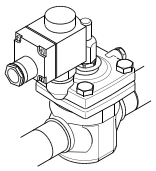
Example no. 1–3

On/off regulation
(solenoid valve)



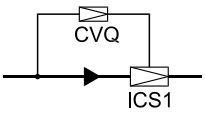
Products

1 × ICS 1 Pilot
1 × EVM
1 × coil



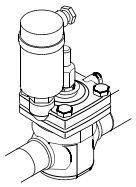
Example no. 1–9

Electronically controlled media temperature regulation
-1 – 8 bar g
(0 in Hg – 116 psig)



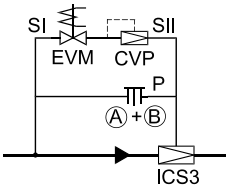
Products

1 × ICS 1 Pilot
1 × CVQ



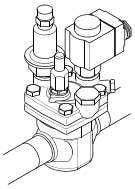
Example no. 3–1

Constant pressure regulation combined with electrical shut off.
-0.66 – 7 bar g
(19.5 in Hg – 102 psig)



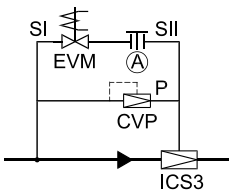
Products

1 × ICS 3 Pilots
1 × blanking plug
1 × CVP (LP)
1 × EVM
1 × coil



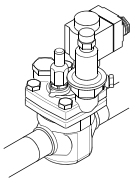
Example no. 3–2

Constant pressure regulation combined with electrical wide open. -0.66 – 7 bar g
(19.5 in Hg – 102 psig)



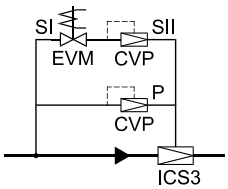
Products

1 × ICS 3 Pilots
1 × blanking plug
1 × CVP (LP)
1 × EVM



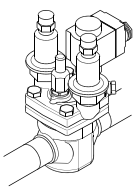
Example no. 3–4

Constant pressure regulation with change-over between two preset evaporating pressures.
-0.66 – 7 bar g
(19.5 in Hg – 102 psig)



Products

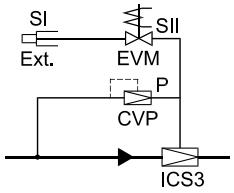
1 × ICS 3 Pilots
2 × CVP (LP)
1 × EVM
1 × coil



ICS application examples (continued)

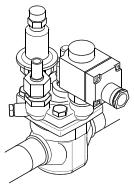
Example no. 3–5

External control pressure with electrical shut off combined with constant pressure regulation.
-0.66 – 7 bar g
(19.5 in Hg – 102 psig)



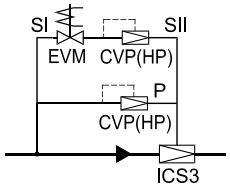
Products

1 × ICS 3 Pilots
1 × nipple for external control pressure
1 × CVP (LP)
1 × EVM
1 × coil



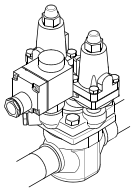
Example no. 3–15

Constant pressure regulation with change-over between two preset evaporating pressures.
-0.66 – 28 bar g
(19.5 in Hg – 406 psig)



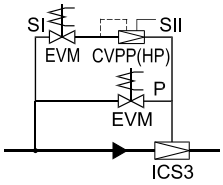
Products

1 × ICS 3 Pilots
2 × CVP (HP)
1 × EVM
1 × coil



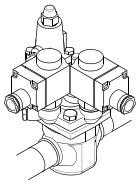
Example no. 3–18

Differential pressure regulation combined with electrical wide open and shut off.
0 – 22 bar g / 0 – 319 psig



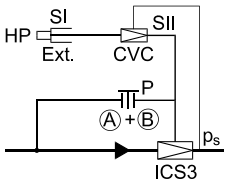
Products

1 × ICS 3 Pilots
1 × CVPP (HP)
2 × EVM
2 × coils



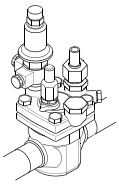
Example no. 3–22

Crankcase pressure regulation (max. suction pressure regulation) at low pressure drops across the valve.
-0.45 – 7 bar g
(13.3 in Hg – 102 psig).



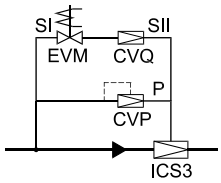
Products

1 × ICS 3 Pilots
1 × blanking plug
1 × nipple for external control pressure
1 × CVC



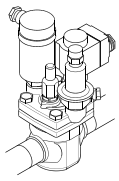
Example no. 3–28

Electronically controlled media temperature regulation combined with electrical shut off and changeover to constant pressure regulation.
-1 – 8 bar g
(0 in Hg – 116 psig)

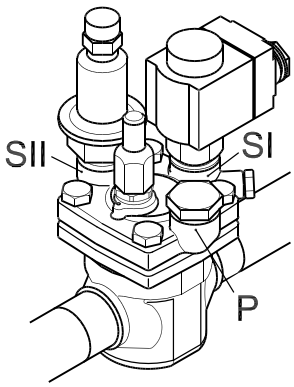


Products

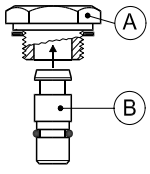
1 × ICS 3 Pilots
1 × CVQ
1 × CVP (LP)
1 × EVM
1 × coil



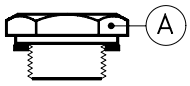
The ICS valve will be fully open if the pilot valve in P is fully open, irrespective of the degree of opening of pilot valves SI and SII.
The ICS valve will be fully closed if the pilot valve in P is fully closed and at least one of the valves in SI or SII is fully closed at the same time.
The relation between the pilot valves in ports SI, SII and P is shown in the table below.



Pilot valve port			ICS valve
SI	SII	P	
Open	Open	Closed	Open
Open	Open	Open	Open
Open	Closed	Closed	Closed
Open	Closed	Open	Open
Closed	Open	Closed	Closed
Closed	Open	Open	Open
Closed	Closed	Closed	Closed
Closed	Closed	Open	Open



Blanking plug A + B

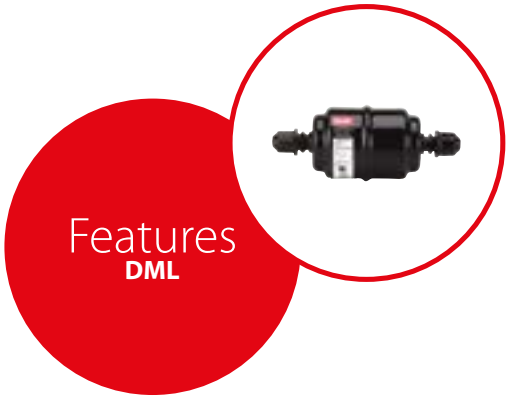


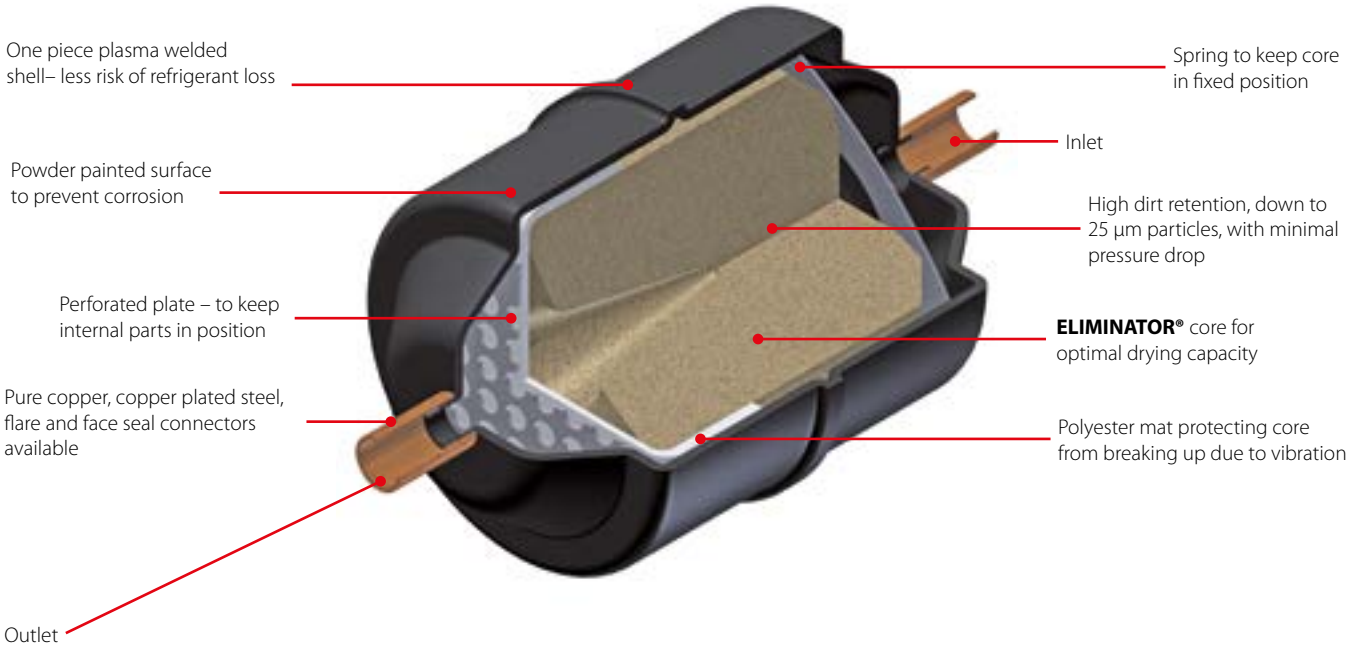
Blanking plug A

DML - Hermetic filter drier

DML **ELIMINATOR®** hermetic filter driers protect refrigeration and air conditioning systems from moisture, acids and solid particles, eliminating harmful chemical reactions and abrasive impurities.

DML hermetic filter driers, with a 100% solid molecular sieve core, are recommended for use with HFO, HC, HFC and HCFC refrigerants. They are hermetic and available in many sizes and connection types.





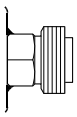
Facts

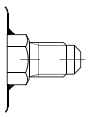
Application:
- Traditional refrigeration
- Air conditioning units
- Transport refrigeration

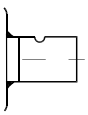
- High drying capacity avoiding the risk of acid formation in the refrigeration system
- All Danfoss filter driers have end caps designed for greater protection and easy removal
- Wide range with sizes:
  1.5 – 75 cubic inches
- Corrosion resistant powder-painted finish, tested for 500 hrs in salt spray

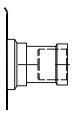
- 100% 3Å molecular sieve core
- Recommended for use with HFO, HC, HFC and HCFC refrigerants (Face seal connectors for HFO refrigerants available upon request, please contact your sales representative)
- PS / MWP up to 46 bar / 667 psig
- Available with flare, solder (pure cooper, cu-plated) connections

Technical data and ordering


Face seal version


Flare version


Solder version (pure cooper)


Solder version (cu-plated)

DML - Hermetic filter drier

Drying and liquid capacity

Type	Drying capacity [kg] of refrigerant [1]														Liquid capacity [kW] [2]							Max. working pressure PS [bar]
	R134a		R404A		R507		R22		R407C		R410A		R32		R134a	R404A	R507	R22	R407C	R410A	R32	
	[°C]																					
	24	52	24	52	24	52	24	52	24	52	24	52	24	52								
DML 1.52 s	2.9	2.7	3.1	3.0	3.2	2.9	2.9	2.7	2.9	2.7	2.6	2.4	2.7	2.5	5.97	4.21	3.86	6.32	5.97	5.97	8.78	46
DML 032 / 032s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	4.6	4.2	6.70	5.01	4.86	7.45	7.09	7.43	10.56	46
DML 032.5s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	4.6	4.2	9.59	6.97	6.75	10.52	9.97	10.31	15.10	46
DML 033 / 033s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	4.6	4.2	12.85	9.86	9.57	14.46	13.84	14.67	21.40	46
DML 034s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	4.6	4.2	24.71	20.12	19.57	28.60	27.65	30.13	43.78	46
DML 052 / 052s	7.9	7.5	8.5	8.1	8.6	8.0	8.0	7.4	7.9	7.3	7.2	6.6	7.3	6.7	7.57	5.62	5.45	8.45	8.02	8.32	12.8	46
DML 052.5s	7.9	7.5	8.5	8.1	8.6	8.0	8.0	7.4	7.9	7.3	7.2	6.6	7.3	6.7	9.58	7.01	6.80	10.34	10.01	10.38	15.19	46
DML 053 / 053s	7.9	7.5	8.5	8.1	8.6	8.0	8.0	7.4	7.9	7.3	7.2	6.6	7.3	6.7	12.87	9.81	9.52	14.44	13.80	14.58	21.28	46
DML 054s	7.9	7.5	8.5	8.1	8.6	8.0	8.0	7.4	7.9	7.3	7.2	6.6	7.3	6.7	25.70	20.77	20.19	29.64	28.62	31.07	45.77	46
DML 055s	7.9	7.5	8.5	8.1	8.6	8.0	8.0	7.4	7.9	7.3	7.2	6.6	7.3	6.7	36.22	29.07	28.25	41.63	40.15	43.45	63.19	46
DML 082 / 082s	12.6	11.9	13.6	12.9	13.8	12.8	12.8	11.8	12.7	11.7	11.5	10.6	11.7	10.8	7.68	5.44	5.27	8.32	7.85	8.02	11.77	46
DML 082.5s	12.6	11.9	13.6	12.9	13.8	12.8	12.8	11.8	12.7	11.7	11.5	10.6	11.7	10.8	10.53	7.84	7.61	11.69	11.13	11.63	17.01	46
DML 083 / 083s	12.6	11.9	13.6	12.9	13.8	12.8	12.8	11.8	12.7	11.7	11.5	10.6	11.7	10.8	14.19	10.98	10.66	16.03	15.37	16.35	23.85	46
DML 084 / 084s	12.6	11.9	13.6	12.9	13.8	12.8	12.8	11.8	12.7	11.7	11.5	10.6	11.7	10.8	28.61	21.33	20.68	31.76	30.24	31.63	46.24	46
DML 085 / 085s	12.6	11.9	13.6	12.9	13.8	12.8	12.8	11.8	12.7	11.7	11.5	10.6	11.7	10.8	43.81	35.32	34.33	50.47	48.71	52.83	76.81	46
DML 162 / 162s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	25.6	23.6	7.68	5.43	5.26	8.31	7.85	8.01	11.75	46
DML 162.5s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	25.6	23.6	10.57	7.36	7.12	11.36	10.69	10.83	15.91	46
DML 163 / 163s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	25.6	23.6	16.33	11.18	10.82	17.41	16.33	16.43	24.16	46
DML 164 / 164s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	25.6	23.6	32.19	23.54	22.81	35.40	33.60	34.83	50.99	46
DML 165 / 165s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	25.6	23.6	44.64	36.59	35.59	31.82	50.16	54.83	79.63	46
DML 166 / 166s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	25.6	23.6	45.53	37.37	36.35	52.89	51.20	56.01	81.33	46
DML 167s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	25.6	23.6	43.92	40.14	39.19	53.50	52.78	60.97	87.77	46
DML 303 / 303s	57.6	54.6	62.0	58.8	63.1	58.3	58.5	54.0	57.8	53.4	52.6	48.5	53.3	49.2	15.70	10.56	10.20	16.59	15.52	15.48	22.79	46
DML 304 / 304s	57.6	54.6	62.0	58.8	63.1	58.3	58.5	54.0	57.8	53.4	52.6	48.5	53.3	49.2	32.51	25.00	24.26	36.63	35.06	37.19	54.26	46
DML 305 / 305s	57.6	54.6	62.0	58.8	63.1	58.3	58.5	54.0	57.8	53.4	52.6	48.5	53.3	49.2	45.71	36.96	35.93	52.72	50.91	55.29	80.38	46
DML 306 / 306s	57.6	54.6	62.0	58.8	63.1	58.3	58.5	54.0	57.8	53.4	52.6	48.5	53.3	49.2	43.73	39.89	38.95	53.22	52.49	60.57	87.22	46
DML 307s	57.6	54.6	62.0	58.8	63.1	58.3	58.5	54.0	57.8	53.4	52.6	48.5	53.3	49.2	64.25	53.95	52.51	75.40	73.29	81.06	117.51	46
DML 309s	57.6	54.6	62.0	58.8	63.1	58.3	58.5	54.0	57.8	53.4	52.6	48.5	53.3	49.2	83.62	69.78	67.90	97.86	95.02	104.77	114.45	46
DML 413	77.9	73.6	83.7	79.4	85.2	78.7	78.9	72.9	78.0	72.1	71.0	65.5	71.9	66.3	18.40	12.44	12.02	19.49	18.25	18.25	26.86	46
DML 414 / 414s	77.9	73.6	83.7	79.4	85.2	78.7	78.9	72.9	78.0	72.1	71.0	65.5	71.9	66.3	33.39	26.45	25.70	38.15	36.70	39.48	57.48	46
DML 415 / 415S	77.9	73.6	83.7	79.4	85.2	78.7	78.9	72.9	78.0	72.1	71.0	65.5	71.9	66.3	55.48	41.84	40.58	61.92	59.08	62.11	90.74	46
DML 417s	77.9	73.6	83.7	79.4	85.2	78.7	78.9	72.9	78.0	72.1	71.0	65.5	71.9	66.3	66.74	56.32	54.82	78.50	76.37	84.67	122.70	35
DML 419s	77.9	73.6	83.7	79.4	85.2	78.7	78.9	72.9	78.0	72.1	71.0	65.5	71.9	66.3	95.30	76.29	74.14	109.42	105.47	114.01	165.86	35
DML 604s	116.9	110.5	125.7	119.1	127.9	118.2	118.4	109.5	117.1	108.2	106.6	98.2	107.9	99.6	27.88	26.22	25.63	34.36	34.07	39.98	57.41	46
DML 607s	116.9	110.5	125.7	119.1	127.9	118.2	118.4	109.5	117.1	108.2	106.6	98.2	107.9	99.6	70.08	70.13	68.74	88.46	88.70	107.99	154.09	46
DML 609s	116.9	110.5	125.7	119.1	127.9	118.2	118.4	109.5	117.1	108.2	106.6	98.2	107.9	99.6	61.35	73.05	72.40	81.77	84.39	117.36	162.79	46
DML 757s	159.8	151.1	171.8	162.9	174.9	161.6	161.9	149.7	160.2	148.0	145.8	134.3	147.5	136.1	84.97	71.70	69.80	99.95	97.23	107.81	156.22	35
DML 759s	159.8	151.1	171.8	162.9	174.9	161.6	161.9	149.7	160.2	148.0	145.8	134.3	147.5	136.1	84.22	87.19	85.60	107.64	106.54	135.08	191.97	35

[1]) Drying capacity is based on following moisture content test standards before and after drying:
- *– R32: 990 ppm W – 50 ppm W*
- *– R134a: 1050 – 50 ppm W*
- *– R404A, R507: 1020 – 50 ppm W*
- *– R407C: 1020 – 50 ppm W*
- *– R410A: 1050 – 50 ppm W*
- *– R22: 1050 – 60 ppm W*

In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
- $t_e = -15$ °C
- $t_c = 30$ °C
- $\Delta p = 0.07$ bar

Approvals
UL US, file no. SA 6398
PED 97 / 23 / EC - a3p3
Compliant with ATEX hazard zone 2

Note
Only solder versions (cu-plated / pure copper) and connection sizes below 25 mm are approved for flammable refrigerants now

Technical data and ordering

DML - Hermetic filter drier

Drying and liquid capacity

Type	Drying capacity [lb] of refrigerant [1]														Liquid capacity [TR] [2]							Max. working pressure MWP [psig]
	R134a		R404A		R507		R22		R407C		R410A		R32									
	[°F]																					
	75	125	75	125	75	125	75	125	75	125	75	125	75	125	R134a	R404A	R507	R22	R407C	R410A	R32	
DML 1.52s	6.4	6.0	6.8	6.6	7.1	6.4	6.4	6.0	6.4	6.0	5.7	5.3	6.0	5.5	1.70	1.20	1.10	1.80	1.70	1.70	2.50	667
DML 032 / 032s	10.9	10.3	11.8	11.2	12.0	11.1	11.1	10.3	11.0	10.1	10.0	9.2	10.1	9.3	1.90	1.42	1.38	2.12	2.02	2.11	3.09	667
DML 032.5s	10.9	10.3	11.8	11.2	12.0	11.1	11.1	10.3	11.0	10.1	10.0	9.2	10.1	9.3	2.73	1.98	1.92	2.99	2.84	2.93	4.30	667
DML 033 / 033s	10.9	10.3	11.8	11.2	12.0	11.1	11.1	10.3	11.0	10.1	10.0	9.2	10.1	9.3	3.65	2.80	2.72	4.11	3.94	4.17	6.10	667
DML 034s	10.9	10.3	11.8	11.2	12.0	11.1	11.1	10.3	11.0	10.1	10.0	9.2	10.1	9.3	7.03	5.72	5.56	8.13	7.86	8.57	12.47	667
DML 052 / 052s	17.4	16.5	18.7	17.8	19.1	17.6	17.6	16.3	17.5	16.1	15.9	14.6	16.1	14.8	2.18	1.60	1.55	2.40	2.28	2.37	3.47	667
DML 052.5s	17.4	16.5	18.7	17.8	19.1	17.6	17.6	16.3	17.5	16.1	15.9	14.6	16.1	14.8	2.72	1.99	1.93	3.00	2.85	2.95	4.33	667
DML 053 / 053s	17.4	16.5	18.7	17.8	19.1	17.6	17.6	16.3	17.5	16.1	15.9	14.6	16.1	14.8	3.66	2.79	2.71	4.10	3.92	4.15	6.06	667
DML 054s	17.4	16.5	18.7	17.8	19.1	17.6	17.6	16.3	17.5	16.1	15.9	14.6	16.1	14.8	7.31	5.91	5.74	8.43	8.14	8.83	12.87	667
DML 055s	17.4	16.5	18.7	17.8	19.1	17.6	17.6	16.3	17.5	16.1	15.9	14.6	16.1	14.8	10.30	8.26	8.03	11.84	11.42	12.35	18.00	667
DML 082 / 082s	27.9	26.3	29.9	28.4	30.5	28.2	28.2	26.1	27.9	25.8	25.4	23.4	25.8	23.8	2.18	1.55	1.50	2.37	2.23	2.28	3.35	667
DML 082.5s	27.9	26.3	29.9	28.4	30.5	28.2	28.2	26.1	27.9	25.8	25.4	23.4	25.8	23.8	3.00	2.23	2.16	3.32	3.16	3.31	4.85	667
DML 083 / 083s	27.9	26.3	29.9	28.4	30.5	28.2	28.2	26.1	27.9	25.8	25.4	23.4	25.8	23.8	4.03	3.12	3.03	4.56	4.37	4.65	6.79	667
DML 084 / 084s	27.9	26.3	29.9	28.4	30.5	28.2	28.2	26.1	27.9	25.8	25.4	23.4	25.8	23.8	8.14	6.07	5.88	9.03	8.60	8.99	13.17	667
DML 085 / 085s	27.9	26.3	29.9	28.4	30.5	28.2	28.2	26.1	27.9	25.8	25.4	23.4	25.8	23.8	12.46	10.04	9.76	14.35	13.85	15.02	21.88	667
DML 162 / 162s	61.2	57.8	65.7	62.3	66.9	61.8	61.9	57.3	61.3	56.6	55.8	51.4	56.4	52.0	2.18	1.54	1.50	2.36	2.23	2.28	3.35	667
DML 162.5s	61.2	57.8	65.7	62.3	66.9	61.8	61.9	57.3	61.3	56.6	55.8	51.4	56.4	52.0	3.01	2.09	2.02	3.23	3.04	3.08	4.53	667
DML 163 / 163s	61.2	57.8	65.7	62.3	66.9	61.8	61.9	57.3	61.3	56.6	55.8	51.4	56.4	52.0	4.64	3.18	3.08	4.95	4.64	4.67	6.88	667
DML 164 / 164s	61.2	57.8	65.7	62.3	66.9	61.8	61.9	57.3	61.3	56.6	55.8	51.4	56.4	52.0	9.15	6.69	6.49	10.07	9.55	9.90	14.53	667
DML 165 / 165s	61.2	57.8	65.7	62.3	66.9	61.8	61.9	57.3	61.3	56.6	55.8	51.4	56.4	52.0	12.69	10.41	10.12	14.74	14.26	15.59	22.69	667
DML 166 / 166s	61.2	57.8	65.7	62.3	66.9	61.8	61.9	57.3	61.3	56.6	55.8	51.4	56.4	52.0	12.95	10.63	10.34	15.04	14.56	15.93	23.17	667
DML 167s	61.2	57.8	65.7	62.3	66.9	61.8	61.9	57.3	61.3	56.6	55.8	51.4	56.4	52.0	12.49	11.41	11.14	15.21	15.01	17.34	25.01	667
DML 303 / 303s	127.2	120.2	136.7	129.6	139.2	128.6	128.8	119.1	127.5	117.8	116.0	106.9	117.5	108.5	4.46	3.00	2.90	4.72	4.41	4.40	6.49	667
DML 304 / 304s	127.2	120.2	136.7	129.6	139.2	128.6	128.8	119.1	127.5	117.8	116.0	106.9	117.5	108.5	9.24	7.11	6.90	10.41	9.97	10.58	15.46	667
DML 305 / 305s	127.2	120.2	136.7	129.6	139.2	128.6	128.8	119.1	127.5	117.8	116.0	106.9	117.5	108.5	13.00	10.51	10.22	14.99	14.48	15.72	22.90	667
DML 306 / 306s	127.2	120.2	136.7	129.6	139.2	128.6	128.8	119.1	127.5	117.8	116.0	106.9	117.5	108.5	12.43	11.34	11.07	15.13	14.92	17.22	24.85	667
DML 307s	127.2	120.2	136.7	129.6	139.2	128.6	128.8	119.1	127.5	117.8	116.0	106.9	117.5	108.5	18.27	15.34	14.93	21.44	20.84	23.05	33.48	667
DML 309s	127.2	120.2	136.7	129.6	139.2	128.6	128.8	119.1	127.5	117.8	116.0	106.9	117.5	108.5	23.78	19.84	19.31	27.83	27.02	29.79	32.61	667
DML 413	171.6	162.2	184.5	174.9	187.8	173.5	173.8	160.7	172.0	158.9	156.6	144.3	158.5	146.2	5.23	3.54	3.42	5.54	5.19	5.19	7.65	667
DML 414 / 414s	171.6	162.2	184.5	174.9	187.8	173.5	173.8	160.7	172.0	158.9	156.6	144.3	158.5	146.2	9.49	7.52	7.31	10.85	10.44	11.23	16.38	667
DML 415 / 415s	171.6	162.2	184.5	174.9	187.8	173.5	173.8	160.7	172.0	158.9	156.6	144.3	158.5	146.2	15.78	11.90	11.54	17.61	16.80	17.66	25.85	667
DML 417s	171.6	162.2	184.5	174.9	187.8	173.5	173.8	160.7	172.0	158.9	156.6	144.3	158.5	146.2	18.98	16.01	15.59	22.32	21.71	24.08	34.96	500
DML 419s	171.6	162.2	184.5	174.9	187.8	173.5	173.8	160.7	172.0	158.9	156.6	144.3	158.5	146.2	27.10	21.69	21.08	31.11	29.99	32.42	47.25	500
DML 604s	257.6	243.5	276.9	262.5	281.9	260.4	260.9	241.2	258.2	238.6	235.0	216.5	237.9	219.6	7.93	7.45	7.29	9.77	9.69	11.37	16.36	667
DML 607s	257.6	243.5	276.9	262.5	281.9	260.4	260.9	241.2	258.2	238.6	235.0	216.5	237.9	219.6	19.93	19.94	19.54	25.16	25.22	30.71	43.90	667
DML 609s	257.6	243.5	276.9	262.5	281.9	260.4	260.9	241.2	258.2	238.6	235.0	216.5	237.9	219.6	17.45	20.77	20.59	23.25	23.99	33.37	46.38	667
DML 757s	352.3	333.0	378.7	359.0	385.5	356.1	356.8	329.9	353.0	326.2	321.3	296.1	325.2	300.0	24.16	20.39	19.85	28.42	27.65	30.66	44.51	500
DML 759s	352.3	333.0	378.7	359.0	385.5	356.1	356.8	329.9	353.0	326.2	321.3	296.1	325.2	300.0	23.95	24.79	24.34	30.61	30.86	38.41	54.69	500

[1]) Drying capacity is based on following moisture content test standards before and after drying:
- *– R32: 990 ppm W – 50 ppm W*
- *– R134a: 1050 – 50 ppm W*
- *– R404A, R507: 1020 – 50 ppm W*
- *– R407C: 1020 – 50 ppm W*
- *– R410A: 1050 – 50 ppm W*
- *– R22: 1050 – 60 ppm W*

In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
- $t_e = 5$ °F
- $t_c = 85$ °F
- $\Delta p = 1$ psig

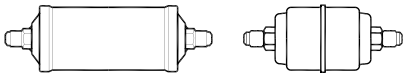
Approvals
UL US, file no. SA 6398
PED 97 / 23 / EC - a3p3
Compliant with ATEX hazard zone 2

Note
Only solder versions (cu-plated / pure copper) and connection sizes below 25 mm are approved for flammable refrigerants now

Technical data and ordering

DML - Flare

Ordering

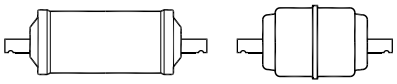


Type	Connection		Code no.
	[in]	[mm]	
DML 032	1/4	6	023Z5035 [1])
DML 033	3/8	10	023Z5036 [1])
	3/8	10	023Z5090
DML 052	1/4	6	023Z5037
DML 053	3/8	10	023Z5038
DML 082	1/4	6	023Z5039
DML 083	3/8	10	023Z5040
DML 084	1/2	12	023Z5041
DML 085	5/8	16	023Z5073
DML 162	1/4	6	023Z5042
DML 163	3/8	10	023Z5043
DML 164	1/2	12	023Z5044
DML 165	5/8	16	023Z5045
DML 166	3/4	19	023Z5046
DML 303	3/8	10	023Z0049
DML 304	1/2	12	023Z0050
DML 305	5/8	16	023Z0051
DML 306	3/4	19	023Z0193
DML 385	5/8	16	023Z0189
DML 413	3/8	10	023Z0108
DML 414	1/2	12	023Z0109
DML 415	5/8	16	023Z0110
DML 416	3/4	19	023Z0195

[1]) Wire mesh in filter drier outlet

Technical data and ordering

DML - Solder (pure copper)



Ordering

Type	Connection [in]	Code no.	Connection [mm]	Code no.
DML 1.52s	1/4	023Z8253	–	–
DML 1.52x2 / 2s	1/4	023Z8250	–	–
DML 032s	1/4	023Z5048 [1])	6	–
DML 032.5s	5/16	023Z5049	8	–
DML 033s	3/8	023Z5050	10	023Z5051
DML 034s	1/2	023Z5121	12	–
DML 052s	1/4	023Z5053	6	023Z5052
DML 053s	3/8	023Z5054	10	023Z5055
DML 054s	1/2	023Z5101	3.8	–
DML 055s	5/8	–	16	023Z5100
DML 082s	1/4	023Z5057	6	–
DML 082.5s	5/16	023Z5117	8	–
DML 083s	3/8	023Z5058	10	023Z5059
DML 084s	1/2	023Z5061	12	023Z5060
DML 085s	5/8	023Z5072	16	–
DML 162s	1/4	023Z5063	6	–
DML 163s	3/8	023Z5064	10	023Z5065
DML 164s	1/2	023Z5067	12	023Z5066
DML 165s	5/8	023Z5068	16	–
DML 166s	3/4	023Z5071	19	–
DML 167s	7/8	023Z5069	22	–
DML 303s	3/8	023Z0067	10	–
DML 304s	1/2	023Z0068	12	–
DML 305s	5/8	023Z0069	16	–
DML 306s	3/4	023Z0070	19	–
DML 307s	7/8	023Z0071	22	–
DML 309s	1 1/8	023Z0072	28	–
DML 414s	1/2	023Z0111	12	–
DML 415s	5/8	023Z0112	16	–
DML 416s	3/4	–	19	023Z8246
DML 417s	7/8	023Z0113	22	–
DML 419s	1 1/8	023Z0114	28	–
DML 604s	1/2	–	12	–
DML 607s	7/8	023Z0073	22	–
DML 609s	1 1/8	023Z0074	28	–
DML 757s	7/8	023Z0117	22	–
DML 759s	1 1/8	023Z0118	28	–

[1]) Wire mesh in filter drier outlet

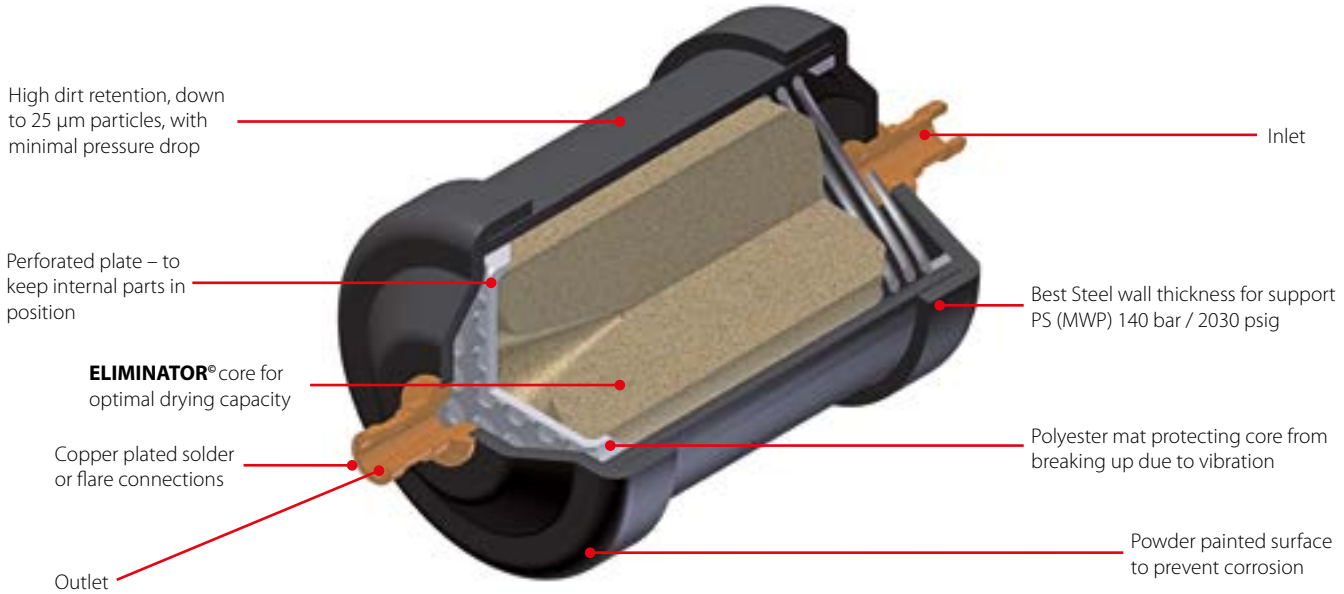
Quick Selection Notes:

DMT - Hermetic filter drier for CO_2

DMT **ELIMINATOR®** hermetic filter driers are designed for use in CO_2 systems, and protect the system from moisture, acids and solid particles, eliminating harmful chemical reactions and abrasive impurities. DMT driers have a core composition of 100% Molecular Sieve.

DMT hermetic filter driers are designed for applications requiring the highest moisture capacity, and the lowest possible leak rate. They are available with flare and solder (cu-plated steel) connections and are designed to support max. working pressure as high as 140 bar / 2030 psig.



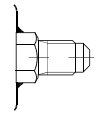


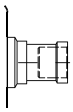
Facts

Application:
- liquid line in CO_2 systems

- Recommended for use with R744 (CO_2) refrigerants
- Support PS / MWP up to 140 bar / 2030 psig
- 100% 3 Å Molecular Sieve core
- High drying capacity minimizing the risk of acid formation (hydrolysis)
- Will not deplete oil additives
- Available with solder (copper plated) and flare connections (i.e. standard, flare o-ring and NPT)
- Lowest possible leak rate
- Corrosion resistant powder-painted finish. Special coating for marine applications available upon request
- Allows installation with any orientation provided the arrow is in the flow direction,
- Available in sizes from 8 to 13 cubic inches
- 25 µm (0.001 in) filter provides high retention with minimal pressure drop
- No residual moisture when delivered
- Thermally stable up to 120 °C / 250 °F

Technical data and ordering


Flare version


Solder version (cu-plated)

DMT - Hermetic filter drier for CO_2

Drying and liquid capacity

Type	Drying capacity [1]						Liquid capacity [2]		Max. working pressure PS / MWP [bar / psig]	Additional Data		
	R 744 CO_2 -6.6 °C			R 744 CO_2 24 °C			R 744 CO_2 Flare / Cu-plated			Volume [l]		
	H_2O [g]	Ref [Kg]	Drop Water	H_2O [g]	Ref [Kg]	Drop Water	[kW]	[TR]		Shell	Core	Net
DMT 082 / 082s	7.2	7.2	143	5.7	5.8	114	3.56	1.0	140 / 2030	0.22	0,058	0.162
DMT 083 / 083s	7.2	7.2	143	5.7	5.8	114	10.61	3.0	140 / 2030	0.22	0,058	0.162
DMT 084s	7.2	7.2	143	5.7	9.3	114	13.49	3.8	140 / 2030	0.22	0,058	0.162
DMT 133 / 133s	11.6	11.7	232	9.2	9.3	184	10.99	3.1	140 / 2030	0.32	0,095	0.225
DMT 134s	11.6	11.7	232	9.2	9.3	184	13.49	3.8	140 / 2030	0.32	0,095	0.225

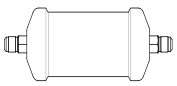
The moisture test was performed according with ASHRAE standard on liquid phase

[1] ***Drying capacity***
Drying capacity is based on following moisture content test standards before and after drying:
EPD: From 1110 ppm W to 50 ppm W at 24 °C
EPD: From 445 ppm W to 50 ppm W at -6.6 °C

[2] ***Liquid capacity***
Given in accordance with ARI 710-2004 for:
t_e = -15 °C / 5 °F
t_c = 30 °C / 85 °F
Δp = 0.07 bar / 1 psig

Termperature range:
-40 – 100 °C / -40 – 212 °F

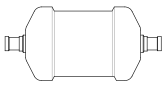
DMT - Flare



Ordering

Type	Connection [in]	Code no.
DMT 082	1/4	023Z8407
DMT 083	3/8	023Z8406
DMT 133	3/8	023Z8405
DMT 133 NPT	1/4	023Z8410

DMT - Solder (cu-plated)



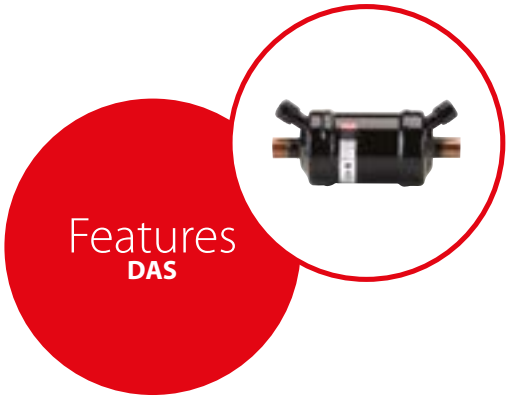
Ordering

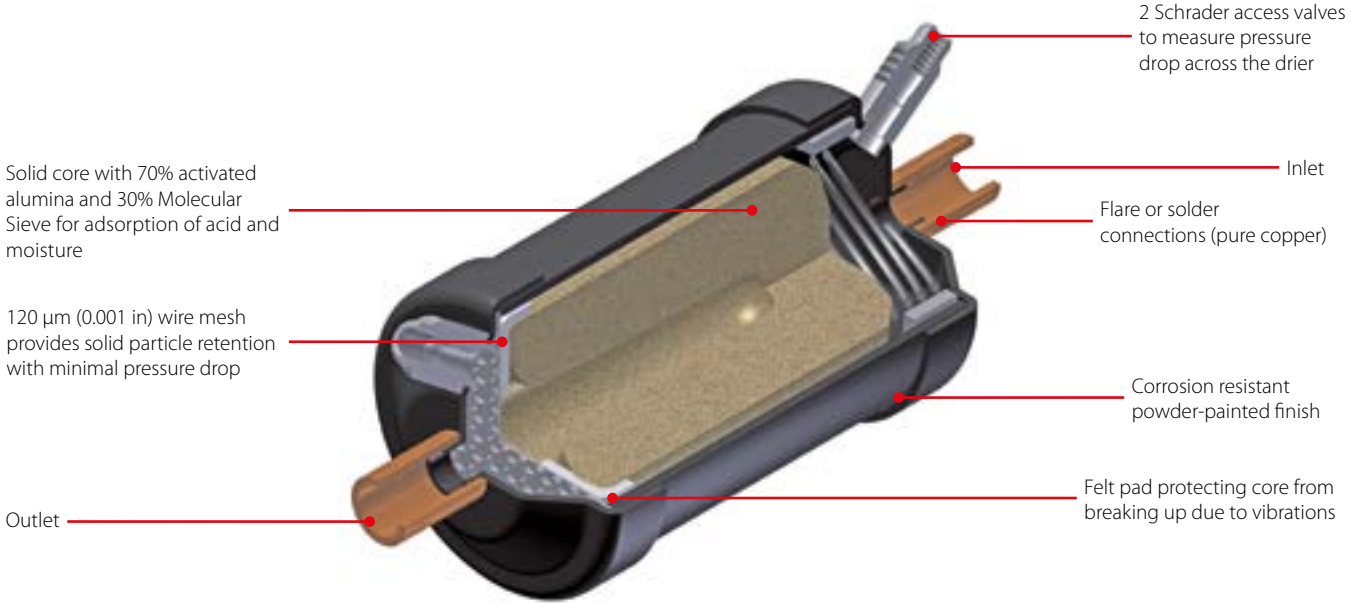
Type	Connection [in]	Code no.	Multi-pack Code no.
DMT 082s	1/4	023Z8408	023Z8415
DMT 083s	3/8	023Z8409	023Z8416
DMT 084s	1/2	023Z8412	023Z8417
DMT 133s	3/8	023Z8402	023Z8418
DMT 134s	1/2	023Z8411	023Z8419

DAS - Hermetic burn-out filter drier

DAS **ELIMINATOR®** hermetic burn-out filter driers are used in the suction line to clean up refrigeration and air conditioning systems with flourinated refrigerants after a compressor motor burn-out.

The solid core, which is composed of 70% activated alumina and 30% Molecular Sieve, adsorbs harmful acids as well as moisture, in order to protect the new compressor against failure.





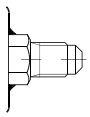
Facts

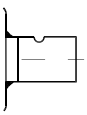
Application:
- Traditional refrigeration
- Air conditioning units
- Transport refrigeration

- The large diameter of the hermetic burn-out filter drier means that flow velocity is suitably low and the pressure drop minimal
- Bonded solid core grains eliminate powder formation
- Corrosion resistant powder-painted finish, tested for 500 hrs in salt spray

- Installation with any orientation provided the flow is in the arrow direction
- Available in sizes from 8 to 60 cubic inches
- Recommended for use with HFO, HC, HFC and HCFC refrigerants

Technical data and ordering


Flare version


Solder version (pure cooper)

DAS - Hermetic burn-out filter drier

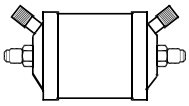
Rated and acid capacities

Type	Rated capacity, Q_n [1]						Acid capacity [2]	Max. working pressure PS / MWP [bar / psig]
	R22 / R407C / R410A		R134a		R404A / R507			
	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[g]	
DAS 083	1.7	6.0	1.0	3.5	1.3	4.5	3.8	35 / 500
DAS 084	2.9	10.0	1.6	5.5	2.3	8.0	3.8	35 / 500
DAS 085	4.1	14.5	2.6	9.0	3.6	12.5	3.8	35 / 500
DAS 086	5.4	19.0	3.3	11.5	4.7	16.5	3.8	35 / 500
DAS 164	3.0	10.5	1.7	6.0	2.4	8.5	8.6	35 / 500
DAS 165	4.3	15.0	2.7	9.5	3.7	13.0	8.6	35 / 500
DAS 166	5.7	20.0	3.4	12.0	4.9	17.0	8.6	35 / 500
DAS 167	6.3	22.0	3.9	13.5	5.4	19.0	8.6	35 / 500
DAS 305	5.1	18.0	3.1	11.0	4.3	15.0	18.2	35 / 500
DAS 306	6.3	22.0	4.0	14.0	5.4	19.0	18.2	35 / 500
DAS 307	7.4	26.0	4.6	16.0	6.3	22.0	18.2	35 / 500
DAS 309	8.9	31.0	5.7	20.0	7.7	27.0	18.2	35 / 500
DAS 417	8.6	30.0	5.1	18.0	7.1	25.0	24.3	35 / 500
DAS 419	10.0	35.0	6.3	22.0	8.6	30.0	24.3	35 / 500
DAS 607	5.7	20.0	3.4	12.0	4.9	17.0	36.5	35 / 500

[1]) Rated capacity is stated at:
evaporating temperature t_e = 4 °C / 39.2 °F
pressure drop Δp = 0.21 bar / 3.04 psig
[2]) Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)

Capacities for other temperatures than 4 °C / 39.2 °F are calculated by use of correction factors. Divide your actual evaporator capacity with the correction factor given for your actual evaporating temperature. Look up the capacity table for the necessary rated capacity
$Q_e / F_e = Q_n$
Q_e = Actual evaporator capacity
Q_n = Nominal capacity
F_e = Correction factor

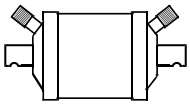
DAS - Flare



Ordering

Type	Connection [in]	Code no.
DAS 084VV	1/2	023Z1002
DAS 164VV	1/2	023Z1007
DAS 165VV	5/8	023Z1008

DAS - Solder (pure copper)



Ordering

Type	Connection [in]	Code no.
DAS 084sVV	1/2	023Z1004
DAS 085sVV	5/8	023Z1005
DAS 086sVV	3/4	023Z1006
DAS 164sVV	1/2	023Z1009
DAS 165sVV	5/8	023Z1010
DAS 166sVV	3/4	023Z1011
DAS 167sVV	7/8	023Z1012
DAS 305sVV	5/8	023Z1013
DAS 306sVV	3/4	023Z1014
DAS 307sVV	7/8	023Z1015
DAS 309sVV	1 1/8	023Z1016
DAS 417sVV	7/8	023Z1017
DAS 419sVV	1 1/8	023Z1018
DAS 607sVV	7/8	023Z1019
DAS 609sVV	1 1/8	023Z1020

Correction factors F_e for evaporating temperatures [°C] / [°F]

[°C] / [°F]	4 / 39.2	0 / 32	-5 / 23	-10 / 14	-15 / 5	-20 / -4	-25 / -13	-30 / -22	-35 / -31	-40 / -40
F_e	1	0.9	0.75	0.6	0.5	0.4	0.35	0.25	0.2	0.15

Example
To select a hermetic burn-out filter drier for a R22 plant with an evaporator capacity at 8.5 kW / 2.41 TR a -20 / -4 °F you may use a hermetic burn-out filter drier with a rated capacity of 8.5 / 0.4 = 21.25 kW / 6.02 TR
For example DAS 306

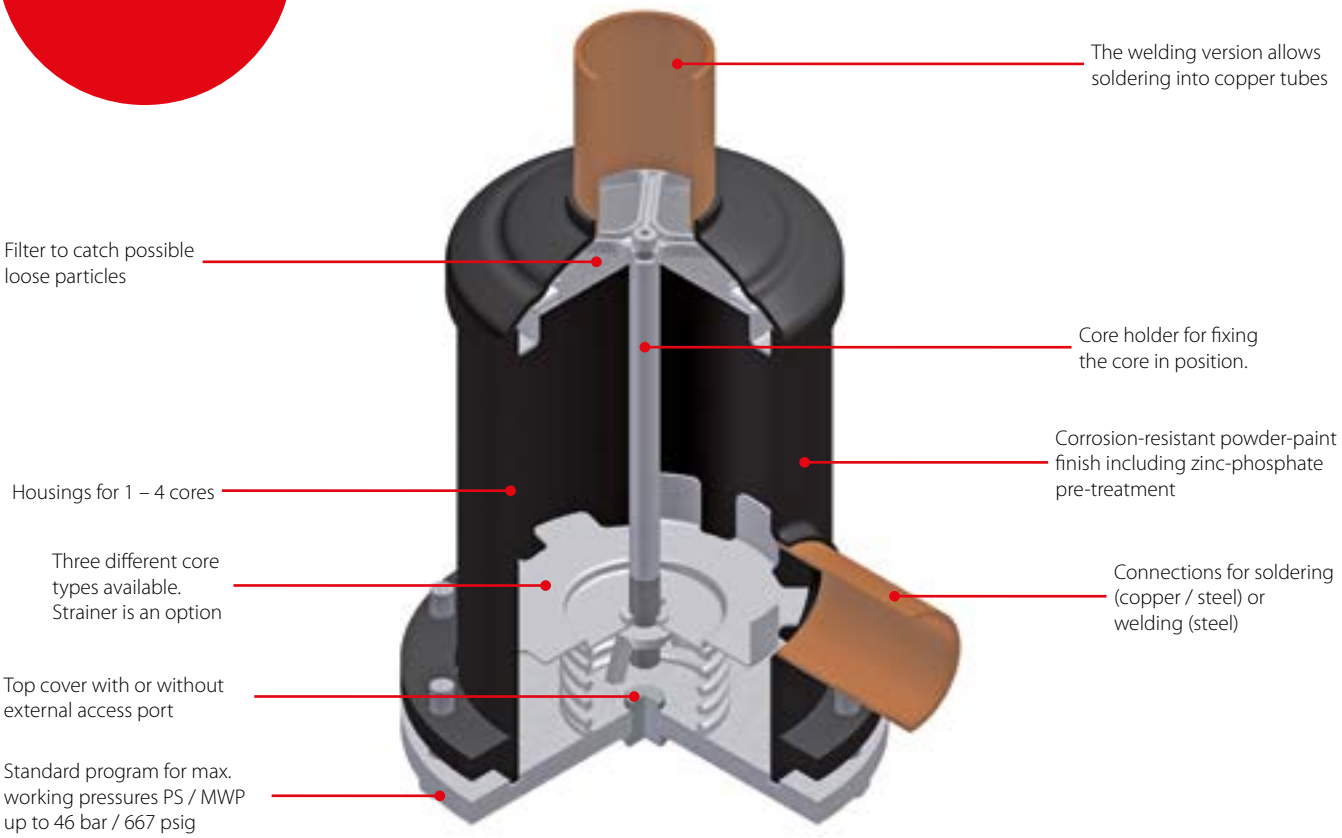
DCR - Filter drier with replaceable solid core

DCR **ELIMINATOR®** filter driers with replaceable solid core protect refrigeration, freezing and air conditioning systems from moisture, acids and solid particles.
Besides being able to meet the demanding requirements of high working pressure levels when operating with R410A and CO_2, thanks to replaceable solid cores the DCR programme offers flexibility with respect to different applications.

Core types:
- 48-DC for HFC, HCFC systems and mineral or AB oils
- 48-DM for HFC, HCFC systems and POE or PAG oils
- 48 DA for acid adsorption after burnout
- 48-F strainer for retaining dirt

Cores / inserts are ordered separately.





Facts

Application:
- For refrigeration plants with fluorinated refrigerants or CO_2

- Highly efficient dirt retaining capabilities on both the suction and the liquid line
- Can be used in all environments. Shell is zinc-phosphated, and with corrosion resistant powder-painted finish, tested for 500 hrs in salt spray (acc. to ASTM B117, ISO 12944-6 (blistering))
- The core holder requires minimum free space to remove the core for replacement
- For convenient filter drier commissioning, cover is designed to remain in place while cores, cover and housing are assembled
- Can be installed in any position
- 48-DM core for liquid line application (100 % molecular sieve for HFC). Provides high moisture adsorption at low and high condensing temperatures. Effective protection against impurities
- 48-DC 80% molecular sieve and 20% activated alumina solid core suitable for HCFC refrigerants and compatible with HFC refrigerants: Adsorbs moisture and acid in the system throughout the entire temperature range
- 48-DA 30% molecular sieve and 70% activated alumina solid core suitable after compressor burn-out: high acid adsorption and standard water adsorption
- Recommended for use with HFO, HFC and HCFC refrigerants
- 48-F strainer – compatible with all refrigerants:
  - Retains dirt particles larger than 15 µm
  - For use direct in DCR housings
  - Utilized in the suction or liquid line

Technical data and ordering

DCR - Filter drier with replaceable solid core

Drying and liquid capacity, type 48-DM

Type	Number of cores	Drying capacity [kg] of refrigerant [1]												Liquid capacity [kW] [2]						Max. working pressure PS [bar]
		R134a		R404A		R507		R22 / R407C		R410A		R744 (CO_2)		R134a	R404A	R507	R22 / R407C	R410A	R744 (CO_2)	
		[°C]																		
		24	52	24	52	24	52	24	52	24	52	-6.6	24							
DCR 0485	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	74.9	68.9	80.6	59.4	57.5	84.5	87.9	40.8	46
DCR 0487	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	74.9	68.9	128.0	92.5	89.6	132.6	136.8	58.0	46
DCR 0489	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	74.9	68.9	184.3	132.6	128.4	190.4	195.9	95.7	46
DCR 04811	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	74.9	68.9	249.3	180.5	174.8	258.5	266.8	113.9	46
DCR 04813	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	74.9	68.9	304.1	222.0	215.1	317.1	328.5	111.5	46
DCR 04817	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	74.9	68.9	434.3	324.1	314.3	459.4	480.7	148.1	46
DCR 04821	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	74.9	68.9	320.4	234.4	227.1	334.5	346.8	185.0	46
DCR 0967	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	149.8	137.7	119.6	85.7	83.0	123.2	126.6	78.4	46
DCR 0969	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	149.8	137.7	189.5	136.4	131.9	195.6	201.2	111.5	46
DCR 09611	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	149.8	137.7	259.7	187.2	181.4	268.6	276.7	126.6	46
DCR 09613	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	149.8	137.7	331.9	240.8	233.3	344.7	356.1	150.9	46
DCR 09617	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	149.8	137.7	477.2	349.1	338.3	498.2	516.6	200.5	46
DCR 1449	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	224.8	206.6	184.4	132.7	128.5	190.5	196.0	124.5	35[3] / 46[4]
DCR 14411	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	224.8	206.6	272.5	196.9	190.7	282.2	290.9	154.0	35[3] / 46[4]
DCR 14413	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	224.8	206.6	340.1	246.8	239.1	353.2	364.9	183.2	35[3] / 46[4]
DCR 14417	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	224.8	206.6	442.3	323.0	313.0	461.3	478.0	243.4	35[3] / 46[4]
DCR 19211	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	299.7	275.4	290.0	211.6	205.0	302.3	313.1	177.2	28[3] / 40[4]
DCR 19213	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	299.7	275.4	359.8	261.7	253.6	374.2	387.0	211.0	28[3] / 40[4]
DCR 19217	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	299.7	275.4	505.6	366.0	354.6	524.3	541.0	299.6	28[3] / 40[4]
DCR 19221	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	299.7	275.4	442.5	321.7	311.7	460.2	475.8	381.6	28[3] / 40[4]
DCR 300	3	555.9	525.5	597.6	566.5	608.3	561.9	557.1	514.8	507.1	467.2	505.0	464.1	–	–	–	–	–	–	–
DCR 400	4	741.2	700.6	796.8	755.3	811.0	749.2	742.8	686.4	676.1	623.0	673.3	618.7	–	–	–	–	–	–	–

[1]) Drying capacity is based on following moisture content test standards before and after drying:
– R134a: 1050 – 50 ppm W
– R404A, R507: 1020 – 50 ppm W
– R407C: 1020 – 50 ppm W
– R410A: 1050 – 50 ppm W
– R22: 1050 – 60 ppm W
– R744: 1010 – 50 ppm W at 24 °C / 445 – 50 ppm W at -6.6 °C
In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
t_e = -15 °C
t_c = 30 °C
Δp = 0.07 bar

[3]) For usage with strainer or as a receiver application
[4]) For "drier" application using all the permissible cores

Technical data and ordering

DCR - Filter drier with replaceable solid core

Drying and liquid capacity, type 48-DM and 100-DM

Type	Number of cores	Drying capacity [lb] of refrigerant [1]												Liquid capacity [TR] [2]						Max. working pressure MWP [psig]
		R134a		R404A		R507		R22 / R407C		R410A		R744 (CO_2)		R134a	R404A	R507	R22 / R407C	R410A	R744 (CO_2)	
		[°F]																		
		75	125	75	125	75	125	75	125	75	125	20	75.5							
DCR 0485	1	181.9	172.0	195.6	185.2	199.1	183.9	182.3	168.4	165.8	152.8	165.1	151.9	22.9	16.9	16.3	24.0	25.0	11.6	667
DCR 0487	1	181.9	172.0	195.6	185.2	199.1	183.9	182.3	168.4	165.8	152.8	165.1	151.9	36.4	26.3	25.5	37.7	38.9	16.5	667
DCR 0489	1	181.9	172.0	195.6	185.2	199.1	183.9	182.3	168.4	165.8	152.8	165.1	151.9	52.4	37.7	36.5	54.1	55.7	27.2	667
DCR 04811	1	181.9	172.0	195.6	185.2	199.1	183.9	182.3	168.4	165.8	152.8	165.1	151.9	70.9	51.3	49.7	73.5	75.9	32.4	667
DCR 04813	1	181.9	172.0	195.6	185.2	199.1	183.9	182.3	168.4	165.8	152.8	165.1	151.9	86.5	63.1	61.2	90.2	93.4	31.7	667
DCR 04817	1	181.9	172.0	195.6	185.2	199.1	183.9	182.3	168.4	165.8	152.8	165.1	151.9	123.5	92.2	89.4	130.6	136.7	42.1	667
DCR 04821	1	181.9	172.0	195.6	185.2	199.1	183.9	182.3	168.4	165.8	152.8	165.1	151.9	91.1	66.7	64.6	95.1	98.6	52.6	667
DCR 0967	2	363.8	341.7	390.9	370.6	397.9	367.7	364.4	336.9	331.8	305.8	330.3	303.6	34.0	24.4	23.6	35.0	36.0	22.3	667
DCR 0969	2	363.8	341.7	390.9	370.6	397.9	367.7	364.4	336.9	331.8	305.8	330.3	303.6	53.9	38.8	37.5	55.6	57.2	31.7	667
DCR 09611	2	363.8	341.7	390.9	370.6	397.9	367.7	364.4	336.9	331.8	305.8	330.3	303.6	73.8	53.2	51.6	76.4	78.7	36.0	667
DCR 09613	2	363.8	341.7	390.9	370.6	397.9	367.7	364.4	336.9	331.8	305.8	330.3	303.6	94.4	68.5	66.3	98.0	101.3	42.9	667
DCR 09617	2	363.8	341.7	390.9	370.6	397.9	367.7	364.4	336.9	331.8	305.8	330.3	303.6	135.7	99.3	96.2	141.7	146.9	57.0	667
DCR 1449	3	545.6	515.7	586.4	557.1	597.0	551.4	546.7	505.1	497.6	458.6	495.6	455.5	52.4	37.7	36.5	54.2	55.7	35.4	507[3]) / 667[4])
DCR 14411	3	545.6	515.7	586.4	557.1	597.0	551.4	546.7	505.1	497.6	458.6	495.6	455.5	77.5	56.0	54.2	80.2	82.7	43.8	507[3]) / 667[4])
DCR 14413	3	545.6	515.7	586.4	557.1	597.0	551.4	546.7	505.1	497.6	458.6	495.6	455.5	96.7	70.2	68.0	100.4	103.8	52.1	507[3]) / 667[4])
DCR 14417	3	545.6	515.7	586.4	557.1	597.0	551.4	546.7	505.1	497.6	458.6	495.6	455.5	125.8	91.8	89.0	131.2	135.9	69.2	507[3]) / 667[4])
DCR 19211	4	727.3	687.6	782.0	741.2	795.9	735.2	728.8	673.5	663.4	610.7	660.7	607.2	82.5	60.2	58.3	86.0	89.0	50.4	406[3]) / 580[4])
DCR 19213	4	727.3	687.6	782.0	741.2	795.9	735.2	728.8	673.5	663.4	610.7	660.7	607.2	102.3	74.4	72.1	106.4	110.0	60.0	406[3]) / 580[4])
DCR 19217	4	727.3	687.6	782.0	741.2	795.9	735.2	728.8	673.5	663.4	610.7	660.7	607.2	143.8	104.1	100.8	149.1	153.8	85.2	406[3]) / 580[4])
DCR 19221	4	727.3	687.6	782.0	741.2	795.9	735.2	728.8	673.5	663.4	610.7	660.7	607.2	125.8	91.5	88.6	130.9	135.3	108.5	406[3]) / 580[4])
DCR 300	3	1226	1159	1317	1249	1341	1239	1228	1135	1118	1030	1113	1023	–	–	–	–	–	–	–
DCR 400	4	1634	1545	1757	1665	1788	1652	1638	1513	1491	1373	1484	1364	–	–	–	–	–	–	–

[1]) Drying capacity is based on the following moisture contents before and after drying:
- *– R134a: 1050 – 50 ppm W*
- *– R404A, R507: 1020 – 50 ppm W*
- *– R407C: 1020 – 50 ppm W*
- *– R410A: 1050 – 50 ppm W*
- *– R22: 1050 – 60 ppm W*
- *– R744: 1010 – 50 ppm W at 24 °C / 445 – 50 ppm W at -6.6 °C*

In accordance with ARI 710-2004

[2]) Liquid capacity given in accordance with ARI 710-2002 evaporating temperature:
- *t_e = 5 °F*
- *t_c = 86 °F*
- *Δp = 1 psig*

[3]) For usage with strainer or as a receiver application
[4]) For "drier" application using all the permissible cores

Technical data and ordering

DCR - Filter drier with replaceable solid core

Drying and liquid capacity, type 48-DC and 100-DC

Type	Number of cores	Drying capacity [kg] of refrigerant [1]												Liquid capacity [kW] [2]						Max. working pressure PS [bar]
		R134a		R404A		R507		R22 / R407C		R410A		R744 (CO_2)		R134a	R404A	R507	R22 / R407C	R410A	R744 (CO_2)	
		[°C]																		
		24	52	24	52	24	52	24	52	24	52	-6.6	24							
DCR 0485	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	55.5	51.0	80.6	59.4	57.5	84.5	87.9	40.8	46
DCR 0487	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	55.5	51.0	128.0	92.5	89.6	132.6	136.8	58.0	46
DCR 0489	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	55.5	51.0	184.3	132.6	128.4	190.4	195.9	95.7	46
DCR 04811	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	55.5	51.0	249.3	180.5	174.8	258.5	266.8	113.9	46
DCR 04813	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	55.5	51.0	304.1	222.0	215.1	317.1	328.5	111.5	46
DCR 04817	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	55.5	51.0	434.3	324.1	314.3	459.4	480.7	148.1	46
DCR 04821	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	55.5	51.0	320.4	234.4	227.1	334.5	346.8	185.0	46
DCR 0967	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	110.9	101.9	119.6	85.7	83.0	123.2	126.6	78.4	46
DCR 0969	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	110.9	101.9	189.5	136.4	131.9	195.6	201.2	111.5	46
DCR 09611	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	110.9	101.9	259.7	187.2	181.4	268.6	276.7	126.6	46
DCR 09613	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	110.9	101.9	331.9	240.8	233.3	344.7	356.1	150.9	46
DCR 09617	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	110.9	101.9	477.2	349.1	338.3	498.2	516.6	200.5	46
DCR 1449	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	166.4	152.9	184.4	132.7	128.5	190.5	196.0	124.5	35[3]) / 46[4])
DCR 14411	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	166.4	152.9	272.5	196.9	190.7	282.2	290.9	154.0	35[3]) / 46[4])
DCR 14413	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	166.4	152.9	340.1	246.8	239.1	353.2	364.9	183.2	35[3]) / 46[4])
DCR 14417	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	166.4	152.9	442.3	323.0	313.0	461.3	478.0	243.4	35[3]) / 46[4])
DCR 19211	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	221.8	203.8	290.0	211.6	205.0	302.3	313.1	177.2	28[3]) / 40[4])
DCR 19213	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	221.8	203.8	359.8	261.7	253.6	374.2	387.0	211.0	28[3]) / 40[4])
DCR 19217	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	221.8	203.8	505.6	366.0	354.6	524.3	541.0	299.6	28[3]) / 40[4])
DCR 19221	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	221.8	203.8	442.5	321.7	311.7	460.2	475.8	381.6	28[3]) / 40[4])
DCR 300	3	433.5	409.7	466.0	441.7	474.3	438.1	434.4	401.4	395.3	364.3	371.4	341.3	–	–	–	–	–	–	–
DCR 400	4	577.9	546.3	621.3	588.9	632.4	584.2	579.1	535.2	527.1	485.7	495.2	455.1	–	–	–	–	–	–	–

[1]) Drying capacity is based on following moisture content test standards before and after drying:
– R134a: 1050 – 50 ppm W
– R404A, R507: 1020 – 50 ppm W
– R407C: 1020 – 50 ppm W
– R410A: 1050 – 50 ppm W
– R22: 1050 – 60 ppm W
– R744: 1010 – 50 ppm W at 24 °C / 445 – 50 ppm W at -6.6 °C
In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
t_e = -15 °C
t_c = 30 °C
Δp = 0.07 bar

[3]) For usage with strainer or as a receiver application
[4]) For "drier" application using all the permissible cores

Technical data and ordering

DCR - Filter drier with replaceable solid core

Drying and liquid capacity, type 48-DC and 100-DC

Type	Number of cores	Drying capacity [lb] of refrigerant [1]												Liquid capacity [TR] [2]						Max. working pressure MWP [psig]
		R134a		R404A		R507		R22 / R407C		R410A		R744 (CO_2)		R134a	R404A	R507	R22 / R407C	R410A	R744 (CO_2)	
		[°F]																		
		75	125	75	125	75	125	75	125	75	125	20	75.5							
DCR 0485	1	142.6	134.9	153.4	145.3	156.1	144.2	143.1	132.1	130.1	119.9	122.4	112.4	22.9	16.9	16.3	24.0	25.0	11.6	667
DCR 0487	1	142.6	134.9	153.4	145.3	156.1	144.2	143.1	132.1	130.1	119.9	122.4	112.4	36.4	26.3	25.5	37.7	38.9	16.5	667
DCR 0489	1	142.6	134.9	153.4	145.3	156.1	144.2	143.1	132.1	130.1	119.9	122.4	112.4	52.4	37.7	36.5	54.1	55.7	27.2	667
DCR 04811	1	142.6	134.9	153.4	145.3	156.1	144.2	143.1	132.1	130.1	119.9	122.4	112.4	70.9	51.3	49.7	73.5	75.9	32.4	667
DCR 04813	1	142.6	134.9	153.4	145.3	156.1	144.2	143.1	132.1	130.1	119.9	122.4	112.4	86.5	63.1	61.2	90.2	93.4	31.7	667
DCR 04817	1	142.6	134.9	153.4	145.3	156.1	144.2	143.1	132.1	130.1	119.9	122.4	112.4	123.5	92.2	89.4	130.6	136.7	42.1	667
DCR 04821	1	142.6	134.9	153.4	145.3	156.1	144.2	143.1	132.1	130.1	119.9	122.4	112.4	91.1	66.7	64.6	95.1	98.6	52.6	667
DCR 0967	2	285.3	269.6	306.7	290.8	312.2	288.4	285.9	264.3	260.4	239.9	244.5	224.7	34.0	24.4	23.6	35.0	36.0	22.3	667
DCR 0969	2	285.3	269.6	306.7	290.8	312.2	288.4	285.9	264.3	260.4	239.9	244.5	224.7	53.9	38.8	37.5	55.6	57.2	31.7	667
DCR 09611	2	285.3	269.6	306.7	290.8	312.2	288.4	285.9	264.3	260.4	239.9	244.5	224.7	73.8	53.2	51.6	76.4	78.7	36.0	667
DCR 09613	2	285.3	269.6	306.7	290.8	312.2	288.4	285.9	264.3	260.4	239.9	244.5	224.7	94.4	68.5	66.3	98.0	101.3	42.9	667
DCR 09617	2	285.3	269.6	306.7	290.8	312.2	288.4	285.9	264.3	260.4	239.9	244.5	224.7	135.7	99.3	96.2	141.7	146.9	57.0	667
DCR 1449	3	427.9	404.5	460.1	436.1	468.3	432.5	429.0	396.4	390.4	357.6	366.8	337.1	52.4	37.7	36.5	54.2	55.7	35.4	507[3]) / 667[4])
DCR 14411	3	427.9	404.5	460.1	436.1	468.3	432.5	429.0	396.4	390.4	357.6	366.8	337.1	77.5	56.0	54.2	80.2	82.7	43.8	507[3]) / 667[4])
DCR 14413	3	427.9	404.5	460.1	436.1	468.3	432.5	429.0	396.4	390.4	357.6	366.8	337.1	96.7	70.2	68.0	100.4	103.8	52.1	507[3]) / 667[4])
DCR 14417	3	427.9	404.5	460.1	436.1	468.3	432.5	429.0	396.4	390.4	357.6	366.8	337.1	125.8	91.8	89.0	131.2	135.9	69.2	507[3]) / 667[4])
DCR 19211	4	570.8	539.5	613.5	581.6	624.3	576.9	571.9	528.4	520.5	479.7	489.0	449.3	82.5	60.2	58.3	86.0	89.0	50.4	406[3]) / 580[4])
DCR 19213	4	570.8	539.5	613.5	581.6	624.3	576.9	571.9	528.4	520.5	479.7	489.0	449.3	102.3	74.4	72.1	106.4	110.0	60.0	406[3]) / 580[4])
DCR 19217	4	570.8	539.5	613.5	581.6	624.3	576.9	571.9	528.4	520.5	479.7	489.0	449.3	143.8	104.1	100.8	149.1	153.8	85.2	406[3]) / 580[4])
DCR 19221	4	570.8	539.5	613.5	581.6	624.3	576.9	571.9	528.4	520.5	479.7	489.0	449.3	125.8	91.5	88.6	130.9	135.3	108.5	406[3]) / 580[4])
DCR 300	3	956	903	1027	974	1046	966	958	885	871	803	819	752	–	–	–	–	–	–	–
DCR 400	4	1274	1204	1370	1298	1394	1288	1277	1180	1162	1071	1092	1003	–	–	–	–	–	–	–

[1]) Drying capacity is based on the following moisture contents before and after drying:
– R134a: 1050 – 50 ppm W
– R404A, R507: 1020 – 50 ppm W
– R407C: 1020 – 50 ppm W
– R410A: 1050 – 50 ppm W
– R22: 1050 – 60 ppm W
– R744: 1010 – 50 ppm W at 24 °C / 445 – 50 ppm W at -6.6 °C
In accordance with ARI 710-2004

[2]) Liquid capacity given in accordance with ARI 710-2004
t_e = 5 °F
t_c = 86 °F
Δp = 1 psig

[3]) For usage with strainer or as a receiver application
[4]) For "drier" application using all the permissible cores

Technical data and ordering

DCR - Filter drier with replaceable solid core

Drying capacity [g] of water [3]), type 48-DA

Type	Number of cores	Evaporating temperature t_e [°C]												Acid capacity [4]) [g]
		-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4	
		R22 / R407C			R134a			R404A / R507			R410A			
DCR 048	1	28	19	12	45	38	27	47	30	19	42	35	25	26.6
DCR 096	2	56	37	24	90	77	54	94	60	37	84	70	50	53.3
DCR 144	3	84	56	36	135	115	81	142	90	56	126	105	75	79.9
DCR 192	4	112	74	48	180	153	108	189	120	75	168	140	100	106.5

[3]) Drying capacity is expressed during drying in:
R22: EPD = 10 ppm W, corresponding to a dew point temperature = -50 °C
R134a: EPD = 50 ppm W, corresponding to a dew point temperature = -37 °C
R404A: EPD = 10 ppm W, corresponding to a dew point temperature = -40 °C
R407C: EPD = 10 ppm W, corresponding to a dew point temperature = -40 °C
[4]) Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)

DCR - Filter drier with replaceable solid core

Drying capacity [lb] of refrigerant [3]), type 48-DA

Type	Number of cores	Evaporating temperature t_e [°F]												Acid capacity [4]) [g]
		-40	-4	40	-22	-4	40	-40	-4	40	-40	-4	40	
		R22 / R407C			R134a			R404A / R507			R410A			
DCR 048	1	28	19	12	45	38	27	47	30	19	42	35	25	0.94
DCR 096	2	56	37	24	90	77	54	94	60	37	84	70	50	1.88
DCR 144	3	84	56	36	135	115	81	142	90	56	126	105	75	2.82
DCR 192	4	112	74	48	180	153	108	189	120	75	168	140	100	3.76

[3]) Drying capacity is expressed during drying in:
R22: EPD = 10 ppm W, corresponding to a dew point temperature = -58 °F
R134a: EPD = 50 ppm W, corresponding to a dew point temperature = -34.6 °F
R404A: EPD = 10 ppm W, corresponding to a dew point temperature = -40 °F
R407C: EPD = 10 ppm W, corresponding to a dew point temperature = -40 °F
[4]) Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)

DCR - Filter drier with replaceable solid core

Recommended plant capacity [kW] in suction line - burn-out, type 48-DA

Type	Evaporating temperature t_e [°C]											
	-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4
	Pressure drop Δp [bar]											
	0.04	0.10	0.21	0.04	0.07	0.14	0.04	0.10	0.21	0.04	0.10	0.21
	R22 / R407C			R134a			R404A / R507			R410A		
DCR 0485	3.1	8.9	21.0	3.0	5.4	13.0	2.4	7.1	17.5	3.1	8.9	21.0
DCR 0487	5.8	16.1	37.8	5.6	9.9	23.4	4.5	12.9	31.2	5.8	16.1	37.8
DCR 0489	7.8	21.6	50.7	7.5	13.3	31.5	6.0	17.2	41.8	7.8	21.6	50.7
DCR 04811	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 04813	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 04817	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 04821	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 0965	3.3	9.1	21.4	3.2	5.7	13.4	2.5	7.4	18.0	3.3	9.2	21.6
DCR 0967	5.8	16.2	38.1	5.6	9.9	23.6	4.5	12.9	31.4	5.8	16.2	38.1
DCR 0969	8.7	24.6	58.3	8.4	15.0	35.9	6.8	19.7	48.1	8.7	24.6	58.3
DCR 09611	11.9	33.4	79.3	11.4	20.4	48.9	9.3	26.8	65.4	11.9	33.4	79.3
DCR 09613	14.1	39.9	95.2	13.6	24.3	58.5	11.0	32.0	78.7	14.1	39.9	95.2
DCR 09617	14.1	39.9	95.2	13.6	24.3	58.5	11.0	32.0	78.7	14.1	39.9	95.2
DCR 09621	14.1	39.9	95.2	13.6	24.3	58.5	11.0	32.0	78.7	14.1	39.9	95.2
DCR 1445	3.5	10.0	22.8	3.4	6.0	14.0	2.7	7.7	18.9	3.5	10.0	22.8
DCR 1447	6.6	18.9	42.9	6.3	11.2	26.4	5.1	14.5	35.6	6.6	18.9	42.9
DCR 1449	8.8	25.1	57.2	8.4	15.0	35.2	6.8	19.4	47.5	8.8	25.1	57.2
DCR 14411	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 14413	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 14417	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 14421	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 1925	4.2	11.5	27.3	4.0	7.1	16.8	3.2	9.2	22.7	4.2	11.5	27.3
DCR 1927	7.9	21.6	51.4	7.6	13.4	31.6	6.1	17.4	42.7	7.9	21.6	51.4
DCR 1929	10.6	28.9	68.9	10.2	18.0	42.1	8.2	23.3	57.2	10.6	28.9	68.9
DCR 19211	14.8	41.8	99.4	14.3	25.5	61.2	11.6	33.6	82.2	14.8	41.8	99.4
DCR 19213	18.0	51.1	122.1	17.4	31.1	75.0	14.1	41.1	101.0	18.0	51.1	122.1
DCR 19217	18.0	51.1	122.1	17.4	31.1	75.0	14.1	41.1	101.0	18.0	51.1	122.1
DCR 19221	18.0	51.1	122.1	17.4	31.1	75.0	14.1	41.1	101.0	18.0	51.1	122.1

Data given in a accordance with ARI-Standard 710-2004 for:
t_e = 4.4 °C
t_c = 32.2 °C

Technical data and ordering

DCR - Filter drier with replaceable solid core

Recommended plant capacity [TR], type 48-DA

Type	Evaporating temperature t_e [°F]											
	-40	-4	40	-22	-4	40	-40	-4	40	-40	-4	40
	Pressure drop [psig]											
	0.58	1.45	3.05	0.58	1	2.03	0.58	1.45	3.05	0.58	1.45	3.05
	R22 / R407C			R134a			R404A / R507			R410A		
DCR 0485	0.9	2.5	6.0	0.9	1.5	3.7	0.7	2.0	5.0	0.9	2.5	6.0
DCR 0487	1.6	4.6	10.7	1.6	2.8	6.7	1.3	3.7	8.9	1.6	4.6	10.7
DCR 0489	2.2	6.1	14.4	2.1	3.8	9.0	1.7	4.9	11.9	2.2	6.1	14.4
DCR 04811	2.8	7.8	18.0	2.7	4.8	11.2	2.2	6.2	14.8	2.8	7.8	18.0
DCR 04813	2.8	7.8	18.0	2.7	4.8	11.2	2.2	6.2	14.8	2.8	7.8	18.0
DCR 04817	2.8	7.8	18.0	2.7	4.8	11.2	2.2	6.2	14.8	2.8	7.8	18.0
DCR 04821	2.8	7.8	18.0	2.7	4.8	11.2	2.2	6.2	14.8	2.8	7.8	18.0
DCR 0965	0.9	2.6	6.1	0.9	1.6	3.8	0.7	2.1	5.1	0.9	2.6	6.1
DCR 0967	1.6	4.6	10.8	1.6	2.8	6.7	1.3	3.7	8.9	1.6	4.6	10.8
DCR 0969	2.5	7.0	16.6	2.4	4.3	10.2	1.9	5.6	13.7	2.5	7.0	16.6
DCR 09611	3.4	9.5	22.5	3.2	5.8	13.9	2.6	7.6	18.6	3.4	9.5	22.5
DCR 09613	4.0	11.3	27.1	3.9	6.9	16.6	3.1	9.1	22.4	4.0	11.3	27.1
DCR 09617	4.0	11.3	27.1	3.9	6.9	16.6	3.1	9.1	22.4	4.0	11.3	27.1
DCR 09621	4.0	11.3	27.1	3.9	6.9	16.6	3.1	9.1	22.4	4.0	11.3	27.1
DCR 1445	1.0	2.8	6.5	1.0	1.7	4.0	0.8	2.2	5.4	1.0	2.8	6.5
DCR 1447	1.9	5.4	12.2	1.8	3.2	7.5	1.5	4.1	10.1	1.9	5.4	12.2
DCR 1449	2.5	7.1	16.3	2.4	4.3	10.0	1.9	5.5	13.5	2.5	7.1	16.3
DCR 14411	3.8	10.8	26.2	3.6	6.5	16.0	2.9	8.7	21.8	3.8	10.8	26.2
DCR 14413	3.8	10.8	26.2	3.6	6.5	16.0	2.9	8.7	21.8	3.8	10.8	26.2
DCR 14417	3.8	10.8	26.2	3.6	6.5	16.0	2.9	8.7	21.8	3.8	10.8	26.2
DCR 14421	3.8	10.8	26.2	3.6	6.5	16.0	2.9	8.7	21.8	3.8	10.8	26.2
DCR 1925	1.2	3.3	7.8	1.1	2.0	4.8	0.9	2.6	6.5	1.2	3.3	7.8
DCR 1927	2.2	6.1	14.6	2.2	3.8	9.0	1.7	4.9	12.1	2.2	6.1	14.6
DCR 1929	3.0	8.2	19.6	2.9	5.1	12.0	2.3	6.6	16.3	3.0	8.2	19.6
DCR 19211	4.2	11.9	28.3	4.1	7.3	17.4	3.3	9.6	23.4	4.2	11.9	28.3
DCR 19213	5.1	14.5	34.7	4.9	8.8	21.3	4.0	11.7	28.7	5.1	14.5	34.7
DCR 19217	5.1	14.5	34.7	4.9	8.8	21.3	4.0	11.7	28.7	5.1	14.5	34.7
DCR 19221	5.1	14.5	34.7	4.9	8.8	21.3	4.0	11.7	28.7	5.1	14.5	34.7

Data given in accordance with ARI-Standard 710-2002 for:
t_e = 40 °F
t_c = 90 °F

Strainer mounted in suction line, type 48-F

Refrigerant	R22 / R407C			R134a			R404A / R507			R410A		
Evaporating temperature [°C]	-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4
Pressure drop Δp [bar]	0.04	0.10	0.21	0.04	0.07	0.14	0.04	0.10	0.21	0.04	0.10	0.21
Recommended system capacity [kW]	15	47	113	15	28	69	12	38	93	15	47	113

Strainer mounted in solution line

Refrigerant	R22 / R407C	R134a	R404A / R507	R410A
Recommended s ystem capacity [kW]	390	350	260	390

The data given apply to DCR 04811 with 48-F-core
Liquid capacity is given in accordance with 710-2004 for:
t_e = -15 °C
t_c = 30 °C
Δp = 0.07 bar

Strainer mounted in suction line, type 48-F

Refrigerant	R22 / R407C			R134a			R404A / R507			R410A		
Evaporating temperature [°F]	-40	-4	40	-22	-4	40	-40	-4	40	-40	-4	40
Pressure drop Δp [psig]	0.59	1.47	3.09	0.59	1.03	2.06	0.59	1.47	3.09	0.59	1.47	3.09
Recommended system capacity [TR]	4	13	32	4	8	20	3	11	26	4	13	32

Strainer mounted in solution line

Refrigerant	R22 / R407C	R134a	R404A / R507	R410A
Recommended s ystem capacity [TR]	111	100	74	111

The data given apply to DCR 04811 with 48-F core
Liquid capacity is given in accordance with ARI 710-2002 for:
t_e = 5 °F
t_c = 86 °F
Δp = 1 psi

Technical data and ordering

DCR - Filter drier with replaceable solid core

Housing + top cover

Type	Number of cores	Steel connectors			Cover type	Max. working pressure PS [bar]	Max. working pressure MWP [psig]	Code no.
		Solder		Butt weld				
		ODF [in]	ODF [mm]	[in]				
DCR 0485	1	5/8	16	1/2	Plug	46	667	023U7050
DCR 0487	1	7/8	22	3/4	Plug	46	667	023U7051
DCR 0487	1	7/8	22	3/4	–	46	667	023U7151
DCR 0489	1	–	28	1	Plug	46	667	023U7052
DCR 0489	1	1 1/8	–	1	Plug	46	667	023U7053
DCR 04811	1	1 3/8	35	1 1/4	Plug	46	667	023U7054
DCR 04813	1	1 5/8	–	1 1/2	Plug	46	667	023U7055
DCR 04813	1	–	42	1 1/2	Plug	46	667	023U7056
DCR 04817	1	2 1/8	54	2	Plug	46	667	023U7057
DCR 04821	1	2 5/8	–	2 1/2	Plug	46	667	023U7076
DCR 0967	2	7/8	22	3/4	Plug	46	667	023U7058
DCR 0969	2	–	28	1	Plug	46	667	023U7059
DCR 0969	2	1 1/8	–	1	Plug	46	667	023U7060
DCR 09611	2	1 3/8	35	1 1/4	Plug	46	667	023U7061
DCR 09611	2	1 3/8	35	1 1/4	–	46	667	023U7161
DCR 09613	2	1 5/8	–	1 1/2	Plug	46	667	023U7062
DCR 09613	2	–	42	1 1/2	Plug	46	667	023U7063
DCR 09617	2	2 1/8	54	2	Plug	46	667	023U7064
DCR 1449	3	–	28	1	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7065
DCR 1449	3	1 1/8	–	1	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7066
DCR 14411	3	1 3/8	35	1 1/4	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7067
DCR 14413	3	1 5/8	–	1 1/2	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7068
DCR 14413	3	–	42	1 1/2	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7069
DCR 14417	3	2 1/8	54	2	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7070
DCR 19211	4	1 3/8	35	1 1/4	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7071
DCR 19213	4	1 5/8	–	1 1/2	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7072
DCR 19213	4	–	42	1 1/2	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7073
DCR 19217	4	2 1/8	54	2	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7074
DCR 19221	4	2 5/8	–	2 1/2	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7086

[1]) For usage with strainer or as a receiver application
[2]) For "drier" application all the permissible cores

Technical data and ordering

DCR - Filter drier with replaceable solid core

Housing + top cover

Type	Number of cores	Copper connectors		Cover type	Max. working pressure PS [bar]	Max. working pressure MWP [psig]	Code no.
		Solder					
		ODF [in]	ODF [mm]				
DCR 0485s	1	5/8	16	Plug	46	667	023U7250
DCR 0487s	1	7/8	22	Plug	46	667	023U7251
DCR 0487s	1	7/8	22	–	46	667	023U7571
DCR 0489s	1	–	28	Plug	46	667	023U7252
DCR 0489s	1	1 1/8	–	Plug	46	667	023U7253
DCR 0489s	1	–	28	–	46	667	023U7268
DCR 04811s	1	1 3/8	35	Plug	46	667	023U7254
DCR 04813s	1	1 5/8	–	Plug	46	667	023U7255
DCR 04813s	1	–	42	Plug	46	667	023U7256
DCR 04813s	1	–	42	–	46	667	023U7303
DCR 04817s	1	2 1/8	54	Plug	46	667	023U7257
DCR 04821s	1	2 5/8	–	Plug	46	667	023U7276
DCR 0967s	2	7/8	22	Plug	46	667	023U7258
DCR 0969s	2	–	28	Plug	46	667	023U7259
DCR 0969s	2	1 1/8	–	Plug	46	667	023U7260
DCR 0969s	2	1 1/8	–	–	46	667	023U7278
DCR 09611s	2	1 3/8	35	Plug	46	667	023U7261
DCR 09613s	2	1 5/8	–	Plug	46	667	023U7262
DCR 09613s	2	–	42	Plug	46	667	023U7263
DCR 09613s	2	–	42	–	46	667	023U7463
DCR 09617s	2	2 1/8	54	Plug	46	667	023U7264
DCR 09617s	2	2 1/8	54	–	46	667	023U7290
DCR 09621s	2	2 5/8	–	Plug	46	667	023U7281
DCR 1449s	3	–	28	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7265
DCR 14411s	3	1 3/8	35	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7267
DCR 14411s	3	1 3/8	–	–	35[1]) / 46[2])	507[1]) / 667[2])	023U7275
DCR 14413s	3	1 5/8	–	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7282
DCR 14413s	3	–	42	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7269
DCR 14413s	3	1 5/8	42	–	35[1]) / 46[2])	507[1]) / 667[2])	023U7297
DCR 14417s	3	2 1/8	54	Plug	35[1]) / 46[2])	507[1]) / 667[2])	023U7270
DCR 19211s	4	1 3/8	–	–	28[1]) / 40[2])	406[1]) / 580[2])	023U7083
DCR 19213s	4	1 5/8	–	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7272
DCR 19213s	4	–	42	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7273
DCR 19213s	4	1 5/8	–	–	28[1]) / 40[2])	406[1]) / 580[2])	023U7082
DCR 19217s	4	2 1/8	54	Plug	28[1]) / 40[2])	406[1]) / 580[2])	023U7274

[1]) For usage with strainer or as a receiver application
[2]) For "drier" application all the permissible cores

Technical data and ordering


Solid core


Strainer

DCR - Inserts with gasket

Ordering

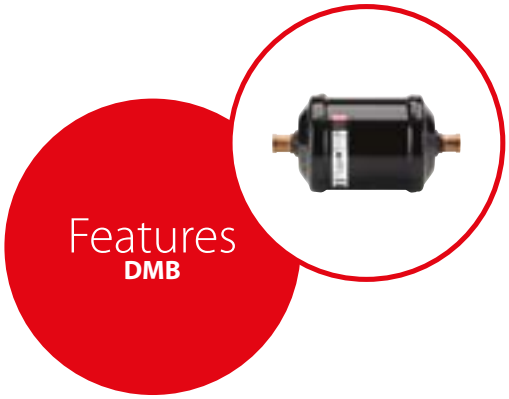
Type	Material	Code no.		
		Industrial pack		Multi pack
		With gasket	Without gasket	With gasket
48-DM solid core	100% molecular sieve	023U1392	023U1393	023U1391
48-DC solid core	80% molecular sieve and 20% Al_3O_2	023U4381	023U4382	023U4380
48-DA solid core	30% molecular sieve and 70% Al_3O_2	023U5381	023U5382	023U5380
48-F strainer	Felt-gasket, 15 µm	023U1921	–	–
		Multi pack		
100-DM solid core[1])	100% molecular sieve	023U7562	–	–
100-DC solid core[1])	80% molecular sive and 20% Al_3O_2	023U7563	–	–

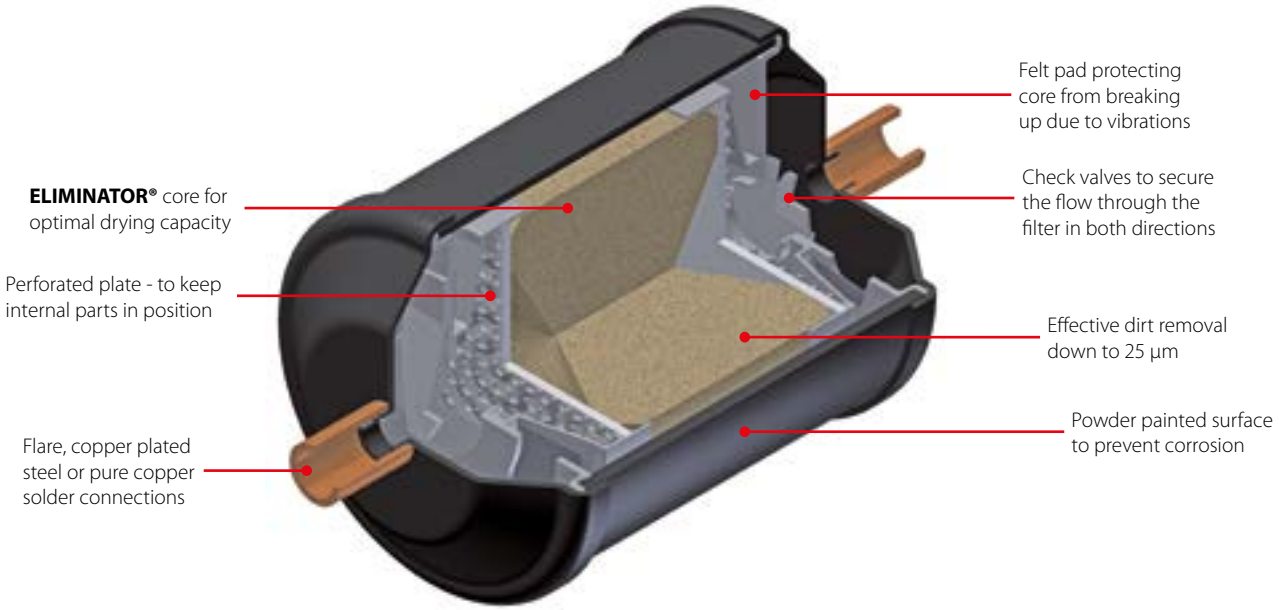
[1]) Do not use with DCR 048 – 192 housings

DMB - Hermetic bi-flow filter drier

DMB **ELIMINATOR®** hermetic bi-flow filter drier series are for use in liquid lines on heat pumps, and have built-in check valves to ensure that refrigerant liquid flows through the filter drier from the outer side of the filter core towards the center.
They ensure fast and effective adsorption of moisture as well as organic and inorganic acids, and all dirt particles are retained irrespective of flow direction.

DMB hermetic bi-flow filter driers contain a solid core consisting of 100% 3 Å Molecular Sieve, and are especially suitable for heat pumps with HFC refrigerants and polyolester oil with additives.





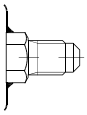
Facts

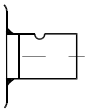
Application:
- Traditional refrigeration
- Heat pumps
- Air conditioning units

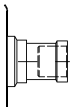
- No dirt released by reversing the flow direction
- The check valves are not sensitive to dirt and give minimum restriction, irrespective of flow direction
- When building heat pump systems, the use of hermetic bi-flow filter driers can save up to ten solder connections. This reduces production costs and the number of potential leakage points

- DMB filter driers are especially suitable for heat pumps with HFC refrigerant and polyolester oil with additives
- Optimum flow characteristics and dirt retention
- Recommended for use with HFO, HC, HFC and HCFC refrigerants
- Available in sizes from 05 to 30 cubic inches
- Available with flare, solder (pure copper, cu-plated) connections

Technical data and ordering


Flare version


Solder version (pure cooper)


Solder version (cu-plated)

DMB - Hermetic bi-flow filter drier

Drying and liquid capacity

Type	Drying capacity [kg] of refrigerant [1]												Liquid capacity [kW] [2]						Max working pressure PS [bar]
	R134a		R404A		R507		R22		R407C		R410A		R134a	R404A	R507	R22	R407C	R410A	
	[°C]																		
	24	52	24	52	24	52	24	52	24	52	24	52							
DMB 082 / 082s	9.1	8.6	9.7	9.2	9.9	9.2	9.2	8.5	9.1	8.4	8.3	7.6	3.9	2.8	2.8	4.3	4.3	4.3	46
DMB 083 / 083s	9.1	8.6	9.7	9.2	9.9	9.2	9.2	8.5	9.1	8.4	8.3	7.6	7.4	5.3	5.3	8.2	8.2	8.2	46
DMB 084 / 084s	9.1	8.6	9.7	9.2	9.9	9.2	9.2	8.5	9.1	8.4	8.3	7.6	8.3	6.0	6.0	9.2	9.2	9.2	46
DMB 162	17.1	16.2	18.4	17.4	18.7	17.3	17.3	16.0	17.1	15.8	15.6	14.4	7.6	5.3	5.3	8.8	8.8	8.8	46
DMB 163 / 163s	17.1	16.2	18.4	17.4	18.7	17.3	17.3	16.0	17.1	15.8	15.6	14.4	18.0	13.0	13.0	20.0	20.0	20.0	46
DMB 164 / 164s	17.1	16.2	18.4	17.4	18.7	17.3	17.3	16.0	17.1	15.8	15.6	14.4	28.0	20.0	20.0	32.0	32.0	32.0	46
DMB 165 / 165s	17.1	16.2	18.4	17.4	18.7	17.3	17.3	16.0	17.1	15.8	15.6	14.4	37.0	29.0	29.0	40.0	40.0	40.0	46
DMB 303	42.0	39.7	45.2	42.8	46.0	42.5	42.5	39.3	42.1	38.9	38.3	35.3	19.0	15.0	15.0	21.0	21.0	21.0	46
DMB 304 / 304s	42.0	39.7	45.2	42.8	46.0	42.5	42.5	39.3	42.1	38.9	38.3	35.3	28.0	20.0	20.0	31.0	31.0	31.0	46
DMB 305 / 305s	42.0	39.7	45.2	42.8	46.0	42.5	42.5	39.3	42.1	38.9	38.3	35.3	38.0	28.0	28.0	42.0	42.0	42.0	46
DMB 307s	42.0	39.7	45.2	42.8	46.0	42.5	42.5	39.3	42.1	38.9	38.3	35.3	43.0	32.0	32.0	47.0	47.0	47.0	46

[1]) Drying capacity is based on following moisture content test standards before and after drying:
- *– R134a: 1050 – 50 ppm W*
- *– R404A, R507: 1020 – 50 ppm W*
- *– R407C: 1020 – 50 ppm W*
- *– R410A: 1050 – 50 ppm W*
- *– R22: 1050 – 60 ppm W*

In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
- *t_e = -15 °C*
- *t_c = 30 °C*
- *Δp = 0.07 bar*

DMB - Hermetic bi-flow filter drier

Drying and liquid capacity

Type	Drying capacity [lb] of refrigerant [1]												Liquid capacity [TR] [2]						Max. working pressure MWP [psig]
	R134a		R404A		R507		R22		R407C		R410A		R134a	R404A	R507	R22	R407C	R410A	
	[°F]																		
	75	125	75	125	75	125	75	125	75	125	75	125							
DMB 082 / 082s	20.0	18.9	21.3	20.2	21.8	20.2	20.2	18.7	20.0	18.5	18.2	16.7	1.1	0.8	0.8	1.2	1.2	1.2	667
DMB 083 / 083s	20.0	18.9	21.3	20.2	21.8	20.2	20.2	18.7	20.0	18.5	18.2	16.7	2.1	1.5	1.5	2.3	2.3	2.3	667
DMB 084 / 084s	20.0	18.9	21.3	20.2	21.8	20.2	20.2	18.7	20.0	18.5	18.2	16.7	2.4	1.7	1.7	2.6	2.6	2.6	667
DMB 162	37.6	35.7	40.5	38.3	41.2	38.1	38.1	35.2	37.6	34.8	34.3	31.7	2.2	1.5	1.5	2.5	2.5	2.5	667
DMB 163 / 163s	37.6	35.7	40.5	38.3	41.2	38.1	38.1	35.2	37.6	34.8	34.3	31.7	5.1	3.7	3.7	5.7	5.7	5.7	667
DMB 164 / 164s	37.6	35.7	40.5	38.3	41.2	38.1	38.1	35.2	37.6	34.8	34.3	31.7	8.0	5.7	5.7	9.1	9.1	9.1	667
DMB 165 / 165s	37.6	35.7	40.5	38.3	41.2	38.1	38.1	35.2	37.6	34.8	34.3	31.7	10.6	8.3	8.3	11.4	11.4	11.4	667
DMB 303	92.5	87.5	99.6	94.3	101.4	93.6	93.6	86.6	92.8	85.7	84.4	77.8	5.4	4.3	4.3	6.0	6.0	6.0	667
DMB 304 / 304s	92.5	87.5	99.6	94.3	101.4	93.6	93.6	86.6	92.8	85.7	84.4	77.8	8.0	5.7	5.7	8.9	8.9	8.9	667
DMB 305 / 305s	92.5	87.5	99.6	94.3	101.4	93.6	93.6	86.6	92.8	85.7	84.4	77.8	10.9	8.0	8.0	12.0	12.0	12.0	667
DMB 307s	92.5	87.5	99.6	94.3	101.4	93.6	93.6	86.6	92.8	85.7	84.4	77.8	12.3	9.1	9.1	13.4	13.4	13.4	667

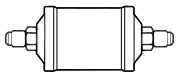
[1]) Drying capacity is based on following moisture content test standards before and after drying:
- *– R134a: 1050 – 50 ppm W*
- *– R404A, R507: 1020 – 50 ppm W*
- *– R407C: 1020 – 50 ppm W*
- *– R410A: 1050 – 50 ppm W*
- *– R22: 1050 – 60 ppm W*

In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
- *t_e = 5 °F*
- *t_c = 85 °F*
- *Δp = 1 psig*

Technical data and ordering

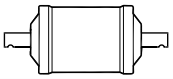
DMB - Flare



Ordering

Type	Connection		Code no.
	[in]	[mm]	
DMB 082	1/4	6	023Z1412
DMB 083	3/8	10	023Z1411
DMB 084	1/2	12	023Z1410
DMB 163	3/8	10	023Z1415
DMB 164	1/2	12	023Z1414
DMB 165	5/8	16	023Z1413
DMB 303	3/8	10	023Z1419
DMB 304	1/2	12	023Z1418
DMB 305	5/8	16	023Z1417

DMB - Solder (pure copper)



Ordering

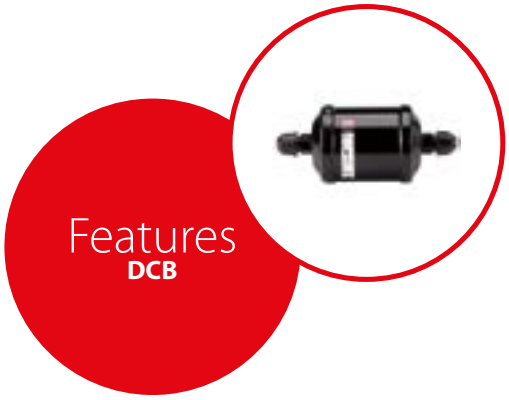
Type	Connection	Code no.	Connection	Code no.
	[in]		[mm]	
DMB 082s	1/4	023Z1443	–	–
DMB 083s	3/8	023Z1442	10	023Z1424
DMB 084s	1/2	023Z1441	–	–
DMB 163s	3/8	023Z1446	10	023Z1422
DMB 164s	1/2	023Z1445	–	–
DMB 165s	5/8	023Z1444	–	–
DMB 304s	1/2	023Z1449	–	–
DMB 305s	5/8	023Z1448	–	–
DMB 307s	7/8	023Z1447	–	–

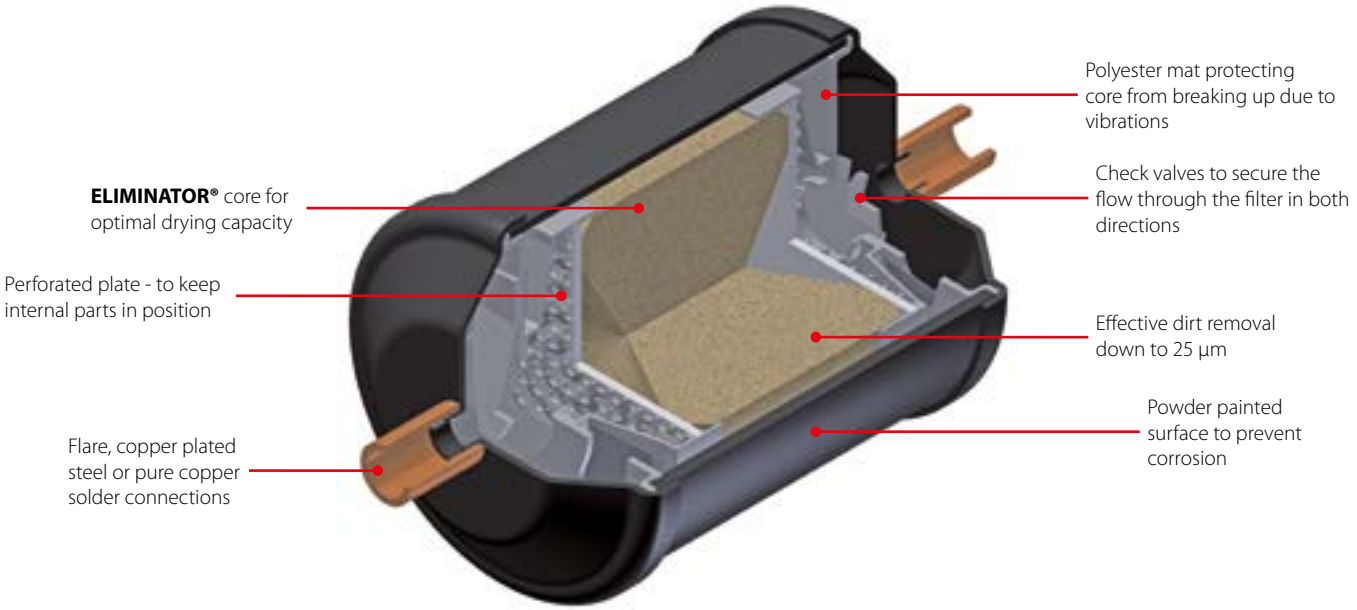
Quick Selection Notes:

DCB - Hermetic bi-flow filter drier

DCB **ELIMINATOR®** hermetic bi-flow filter driers protect refrigeration and air conditioning systems from moisture, acids and solid particles, eliminating harmful chemical reaction and abrasive impurities.

DCB hermetic bi-flow filter driers, with a solid core of 80% Molecular Sieve and 20% activated alumina, are recommended for use with HFO, HC, HFC and HCFC refrigerants. They are hermetic and available in many sizes and connection types.





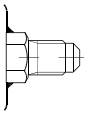
Facts

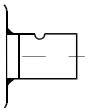
Application:
- Traditional refrigeration
- Heat pumps
- Air conditioning units

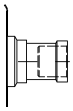
- No dirt released by reversing the flow direction
- The check valves are not sensitive to dirt and give minimum restriction, irrespective of flow direction
- When building heat pump systems, the use of hermetic bi-flow filter driers can save up to ten solder connections. This reduces production costs and the number of potential leakage points

- DCB filter driers can be used in heat pumps with HCFC refrigerants and mineral oil, and also with HFC refrigerants and polyolester oil
- Optimum flow characteristics and dirt retention
- Recommended for use with HFO, HC, HFC and HCFC refrigerants
- Available in sizes from 05 to 30 cubic inches
- Available with flare, solder (pure copper, cu-plated) connections

Technical data and ordering


Flare version


Solder version (pure cooper)


Solder version (cu-plated)

DCB - Hermetic bi-flow filter drier

Drying and liquid capacity

Type	Drying capacity [kg] of refrigerant [1]												Liquid capacity [kW] [2]						Max working pressure PS [bar]
	R134a		R404A		R507		R22		R407C		R410A		R134a	R404A	R507	R22	R407C	R410A	
	[°C]																		
	24	52	24	52	24	52	24	52	24	52	24	52							
DCB 082 / 082s	7.1	6.7	7.6	7.2	7.7	7.1	7.1	6.6	7.1	6.5	6.4	5.9	3.9	2.8	2.8	4.3	4.3	4.3	46
DCB 083 / 083s	7.1	6.7	7.6	7.2	7.7	7.1	7.1	6.6	7.1	6.5	6.4	5.9	7.4	5.3	5.3	8.2	8.2	8.2	46
DCB 084 / 084s	7.1	6.7	7.6	7.2	7.7	7.1	7.1	6.6	7.1	6.5	6.4	5.9	8.3	6.0	6.0	9.2	9.2	9.2	46
DCB 162	13.3	12.6	14.3	13.6	14.6	13.5	14.6	12.5	13.4	11.6	12.2	11.2	7.6	5.3	5.3	8.8	8.8	8.8	46
DCB 163 / 163s	13.3	12.6	14.3	13.6	14.6	13.5	14.6	12.5	13.4	11.6	12.2	11.2	18.0	13.0	13.0	20.0	20.0	20.0	46
DCB 164 / 164s	13.3	12.6	14.3	13.6	14.6	13.5	14.6	12.5	13.4	11.6	12.2	11.2	28.0	20.0	20.0	32.0	32.0	32.0	46
DCB 165 / 165s	13.3	12.6	14.3	13.6	14.6	13.5	14.6	12.5	13.4	11.6	12.2	11.2	37.0	29.0	29.0	40.0	40.0	40.0	46
DCB 303	32.8	31.0	35.8	33.4	35.8	33.1	33.2	30.7	32.8	30.3	29.9	27.5	19.0	15.0	15.0	21.0	21.0	21.0	46
DCB 304 / 304s	32.8	31.0	35.8	33.4	35.8	33.1	33.2	30.7	32.8	30.3	29.9	27.5	28.0	20.0	20.0	31.0	31.0	31.0	46
DCB 305 / 305s	32.8	31.0	35.8	33.4	35.8	33.1	33.2	30.7	32.8	30.3	29.9	27.5	38.0	28.0	28.0	42.0	42.0	42.0	46
DCB 307s	32.8	31.0	35.8	33.4	35.8	33.1	33.2	30.7	32.8	30.3	29.9	27.5	43.0	32.0	32.0	47.0	47.0	47.0	46

[1]) Drying capacity is based on following moisture content test standards before and after drying:
– R134a: 1050 – 50 ppm W
– R404A, R507: 1020 – 50 ppm W
– R407C: 1020 – 50 ppm W
– R410A: 1050 – 50 ppm W
– R22: 1050 – 60 ppm W
In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
t_e = -15 °C
t_c = 30 °C
Δp = 0.07 bar

DCB - Hermetic bi-flow filter drier

Drying and liquid capacity

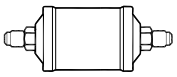
Type	Drying capacity [lb] of refrigerant [1]												Liquid capacity [TR] [2]						Max. working pressure MWP [psig]
	R134a		R404A		R507		R22		R407C		R410A		R134a	R404A	R507	R22	R407C	R410A	
	[°F]																		
	75	125	75	125	75	125	75	125	75	125	75	125							
DCB 082 / 082s	15.6	14.7	16.7	15.8	16.9	15.6	15.6	14.5	15.6	14.3	14.1	13.0	1.1	0.8	0.8	1.2	1.2	1.2	667
DCB 083 / 083s	15.6	14.7	16.7	15.8	16.9	15.6	15.6	14.5	15.6	14.3	14.1	13.0	2.1	1.5	1.5	2.3	2.3	2.3	667
DCB 084 / 084s	15.6	14.7	16.7	15.8	16.9	15.6	15.6	14.5	15.6	14.3	14.1	13.0	2.4	1.7	1.7	2.6	2.6	2.6	667
DCB 162	29.3	27.7	31.5	29.9	32.1	29.7	29.7	27.5	29.5	27.3	26.8	24.6	2.2	1.5	1.5	2.5	2.5	2.5	667
DCB 163 / 163s	29.3	27.7	31.5	29.9	32.1	29.7	29.7	27.5	29.5	27.3	26.8	24.6	5.1	3.7	3.7	5.7	5.7	5.7	667
DCB 164 / 164s	29.3	27.7	31.5	29.9	32.1	29.7	29.7	27.5	29.5	27.3	26.8	24.6	8.0	5.7	5.7	9.1	9.1	9.1	667
DCB 165 / 165s	29.3	27.7	31.5	29.9	32.1	29.7	29.7	27.5	29.5	27.3	26.8	24.6	10.6	8.3	8.3	11.4	11.4	11.4	667
DCB 303	72.3	68.3	77.6	73.6	78.9	72.9	73.1	67.6	72.3	66.8	65.9	60.6	5.4	4.3	4.3	6.0	6.0	6.0	667
DCB 304 / 304s	72.3	68.3	77.6	73.6	78.9	72.9	73.1	67.6	72.3	66.8	65.9	60.6	8.0	5.7	5.7	8.9	8.9	8.9	667
DCB 305 / 305s	72.3	68.3	77.6	73.6	78.9	72.9	73.1	67.6	72.3	66.8	65.9	60.6	10.9	8.0	8.0	12.0	12.0	12.0	667
DCB 307	72.3	68.3	77.6	73.6	78.9	72.9	73.1	67.6	72.3	66.8	65.9	60.6	12.3	9.1	9.1	13.4	13.4	13.4	667

[1]) Drying capacity is based on following moisture content test standards before and after drying:
– R134a: 1050 – 50 ppm W
– R404A, R507: 1020 – 50 ppm W
– R407C: 1020 – 50 ppm W
– R410A: 1050 – 50 ppm W
– R22: 1050 – 60 ppm W
In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
t_e = 5 °F
t_c = 85 °F
Δp = 1 psig

Technical data and ordering

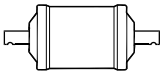
DCB - Flare



Ordering

Type	Connection		Code no.
	[in]	[mm]	
DCB 082	1/4	6	023Z1402
DCB 083	3/8	10	023Z1401
DCB 084	1/2	12	023Z1400
DCB 162	1/4	6	023Z1406
DCB 163	3/8	10	023Z1405
DCB 164	1/2	12	023Z1404
DCB 165	5/8	16	023Z1403
DCB 303	3/8	10	023Z1409
DCB 304	1/2	12	023Z1408
DCB 305	5/8	16	023Z1407

DCB - Solder (pure copper)



Ordering

Type	Connection	Code no.	Connection	Code no.
	[in]		[mm]	
DCB 082s	1/4	023Z1434	–	–
DCB 083s	3/8	023Z1433	–	–
DCB 084s	1/2	023Z1432	–	–
DCB 163s	3/8	023Z1437	–	–
DCB 164s	1/2	023Z1436	–	–
DCB 165s	5/8	023Z1435	–	–
DCB 304s	1/2	023Z1440	–	–
DCB 305s	5/8	023Z1439	–	–
DCB 307s	7/8	023Z1438	–	–

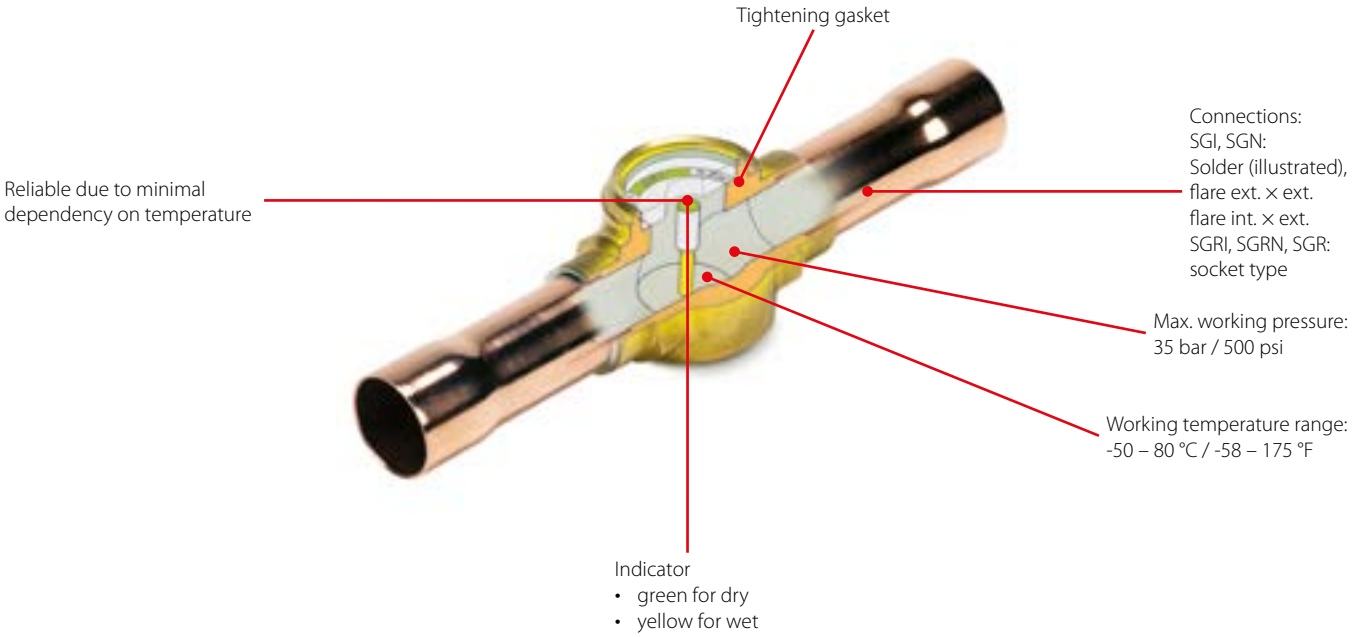
Quick Selection Notes:

SG - Standard sight glass

SG are sight glasses for commercial refrigeration applications. They are made in brass and are available in versions with flare, solder or socket connections. The SGR are mainly used to indicate the condition of the refrigerant as well as the liquid level in the receiver or the oil level in the compressor.

The SGI / SGN and SGRI / SGRN are equipped with sensitive indicators that change colour depending on the moisture content in the refrigerant.





Facts

Application:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Transport refrigeration

- Visual indication of moisture (minimal dependence on temperature)
- The flare ext. × int. version can be screwed together with filter drier (reduction of assembly costs)
- Flare connections are 4-sided for quick installation
- Designed for HCFC and non-flammable HFC refrigerants

- Connections:
  - Solder ODF x ODF
  - Solder ODF x ODM
  - Flare ext. × ext
  - Flare int. × ext
  - Socket
- Wide range with connection sizes from 6 to 22 mm

Technical data and ordering

Max. working pressure: PS / MWP = 35 bar / 507 psi
Media temperature: -50 – 80 °C / -58 – 176 °F

Available types



Flare Internal x External

SGI and SGN
with indicator



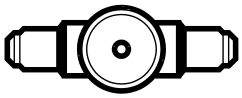
Solder version ODF x ODM

SGI and SGN
with indicator



Solder version ODF x ODF

SGI and SGN
with indicator



Flare External x External

SGI and SGN
with indicator



Socket

SGR
without indicator



Socket

SGRI and SGRN
with indicator



Saddle

SGS

SGI / SGI for HCFC refrigerants with mineral oil

Technical data

Refrigerant	Moisture content ppm = parts per million					
	SGI / SGRI					
	Media temperature 25 °C / 77 °F			Media temperature 43 °C / 109 °F		
	Green / dry	Intermed. color	Yellow / wet	Green / dry	Intermed. color	Yellow / wet
R22 with mineral oil	< 150	150 – 300	> 300	< 250	250 – 500	> 500

SGN / SGRN for HCFC and non-flammable HFC refrigerants

Technical data

Refrigerant	Moisture content ppm = parts per million					
	SGN / SGRN					
	Media temperature 25 °C / 77 °F			Media temperature 43 °C / 109 °F		
	Green / dry	Intermed. color	Yellow / wet	Green / dry	Intermed. color	Yellow / wet
R22	< 30	30 – 120	> 120	< 50	50 – 200	> 200
R134a	< 30	30 – 100	> 100	< 45	45 – 170	> 170
R404A	< 20	20 – 70	> 70	< 25	25 – 100	> 100
R407C	< 30	30 – 140	> 140	< 60	60 – 225	> 225
R507	< 15	15 – 60	> 60	< 30	30 – 110	> 110

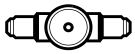
Note
For colours reflecting moisture values of other refrigerants, please contact Danfoss.

Technical data and ordering

SGI / SGRI for HCFC refrigerants with mineral oil

Ordering - Solder / Flare type

Type	Connection type	Connection [in]	Connection [mm]	Code no.
SGI 6	Flare ext. × ext.	1/4 × 1/4	6 × 6	014-0007
SGI 10	Flare ext. × ext.	3/8 × 3/8	10 × 10	014-0008
SGI 12	Flare ext. × ext.	1/2 × 1/2	12 × 12	014-0009
SGI 16	Flare ext. × ext.	5/8 × 5/8	16 × 16	014-0024
SGI 19	Flare ext. × ext.	3/4 × 3/4	19 × 19	014-0028
SGI 6	Flare int. × ext. [1]	1/4 × 1/4	6 × 6	014-0021
SGI 10	Flare int. × ext. [1]	3/8 × 3/8	10 × 10	014-0022
SGI 12	Flare int. × ext. [1]	1/2 × 1/2	12 × 12	014-0025
SGI 16	Flare int. × ext. [1]	5/8 × 5/8	16 × 16	014-0026
SGI 19	Flare int. × ext. [1]	3/4 × 3/4	19 × 19	014-0043
SGI 6s	Solder ODF × ODF	1/4 × 1/4	–	014-0034
SGI 10s	Solder ODF × ODF	3/8 × 3/8	–	014-0035
SGI 12s	Solder ODF × ODF	1/2 × 1/2	–	014-0036
SGI 16s	Solder ODF × ODF	5/8 × 5/8	16 × 16	014-0044
SGI 19s	Solder ODF × ODF	3/4 × 3/4	19 × 19	014-0047
SGI 22s	Solder ODF × ODF	7/8 × 7/8	22 × 22	014-0039
SGI 6s	Solder ODF × ODF	–	6 × 6	014-0040
SGI 10s	Solder ODF × ODF	–	10 × 10	014-0041
SGI 12s	Solder ODF × ODF	–	12 × 12	014-0042
SGI 18s	Solder OD × ODF	–	18 × 18	014-0045
SGI 6s	Solder ODF × ODM	1/4 × 5/8	–	014-0125
SGI 10s	Solder ODF × ODM	3/8 × 3/8	–	014-0126
SGI 12s	Solder ODF × ODM	1/2 × 1/2	–	014-0127
SGI 16s	Solder ODF × ODM	5/8 × 5/8	16 × 16	014-0128
SGI 22s	Solder ODF × ODM	7/8 × 7/8	22 × 22	014-0130






[1]) *Can be screwed directly into the filter drier.*

SGN for HCFC and non-flammable HFC refrigerants

Ordering - Solder / Flare type

Type	Connection type	Connection [in]	Connection [mm]	Code no.
SGN 6	Flare ext. × ext.	1/4 × 1/4	6 × 6	014-0161
SGN 10	Flare ext. × ext.	3/8 × 3/8	10 × 10	014-0162
SGN 12	Flare ext. × ext.	1/2 × 1/2	12 × 12	014-0163
SGN 16	Flare ext. × ext.	5/8 × 5/8	16 × 16	014-0165
SGN 19	Flare ext. × ext.	3/4 × 3/4	19 × 19	014-0166
SGN 6	Flare int. × ext. [1]	1/4 × 1/4	6 × 6	014-0171
SGN 10	Flare int. × ext. [1]	3/8 × 3/8	10 × 10	014-0172
SGN 12	Flare int. × ext. [1]	1/2 × 1/2	12 × 12	014-0173
SGN 16	Flare int. × ext. [1]	5/8 × 5/8	16 × 16	014-0174
SGN 19	Flare int. × ext. [1]	3/4 × 3/4	19 × 19	014-0175
SGN 6s	Solder ODF × ODF	1/4 × 1/4	–	014-0181
SGN 10s	Solder ODF × ODF	3/8 × 3/8	–	014-0182
SGN 12s	Solder ODF × ODF	1/2 × 1/2	–	014-0183
SGN 16s	Solder ODF × ODF	5/8 × 5/8	16 × 16	014-0184
SGN 19s	Solder ODF × ODF	3/4 × 3/4	19 × 19	014-0185
SGN 22s	Solder ODF × ODF	7/8 × 7/8	22 × 22	014-0186
SGN 22s [2])	Solder ODF × ODF	1 1/8 × 1 1/8	–	014-0187
SGN 6s	Solder ODF × ODF	–	6 × 6	014-0191
SGN 10s	Solder ODF × ODF	–	10 × 10	014-0192
SGN 12s	Solder ODF × ODF	–	12 × 12	014-0193
SGN 18s	Solder ODF × ODF	–	18 × 18	014-0195
SGN 6s	Solder ODF × ODM	1/4 × 1/4	–	014-0201
SGN 10s	Solder ODF × ODM	3/8 × 3/8	–	014-0202
SGN 12s	Solder ODF × ODM	1/2 × 1/2	–	014-0203
SGN 16s	Solder ODF × ODM	5/8 × 5/8	16 × 16	014-0204
SGN 22s	Solder ODF × ODM	7/8 × 7/8	22 × 22	014-0206






[1]) *Can be screwed directly into the filter drier.*
[2]) *Oversize connections.*

Technical data and ordering

SGR socket type and SGS saddle

Ordering

Type	Version	Connection		Floating ball [pc]	Code no.
		1	2		
SGR (no indicator)	Pipe thread	G 3/4 A [1])	–	1	014-0004
	NPT	3/4 – 14 NPT [2])	–	1	014-0005
	NPT	1/2 – 14 NPT [2])	–	3	014-0002
SGRI (I type indicator)	NPT	1/2 – 14 NPT [2])	–	3	014-0131
	M thread	M24 × 1	–	–	014-1154
SGRN (N type indicator)	NPT	1/2 – 14 NPT [2])	–	3	014-0006
	M thread	M24 × 1	–	–	014-1155
	M thread	M20 × 1.5	–	–	014-1603
SGS (saddle)	Tube fitting	M20 × 1.5	7/8	–	014-1073
	Tube fitting	M20 × 1.5	1 1/8	–	014-1071
	Tube fitting	M20 × 1.5	1 3/8	–	014-1074
	Tube fitting	M20 × 1.5	1 5/8	–	014-1084
	Tube fitting	M20 × 1.5	3 1/8	–	014-1072
	Tube fitting	M24 × 1	7/8	–	014-1059
	Tube fitting	M24 × 1	1 1/8	–	014-1056
	Tube fitting	M24 × 1	1 3/8	–	014-1057
	Tube fitting	M24 × 1	1 5/8	–	014-1058
	Tube fitting	M24 × 1	2 1/8	–	014-1067
	Tube fitting	M24 × 1	3 1/8	–	014-1068
	Tube fitting	M24 × 1	4 1/8	–	014-1069







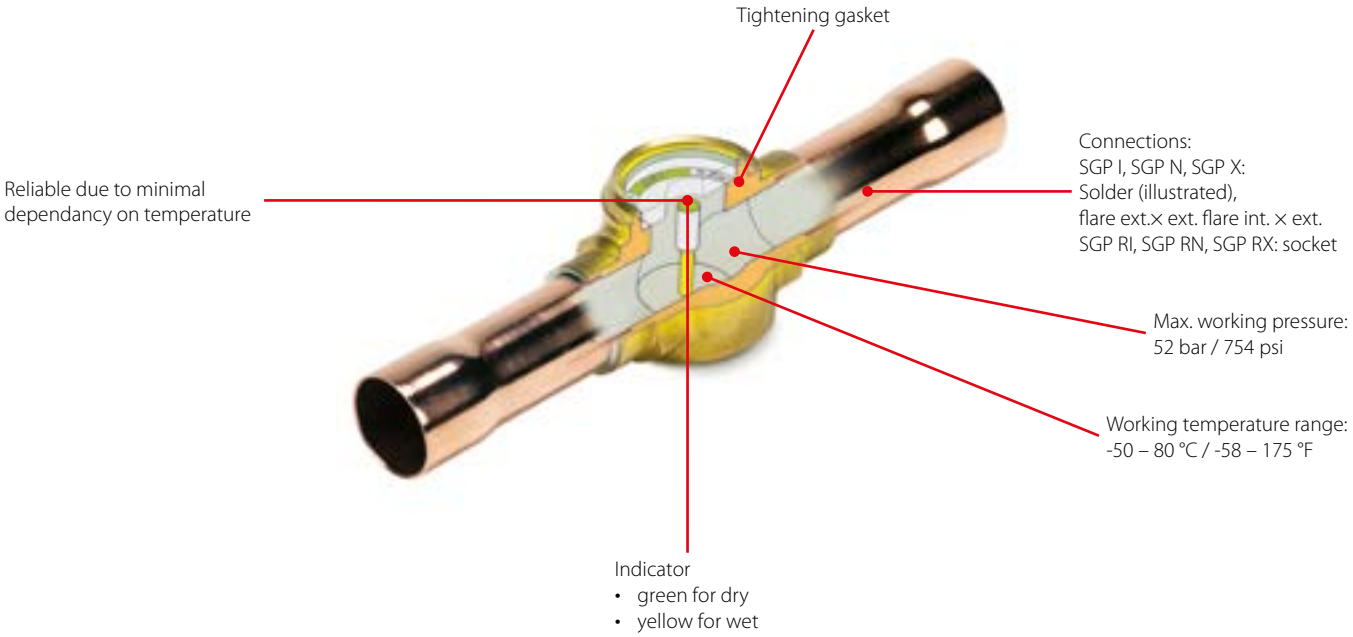
[1]) *ISO 228 / 1.*
[2]) *ANSI / ASME B1.20.1.*

SGP - Sight glass (high pressure)

SGP are sight glasses for high pressure applications (Max Working Pressure PS / MWP: 52 bar / 754 psi).
SGP is available in versions SGP I optimized for HCFC and HC refrigerants and in SGP N optimized for HCFC, HFC, HC and R744 refrigerants.

SGP is available with flare, solder and socket connections, and with and without moisture indicators.





Facts

Application:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Transport refrigeration

- Solder versions are compliant with ATEX hazard zone 2

Type SGP X (without indicator)
- Indicates lack of subcooling
- Indicates refrigerant deficiency
- Indicates liquid level in receiver
- Indicates oil level in compressor

Type SGP I (with I type indicator)
- For HCFC and HC refrigerants
- Indicates too high moisture content in the refrigeration system
- Indicates lack of subcooling
- Indicates refrigerant deficiency

Type SGP N (with N type indicator)
- For HCFC, HFC, HC and R744 refrigerants
- Indicates too high moisture content in the refrigeration system
- Indicates lack of subcooling
- Indicates refrigerant deficiency

Technical data

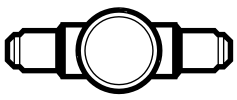
Max. working pressure: PS / MWP = 52 bar / 754 psi
Media temperature: -50 – 80 °C / -58 – 175 °F

Available types



Solder version ODF x ODF

SGP X
without indicator



Flare External x External

SGP X
without indicator



Flare Internal x External

SGP I and SGP N
with indicator



Solder version ODF x ODM

SGP I and SGP N
with indicator



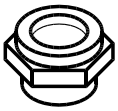
Solder version ODF x ODF

SGP I and SGP N
with indicator



Flare External x External

SGP I and SGP N
with indicator



Socket

SGP RX
without indicator



Socket

SGP RI and SGP RN
with indicator



Saddle

SGS

SGP I for HCFC and HC refrigerants

Technical data

Refrigerant	Moisture content ppm = parts per million					
	SGP I / SGP RI					
	Media temperature 25 °C / 77 °F			Media temperature 43 °C / 109 °F		
	Green / dry	Intermed. color	Yellow / wet	Green / dry	Intermed. color	Yellow / wet
R22	< 150	150 – 300	> 300	< 250	250 – 500	> 500
R290	< 25	25 – 50	> 50	< 50	50 – 100	> 100
R600	< 10	10 – 20	> 20	< 28	28 – 55	> 55
R600a	< 11	11 – 22	> 22	< 30	30 – 60	> 60

SGP N for HCFC, HFC, HC and R744 (CO_2) refrigerants

Technical data

Refrigerant	Moisture content ppm = parts per million					
	SGP N / SGP RN					
	Media temperature 25 °C / 77 °F			Media temperature 43 °C / 109 °F		
	Green / dry	Intermed. color	Yellow / wet	Green / dry	Intermed. color	Yellow / wet
R22	< 30	30 – 120	> 120	< 50	50 – 200	> 200
R32	< 70	70 – 300	> 300	< 120	120 – 500	> 500
R134a	< 30	30 – 100	> 100	< 45	45 – 170	> 170
R404A	< 20	20 – 70	> 70	< 25	25 – 100	> 100
R407C	< 30	30 – 140	> 140	< 60	60 – 225	> 225
R507	< 15	15 – 60	> 60	< 30	30 – 110	> 110
R410A	< 66	66 – 266	> 266	< 135	135 – 540	> 540
R1270	< 16	16 – 62	> 62	< 29	29 – 115	> 115

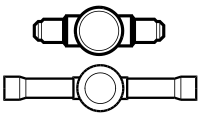
Note
For colours reflecting moisture values of other refrigerants, please contact Danfoss.

Technical data and ordering

SGP X without indicator

Ordering - Solder / Flare type

Type	Connection type	Connection [in]	Connection [mm]	Code no.
SGP 10 X	Flare ext. × ext.	3/8 × 3/8	10 × 10	014L0080
SGP 12s X	Solder ODF x ODF	1/2 × 1/2	–	014L0086
SGP 16s X	Solder ODF x ODF	5/8 × 5/8	16 × 16	014L0087
SGP 22s X	Solder ODF x ODF	7/8 × 7/8	–	014L1207



Note
Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants.

SGP I for HCFC and HC refrigerants

Ordering

Type	Connection type	Connection [in]	Connection [mm]	Code no.
SGP 6 I	Flare ext. × ext.	1/4 × 1/4	6 × 6	014L0007
SGP 10 I	Flare ext. × ext.	1/2 × 1/2	10 × 10	014L0008
SGP 12 I	Flare ext. × ext.	1/2 × 1/2	12 × 12	014L0009
SGP 16 I	Flare ext. × ext.	5/8 × 5/8	16 × 16	014L0024
SGP 19 I	Flare ext. × ext.	3/4 × 3/4	19 × 19	014L0028
SGP 6 I	Flare int. × ext. [1]	1/4 × 1/4	6 × 6	014L0021
SGP 10 I	Flare int. × ext. [1]	3/8 × 3/8	10 × 10	014L0022
SGP 12 I	Flare int. × ext. [1]	1/2 × 1/2	12 × 12	014L0025
SGP 16 I	Flare int. × ext. [1]	5/8 × 5/8	16 × 16	014L0026
SGP 19 I	Flare int. × ext. [1]	3/4 × 3/4	19 × 19	014L0043
SGP 6s I	ODF × ODF solder	1/4 × 1/4	–	014L0034
SGP 10s I	ODF × ODF solder	3/8 × 3/8	–	014L0035
SGP 12s I	ODF × ODF solder	1/2 × 1/2	–	014L0036
SGP 16s I	ODF × ODF solder	5/8 × 5/8	16 × 16	014L0044
SGP 19s I	ODF × ODF solder	3/4 × 3/4	19 × 19	014L0047
SGP 22s I	ODF × ODF solder	7/8 × 7/8	22 × 22	014L0039
SGP 6s I	ODF × ODF solder	–	6 × 6	014L0040
SGP 10s I	ODF × ODF solder	–	10 × 10	014L0041
SGP 12s I	ODF × ODF solder	–	12 × 12	014L0042
SGP 18s I	ODF × ODF solder	–	18 × 18	014L0045
SGP 6s I	ODF × ODM solder	1/4 × 1/4	–	014L0125
SGP 10s I	ODF × ODM solder	3/8 × 3/8	–	014L0126
SGP 12s I	ODF × ODM solder	1/2 × 1/2	–	014L0127
SGP 16s I	ODF × ODM solder	5/8 × 5/8	16 × 16	014L0128
SGP 22s I	ODF × ODM solder	7/8 × 7/8	22 × 22	014L0130









[1]) *Can be screwed directly into the filter drier.*

Note
Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants.

Technical data and ordering

SGP N for HCFC, HFC, HC and R744 (CO_2) refrigerants

Ordering

Type	Version	Connection [in]	Connection [mm]	Code no.
SGP 6 N	Flare ext. × ext.	1/4 × 1/4	6 × 6	014L0161
SGP 10 N	Flare ext. × ext.	3/8 × 3/8	10 × 10	014L0162
SGP 12 N	Flare ext. × ext.	1/2 × 1/2	12 × 12	014L0163
SGP 16 N	Flare ext. × ext.	5/8 × 5/8	16 × 16	014L0165
SGP 19 N	Flare ext. × ext.	3/4 × 3/4	19 × 19	014L0166
SGP 6 N	Flare int. × ext. [1]	1/4 × 1/4	6 × 6	014L0171
SGP 10 N	Flare int. × ext. [1]	3/8 × 3/8	10 × 10	014L0172
SGP 12 N	Flare int. × ext. [1]	1/2 × 1/2	12 × 12	014L0173
SGP 16 N	Flare int. × ext. [1]	5/8 × 5/8	16 × 16	014L0174
SGP 19 N	Flare int. × ext. [1]	3/4 × 3/4	19 × 19	014L0175
SGP 6s N	ODF × ODF solder	1/4 × 1/4	–	014L0181
SGP 10s N	ODF × ODF solder	3/8 × 3/8	–	014L0182
SGP 12s N	ODF × ODF solder	1/2 × 1/2	–	014L0183
SGP 16s N	ODF × ODF solder	5/8 × 5/8	16 × 16	014L0184
SGP 19s N	ODF × ODF solder	3/4 × 3/4	19 × 19	014L0185
SGP 22s N	ODF × ODF solder	7/8 × 7/8	22 × 22	014L0186
SGP 22s N [2]	ODF × ODF solder	1 1/8 × 1 1/8	–	014L0187
SGP 6s N	ODF × ODF solder	–	6 × 6	014L0191
SGP 10s N	ODF × ODF solder	–	10 × 10	014L0192
SGP 12s N	ODF × ODF solder	–	12 × 12	014L0193
SGP 18s N	ODF × ODF solder	–	18 × 18	014L0195
SGP 6s N	ODF × ODM solder	1/4 × 1/4	–	014L0201
SGP 10s N	ODF × ODM solder	3/8 × 3/8	–	014L0202
SGP 12s N	ODF × ODM solder	1/2 × 1/2	–	014L0203
SGP 16s N	ODF × ODM solder	5/8 × 5/8	16 × 16	014L0204
SGP 22s N	ODF × ODM solder	7/8 × 7/8	22 × 22	014L0206









[1] *Can be screwed directly into the filter drier.*
[2] *Oversize connections.*

Note
Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants.

SGP - socket type and SGS saddle

Ordering

Type	Version	Connection 1	Connection 2	Floating ball [pc]	Code no.
SGP ¾ RX (no indicator)	Pipe thread	G 3/4 A [1]	–	1	014L0004
	NPT	3/4 – 14 NPT [2]	–	1	014L0005
SGP ½ RX (no indicator)	NPT	1/2 – 14 NPT [2]	–	3	014L0002
SGP ½ RI (I type indicator)	NPT	1/2 – 14 NPT [2]	–	3	014L0131
SGP 24 RI (I type indicator)	M thread	M24 × 1	–	–	014L1154
SGP ½ RN (N type indicator)	NPT	1/2 – 14 NPT [2]	–	3	014L0006
SGP 24 RN (N type indicator)	M thread	M24 × 1	–	–	014L1155
SGP 20 RN (N type indicator)	M thread	M20 × 1.5	–	–	014L1603
SGS (saddle)	Tube fitting	M20 × 1.5	7/8	–	014-1073
	Tube fitting	M20 × 1.5	1 1/8	–	014-1071
	Tube fitting	M20 × 1.5	1 3/8	–	014-1074
	Tube fitting	M20 × 1.5	1 5/8	–	014-1084
	Tube fitting	M20 × 1.5	3 1/8	–	014-1072
	Tube fitting	M24 × 1	7/8	–	014-1059
	Tube fitting	M24 × 1	1 1/8	–	014-1056
	Tube fitting	M24 × 1	1 3/8	–	014-1057
	Tube fitting	M24 × 1	1 5/8	–	014-1058
	Tube fitting	M24 × 1	2 1/8	–	014-1067
	Tube fitting	M24 × 1	3 1/8	–	014-1068
	Tube fitting	M24 × 1	4 1/8	–	014-1069







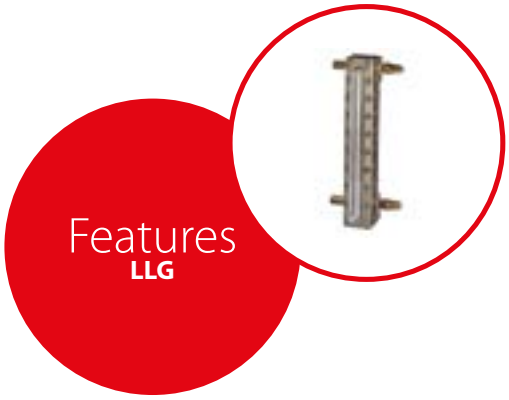
[1] *ISO 228-1.*
[2] *NSI / ASME B1.20.1*

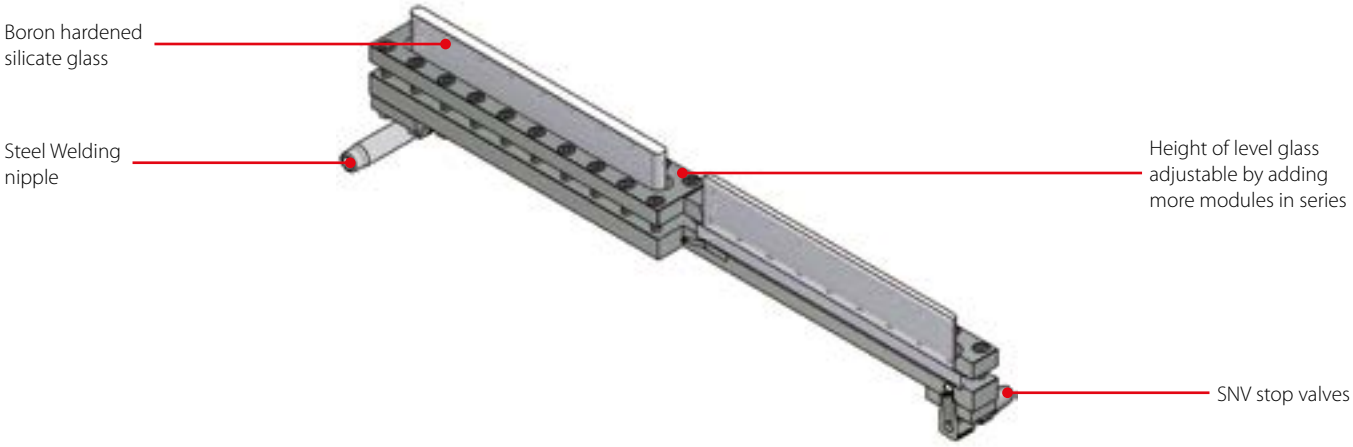
Note
Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants.

LLG - Sight glass

LLG columnar sight glasses are made of ductile steel which meets the strictest requirements on industrial and marine refrigeration installations.
Applicable to HCFC, HFC and R717 (Ammonia).

LLG has sufficient flow areas to secure the highest possible degree of synchronous operation, and have a specially hardened reflection glass for quick reading. The recessed bolts makes insulation easy while front access to the bolts facilitates inspection and service.





Facts

- All LLG sight glasses are equipped as standard with a built-in safety system (non return device). If a glass is damaged, the pressure of the refrigerant will activate the safety system and refrigerant loss will be limited to an absolute minimum
- Applicable to HCFC, HFC and R717 (Ammonia). For further information please see installation instruction for LLG. Flammable hydrocarbons are not recommended. For further information please contact your local Danfoss Sales Company
- Temperature range
  -10 – 100 °C / -50 – 30 °F
- Maximum operating pressure: 25 bar/psi g. Equipped with boron-silicate glass, hardened by an accurately controlled heat treatment process
- The range of sight glasses is based on 3 basic liquid level glasses: LLG 185, LLG 335 and LLG 740. The other standard lengths are combined by using variations of basic glass lengths. High reliability and durability due to maximum internal and external tightness
- The sight glasses are offered in 4 different versions:
  - with welding nipples (LLG)
  - with stop valves equipped with caps (LLG S)
  - with sight adapter in acrylic glass ready for insulation on site (LLG F)
  - with stop valves and sight adapter in acrylic glass ready for insulation on site (LLG SF)

Place LLG sight glass in CE approved applications with the stop valves in front i.e. LLG S or LLG SF

Technical data and ordering



LLG - Sigh glass

Technical data

Refrigerants	The liquid level glasses are applicable to all common non flammable refrigerants including R717 and non corrosive gases / liquids. Flammable hydrocarbons are not recommended.
Temperatur range [°C / °F]	LLG S: -10 – 100 / 14 – 212 LLG SF: -50 – 30 / -58 – 86
Max. operating pressure [bar / psi g]	25 / 363
Strength test pressure [bar / psi g]	50 / 725
Leakage test pressure [bar / psi g]	25 / 363

Ordering

LLG with safety system and welding nipples

Type	Size		Code no.
	[in]	[mm]	
LLG 185	7 1/4	185	2512+049
LLG 335	13 1/4	335	2512+050
LLG 590	23 1/4	590	2512+051
LLG 740	29 1/4	740	2512+052
LLG 995	39 1/4	995	2512+053
LLG 1145	45	1145	2512+054
LLG 1550	61	1550	2512+055

LLG S with safety system and stop valves (SNV-ST)

Type	Size		Code no.
	[in]	[mm]	
LLG 185 S	7 1/4	185	2512+056
LLG 335 S	13 1/4	335	2512+057
LLG 590 S	23 1/4	590	2512+058
LLG 740 S	29 1/4	740	2512+059
LLG 995 S	39 1/4	995	2512+060
LLG 1145 S	45	1145	2512+061
LLG 1550 S	61	1550	2512+062

LLG F with safety system and sight adapter

Type	Size		Code no.
	[in]	[mm]	
LLG 185 F	7 1/4	185	2512+078
LLG 335 F	13 1/4	335	2512+079
LLG 590 F	23 1/4	590	2512+080
LLG 740 F	29 1/4	740	2512+081
LLG 995 F	39 1/4	995	2512+082
LLG 1145 F	45	1145	2512+083
LLG 1550 F	61	1550	2512+084

LLG SF with safety system, stop valves (SNV-ST) and sight adapter

Type	Size		Code no.
	[in]	[mm]	
LLG 185 SF	7 1/4	185	2512+066
LLG 335 SF	13 1/4	335	2512+067
LLG 590 SF	23 1/4	590	2512+068
LLG 740 SF	29 1/4	740	2512+069
LLG 995 SF	39 1/4	995	2512+070
LLG 1145 SF	45	1145	2512+071
LLG 1550 SF	61	1550	2512+072

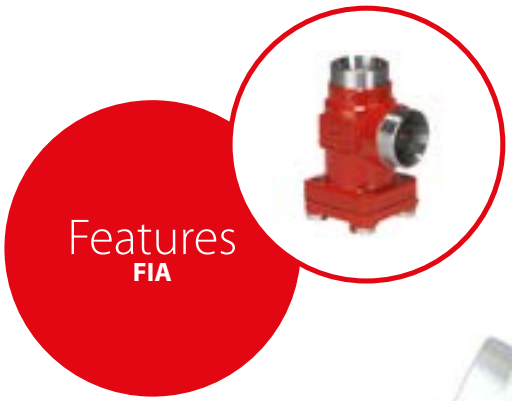
Important!

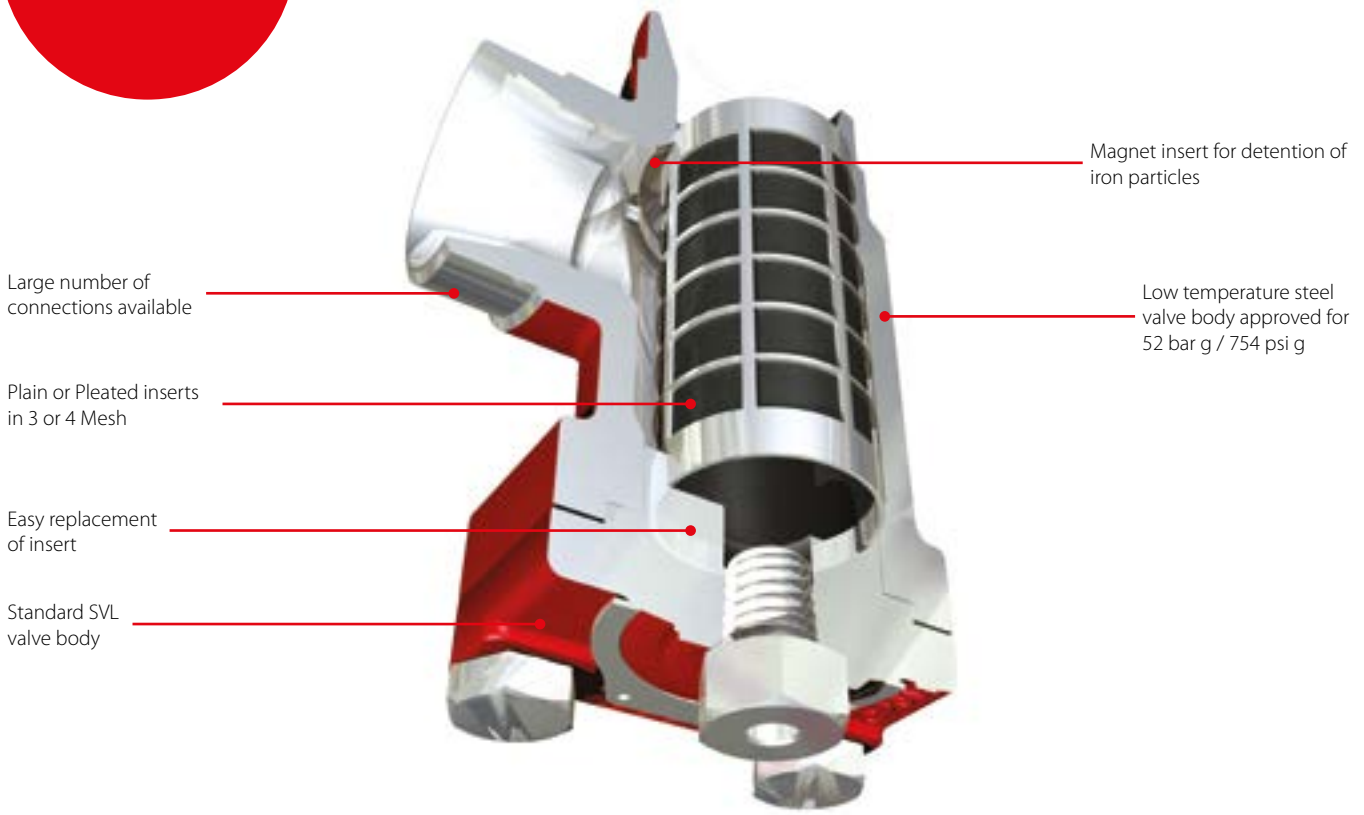
Where products need to be certified according to specific certification societies or where higher pressures are required, the relevant information should be included at the time of order.

FIA - Strainer

FIA strainers are a range of angleway and straightway strainers, carefully designed to give favourable flow conditions. The design makes the strainer easy to install, and ensures quick filter inspection and cleaning. The strainer is based on three main components – valve body, top cover, and strainer insert – and is available both as complete strainers and as parts programme.

FIA strainers are members of the SVL modular concept product family, so each valve body is available with several different connection types and sizes, and it is possible to convert FIA to any other product in the SVL family by replacing the complete top part. FIA strainers are used ahead of automatic controls, pumps, compressors etc., for initial plant start-up and where permanent filtration of the refrigerant is required. The strainer reduces the risk of system breakdowns and reduces wear and tear on plant components. Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants.





Facts

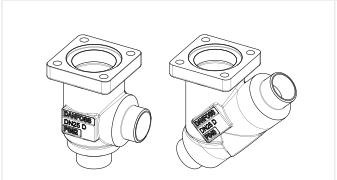
- Valve body is standard SVL angleway or straightway valve body allowing other inserts from the SVL platform to be installed
- Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants
- Strainer insert of stainless steel mounted directly without extra gaskets for easy servicing
- Two types of strainer inserts are available:
  - A plain insert of stainless steel
  - A pleated insert (DN 15 – 200) with extra large surface, which ensures low pressure drop and long intervals between cleaning
- **FIA 15 – 40 (½ – 1 ½ in)**:
  A special insert (50µ) can be used in combination with a standard version when cleaning a plant during commissioning
- **FIA 50 – FIA 200 (2 – 8 in)**:
  A large capacity filter bag (50µ) can be inserted for cleaning plant during commissioning
- **FIA 50 – FIA 200 (2 – 8 in)**:
  can be equipped with a magnetic insert for detention of iron particles and other magnetic particles
- Valve body and bonnet of low temperature steel in accordance with the requirements of the Pressure Equipment Directive and those of other international classification authorities
- Temperature range:
  -60 – 150 °C / -76 – 302 °F
- Max. working pressure:
  52 bar g / 754 psi g

Technical data

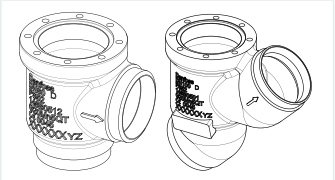
The Concept

Each valve housing is available with several different connection types and sizes.
It is possible to convert FIA strainers to any other product in the SVL family (shut-off valve, hand regulating valve, check & stop valve or check valve) just by replacing the complete top part.

The valve body

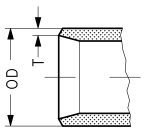
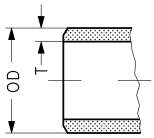
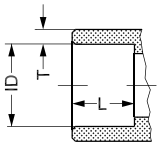
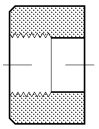


DN 15–65 mm (½ – 2 ½ in)



DN 80–125 mm (3 – 5 in)

Connection type

D / F	A	SOC	FPT
			
Butt-weld DIN Butt-weld F	Butt-weld ANSI	Socket weld ANSI	Female Pipe Thread

Selection of strainer size

The mesh aperture size of the strainer must satisfy the requirements stated by the suppliers of the equipment to be protected.
The following recommendations of aperture size apply in general to refrigeration installations:

All lines

First start up: 50 µ
(Use strainer insert with removable insert for FIA DN15 – 40 or separate filter bag for FIA DN 50 – 200. 50µ insert should normally be removed after the first 24 hours of operation).

Liquid Lines

Ahead of pumps: 500 µ [38 mesh]
After pumps: 150 µ [100 mesh] / 250 µ [72 mesh]
In front of AKVA valves: 100 µ [150 mesh]

Protection of automatic regulation equipment

Generally: 150 µ [100 mesh] / 250 µ [72 mesh]
Sensitive equipment, e.g. suction regulators with low temperature: 250 µ [72 mesh]

Suction Lines

Ahead of screw compressor: 250 µ [72 mesh]
Ahead of piston compressor: 150 µ [100 mesh]

Flow coefficient

(DIN / ANSI)

Connection size (DN) FIA	[µ]	[mesh]	wire [mm]	wire [in]	free space [%]	screen area			
						Plain inserts		Pleated inserts	
						[cm²]	[in²]	[cm²]	[in²]
15 – 20 (½ – ¾ in)	100	–	0.068	0.003	35	25	3.9	45	7.0
	150	100	0.10	0.004	36	25	3.9	45	7.0
	250	72	0.10	0.004	51	25	3.9	45	7.0
	500	38	0.16	0.006	57.6	25	3.9	45	7.0
25 – 40 (1 – 1 ½ in)	100	–	0.068	0.003	35	71	11	160	25.0
	150	100	0.10	0.004	36	71	11	160	25.0
	250	72	0.10	0.004	51	71	11	160	25.0
	500	38	0.16	0.006	57.6	71	11	160	25.0
50 (2 in)	100	–	0.068	0.003	35	71	11	200	31.2
	150	100	0.10	0.004	36	87	13.5	200	31.2
	250	72	0.10	0.004	51	87	13.5	200	31.2
	500	38	0.16	0.006	57.6	87	13.5	200	31.2
65 (2 ½ in)	150	100	0.10	0.004	36	127	19.7	305	47.6
	250	72	0.10	0.004	51	127	19.7	305	47.6
	500	38	0.16	0.006	57.6	127	19.7	305	47.6
80 (3 in)	150	100	0.10	0.004	36	205	31.8	450	70.2
	250	72	0.10	0.004	51	205	31.8	450	70.2
	500	38	0.16	0.006	57.6	205	31.8	450	70.2
100 (4 in)	150	100	0.10	0.004	36	370	57.4	790	123.2
	250	72	0.10	0.004	51	370	57.4	790	123.2
	500	38	0.16	0.006	57.6	370	57.4	790	123.2
125 (5 in)	150	100	0.10	0.004	36	510	79.1	1105	172.4
	250	72	0.10	0.004	51	510	79.1	1105	172.4
	500	38	0.16	0.006	57.6	510	79.1	1105	172.4
150 (6 in)	150	100	0.10	0.004	36	726	112.5	1600	249.6
	250	72	0.10	0.004	51	726	112.5	1600	249.6
	500	38	0.16	0.006	57.6	726	112.5	1600	249.6
200 (8 in)	150	100	0.10	0.004	36	1315	203.8	–	–
	250	72	0.10	0.004	51	1315	203.8	–	–
	500	38	0.16	0.006	57.6	1315	203.8	–	–

Mesh is the number of threads per inch. µ (microns) is the distance between two threads (1 µ = 1/1000 mm).

Technical data

Selection of strainer size

K_v values

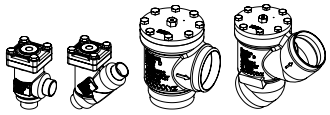
DN	FIA angle – plain strainer insert				FIA angle – pleated strainer insert		
	µ 100	µ 150	µ 250	µ 500	µ 150	µ 250	µ 500
15	3.3	3.4	3.5	3.7	4.2	–	–
20	6.9	7.1	7.3	7.7	8.8	–	–
25	13.8	14.0	14.5	15.2	17.2	17.9	–
32	23.0	23.8	24.7	25.5	29.2	30.5	–
40	25.1	25.5	26.4	28.1	31.4	32.6	–
50	45.1	45.9	47.6	50.2	56.7	58.8	62.0
65	–	56.1	57.8	60.4	69.3	71.4	74.6
80	–	104.6	108.0	113.1	129.2	133.4	139.7
100	–	162.4	167.5	176.0	200.6	206.9	217.4
125	–	275.4	283.9	298.4	340.2	350.7	368.6
150	–	362.1	373.2	391.9	447.3	–	–
200	–	572.9	590.8	620.5	–	–	–

DN	FIA straight – plain strainer insert				FIA straight – pleated strainer insert		
	µ 100	µ 150	µ 250	µ 500	µ 150	µ 250	µ 500
15	2.5	2.6	2.7	2.8	3.3	–	–
20	5.3	5.4	5.6	5.9	6.9	–	–
25	10.5	10.7	11.1	11.6	13.8	14.5	–
32	17.6	18.2	18.9	19.5	23.9	24.7	–
40	19.2	19.5	20.2	21.5	25.5	26.4	–
50	34.5	35.1	36.4	38.4	45.9	47.6	50.2
65	–	42.9	44.2	46.2	56.1	57.8	60.4
80	–	80.0	82.6	86.5	104.6	108.0	113.1
100	–	124.2	128.1	134.6	162.4	167.5	176.0
125	–	210.6	217.1	228.2	275.4	283.9	298.4
150	–	276.9	285.4	299.7	362.1	–	–
200	–	438.1	451.8	474.5	–	–	–

Technical data and ordering

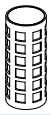
FIA - Strainer

Ordering FIA strainer without strainer insert



Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 15 angleway	1/2	15	Butt weld, EN 10220	D	148B5242
	1/2	15	Butt weld, ANSI (B 36.10)	A	148B5244
	1/2	15	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5246
	1/2	15	Socket weld, ANSI (B 16.11)	SOC	148B5245
FIA 15 straightway	1/2	15	Butt weld, EN 10220	D	148B5243
	1/2	15	Butt weld, ANSI (B 36.10)	A	148B5247
	1/2	15	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5249
	1/2	15	Socket weld, ANSI (B 16.11)	SOC	148B5248
FIA 20 angleway	3/4	20	Butt weld, EN 10220	D	148B5342
	3/4	20	Butt weld, ANSI (B 36.10)	A	148B5344
	3/4	20	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5346
	3/4	20	Socket weld, ANSI (B 16.11)	SOC	148B5345
FIA 20 straightway	3/4	20	Butt weld, EN 10220	D	148B5343
	3/4	20	Butt weld, ANSI (B 36.10)	A	148B5347
	3/4	20	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5349
	3/4	20	Socket weld, ANSI (B 16.11)	SOC	148B5348
FIA 25 angleway	1	25	Butt weld, EN 10220	D	148B5442
	1	25	Butt weld, ANSI (B 36.10)	A	148B5444
	1	25	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5446
	1	25	Socket weld, ANSI (B 16.11)	SOC	148B5445
FIA 25 straightway	1	25	Butt weld, EN 10220	D	148B5443
	1	25	Butt weld, ANSI (B 36.10)	A	148B5447
	1	25	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5449
	1	25	Socket weld, ANSI (B 16.11)	SOC	148B5448
FIA 32 angleway	1 1/4	32	Butt weld, EN 10220	D	148B5543
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	148B5545
	1 1/4	32	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5547
	1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	148B5546
FIA 32 straightway	1 1/4	32	Butt weld, EN 10220	D	148B5544
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	148B5552
	1 1/4	32	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5549
	1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	148B5548
FIA 40 angleway	1 1/2	40	Butt weld, EN 10220	D	148B5624
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	148B5642
	1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	148B5643
FIA 40 straightway	1 1/2	40	Butt weld, EN 10220	D	148B5625
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	148B5644
	1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	148B5645
FIA 50 angleway	2	50	Butt weld, EN 10220	D	148B5712
	2	50	Butt weld, ANSI (B 36.10)	A	148B5714
	2	50	Socket weld, ANSI (B 16.11)	SOC	148B5715
FIA 50 straightway	2	50	Butt weld, EN 10220	D	148B5713
	2	50	Butt weld, ANSI (B 36.10)	A	148B5716
	2	50	Socket weld, ANSI (B 16.11)	SOC	148B5717
FIA 65 angleway	2 1/2	65	Butt weld, EN 10220	D	148B5812
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	148B5814
FIA 65 straightway	2 1/2	65	Butt weld, EN 10220	D	148B5813
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	148B5815
FIA 80 angleway	3	80	Butt weld, EN 10220	D	148B5905
	3	80	Butt weld, ANSI (B 36.10)	A	148B5907
FIA 80 straightway	3	80	Butt weld, EN 10220	D	148B5906
	3	80	Butt weld, ANSI (B 36.10)	A	148B5908
FIA 100 angleway	4	100	Butt weld, EN 10220	D	148B6006
	4	100	Butt weld, ANSI (B 36.10)	A	148B6008
FIA 100 straightway	4	100	Butt weld, EN 10220	D	148B6007
	4	100	Butt weld, ANSI (B 36.10)	A	148B6009
FIA 125 angleway	5	125	Butt weld, EN 10220	D	148B6105
	5	125	Butt weld, ANSI (B 36.10)	A	148B6107
FIA 125 straightway	5	125	Butt weld, EN 10220	D	148B6106
	5	125	Butt weld, ANSI (B 36.10)	A	148B6108
FIA 150 angleway	6	150	Butt weld, EN 10220	D	148B6202
	6	150	Butt weld, ANSI (B 36.10)	A	148B6204
	6	150	Butt weld, F	F	148B6442
FIA 150 straightway	6	150	Butt weld, EN 10220	D	148B6203
	6	150	Butt weld, ANSI (B 36.10)	A	148B6205
	6	150	Butt weld, F	F	148B6444
FIA 200 angleway	8	200	Butt weld, EN 10220	D	148B6302
	8	200	Butt weld, ANSI (B 36.10)	A	148B6304
	8	200	Butt weld, F	F	148B6443
FIA 200 straightway	8	200	Butt weld, EN 10220	D	148B6303
	8	200	Butt weld, ANSI (B 36.10)	A	148B6305
	8	200	Butt weld, F	F	148B6445

Technical data and ordering



FIA - Strainer

Ordering - plain strainer insert

For strainer	[µ]	[mesh]	Code no.
FIA 15 – 20	100	150	148H3122
	150	100	148H3124
	250	72	148H3126
	500	38	148H3128
FIA 25 – 40	100	150	148H3123
	150	100	148H3125
	250	72	148H3127
	500	38	148H3129
FIA 50	100	150	148H3157
	150	100	148H3130
	250	72	148H3138
	500	38	148H3144
FIA 65	150	100	148H3131
	250	72	148H3139
	500	38	148H3145
FIA 80	150	100	148H3119
	250	72	148H3120
	500	38	148H3121
FIA 100	150	100	148H3132
	250	72	148H3140
	500	38	148H3146
FIA 125	150	100	148H3133
	250	72	148H3141
	500	38	148H3147
FIA 150	150	100	148H3134
	250	72	148H3142
	500	38	148H3148
FIA 200	150	100	148H3135
	250	72	148H3143
	500	38	148H3149

Ordering - pleated strainer insert

For strainer	[µ]	[mesh]	Code no.
FIA 15 – 20	150	100	148H3303
	250	72	148H3363
FIA 25 – 40	150	100	148H3304
	250	72	148H3269
FIA 50	150	100	148H3179
	250	72	148H3184
	500	38	148H3189
FIA 65	150	100	148H3180
	250	72	148H3185
	500	38	148H3190
FIA 80	150	100	148H3181
	250	72	148H3186
	500	38	148H3191
FIA 100	150	100	148H3182
	250	72	148H3187
	500	38	148H3192
FIA 125	150	100	148H3183
	250	72	148H3188
	500	38	148H3193
FIA 150	150	100	148H3226
FIA 200	150	100	148H3297

Acessories

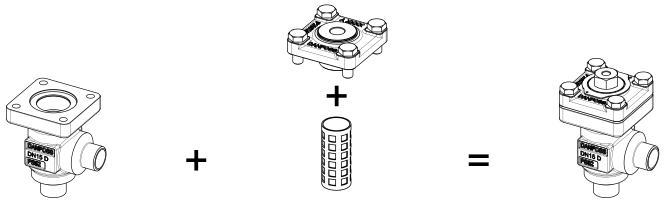
Part	Accessory for	Code no.
Magnet insert	FIA 65 – 100	148H3447
	FIA 125 – 200	148H3448
Strainer insert µ150 with removable insert µ50 for the first start up	FIA 15 – 20	148H3301
	FIA 25 – 40	148H3302
Filter bag	FIA 50	148H3150
	FIA 65	148H3151
	FIA 80	148H3152
	FIA 100	148H3153
	FIA 125	148H3154
	FIA 150	148H3155
	FIA 200	148H3156
Purge valve complete	FIA 50 – 300	148B3745
Blind nut with gasket	FIA 50 – 300	148H3450

Technical data and ordering

Ordering from the parts programme (valve body + top part + strainer insert)

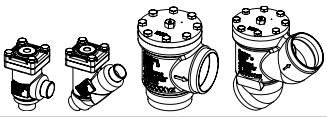
(For strainer insert code numbers; please see the section "*ordering plain strainer inserts*" or "*ordering pleated strainer inserts*")

Example



Valve body, size 15 (1/2 in), DIN butt weld, angleway,
148B5452

Top part, FIA, size 25 (1 in)
148B5476
+
Strainer insert 250 µ, 72 mesh
148H3127



FIA 15 - Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 15 angleway	1/2	15	Butt weld, EN 10220	D	148B5252
	1/2	15	Butt weld, ANSI (B 36.10)	A	148B5254
	1/2	15	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5258
	1/2	15	Socket weld, ANSI (B 16.11)	SOC	148B5256
	1/2	15	Butt weld, F	F	148B6414
FIA 15 straightway	1/2	15	Butt weld, EN 10220	D	148B5253
	1/2	15	Butt weld, ANSI (B 36.10)	A	148B5255
	1/2	15	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5259
	1/2	15	Socket weld, ANSI (B 16.11)	SOC	148B5257
	1/2	15	Butt weld, F	F	148B6424

FIA 15 - Top part [1])

Type		Code no.
FIA 15		148B5284

FIA 20 - Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 20 angleway	3/4	20	Butt weld, EN 10220	D	148B5352
	3/4	20	Butt weld, ANSI (B 36.10)	A	148B5354
	3/4	20	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5358
	3/4	20	Socket weld, ANSI (B 16.11)	SOC	148B5356
	3/4	20	Butt weld, F	F	148B6415
FIA 20 straightway	3/4	20	Butt weld, EN 10220	D	148B5353
	3/4	20	Butt weld, ANSI (B 36.10)	A	148B5355
	3/4	20	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5359
	3/4	20	Socket weld, ANSI (B 16.11)	SOC	148B5357
	3/4	20	Butt weld, F	F	148B6425

FIA 20 - Top part [1])

Type		Code no.
FIA 20		148B5284

FIA 25 - Valve body

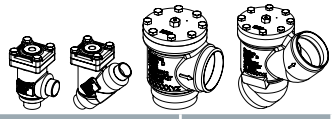
Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 25 angleway	1	25	Butt weld, EN 10220	D	148B5452
	1	25	Butt weld, ANSI (B 36.10)	A	148B5454
	1	25	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5458
	1	25	Socket weld, ANSI (B 16.11)	SOC	148B5456
	1	25	Butt weld, F	F	148B6416
FIA 25 straightway	1	25	Butt weld, EN 10220	D	148B5453
	1	25	Butt weld, ANSI (B 36.10)	A	148B5455
	1	25	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5459
	1	25	Socket weld, ANSI (B 16.11)	SOC	148B5457
	1	25	Butt weld, F	F	148B6426

FIA 25 - Top part [1])

Type		Code no.
FIA 25		148B5484

[1]) *Including gaskets and bolts.*

Technical data and ordering



FIA 32 - Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 32 angleway	1 1/4	32	Butt weld, EN 10220	D	148B5576
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	148B5578
	1 1/4	32	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5582
	1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	148B5580
	1 1/4	32	Butt weld, F	F	148B6417
FIA 32 straightway	1 1/4	32	Butt weld, EN 10220	D	148B5577
	1 1/4	32	Butt weld, ANSI (B 36.10)	A	148B5579
	1 1/4	32	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5583
	1 1/4	32	Socket weld, ANSI (B 16.11)	SOC	148B5581
	1 1/4	32	Butt weld, F	F	148B6427

FIA 32 - Top part [1])

Type	Code no.
FIA 32	148B5484

FIA 40 - Valve body

Type	Connection size		Connection type	Connection designation	Code number
	[in]	[mm]			
FIA 40 angleway	1 1/2	40	Butt weld, EN 10220	D	148B5652
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	148B5654
	1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	148B5656
	1 1/2	40	Butt weld, F	F	148B6418
FIA 40 straightway	1 1/2	40	Butt weld, EN 10220	D	148B5653
	1 1/2	40	Butt weld, ANSI (B 36.10)	A	148B5655
	1 1/2	40	Socket weld, ANSI (B 16.11)	SOC	148B5657
	1 1/2	40	Butt weld, F	F	148B6428

FIA 40 - Top part [1])

Type	Code no.
FIA 40	148B5484

FIA 50 - Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 50 angleway	2	50	Butt weld, EN 10220	D	148B5741
	2	50	Butt weld, ANSI (B 36.10)	A	148B5743
	2	50	Socket weld, ANSI (B 16.11)	SOC	148B5745
	2	50	Butt weld, F	F	148B6419
FIA 50 straightway	2	50	Butt weld, EN 10220	D	148B5742
	2	50	Butt weld, ANSI (B 36.10)	A	148B5744
	2	50	Socket weld, ANSI (B 16.11)	SOC	148B5746
	2	50	Butt weld, F	F	148B6429

FIA 50 - top part [1])

Type	Code no.
FIA 50	148B5748

FIA 65 - Valve body

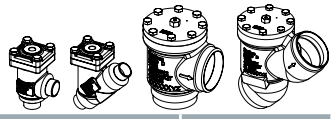
Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 65 angleway	2 1/2	65	Butt weld, EN 10220	D	148B5816
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	148B5818
	2 1/2	65	Butt weld, F	F	148B6420
FIA 65 straightway	2 1/2	65	Butt weld, EN 10220	D	148B5817
	2 1/2	65	Butt weld, ANSI (B 36.10)	A	148B5819
	2 1/2	65	Butt weld, F	F	148B6430

FIA 65 - Top part [1])

Type	Code no.
FIA 65	148B5832

[1]) Including gaskets and bolts.

Technical data and ordering



FIA 80 - Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 80 angleway	3	80	Butt weld, EN 10220	D	148B5912
	3	80	Butt weld, ANSI (B 36.10)	A	148B5914
	3	80	Butt weld, F	F	148B6421
FIA 80 straightway	3	80	Butt weld, EN 10220	D	148B5913
	3	80	Butt weld, ANSI (B 36.10)	A	148B5915
	3	80	Butt weld, F	F	148B6431

FIA 80 - Top part [1])

Type		Code no.
FIA 80		148B5922

FIA 100 - Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 100 angleway	4	100	Butt weld, EN 10220	D	148B6014
	4	100	Butt weld, ANSI (B 36.10)	A	148B6016
	4	100	Butt weld, F	F	148B6422
FIA 100 straightway	4	100	Butt weld, EN 10220	D	148B6015
	4	100	Butt weld, ANSI (B 36.10)	A	148B6017
	4	100	Butt weld, F	F	148B6432

FIA 100 - Top part [1])

Type		Code no.
FIA 100		148B6024

FIA 125 - Valve body

Type	Connection size		Connection type	Connection designation	Code no.
	[in]	[mm]			
FIA 125 angleway	5	125	Butt weld, EN 10220	D	148B6112
	5	125	Butt weld, ANSI (B 36.10)	A	148B6114
	5	125	Butt weld, F	F	148B6423
FIA 125 straightway	5	125	Butt weld, EN 10220	D	148B6113
	5	125	Butt weld, ANSI (B 36.10)	A	148B6115
	5	125	Butt weld, F	F	148B6433

FIA 125 - Top part [1])

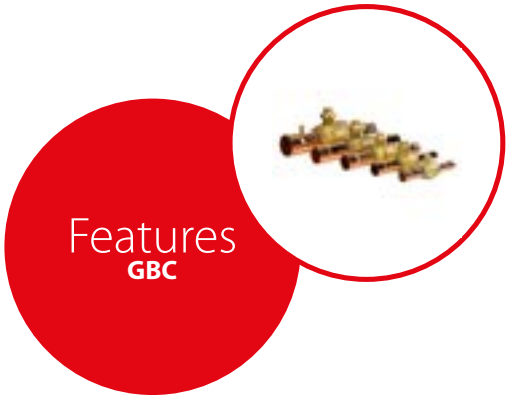
Type		Code no.
FIA 125		148B6122

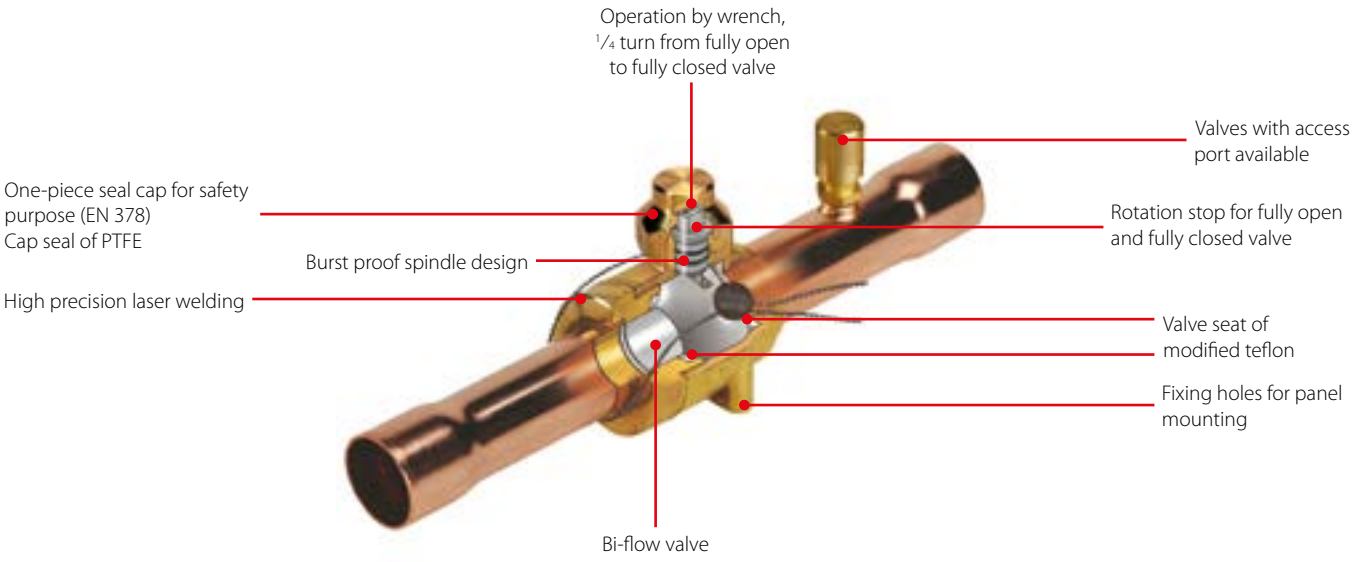
[1]) *Including gaskets and bolts.*

GBC, Shut-off ball valve

GBC shut-off ball valves are manually operated valves suitable for bi-directional flow.
Shut-off Ball valves are used in liquid, suction and hot gas lines in refrigeration, freezing and air conditioning systems.

The GBC bi-directional shut-off ball valves can be delivered with or without external access port.
The valves have one-piece wire seal cap to prevent unintentional cap removal or tampering between services.





Facts

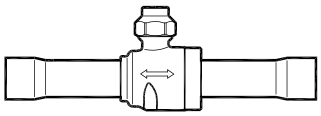
Application:
- GBC valves are used in liquid, suction and hot gas lines in all refrigeration and air-conditioning systems with fluorinated refrigerants

- Full flow with minimum pressure drop
- Bi-flow, i.e. valve orientation is unimportant
- Slimline design ensures easy operational handling
- Burst proof spindle design prevents liquid from being trapped internally
- Valve seat of modified teflon to secure maximum tightness and a long lifetime
- Versions with access port helps in reducing cost if service of the system is necessary
- Ball status indicator on spindle top indicating open or closed position
- Laser welded construction
- Holes for panel mounting
- Temperature range:
  - GBC 6s – 42s: -40 – 150 °C / -40 – 302 °F
  - GBC 54s – 79s: -40 – 121 °C / -40 – 250 °F
- Approvals: C UL US LISTED, EAC

Technical data and ordering

The product range cover valves with and or without access port.
Both versions can be supplied in inch or millimeter sizes: 1/4 – 3 1/8 in / 6 – 54 mm. All valves have holes for panel mounting.

GBC without access port, ODF / ODF

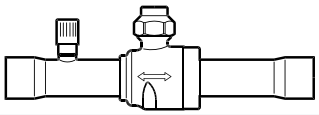


Ordering

Type	Solder ODF / ODF connection		Max. working pressure PS / MWP		K_V value [1] [m³/h]	C_V value [1] [gal/min]	Code no.
	[in]	[mm]	[Bar]	[psig]			
GBC 6s	–	6	45	650	1.74	2.01	009G7030
GBC 6s	1/4	–	45	650	1.74	2.01	009G7020
GBC 10s	–	10	45	650	7.52	8.69	009G7031
GBC 10s	3/8	–	45	650	7.52	8.69	009G7021
GBC 12s	–	12	45	650	12.9	14.9	009G7032
GBC 12s	1/2	–	45	650	12.9	14.9	009G7022
GBC 16s	5/8	16	45	650	15.6	18.1	009G7023
GBC 18s	–	18	45	650	21.9	25.3	009G7035
GBC 18s	3/4	–	45	650	21.9	25.3	009G7024
GBC 22s	7/8	22	45	650	33.3	38.5	009G7025
GBC 28s	–	28	45	650	62	71	009G7033
GBC 28s	1 1/8	–	45	650	62	71	009G7026
GBC 35s	1 3/8	35	45	650	92	107	009G7027
GBC 42s	–	42	45	650	134	155	009G7034
GBC 42s	1 5/8	–	45	650	134	155	009G7028
GBC 54s	2 1/8	54	45	650	240	277	009G7029
GBC 67s	2 5/8	–	45	650	367	424	009G7959
GBC 67s RP	2 5/8	–	45	650	203	234	009G7036
GBC 79s	3 1/8	–	45	650	528	611	009G7980
GBC 79s RP	3 1/8	–	45	650	171	198	009G7037

[1]) calculated values

GBC with access port, ODF / ODF



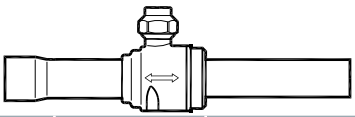
Ordering

Type	Solder ODF / ODF connection		Max. working pressure PS / MWP		K_V value [1] [m³/h]	C_V value [1] [gal/min]	Code no.
	[in]	[mm]	[Bar]	[psig]			
GBC 6s	–	6	45	650	1.74	2.01	009G7060
GBC 6s	1/4	–	45	650	1.74	2.01	009G7050
GBC 10s	–	10	45	650	7.52	8.69	009G7061
GBC 10s	3/8	–	45	650	7.52	8.69	009G7051
GBC 12s	–	12	45	650	12.9	14.9	009G7062
GBC 12s	1/2	–	45	650	12.9	14.9	009G7052
GBC 16s	5/8	16	45	650	15.6	18.1	009G7053
GBC 18s	–	18	45	650	21.9	25.3	009G7065
GBC 18s	3/4	–	45	650	21.9	25.3	009G7054
GBC 22s	7/8	22	45	650	33.3	38.5	009G7055
GBC 28s	–	28	45	650	62	71	009G7063
GBC 28s	1 1/8	–	45	650	62	71	009G7056
GBC 35s	1 3/8	35	45	650	92	107	009G7057
GBC 42s	–	42	45	650	134	155	009G7064
GBC 42s	1 5/8	–	45	650	134	155	009G7058
GBC 54s	2 1/8	54	45	650	240	277	009G7059
GBC 67s	2 5/8	–	45	650	367	424	009G7960
GBC 67s RP	2 5/8	–	45	650	203	234	009G7066
GBC 79s	3 1/8	–	45	650	528	611	009G7981
GBC 79s RP	3 1/8	–	45	650	171	198	009G7067

[1]) calculated values

Technical data and ordering

GBC without access port, ODF / ODM

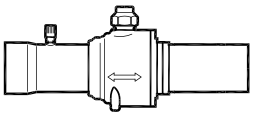


Ordering

Type	Solder ODF / ODM connection		Max. working pressure PS / MWP		K_V value [1] [m³/h]	C_V value [1] [gal/min]	Code no.
	[in]	[mm]	[Bar]	[psig]			
GBC 22s	7/8	22	45	650	33.3	38.5	009G7000
GBC 28s	1 1/8	–	45	650	62	71	009G7001
GBC 35s	1 3/8	35	45	650	92	107	009G7002
GBC 42s	1 5/8	–	45	650	134	155	009G7003
GBC 79s	3 1/8	–	45	650	528	611	009G7969

[1]) calculated values

GBC with access port, ODF / ODM



Ordering

Type	Solder ODF / ODM connection		Max. working pressure PS / MWP		K_V value [1] [m³/h]	C_V value [1] [gal/min]	Code no.
	[in]	[mm]	[Bar]	[psig]			
GBC 28s	7/8	–	45	650	62	71	009G7097
GBC 35s	1 1/8	35	45	650	92	107	009G7098
GBC 42s	1 3/8	–	45	650	134	155	009G7099
GBC 54s	1 5/8	54	45	650	240	277	009G7069
GBC 67s	3 1/8	–	45	650	367	424	009G7958
GBC 79s	3 1/8	–	45	650	528	611	009G7970

[1]) calculated values

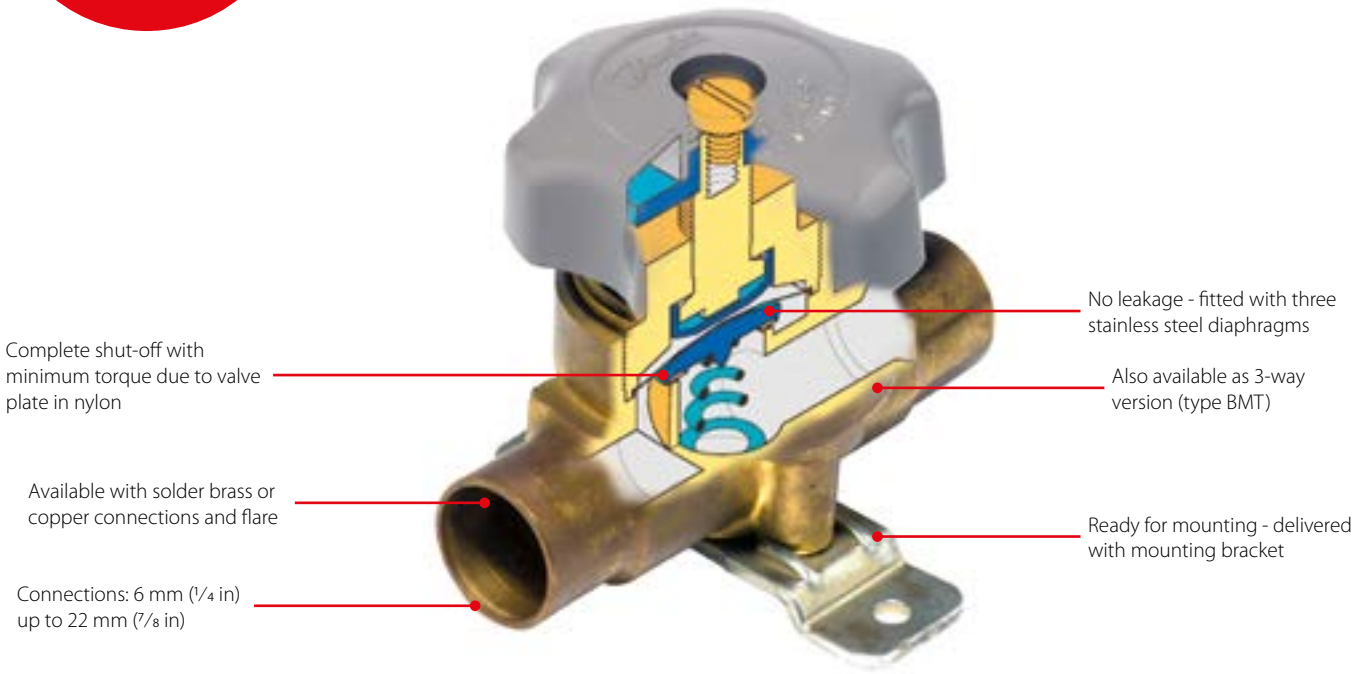
Quick Selection Notes:

BM, Shut-off diaphragm valve

BML are manual shut-off diaphragm valves designed for installation in the liquid, suction and hot gas lines of refrigeration plants.
BML valves can be delivered with flare, ODF solder or ODF solder with extended ends.

In the same product category, BMT 6 is a three-way manual shut-off valve with similar characteristics.
BML / BMT valves can be used for HCFC, HFC and HC refrigerants.





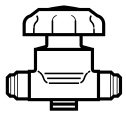
Facts

Application:
- Traditional refrigeration

- Fitted with three stainless steel diaphragms which ensure long operating life
- Valve plate of polyamide nylon to give complete shut-off with minimum torque
- Valve cover with counter-seat to prevent the ingress of moisture in fully open position

- Flare versions can be used for HCFC / Non flammable HFC. Solder versions can be used for all fluorinated refrigerants HCFC, HFC and HC flammable refrigerants
- Temperature range: -55 – 100 °C / -67 – 212 °F
- Max. working pressure PS / MWP: 28 bar / 406 psig
- Approvals: C UL US LISTED, EAC
- Solder versions are compliant with ATEX hazard zone 2

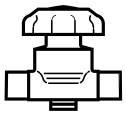
Technical data and ordering



BML flare, with hand wheel

Ordering

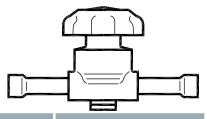
Type	Version	Flare connection		Max. working pressure PS / MWP		K_V value [m³/h]	C_V value [gal/min]	Code no.
		[in]	[mm]	[Bar]	[psi]			Flare
BML 6	Straight way	1/4	–	28	406	0.30	0.35	009G0101
BML 10	Straight way	3/8	–	28	406	0.84	0.97	009G0127
BML 12	Straight way	1/2	–	28	406	1.50	1.73	009G0141
BML 15	Straight way	5/8	–	28	406	2.20	2.54	009G0168
BML 18	Straight way	3/4	–	28	406	2.90	3.35	009G0183



BML solder, with hand wheel

Ordering

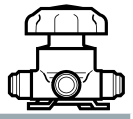
Type	Version	[in]	[mm]	Max. working pressure PS / MWP		K_V value [m³/h]	C_V value [gal/min]	Code no.
				[Bar]	[psi]			
BML 6s	Straight way	1/4	–	28	406	0.30	0.35	009G0102
	Straight way	–	6	28	406	0.30	0.35	009G0108
BML 10s	Straight way	3/8	–	28	406	0.84	0.97	009G0122
	Straight way	–	10	28	406	0.84	0.97	009G0128
BML 12s	Straight way	1/2	–	28	406	1.50	1.73	009G0142
	Straight way	–	12	28	406	1.50	1.73	009G0148
BML 15s	Straight way	5/8	16	28	406	2.20	2.54	009G0170
BML 18s	Straight way	3/4	–	28	406	2.90	3.35	009G0181
	Straight way	–	18	28	406	2.90	3.35	009G0184
BML 22s	Straight way	7/8	22	28	406	2.90	3.35	009G0191



BML solder extended connections, with hand wheel

Ordering

Type	Version	[in]	[mm]	Max. working pressure PS / MWP		K_V value [m³/h]	C_V value [gal/min]	Code no.
				[Bar]	[psi]			
BML 6s	Straight way	1/4	–	28	406	0.30	0.35	009G0202
	Straight way	–	6	28	406	0.30	0.35	009G0208
BML 10s	Straight way	3/8	–	28	406	0.84	0.97	009G0222
	Straight way	–	10	28	406	0.84	0.97	009G0228
BML 12s	Straight way	1/2	–	28	406	1.50	1.73	009G0242
	Straight way	–	12	28	406	1.50	1.73	009G0248
BML 15s	Straight way	5/8	16	28	406	2.20	2.54	009G0262
BML 22s	Straight way	7/8	22	28	406	2.90	3.35	009G0291



BMT 3-way flare, with hand wheel

Ordering

Type	Version	Flare connection		Max. working pressure PS / MWP		K_V value [m³/h]	C_V value [gal/min]	Code no.
		[in]	[mm]	[Bar]	[psi]			Flare
BMT 6	Three-way	1/4	–	28	406	0.3	0.35	009G0105

Note

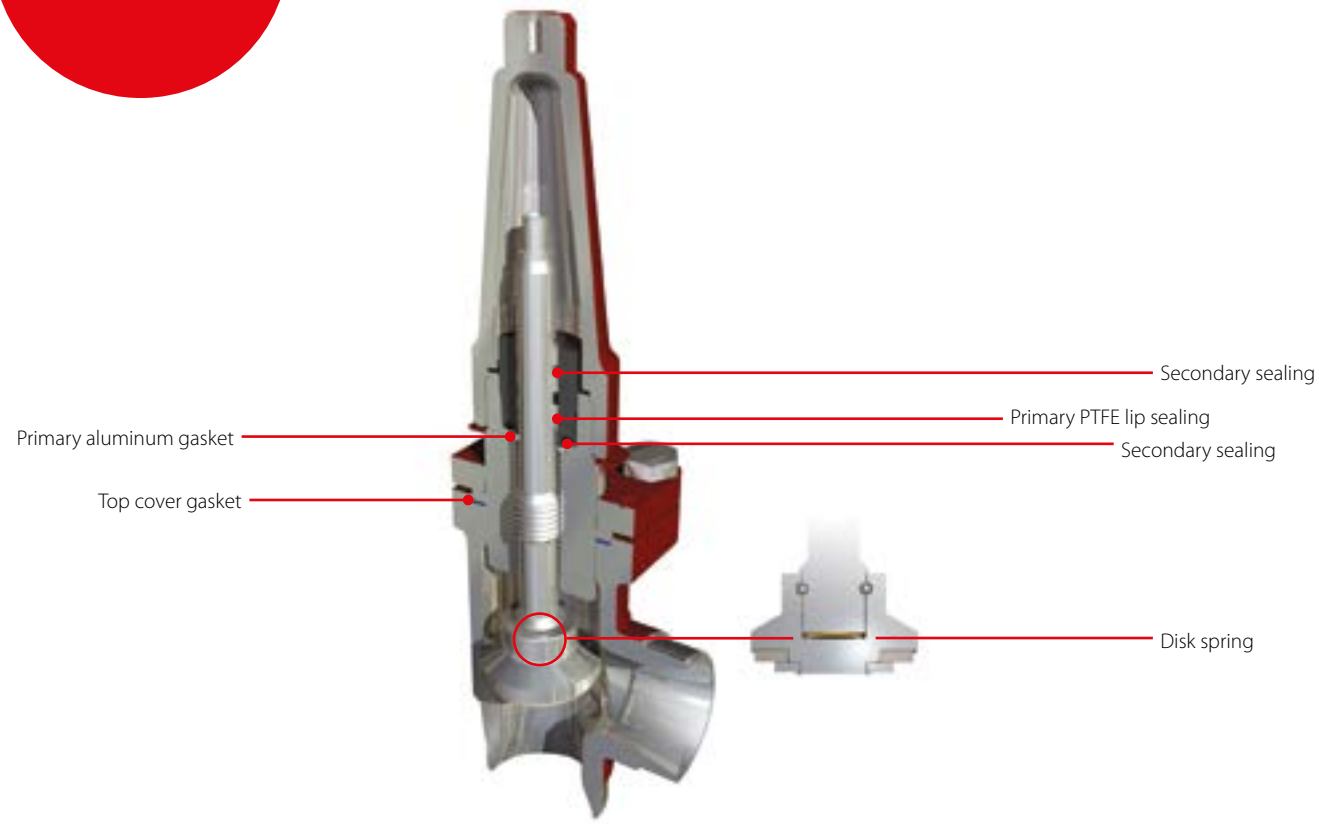
Only solder versions are approved for flammable refrigerants now

SVA-S / SVA-L, Shut-off valve

SVA-S / L shut-off valves are available in angleway and straightway versions and with Standard neck (SVA-S) and Long neck (SVA-L). Each valve housing is available with several different connection types and sizes, and it is possible to convert SVA-S or SVA-L to any other product in the SVL family by replacing the complete top part. The shut-off valves are designed to meet all industrial refrigeration application requirements, to provide favourable flow characteristics, and are easy to dismantle and repair when necessary.
The valve cone is designed to ensure perfect closing and withstand a high system pulsation and vibration, which can be present specifically in the discharge line.
Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants.



Features
SVA-S / SVA-L



Facts

- Available in angleway and straightway versions with Standard neck, or Long neck (DN 15 to DN 40) for insulated systems
- Each valve type is clearly marked with type, size and performance range
- The valves and caps are prepared for sealing, to prevent operation by un-authorized persons, using a seal wire
- Internal metal backseating:
  - DN 6 – 65 (1/4 – 2 1/2 in)
- Internal PTFE backseating:
  - DN 80 – 200 (3 – 8 in)
- Can accept flow in both directions
- Housing and bonnet material is low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities
- Equipped with stainless steel bolts
- Optional accessories:
  - Heavy duty industrial hand wheel for frequent operation
  - Cap for infrequent operation
- Max. working pressure: 52 bar g / 754 psig
- Temperature range: -60 – 150 °C / -76 – 302 °F
- Classification: DNV, CRN, BV etc

Technical data and ordering

SVA-S / SVA-L, Shut-off valve

Technical data

Type	Description
Refrigerants	Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants
Pressure range	The valves are designed for max. working pressure 52 bar g / 754 psig
Temperature range	-60 – 150 °C / -76 – 302 °F

Available connection sizes

SVA-S:
The S means Standard bonnet length (sizes from DN50 to DN200 are insulation friendly).

SVA-L:
The L means Long bonnet length (insulation friendly).



Size	SVA-S	SVA-L
DN 6 (¼)	x	–
DN 10 (⅜)	x	–
DN 15 (½)	x	x
DN 20 (¾)	x	x
DN 25 (1)	x	x
DN 32 (1 ¼)	x	x
DN 40 (1 ½)	x	x
DN 50 (2)	x	–
DN 65 (2 ½)	x	–
DN 80 (3)	x	–
DN 100 (4)	x	–
DN 125 (5)	x	–
DN 150 (6)	x	–
DN 200 (8)	x	–

Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range.
For further information please contact your local Danfoss Sales Company.

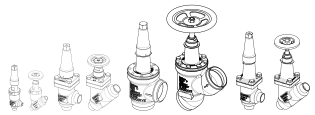
Valve type	Connection size		Available connections				
Nominal size [mm]	[mm]	[in]	A / D	SOC	FPT	T	F
	6	DN 6 (¼)	x			x	
	10	DN 10 (⅜)	x				
	15	DN 15 (½)	x	x	x		x
	20	DN 20 (¾)	x	x	x		x
	25	DN 25 (1)	x	x	x		x
	32	DN 32 (1 ¼)	x	x	x		x
	40	DN 40 (1 ½)	x	x			x
	50	DN 50 (2)	x	x			x
	65	DN 65 (2 ½)	x				x
	80	DN 80 (3)	x				x
	100	DN 100 (4)	x				x
	125	DN 125 (5)	x				x
	150	DN 150 (6)	x				x
	200	DN 200 (8)	x				x
Connections	A D SOC FPT T F	Butt-weld connection: ANSI B 36.10 schedule 80, DN 15 -40 (½ – 1½ in) Butt-weld connection: ANSI B 36.10 schedule 40, DN 50 - 200 (2 – 8 in) Butt-weld connection: DIN EN 10220 Socket weld: ANSI B 16.11 Female Pipe Thread NPT: ANSI / ASME B 1.20.1 Outside threaded connections ISO 228/1 Pipe thread Butt-weld connection F: Thickness DN 15 – 65 = 2 mm Thickness DN 80 – 200 = 3 mm					
Valve housing	ANG STR	Angle flow Straight flow					
Equipment	H-WHEEL CAP	Hand wheel Cap					

Important!
Where products need to be certified according to specific certification societies or where higher pressures are required, the relevant information should be included at the time of order.

Ordering factory assembled SVA-S angleway valve

SVA-S, Shut-off valve

Ordering

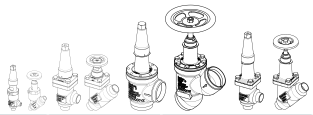


Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[mm]	[in]					
SVA-S 6	6	1/4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5000
	6	1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5020
	6	1/4	Angleway	Butt weld, EN 10220	D	Cap	148B5001
	6	1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5021
	6	1/4	Angleway	Outside pipe thread, (ISO 228/1)	T	Cap	148B5032
SVA-S 10	10	3/8	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5100
	10	3/8	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5120
	10	3/8	Angleway	Butt weld, EN 10220	D	Cap	148B5101
	10	3/8	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5121
SVA-S 15	15	1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5200
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5220
	15	1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5222
	15	1/2	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5224
	15	1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5201
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5221
	15	1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5223
	15	1/2	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5225
SVA-S 20	20	3/4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5300
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5320
	20	3/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5322
	20	3/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5324
	20	3/4	Angleway	Butt weld, EN 10220	D	Cap	148B5301
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5321
	20	3/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5323
	20	3/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5325
SVA-S 25	25	1	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5400
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5420
	25	1	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5422
	25	1	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5424
	25	1	Angleway	Butt weld, EN 10220	D	Cap	148B5401
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5421
	25	1	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5423
	25	1	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5425
SVA-S 32	32	1 1/4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5500
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5520
	32	1 1/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5522
	32	1 1/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5524
	32	1 1/4	Angleway	Butt weld, EN 10220	D	Cap	148B5501
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5521
	32	1 1/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5523
	32	1 1/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5525
SVA-S 40	40	1 1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5600
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5620
	40	1 1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5622
	40	1 1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5601
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5621
	40	1 1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5623
SVA-S 50	50	2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5700
	50	2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5720
	50	2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5722
	50	2	Angleway	Butt weld, EN 10220	D	Cap	148B5701
	50	2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5721
	50	2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5723
SVA-S 65	65	2 1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5800
	65	2 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5820
	65	2 1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5801
	65	2 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5821
SVA-S 80	80	3	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5900
	80	3	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5920
	80	3	Angleway	Butt weld, EN 10220	D	Cap	148B5901
	80	3	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5921
SVA-S 100	100	4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B6000
	100	4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6020
	100	4	Angleway	Butt weld, EN 10220	D	Cap	148B6001
	100	4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B6021
SVA-S 125	125	5	Angleway	Butt weld, EN 10220	D	Hand wheel	148B6100
	125	5	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6120
	125	5	Angleway	Butt weld, EN 10220	D	Cap	148B6101
	125	5	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B6121
SVA-S 150	150	6	Angleway	Butt weld, EN 10220	D	Hand wheel	148B6200
	150	6	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6220
	150	6	Angleway	Butt weld, F	F	Hand wheel	148B6434
	150	6	Angleway	Butt weld, EN 10220	D	Cap	148B6201
	150	6	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B6221
	150	6	Angleway	Butt weld, F	F	Cap	148B6436
SVA-S 200	200	8	Angleway	Butt weld, EN 10220	D	Hand wheel	148B6300
	200	8	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6320
	200	8	Angleway	Butt weld, F	F	Hand wheel	148B6435
	200	8	Angleway	Butt weld, EN 10220	D	Cap	148B6301
	200	8	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B6321
	200	8	Angleway	Butt weld, F	F	Cap	148B6437

Ordering factory assembled SVA-S straightway valve

SVA-S, Shut-off valve

Ordering



Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[mm]	[in]					
SVA-S 6	6	1/4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5010
	6	1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5030
	6	1/4	Straightway	Butt weld, EN 10220	D	Cap	148B5011
	6	1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5031
SVA-S 10	10	3/8	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5110
	10	3/8	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5130
	10	3/8	Straightway	Butt weld, EN 10220	D	Cap	148B5111
	10	3/8	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5131
SVA-S 15	15	1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5210
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5230
	15	1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5232
	15	1/2	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5234
	15	1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5211
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5231
	15	1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5233
	15	1/2	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5235
SVA-S 20	20	3/4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5310
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5330
	20	3/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5332
	20	3/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5334
	20	3/4	Straightway	Butt weld, EN 10220	D	Cap	148B5311
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5331
	20	3/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5333
	20	3/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5335
SVA-S 25	25	1	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5410
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5430
	25	1	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5432
	25	1	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5434
	25	1	Straightway	Butt weld, EN 10220	D	Cap	148B5411
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5431
	25	1	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5433
	25	1	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5435
SVA-S 32	32	1 1/4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5510
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5530
	32	1 1/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5532
	32	1 1/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5534
	32	1 1/4	Straightway	Butt weld, EN 10220	D	Cap	148B5511
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5531
	32	1 1/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5533
	32	1 1/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5535
SVA-S 40	40	1 1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5610
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5630
	40	1 1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5632
	40	1 1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5611
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5631
	40	1 1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5633
SVA-S 50	50	2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5710
	50	2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5730
	50	2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5732
	50	2	Straightway	Butt weld, EN 10220	D	Cap	148B5711
	50	2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5731
	50	2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5733
SVA-S 65	65	2 1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5810
	65	2 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5830
	65	2 1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5811
	65	2 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5831
SVA-S 80	80	3	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5910
	80	3	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5930
	80	3	Straightway	Butt weld, EN 10220	D	Cap	148B5911
	80	3	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5931
SVA-S 100	100	4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B6010
	100	4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6030
	100	4	Straightway	Butt weld, EN 10220	D	Cap	148B6011
	100	4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B6031
SVA-S 125	125	5	Straightway	Butt weld, EN 10220	D	Hand wheel	148B6110
	125	5	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6130
	125	5	Straightway	Butt weld, EN 10220	D	Cap	148B6111
	125	5	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B6131
SVA-S 150	150	6	Straightway	Butt weld, EN 10220	D	Hand wheel	148B6210
	150	6	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6230
	150	6	Straightway	Butt weld, F	F	Hand wheel	148B6438
	150	6	Straightway	Butt weld, EN 10220	D	Cap	148B6211
	150	6	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B6231
	150	6	Straightway	Butt weld, F	F	Cap	148B6440
SVA-S 200	200	8	Straightway	Butt weld, EN 10220	D	Hand wheel	148B6310
	200	8	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B6330
	200	8	Straightway	Butt weld, F	F	Hand wheel	148B6439
	200	8	Straightway	Butt weld, EN 10220	D	Cap	148B6311
	200	8	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B6331
	200	8	Straightway	Butt weld, F	F	Cap	148B6441

Ordering factory assembled SVA-L angleway valve

SVA-L, Shut-off valve



Ordering

Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[mm]	[in]					
SVA-L 15	15	1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5240
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5260
	15	1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5262
	15	1/2	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5264
	15	1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5241
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5261
	15	1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5263
	15	1/2	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5265
SVA-L 20	20	3/4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5340
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5360
	20	3/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5362
	20	3/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5364
	20	3/4	Angleway	Butt weld, EN 10220	D	Cap	148B5341
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5361
	20	3/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5363
	20	3/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5365
SVA-L 25	25	1	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5440
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5460
	25	1	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5462
	25	1	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5464
	25	1	Angleway	Butt weld, EN 10220	D	Cap	148B5441
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5461
	25	1	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5463
	25	1	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5465
SVA-L 32	32	1 1/4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5540
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5560
	32	1 1/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5562
	32	1 1/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5564
	32	1 1/4	Angleway	Butt weld, EN 10220	D	Cap	148B5541
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5561
	32	1 1/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5563
	32	1 1/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5565
SVA-L 40	40	1 1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5640
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5660
	40	1 1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5662
	40	1 1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5641
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B5661
	40	1 1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5663

Ordering factory assembled SVA-L straightway valve

SVA-L, Shut-off valve



Ordering

Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[mm]	[in]					
SVA-L 15	15	1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5250
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5270
	15	1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5272
	15	1/2	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5274
	15	1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5251
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5271
	15	1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5273
	15	1/2	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5275
SVA-L 20	20	3/4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5350
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5370
	20	3/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5372
	20	3/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5374
	20	3/4	Straightway	Butt weld, EN 10220	D	Cap	148B5351
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5371
	20	3/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5373
	20	3/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5375
SVA-L 25	25	1	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5450
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5470
	25	1	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5472
	25	1	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5474
	25	1	Straightway	Butt weld, EN 10220	D	Cap	148B5451
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5471
	25	1	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5473
	25	1	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5475
SVA-L 32	32	1 1/4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5550
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5570
	32	1 1/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5572
	32	1 1/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Hand wheel	148B5574
	32	1 1/4	Straightway	Butt weld, EN 10220	D	Cap	148B5551
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5571
	32	1 1/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5573
	32	1 1/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	Cap	148B5575
SVA-L 40	40	1 1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5650
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B5670
	40	1 1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Hand wheel	148B5672
	40	1 1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5651
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B5671
	40	1 1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	Cap	148B5673

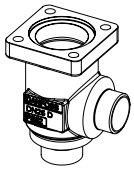
Accessories

6T Nipple Kit solution	Code no.
ACCESSORY WELD.NIPPLE DN6 A + UNION NUT	148B4245
ACCESSORY WELD.NIPPLE DN6 D + UNION NUT	148B4184

Technical data and ordering

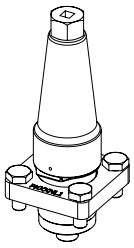
Ordering from the parts programme (valve body + top part)

Example:



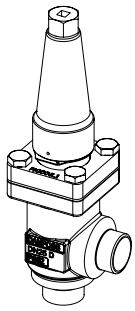
Valve housing, size 25 (1 in),
DIN butt weld, angleway,
148B5452
Table 1

+



Top part, SVA-S
size 25 (1 in) with cap
148B5476
Table 2

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SVA-S 6

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S 6	1/4	6	Angleway	Butt weld, EN 10220	D	148B5002
	1/4	6	Angleway	Butt weld, ANSI (B 36.10)	A	148B5004
	1/4	6	Angleway	Outside pipe thread, (ISO 228 / 1)	T	148B5012
SVA-S 6	1/4	6	Straightway	Butt weld, EN 10220	D	148B5003
	1/4	6	Straightway	Butt weld, ANSI (B 36.10)	A	148B5005

Top part [1])

Type	Equipment	Code no.
SVA-S 6	Cap	148B5013
SVA-S 6	Hand wheel	148B5014

SVA-S 10

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S 10	3/8	10	Angleway	Butt weld, EN 10220	D	148B5122
	3/8	10	Angleway	Butt weld, ANSI (B 36.10)	A	148B5124
SVA-S 10	3/8	10	Straightway	Butt weld, EN 10220	D	148B5123
	3/8	10	Straightway	Butt weld, ANSI (B 36.10)	A	148B5125

Top part [1])

Type	Equipment	Code no.
SVA-S 10	Cap	148B5013
SVA-S 10	Hand wheel	148B5014

SVA-S / L 15

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S / L 15	1/2	15	Angleway	Butt weld, EN 10220	D	148B5252
	1/2	15	Angleway	Butt weld, ANSI (B 36.10)	A	148B5254
	1/2	15	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5258
	1/2	15	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5256
	1/2	15	Angleway	Butt weld, F	F	148B6414
SVA-S / L 15	1/2	15	Straightway	Butt weld, EN 10220	D	148B5253
	1/2	15	Straightway	Butt weld, ANSI (B 36.10)	A	148B5255
	1/2	15	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5259
	1/2	15	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5257
	1/2	15	Straightway	Butt weld, F	F	148B6424

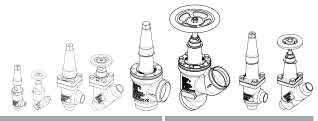
Top part [1])

Type	Equipment	Code no.
SVA-S 15	Cap	148B5276
SVA-S 15	Hand wheel	148B5277
SVA-L 15	Cap	148B5278
SVA-L 15	Hand wheel	148B5279

[1]) Including gaskets and bolts

Technical data and ordering

Ordering from the parts programme (valve body + top part)



SVA-S / L 20

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S / L 20	¾	20	Angleway	Butt weld, EN 10220	D	148B5352
	¾	20	Angleway	Butt weld, ANSI (B 36.10)	A	148B5354
	¾	20	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5358
	¾	20	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5356
	¾	20	Angleway	Butt weld, F	F	148B6415
SVA-S / L 20	¾	20	Straightway	Butt weld, EN 10220	D	148B5353
	¾	20	Straightway	Butt weld, ANSI (B 36.10)	A	148B5355
	¾	20	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5359
	¾	20	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5357
	¾	20	Straightway	Butt weld, F	F	148B6425

Top part [1])

Type	Equipment	Code no.
SVA-S 20	Cap	148B5276
SVA-S 20	Hand wheel	148B5277
SVA-L 20	Cap	148B5278
SVA-L 20	Hand wheel	148B5279

SVA-S / L 25

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S / L 25	1	25	Angleway	Butt weld, EN 10220	D	148B5452
	1	25	Angleway	Butt weld, ANSI (B 36.10)	A	148B5454
	1	25	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5458
	1	25	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5456
	1	25	Angleway	Butt weld, F	F	148B6416
SVA-S / L 25	1	25	Straightway	Butt weld, EN 10220	D	148B5453
	1	25	Straightway	Butt weld, ANSI (B 36.10)	A	148B5455
	1	25	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5459
	1	25	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5457
	1	25	Straightway	Butt weld, F	F	148B6426

Top part [1])

Type	Equipment	Code no.
SVA-S 25	Cap	148B5476
SVA-S 25	Hand wheel	148B5477
SVA-L 25	Cap	148B5478
SVA-L 25	Hand wheel	148B5479

SVA-S / L 32

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S / L 32	1 ¼	32	Angleway	Butt weld, EN 10220	D	148B5576
	1 ¼	32	Angleway	Butt weld, ANSI (B 36.10)	A	148B5578
	1 ¼	32	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5582
	1 ¼	32	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5580
	1 ¼	32	Angleway	Butt weld, F	F	148B6417
SVA-S / L 32	1 ¼	32	Straightway	Butt weld, EN 10220	D	148B5577
	1 ¼	32	Straightway	Butt weld, ANSI (B 36.10)	A	148B5579
	1 ¼	32	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5583
	1 ¼	32	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5581
	1 ¼	32	Straightway	Butt weld, F	F	148B6427

Top part [1])

Type	Equipment	Code no.
SVA-S 32	Cap	148B5476
SVA-S 32	Hand wheel	148B5477
SVA-L 32	Cap	148B5478
SVA-L 32	Hand wheel	148B5479

[1]) *Including gaskets and bolts*

Technical data and ordering

Ordering from the parts programme (valve body + top part)



SVA-S / L 40

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S / L 40	1 ½	40	Angleway	Butt weld, EN 10220	D	148B5652
	1 ½	40	Angleway	Butt weld, ANSI (B 36.10)	A	148B5654
	1 ½	40	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5656
	1 ½	40	Angleway	Butt weld, F	F	148B6418
SVA-S / L 40	1 ½	40	Straightway	Butt weld, EN 10220	D	148B5653
	1 ½	40	Straightway	Butt weld, ANSI (B 36.10)	A	148B5655
	1 ½	40	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5657
	1 ½	40	Straightway	Butt weld, F	F	148B6428

Top part [1])

Type	Equipment	Code no.
SVA-S 40	Cap	148B5476
SVA-S 40	Hand wheel	148B5477
SVA-L 40	Cap	148B5478
SVA-L 40	Hand wheel	148B5479

SVA-S 50

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S 50	2	50	Angleway	Butt weld, EN 10220	D	148B5741
	2	50	Angleway	Butt weld, ANSI (B 36.10)	A	148B5743
	2	50	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5745
	2	50	Angleway	Butt weld, F	F	148B6419
SVA-S 50	2	50	Straightway	Butt weld, EN 10220	D	148B5742
	2	50	Straightway	Butt weld, ANSI (B 36.10)	A	148B5744
	2	50	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5746
	2	50	Straightway	Butt weld, F	F	148B6429

Top part [1])

Type	Equipment	Code no.
SVA-S 50	Cap	148B5728
SVA-S 50	Hand wheel	148B5729

SVA-S 65

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S 65	2 ½	65	Angleway	Butt weld, EN 10220	D	148B5816
	2 ½	65	Angleway	Butt weld, ANSI (B 36.10)	A	148B5818
	2 ½	65	Angleway	Butt weld, F	F	148B6420
SVA-S 65	2 ½	65	Straightway	Butt weld, EN 10220	D	148B5817
	2 ½	65	Straightway	Butt weld, ANSI (B 36.10)	A	148B5819
	2 ½	65	Straightway	Butt weld, F	F	148B6430

Top part [1])

Type	Equipment	Code no.
SVA-S 65	Cap	148B5822
SVA-S 65	Hand wheel	148B5823

[1]) *Including gaskets and bolts*

Technical data and ordering

Ordering from the parts programme (valve body + top part)



SVA-S 80

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S 80	3	80	Angleway	Butt weld, EN 10220	D	148B5912
	3	80	Angleway	Butt weld, ANSI (B 36.10)	A	148B5914
	3	80	Angleway	Butt weld, F	F	148B6421
SVA-S 80	3	80	Straightway	Butt weld, EN 10220	D	148B5913
	3	80	Straightway	Butt weld, ANSI (B 36.10)	A	148B5915
	3	80	Straightway	Butt weld, F	F	148B6431

Top part [1])

Type	Equipment		Code no.
SVA-S 80	Cap		148B5916
SVA-S 80	Hand wheel		148B5917

SVA-S 100

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S 100	4	100	Angleway	Butt weld, EN 10220	D	148B6014
	4	100	Angleway	Butt weld, ANSI (B 36.10)	A	148B6016
	4	100	Angleway	Butt weld, F	F	148B6422
SVA-S 100	4	100	Straightway	Butt weld, EN 10220	D	148B6015
	4	100	Straightway	Butt weld, ANSI (B 36.10)	A	148B6017
	4	100	Straightway	Butt weld, F	F	148B6432

Top part [1])

Type	Equipment		Code no.
SVA-S 100	Cap		148B6012
SVA-S 100	Hand wheel		148B6018

SVA-S 125

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SVA-S 125	5	125	Angleway	Butt weld, EN 10220	D	148B6112
	5	125	Angleway	Butt weld, ANSI (B 36.10)	A	148B6114
	5	125	Angleway	Butt weld, F	F	148B6423
SVA-S 125	5	125	Straightway	Butt weld, EN 10220	D	148B6113
	5	125	Straightway	Butt weld, ANSI (B 36.10)	A	148B6115
	5	125	Straightway	Butt weld, F	F	148B6433

Top part [1])

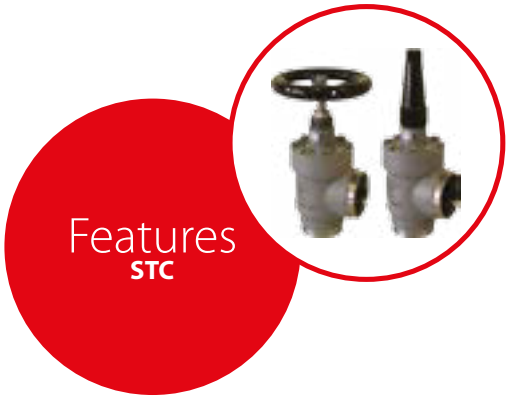
Type	Equipment		Code no.
SVA-S 125	Cap		148B6116
SVA-S 125	Hand wheel		148B6117

[1]) *Including gaskets and bolts*

STC – Shut-off valves

STC are angleway and straightway shut-off valves which are designed to meet industrial refrigeration application requirements.

The valves are designed to give favourable flow characteristics and are easy to dismantle and repair when necessary.

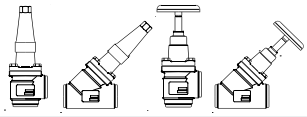




Facts

- Applicable to HCFC, HFC and R717 (Ammonia)
- Available with:
- Heavy duty industrial handwheel for frequent operation
- Vented cap for infrequent operation
- Available in angle and straight versions with standard bonnet for installation in normal insulated systems
- The valves and caps are prepared for sealing, to prevent operation by unauthorized persons
- Internal metal backseating
- DN 15 – 150 (½ - 6 in)
- Can accept flow in both directions
- Max. working pressure: 25 bar g / 365 psig
- Temperature range: -50 – 150 °C / -58 – 302 °F
- Design specification according to DIN 3158

Technical data and ordering



STC - Shut-off valves

Technical data

Type	Description
Refrigerants	Applicable to HCFC, HFC and R717 (Ammonia)
Pressure range	The valves are designed for max. working pressure 25 bar g / 365 psig
Temperature range	-50 – 150 °C / -58 – 302 °F

STC - Shut-off valves

Ordering

Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[in.]	[mm]					
STC 15	15	1/2	Angleway	Metric	M	Hand wheel	148B4645
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4601
	15	1/2	Straightway	Metric	M	Hand wheel	148B4667
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4623
	15	1/2	Angleway	Metric	M	Cap	148B4644
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4600
	15	1/2	Straightway	Metric	M	Cap	148B4666
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4622
STC 20	20	3/4	Angleway	Metric	M	Hand wheel	148B4647
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4603
	20	3/4	Straightway	Metric	M	Hand wheel	148B4669
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4625
	20	3/4	Angleway	Metric	M	Cap	148B4646
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4602
	20	3/4	Straightway	Metric	M	Cap	148B4668
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4624
STC 25	25	1	Angleway	Metric	M	Hand wheel	148B4649
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4605
	25	1	Straightway	Metric	M	Hand wheel	148B4671
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4627
	25	1	Angleway	Metric	M	Cap	148B4648
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4604
	25	1	Straightway	Metric	M	Cap	148B4670
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4626
STC 32	32	1 1/4	Angleway	Metric	M	Hand wheel	148B4651
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4607
	32	1 1/4	Straightway	Metric	M	Hand wheel	148B4673
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4629
	32	1 1/4	Angleway	Metric	M	Cap	148B4650
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4606
	32	1 1/4	Straightway	Metric	M	Cap	148B4672
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4628
STC 40	40	1 1/2	Angleway	Metric	M	Hand wheel	148B4653
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4609
	40	1 1/2	Straightway	Metric	M	Hand wheel	148B4675
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4631
	40	1 1/2	Angleway	Metric	M	Cap	148B4652
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4608
	40	1 1/2	Straightway	Metric	M	Cap	148B4674
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4630
STC 50	50	2	Angleway	Metric	M	Hand wheel	148B4655
	50	2	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4611
	50	2	Straightway	Metric	M	Hand wheel	148B4677
	50	2	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4633
	50	2	Angleway	Metric	M	Cap	148B4654
	50	2	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4610
	50	2	Straightway	Metric	M	Cap	148B4676
	50	2	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4632

Technical data and ordering

STC - Shut-off valves

Ordering

Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[in.]	[mm]					
STC 65	65	2 ½	Angleway	Metric	M	Hand wheel	148B4657
	65	2 ½	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4613
	65	2 ½	Straightway	Metric	M	Hand wheel	148B4679
	65	2 ½	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4635
	65	2 ½	Angleway	Metric	M	Cap	148B4656
	65	2 ½	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4612
	65	2 ½	Straightway	Metric	M	Cap	148B4678
	65	2 ½	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4634
STC 80	80	3	Angleway	Metric	M	Hand wheel	148B4659
	80	3	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4615
	80	3	Straightway	Metric	M	Hand wheel	148B4681
	80	3	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4637
	80	3	Angleway	Metric	M	Cap	148B4658
	80	3	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4614
	80	3	Straightway	Metric	M	Cap	148B4680
	80	3	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4636
STC 100	100	4	Angleway	Metric	M	Hand wheel	148B4661
	100	4	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4617
	100	4	Straightway	Metric	M	Hand wheel	148B4683
	100	4	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4639
	100	4	Angleway	Metric	M	Cap	148B4660
	100	4	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4616
	100	4	Straightway	Metric	M	Cap	148B4682
	100	4	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4638
STC 125	125	5	Angleway	Metric	M	Hand wheel	148B4663
	125	5	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4619
	125	5	Straightway	Metric	M	Hand wheel	148B4685
	125	5	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4641
	125	5	Angleway	Metric	M	Cap	148B4662
	125	5	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4618
	125	5	Straightway	Metric	M	Cap	148B4684
	125	5	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4640
STC 150	150	6	Angleway	Metric	M	Hand wheel	148B4665
	150	6	Angleway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4621
	150	6	Straightway	Metric	M	Hand wheel	148B4687
	150	6	Straightway	Butt weld, ANSI (B 36.10)	A	Hand wheel	148B4643
	150	6	Angleway	Metric	M	Cap	148B4664
	150	6	Angleway	Butt weld, ANSI (B 36.10)	A	Cap	148B4620
	150	6	Straightway	Metric	M	Cap	148B4686
	150	6	Straightway	Butt weld, ANSI (B 36.10)	A	Cap	148B4642

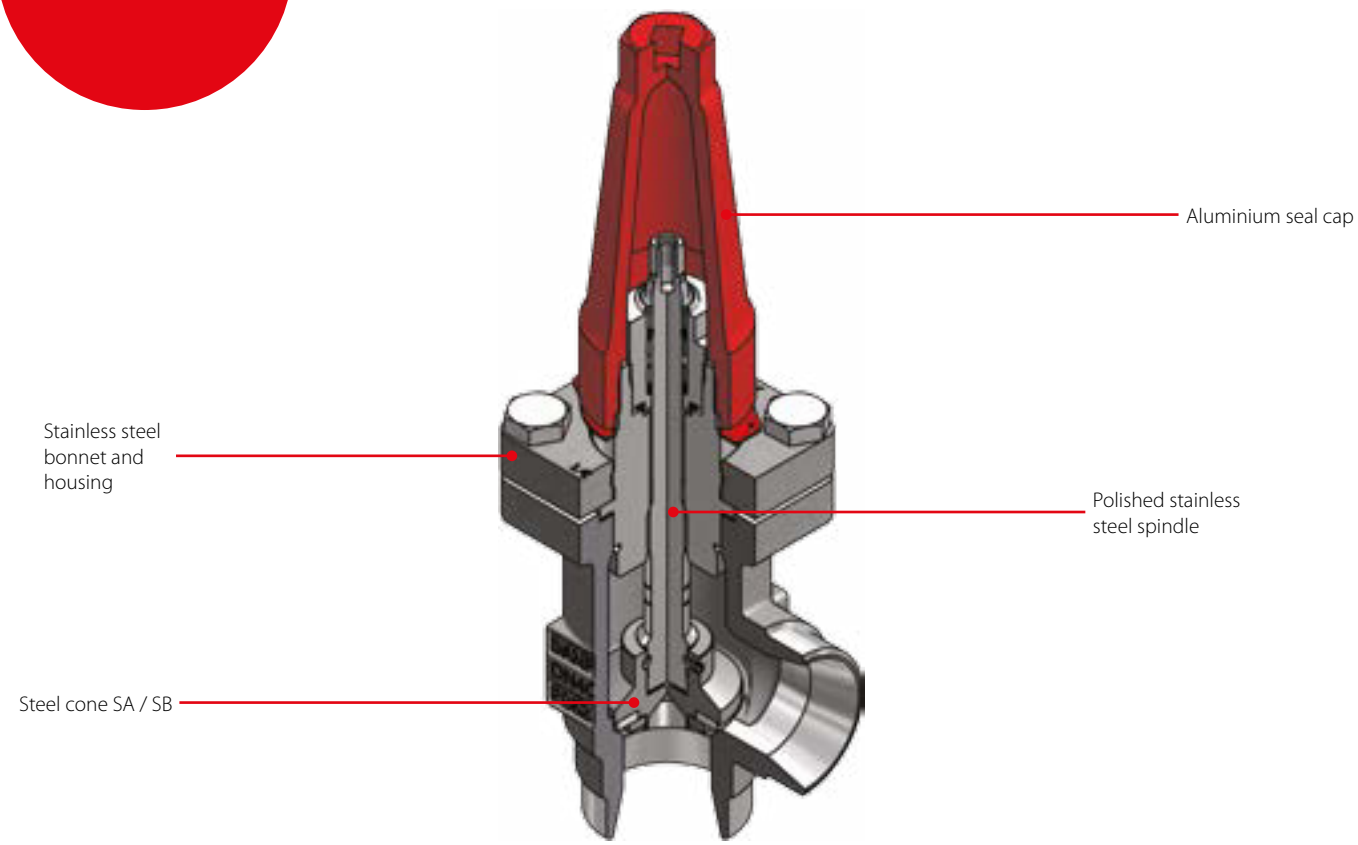
Quick Selection Notes:

SVA-S SS, Shut-off valves

SVA-S SS are angleway and straightway stainless steel shut-off valves, which are designed to meet all industrial refrigeration application requirements.

The valves are designed to give favourable flow characteristics and are easy to dismantle and repair when necessary. The valve cone is designed to ensure perfect closing.





Facts

- Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants
- Available in angleway and straightway versions
- Each valve type is clearly marked with type, size and performance range
- Internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure
- Can accept flow in both directions
- Housing and bonnet material is stainless steel
- Equipped with stainless steel bolts
- Optional accessories:
  - Heavy duty industrial hand wheel for frequent operation
  - Cap for infrequent operation
- Max. working pressure:
  DN 15 – 65: 52 bar g / 754 psig
  DN 80 – 125: 50 bar / 725 psig
- Temperature range:
  -60 – 150 °C / -76 – 302 °F

Technical data and ordering

SVA-S SS, Shut-off valves

Technical data

Type	Description
Refrigerants	Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerant
Pressure range	DN 15 – 65: Max. working pressure PS / MWP 52 bar g / 754 psig DN 80 – 125: Max. working pressure PS / MWP 50 bar / 725 psig
Temperature range	-60 – 150 °C / –76 – 302 °F

SVA-S SS, Shut-off valves



Ordering angleway valves

Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[mm]	[in]					
SVA-S SS 15	15	1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5289
	15	1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5290
SVA-S SS 20	20	3/4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5377
	20	3/4	Angleway	Butt weld, EN 10220	D	Cap	148B5378
SVA-S SS 25	25	1	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5486
	25	1	Angleway	Butt weld, EN 10220	D	Cap	148B5487
SVA-S SS 32	32	1 1/4	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5566
	32	1 1/4	Angleway	Butt weld, EN 10220	D	Cap	148B5567
SVA-S SS 40	40	1 1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5646
	40	1 1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5647
SVA-S SS 50	50	2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5753
	50	2	Angleway	Butt weld, EN 10220	D	Cap	148B5754
SVA-S SS 65	65	2 1/2	Angleway	Butt weld, EN 10220	D	Hand wheel	148B5847
	65	2 1/2	Angleway	Butt weld, EN 10220	D	Cap	148B5848
SVA-S SS 80	80	3	Angleway	Butt weld, EN 10220	D	Cap	148B5928
SVA-S SS 100	100	4	Angleway	Butt weld, EN 10220	D	Cap	148B6032
SVA-S SS 125	125	5	Angleway	Butt weld, EN 10220	D	Cap	148B6126

SVA-S SS, Shut-off valves



Ordering straightway valves

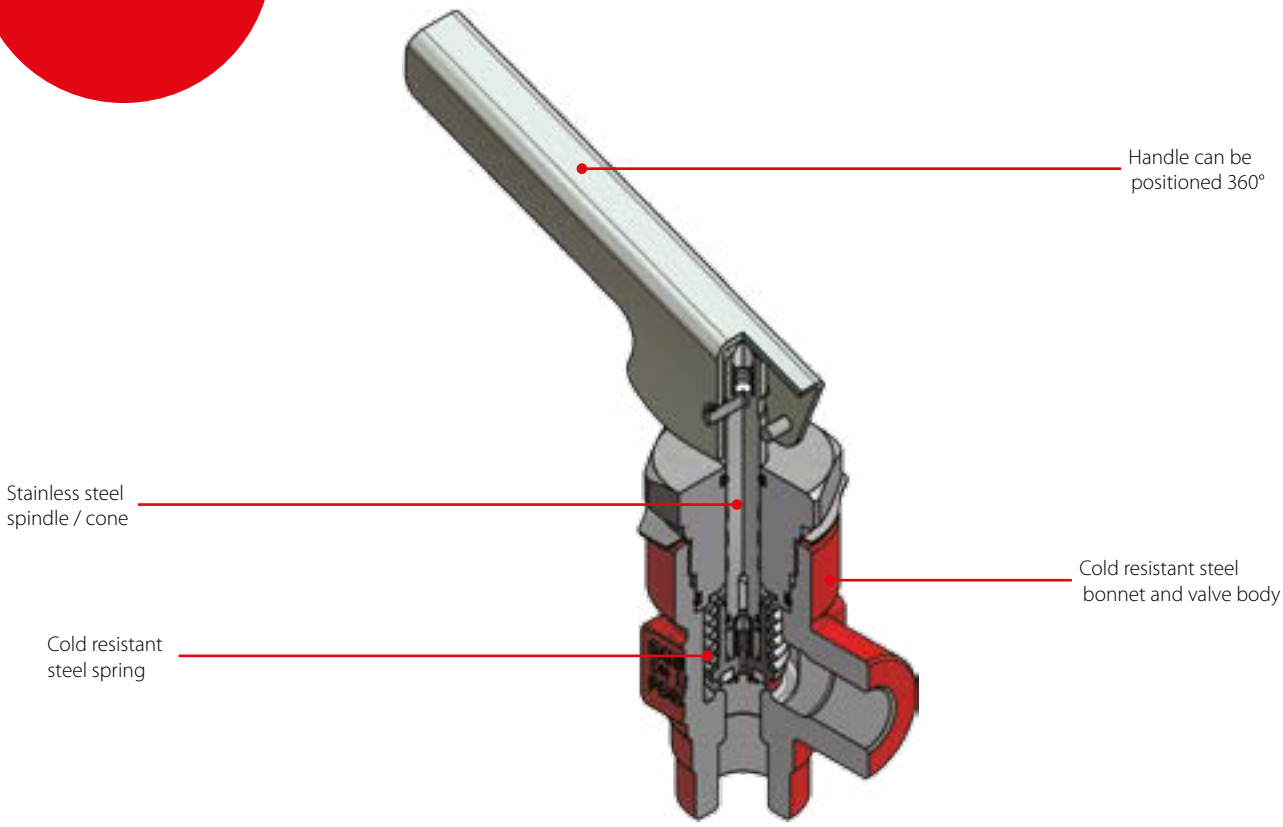
Type	Connection size		Execution	Connection type	Connection designation	Equipment	Code no.
	[mm]	[in]					
SVA-S SS 15	15	1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5291
	15	1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5292
SVA-S SS 20	20	3/4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5379
	20	3/4	Straightway	Butt weld, EN 10220	D	Cap	148B5380
SVA-S SS 25	25	1	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5488
	25	1	Straightway	Butt weld, EN 10220	D	Cap	148B5489
SVA-S SS 32	32	1 1/4	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5568
	32	1 1/4	Straightway	Butt weld, EN 10220	D	Cap	148B5569
SVA-S SS 40	40	1 1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5648
	40	1 1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5649
SVA-S SS 50	50	2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5755
	50	2	Straightway	Butt weld, EN 10220	D	Cap	148B5756
SVA-S SS 65	65	2 1/2	Straightway	Butt weld, EN 10220	D	Hand wheel	148B5849
	65	2 1/2	Straightway	Butt weld, EN 10220	D	Cap	148B5850

QDV, Shut-off valve

QDV are quick closing shut-off valves for oil drain, designed particularly for draining oil from systems containing refrigerant (ammonia) under pressure.
The valve closes immediately on release of the handle, thus protecting user and environment against unnecessary refrigerant leaks.

QDV is applicable to R717 (Ammonia), and is designed to meet the safety demands specified by national and international authorities within industrial refrigeration.





Facts

- QDV is designed for use with R717 (ammonia) but the valve is also applicable to all other common non flammable refrigerants and non corrosive gases / liquids dependent on sealing material compatibility
- Meets the safety demands within industrial refrigeration
- Handle can be positioned 360°
- Built-in integral relief device (opening over 25 bar g to prevent hydraulic pressure building up between stop valve and QDV)
- Can be supplied together with a stop valve for quick on site mounting
- Max. operating pressure: 40 bar g / 580 psig
- Temperature range: -50 – 150 °C / -58 – 302 °F

Technical data and ordering

QDV, Shut-off valve

Technical data

Type	Description
Refrigerants	QDV is designed for use with R717 (ammonia) but the valve is also applicable to all other common non flammable refrigerants and non corrosive gases / liquids dependent on sealing material compatibility. QDV is a backpressure dependent valve. If any tube or hose is mounted on the outlet of the QDV it has to be calculated to prevent black pressure building up when relieving. For further information please see installation instruction for QDV Flammable hydrocarbons are not recommended
Pressure range	The valve is designed for: Maximum operating pressure of 40 bar g / 580 psig
Temperature range	-50 – 150 °C / -58 – 302 °F

QDV, Shut-off valve

Ordering

Type	Inlet	Outlet	Code no.
QDV 15 DN 15	DN 15	G ¾ in	148H3272
QDV 15 ½ in FPT	½ in FPT	½ in FPT	148H3273
QDV 15 ¾ in FPT	¾ in FPT	¾ in FPT	148H3274
QDV 15 DN 15 + SVA-ST DN 15 H-WHEEL *)	DN 15	G ¾ in	148H3310
QDV 15 ½ in FPT + SVA-ST SOC ½ in H-WHEEL *)	½ in SOC	½ in FPT	148H3311
Fittings for hose connection - G ¾ in	–	–	148H3451
Fittings for welding connection - G ¾ in	–	–	148H3452

**) Two valves are supplied in one box and should be mounted on site. The indicated inlet is for the stop valve - The indicated outlet is for the oil drain valve.*

Important

Where products need to be certified according to specific certification societies or where higher pressures are required, the relevant information should be included at the time of order.

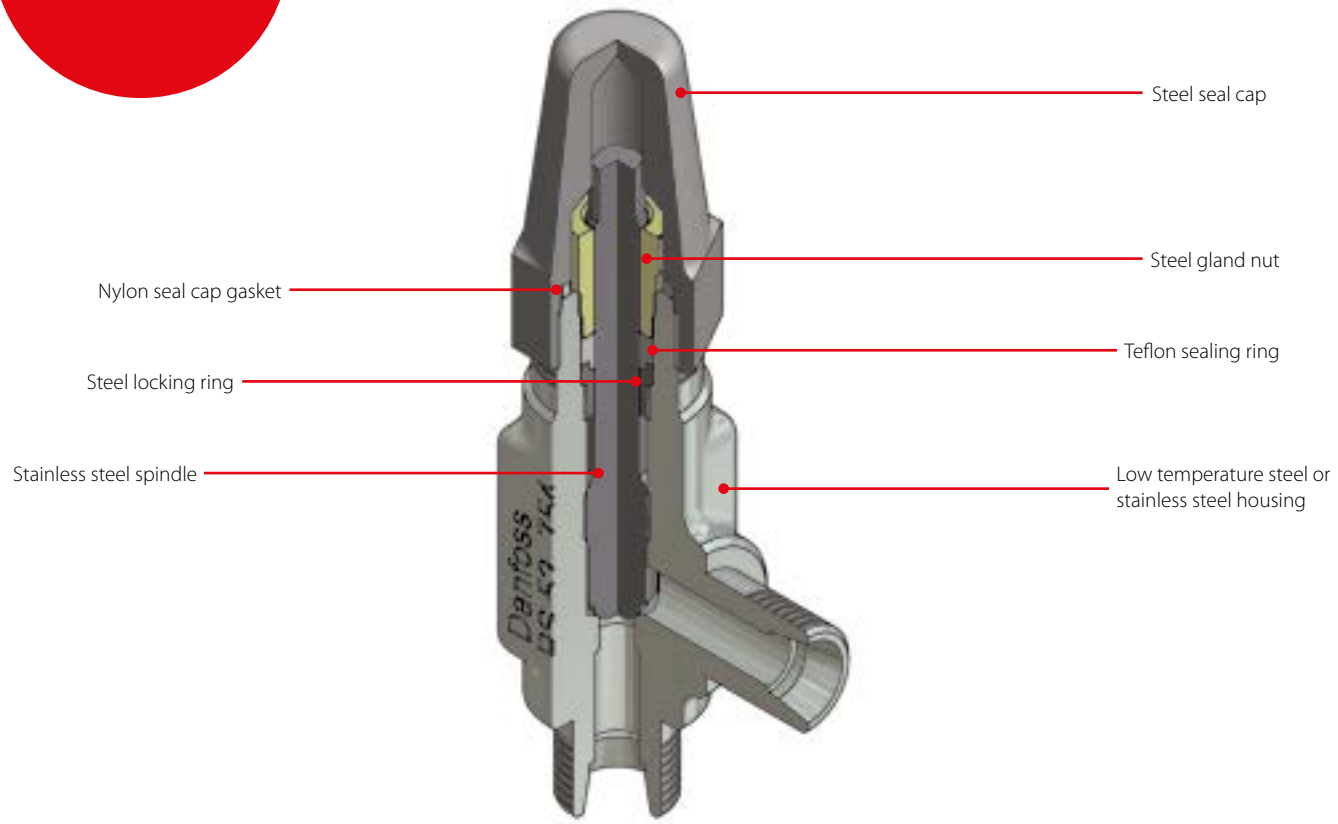
SNV-ST / SNV-SS, Gauge valve

SNV stop gauge are designed as service valves with a very sturdy construction. SNV-ST are made in steel approved for low temperature operations, SVA-SS are stainless steel versions.

SNV valves have internal backseating (metal to metal), enabling the spindle seal to be replaced while the valve is still under pressure. SNV is applicable to HCFC, non flammable HFC, R717 (Ammonia) and R744 (CO_2).



Features
SNV-ST / SNV-SS



Facts

- Applicable to HCFC, non flammable HFC, R717 (Ammonia) and R744 (CO_2)
- Suitable for "heavy duty" industrial applications having a very sturdy and safe design including high pressures and wide temperature range
- The SNV-ST and SNV-SS valves have backseating (metal to metal)
- Compact and light valve for easy handling and installation
- No special flow direction required
- Provide high flow characteristics
- Each valve type is clearly marked with type and size
- Housing and bonnet material is low temperature steel (stainless steel for SNV-SS) according to requirements of the Pressure Equipment Directive and other international classification authorities
- Valve safety is enhanced with the spindle being secured such that it cannot be unscrewed
- Max. operating pressure:
  52 bar g / 754 psig
  Valves for higher operating pressure available on request
- Temperature range:
  -60 – 150 °C / -76 – 302 °F

Technical data and ordering

SNV-ST / SNV-SS, Gauge valve

Dane techniczne

Type	Description
Refrigerants	Applicable to all common refrigerants including R 717 and R744 (CO_2) and non corrosive gases / liquids. For further information please see installation instruction for SNV-ST.
Pressure range	Maximum operating pressure of 52 bar g / 754 psig. Valves for higher operating pressure available on request.
Temperature range	-60 – 150 °C / -76 – 302 °F

How to order

Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range. For further information please contact your local Danfoss Sales Company.

Important!

Where products need to be certified according to specific certification societies or where higher pressures are required, the relevant information should be included at the time of order.

SNV-ST, See figure 1

Ordering

Type	Side branch connection Ⓐ	Bottom branch connection Ⓑ	Quantity [pcs.]	Code no.
SNV-ST CD10-CD10	CD 10	CD 10	1	148B3740
	CD 10	CD 10	30	148B4177
SNV-ST CD10-¼ MPT	CD 10	¼ MPT	1	148B3741
SNV-ST CD6-¼ MPT	CD 6	¼ MPT	1	148B3742
SNV-ST CD10-⅜ MPT	CD 10	⅜ MPT	1	148B3743
SNV-ST CD6-⅜ MPT	CD 6	⅜ MPT	1	148B3744
SNV-ST G ½-G ½	G ½ (external)	G ½ (external)	1	148B3745
	G ½ (external)	G ½ (external)	30	148B4179
SNV-ST ¼ FPT-¼ MPT	¼ FPT	¼ MPT	1	148B3746
	¼ FPT	¼ MPT	30	148B4180
SNV-ST ⅜ FPT-⅜ MPT	⅜ FPT	⅜ MPT	1	148B3747
	⅜ FPT	⅜ MPT	30	148B4181
SNV-ST ⅜ FPT-½ MPT	⅜ FPT	½ MPT	30	148B4233
SNV-ST ¼ FPT-¼ FPT	¼ FPT	¼ FPT	30	148B4223
SNV-ST ½ MPT-½ MPT	½ MPT	½ MPT	30	148B4224
SNV-ST ⅜ FPT-⅜ FPT	⅜ FPT	⅜ FPT	30	148B4225
SNV-ST ½ MPT-⅜ FPT	½ MPT	⅜ FPT	30	148B4226
SNV-ST CD6-¼ MPT *)	CD 6	¼ MPT	30	148B4216
SNV-ST 7/16 UNF-¼ MPT	7/16 UNF	¼ MPT	30	148B4230

**) With handwheel.*

SNV-ST

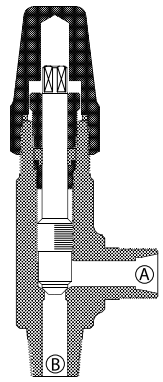


Fig. 1

Technical data and ordering

SNV-ST / SNV-SS (extended Branch) - see figure 2

Ordering

Type	Side branch connection Ⓐ	Bottom branch connection Ⓑ	Quantity [pcs.]	Code no.
SNV-ST CD10-W ½ L100	CD10	W ½ L100	1	148B3768
	CD10	W ½ L100	30	148B4210
SNV-ST G ½-W ½ L100	G ½ (external)	W ½ L100	1	148B3769
	G ½ (external)	W ½ L100	30	148B4211
SNV-ST G ½-W ½ L125	G ½ (external)	W ½ L125	30	148B4219
SNV-ST G ½-W ½ L50	G ½ (external)	W ½ L50	30	148B4218
SNV-ST G ¼-R ¼ L50	G ¼ (internal)	R ¼ L50 (external)	30	148B4231
SNV-ST ¼ FPT-¼ MPT L100	¼ FPT	¼ MPT L100	30	148B4232
SNV-SS G ½-W ½ L50	G ½ (external)	W ½ L50	1	148B4265
SNV-SS G ½-W ½ L150	G ½ (external)	W ½ L150	1	148B4266
SNV-ST G ⅜-W ½ L125	G ⅜ (external)	W ½ L125	30	148B4336

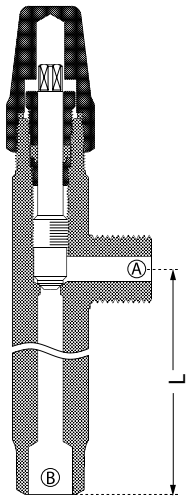
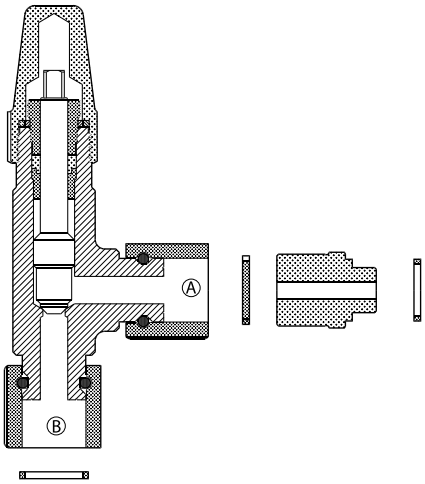
L50 = 50 mm (2 in), L100 = 100 mm (4 in), L125 = 125 mm (5 in), L150 = 150 mm (6 in).

SNV-ST (Manometer connection) - see figure 3

Ordering

Type	Side branch connection Ⓐ	Bottom branch connection Ⓑ	Quantity [pcs.]	Code no.
SNV-ST G ½ Man	G ½	G ½	1	148B3778 **)

***) Including adaptor for connection to ICS / PM valve.*

SNV-ST / SNV-SS (extended branch)	SNV-ST (manometer connection)
	
Fig. 2	*Fig. 3*

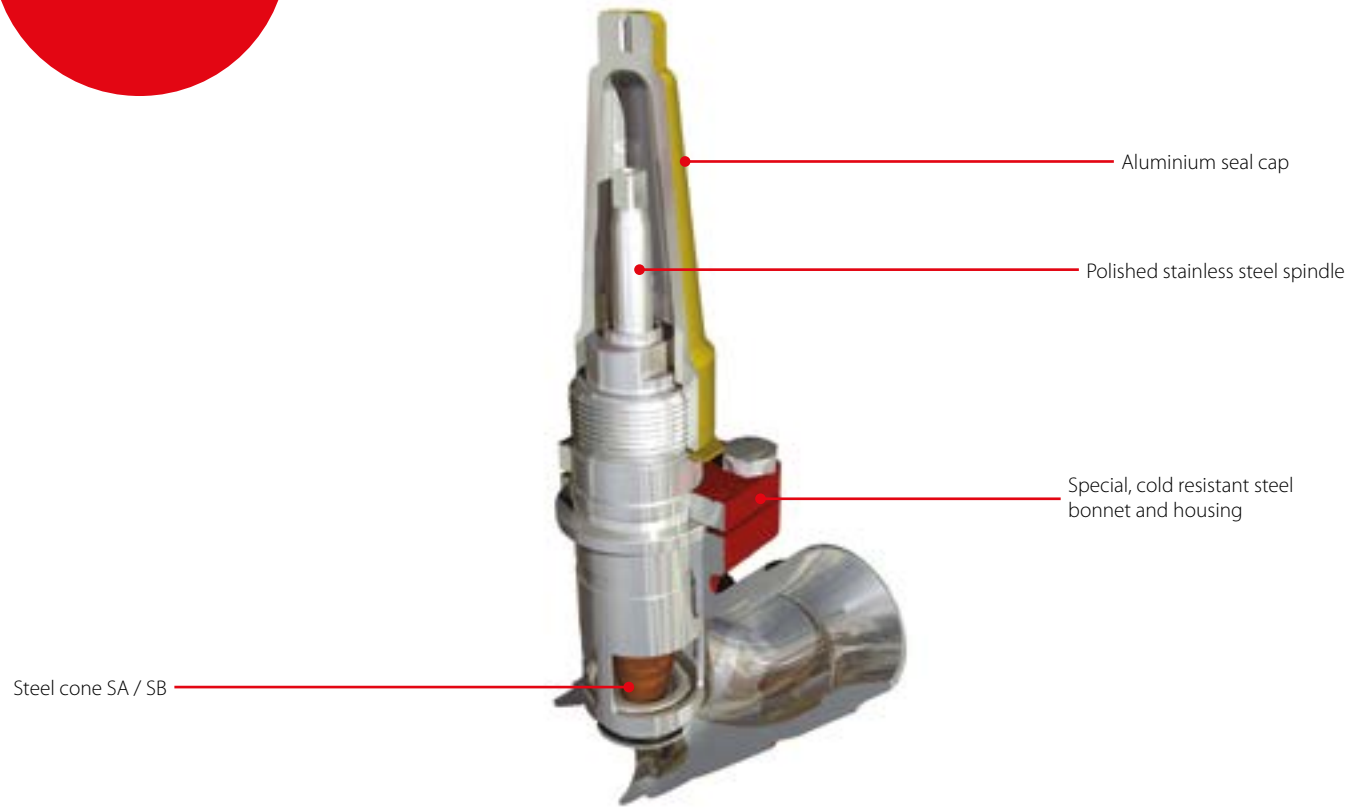
Quick Selection Notes:

REG-SA / REG-SB, Hand-operated regulating valve

REG-SA and REG-SB are angleway and straightway hand-operated regulating valves, which act as normal shut-off valves in closed position.
REG-SA and REG-SB are members of the SVL modular concept product family, so each valve housing is available with several different connection types and sizes, and it is possible to convert REG-SA or REG-SB to any other product in the SVL family by replacing the complete top part.

The valves are available in four different versions – REG-SA (S = short neck) and REG-LA (L = long neck) is for use in expansion lines (cone type A), while REG-SB and REG-LB is designed for regulation purposes in liquid lines (cone type B).
Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2), Propane, Butane, Iso-Butane and Ethane.





Facts

- Standard SVL angleway or straightway valve body allowing other top parts from the SVL platform to be installed
- Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2), Propane, Butane, Iso-Butane and Ethane
- Designed to ensure perfect regulation
- Internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure
- Easy to disassemble for inspection and possible repair
- Max. operating pressure: 52 bar g / 754 psig
- Temperature range: -60 – 150 °C / -76 – 302 °F
- Acts as a normal shut-off valve in closed position
- Valve body and bonnet material is low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities

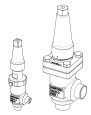
Technical data and ordering

REG-SA / REG-SB, Hand-operated regulating valve

Technical data

Type	Description
Refrigerants	Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2), Propane, Butane, Iso-Butane and Ethane
Pressure range	52 bar g / 754 psig
Temperature range	-60 – 150 °C / -76 – 302 °F
Flow coefficients	Flow coefficients for fully opened valves from K_V = 0.15 – 80 m³/h (C_V = 0.17 – 92.5 USgal/min)

REG-SA / REG-SB, Hand-operated regulating valve



Available combination between valve size, cone type and valve connection

Size	DN 10 (⅜ in)		DN 15 (½ in)		DN 20 (¾ in)		DN 25 (1 in)		DN 32 (1 ¼ in)		DN 40 (1 ½ in)		DN 50 (2 in)		DN 65 (2 ½ in)	
Cone type	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
DIN	×	×	×	×	×	×	×	×	×	×	×	×		×		×
ANSI	×	×	×	×	×	×	×	×	×	×	×	×		×		×
SOC			×	×	×	×	×	×	×	×	×	×		×		
FPT			×	×	×	×	×	×	×	×						
F			×	×	×	×	×	×	×	×	×	×		×		×

× = *available*

How to order

Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range. For further information please contact your local Danfoss Sales Company.

Important!

Where products need to be certified according to specific certification societies or where higher pressures are required, the relevant information should be included at the time of order.

REG-SA / REG-SB - Hand-operated regulating valve

Type codes

Valve type	REG	Regulating Valves					
			Available connection types				
			A	D	SOC	FPT	F
Nominal size in [mm] (Valve size measured on the connection diameter)	10	DN 10	x	x			
	15	DN 15	x	x	x	x	x
	20	DN 20	x	x	x	x	x
	22	DN 22					
	25	DN 25	x	x	x	x	x
	32	DN 32	x	x	x	x	x
	40	DN 40	x	x	x		x
	50	DN 50	x	x	x		x
	65	DN 65	x	x			x
Connections	A	Welding branches: ANSI B 36.10 schedule 80, 15 – 40 (½ – 1 ½ in) Welding branches: ANSI B 36.10 schedule 40, 50 – 65 (2 – 2 ½ in)					
	D	Welding branches: EN 10220					
	SOC	Socket weld: ANSI B 16.11					
	FPT	NPT inside pipe thread: ANSI / ASME B1.20.1					
	F	Butt-weld connection F: Thickness DN 15 – 65 = 2 mm					
Valve housing	ANG	Angle flow					
	STR	Straight flow					
Cone A	Size: DN 10 DN 15 DN 20 DN 25 DN 32 DN 40	Flow area [mm²] 3.02 36.5 36.5 178 178 178					
Cone B	Size: DN 10 DN 15 DN 20 DN 25 DN 32 DN 40 DN 50 DN 65	Flow area [mm²] 16 115 115 531 531 531 822 1978					

Technical data and ordering

REG-SA (Cone type A - for expansion lines)

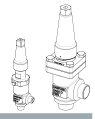
Ordering factory assembled angleway valves



Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[mm]	[in]				
REG-SA 10	10	3/8	Angleway	Butt weld, EN 10220	D	148B5102
	10	3/8	Angleway	Butt weld, ANSI (B 36.10)	A	148B5106
REG-SA 15	15	1/2	Angleway	Butt weld, EN 10220	D	148B5226
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	148B5202
	15	1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5204
	15	1/2	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5206
REG-SA 20	20	3/4	Angleway	Butt weld, EN 10220	D	148B5326
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	148B5302
	20	3/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5304
	20	3/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5306
REG-SA 25	25	1	Angleway	Butt weld, EN 10220	D	148B5426
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	148B5402
	25	1	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5404
	25	1	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5406
REG-SA 32	32	1 1/4	Angleway	Butt weld, EN 10220	D	148B5527
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	148B5502
	32	1 1/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5504
	32	1 1/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5506
REG-SA 40	40	1 1/2	Angleway	Butt weld, EN 10220	D	148B5627
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	148B5602
	40	1 1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5604

REG-SA (Cone type A - for expansion lines)

Ordering factory assembled straightway valves

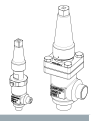


Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[mm]	[in]				
REG-SA 10	10	3/8	Straightway	Butt weld, EN 10220	D	148B5104
	10	3/8	Straightway	Butt weld, ANSI (B 36.10)	A	148B5116
REG-SA 15	15	1/2	Straightway	Butt weld, EN 10220	D	148B5228
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	148B5212
	15	1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5214
	15	1/2	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5216
REG-SA 20	20	3/4	Straightway	Butt weld, EN 10220	D	148B5328
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	148B5312
	20	3/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5314
	20	3/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5316
REG-SA 25	25	1	Straightway	Butt weld, EN 10220	D	148B5428
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	148B5412
	25	1	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5414
	25	1	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5416
REG-SA 32	32	1 1/4	Straightway	Butt weld, EN 10220	D	148B5528
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	148B5512
	32	1 1/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5514
	32	1 1/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5516
REG-SA 40	40	1 1/2	Straightway	Butt weld, EN 10220	D	148B5629
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	148B5612
	40	1 1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5614

Technical data and ordering

REG-SB (Cone type B - for liquid lines)

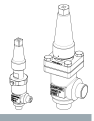
Ordering factory assembled angleway



Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[mm]	[in]				
REG-SB 10	10	3/8	Angleway	Butt weld, EN 10220	D	148B5103
	10	3/8	Angleway	Butt weld, ANSI (B 36.10)	A	148B5107
REG-SB 15	15	1/2	Angleway	Butt weld, EN 10220	D	148B5227
	15	1/2	Angleway	Butt weld, ANSI (B 36.10)	A	148B5203
	15	1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5205
	15	1/2	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5207
REG-SB 20	20	3/4	Angleway	Butt weld, EN 10220	D	148B5327
	20	3/4	Angleway	Butt weld, ANSI (B 36.10)	A	148B5303
	20	3/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5305
	20	3/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5307
REG-SB 25	25	1	Angleway	Butt weld, EN 10220	D	148B5427
	25	1	Angleway	Butt weld, ANSI (B 36.10)	A	148B5403
	25	1	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5405
	25	1	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5407
REG-SB 32	32	1 1/4	Angleway	Butt weld, EN 10220	D	148B5526
	32	1 1/4	Angleway	Butt weld, ANSI (B 36.10)	A	148B5503
	32	1 1/4	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5505
	32	1 1/4	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5507
REG-SB 40	40	1 1/2	Angleway	Butt weld, EN 10220	D	148B5626
	40	1 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	148B5603
	40	1 1/2	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5605
REG-SB 50	50	2	Angleway	Butt weld, EN 10220	D	148B5726
	50	2	Angleway	Butt weld, ANSI (B 36.10)	A	148B5706
	50	2	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5727
REG-SB 65	65	2 1/2	Angleway	Butt weld, EN 10220	D	148B5826
	65	2 1/2	Angleway	Butt weld, ANSI (B 36.10)	A	148B5806

REG-SB (Cone type B - for liquid lines)

Ordering factory assembled straightway valves

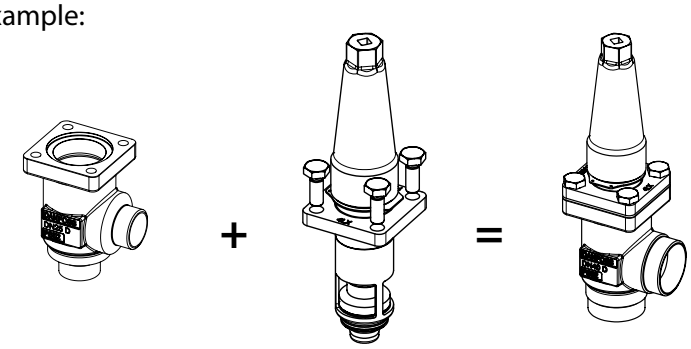


Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[mm]	[in]				
REG-SB 10	10	3/8	Straightway	Butt weld, EN 10220	D	148B5105
	10	3/8	Straightway	Butt weld, ANSI (B 36.10)	A	148B5117
REG-SB 15	15	1/2	Straightway	Butt weld, EN 10220	D	148B5229
	15	1/2	Straightway	Butt weld, ANSI (B 36.10)	A	148B5213
	15	1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5215
	15	1/2	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5217
REG-SB 20	20	3/4	Straightway	Butt weld, EN 10220	D	148B5329
	20	3/4	Straightway	Butt weld, ANSI (B 36.10)	A	148B5313
	20	3/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5315
	20	3/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5317
REG-SB 25	25	1	Straightway	Butt weld, EN 10220	D	148B5429
	25	1	Straightway	Butt weld, ANSI (B 36.10)	A	148B5413
	25	1	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5415
	25	1	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5417
REG-SB 32	32	1 1/4	Straightway	Butt weld, EN 10220	D	148B5529
	32	1 1/4	Straightway	Butt weld, ANSI (B 36.10)	A	148B5513
	32	1 1/4	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5515
	32	1 1/4	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5517
REG-SB 40	40	1 1/2	Straightway	Butt weld, EN 10220	D	148B5628
	40	1 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	148B5613
	40	1 1/2	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5615
REG-SB 50	50	2	Straightway	Butt weld, ANSI (B 36.10)	A	148B5724
REG-SB 65	65	2 1/2	Straightway	Butt weld, ANSI (B 36.10)	A	148B5809
REG-SB 50	50	2	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5725

Technical data and ordering

Ordering from the parts programme (valve body + top part)

Example:



Valve housing, size 25 (1 in), DIN butt weld, angleway, **148B5452**

Top part, REG-SA size 25 (1 in) **148B5480**



REG-SA / SB 10

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB 10	3/8	10	Angleway	Butt weld, EN 10220	D	148B5122
	3/8	10	Angleway	Butt weld, ANSI (B 36.10)	A	148B5124
REG-SA / SB 10	3/8	10	Straightway	Butt weld, EN 10220	D	148B5123
	3/8	10	Straightway	Butt weld, ANSI (B 36.10)	A	148B5125

Top part [1])

Type	Code no.
REG-SA 10	148B5112
REG-SB 10	148B5113

REG-SA / SB / LA / LB 15

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB / LA / LB 15	1/2	15	Angleway	Butt weld, EN 10220	D	148B5252
	1/2	15	Angleway	Butt weld, ANSI (B 36.10)	A	148B5254
	1/2	15	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5258
	1/2	15	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5256
	3/8	10	Angleway	Butt weld, F	F	148B6414
REG-SA / SB / LA / LB 15	1/2	15	Straightway	Butt weld, EN 10220	D	148B5253
	1/2	15	Straightway	Butt weld, ANSI (B 36.10)	A	148B5255
	1/2	15	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5259
	1/2	15	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5257
	3/8	10	Straightway	Butt weld, F	F	148B6424

Top part [1])

Type	Code no.
REG-SA 15	148B5280
REG-SB 15	148B5281
REG-LA 15	148B6401
REG-LB 15	148B6402

[1]) *Including gaskets and bolts*

Technical data and ordering

Ordering from the parts programme (valve body + top part)



REG-SA / SB / LA / LB 20

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB / LA / LB 20	3/4	20	Angleway	Butt weld, EN 10220	D	148B5352
	3/4	20	Angleway	Butt weld, ANSI (B 36.10)	A	148B5354
	3/4	20	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5358
	3/4	20	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5356
	3/4	20	Angleway	Butt weld, F	F	148B6415
REG-SA / SB / LA / LB 20	3/4	20	Straightway	Butt weld, EN 10220	D	148B5353
	3/4	20	Straightway	Butt weld, ANSI (B 36.10)	A	148B5355
	3/4	20	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5359
	3/4	20	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5357
	3/4	20	Straightway	Butt weld, F	F	148B6425

Top part [1])

Type	Code no.
REG-SA 20	148B5280
REG-SB 20	148B5281
REG-LA 20	148B6401
REG-LB 20	148B6402

REG-SA / SB / LA / LB 25

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB / LA / LB 25	1	25	Angleway	Butt weld, EN 10220	D	148B5452
	1	25	Angleway	Butt weld, ANSI (B 36.10)	A	148B5454
	1	25	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5458
	1	25	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5456
	1	25	Angleway	Butt weld, F	F	148B6416
REG-SA / SB / LA / LB 25	1	25	Straightway	Butt weld, EN 10220	D	148B5453
	1	25	Straightway	Butt weld, ANSI (B 36.10)	A	148B5455
	1	25	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5459
	1	25	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5457
	1	25	Straightway	Butt weld, F	F	148B6426

Top part [1])

Type	Code no.
REG-SA 25	148B5480
REG-SB 25	148B5481
REG-LA 25	148B6403
REG-LB 25	148B6404

REG-SA / SB / LA / LB 32

Valve body

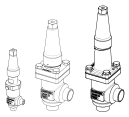
Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB / LA / LB 32	1 1/4	32	Angleway	Butt weld, EN 10220	D	148B5576
	1 1/4	32	Angleway	Butt weld, ANSI (B 36.10)	A	148B5578
	1 1/4	32	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5582
	1 1/4	32	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5580
	1 1/4	32	Angleway	Butt weld, F	F	148B6417
REG-SA / SB / LA / LB 32	1 1/4	32	Straightway	Butt weld, EN 10220	D	148B5577
	1 1/4	32	Straightway	Butt weld, ANSI (B 36.10)	A	148B5579
	1 1/4	32	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5583
	1 1/4	32	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5581
	1 1/4	32	Straightway	Butt weld, F	F	148B6427

Top part [1])

Type	Code no.
REG-SA 32	148B5480
REG-SB 32	148B5481
REG-LA 32	148B6403
REG-LB 32	148B6404

[1]) *Including gaskets and bolts*

Technical data and ordering



REG-SA / SB / LA / LB 40

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB / LA / LB 40	1 ½	40	Angleway	Butt weld, EN 10220	D	148B5652
	1 ½	40	Angleway	Butt weld, ANSI (B 36.10)	A	148B5654
	1 ½	40	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5656
	1 ½	40	Angleway	Butt weld, F	F	148B6418
REG-SA / SB / LA / LB 40	1 ½	40	Straightway	Butt weld, EN 10220	D	148B5653
	1 ½	40	Straightway	Butt weld, ANSI (B 36.10)	A	148B5655
	1 ½	40	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5657
	1 ½	40	Straightway	Butt weld, F	F	148B6428

Top part [1])

Type	Code no.
REG-SA 40	148B5480
REG-SB 40	148B5481
REG-LA 40	148B6403
REG-LB 40	148B6404

REG-SA / SB 50

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB 50	2	50	Angleway	Butt weld, EN 10220	D	148B5741
	2	50	Angleway	Butt weld, ANSI (B 36.10)	A	148B5743
	2	50	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5745
	2	50	Angleway	Butt weld, F	F	148B6419
REG-SA / SB 50	2	50	Straightway	Butt weld, EN 10220	D	148B5742
	2	50	Straightway	Butt weld, ANSI (B 36.10)	A	148B5744
	2	50	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5746
	2	50	Straightway	Butt weld, F	F	148B6429

Top part [1])

Type	Code no.
REG-SB 50	148B5734

REG-SA / SB 65

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
REG-SA / SB 65	2 ½	65	Angleway	Butt weld, EN 10220	D	148B5816
	2 ½	65	Angleway	Butt weld, ANSI (B 36.10)	A	148B5818
	2 ½	65	Angleway	Butt weld, F	F	148B6420
REG-SA / SB 65	2 ½	65	Straightway	Butt weld, EN 10220	D	148B5817
	2 ½	65	Straightway	Butt weld, ANSI (B 36.10)	A	148B5819
	2 ½	65	Straightway	Butt weld, F	F	148B6430

Top part [1])

Type	Code no.
REG-SB 65	148B5824

[1]) *Including gaskets and bolts*

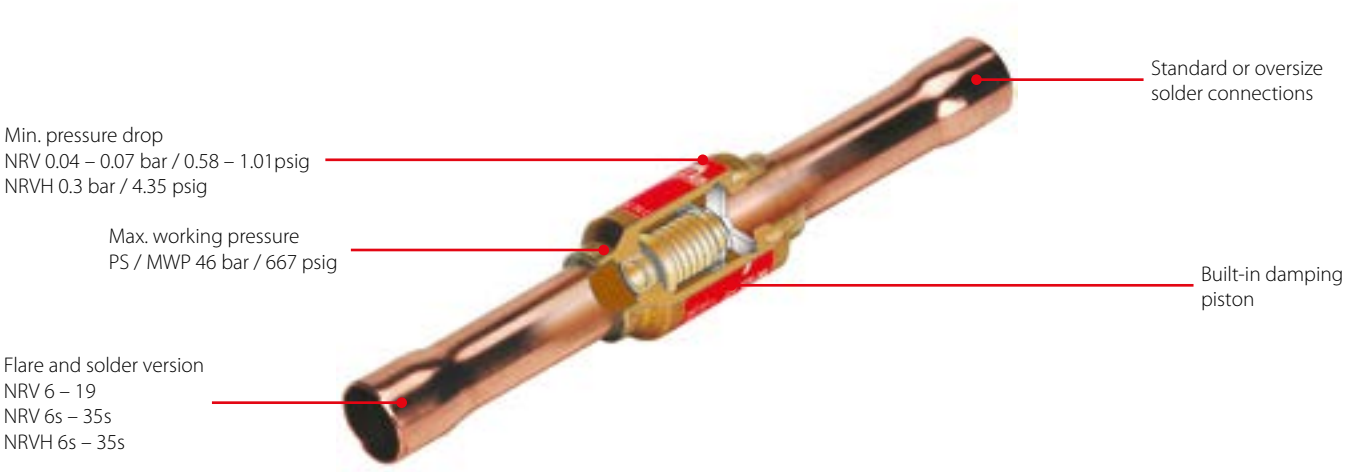
Quick Selection Notes:

NRV / NRVH - Check valves

NRV and NRVH check valves can be used in liquid, suction and hot gas lines in refrigeration and air conditioning plants with HCFC, HFC and HC flammable refrigerants. Special versions, with a max. working pressure of 90 bar / 1305 psig are available for CO_2 applications.

The valves ensure the correct flow direction and prevent back-condensation from a warm part of the system to the cold evaporator. A built-in damping piston makes the valves suitable for installation in lines where pulsation can occur, e. g. in the discharge line from the compressor.





Facts

Application:
- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Transport refrigeration

- Resonance problems can be avoided at partial load in the refrigeration plant
- Oversize connections provide flexibility in use
- Prevents back-condensation from warm to cold system part
- Ensures correct flow direction

- In refrigeration plants with compressors connected in parallel, it is advantageous to use NRVH, since the spring is stronger than in NRV
- Available in both straightway and angleway versions
- Solder versions are compliant with ATEX hazard zone 2

Technical data and ordering

NRV / NRVH - Check valves

Technical data

Type	Description
Temperature range	-50 – 140 °C / -58 – 284 °F
Max. working pressure (PS / MWP)	46 bar / 667 psig
Approvals	C UL US LISTED, EAC

Note
Only solder versions, connection size: 6 – 19 s, are allowed for flammable refrigerants.

NRV - Check valve, straight-way, flare



Ordering

Type	Connection type	Connection		Pressure drop across valve		K_V - value [2]	C_V - value [2]	Code no.
		[in]	[mm]	Δp [bar] [1]	Δp [psig] [1]	[m³/h]	[G/h]	
NRV6	Straight-way - flare	1/4	6	0.07	1.01	0.56	148	020-1040
NRV 10	Straight-way - flare	3/8	10	0.07	1.01	1.20	317	020-1041
NRV 12	Straight-way - flare	1/2	12	0.05	0.72	2.05	542	020-1042
NRV 16	Straight-way - flare	5/8	16	0.05	0.72	3.60	951	020-1043
NRV 19	Straight-way - flare	3/4	19	0.05	0.72	5.50	1453	020-1044

[1]) Δp = the minimum pressure at which the valve is completely open. The NRVH with a stronger spring is used in the discharge line from compressors connected in parallel.
[2]) The K_V / C_V value is the flow of water in [m²/h] / [G/h] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.
[3]) Oversize connections.

NRV - Check valve, straight-way, solder ODF

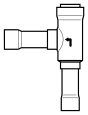


Ordering

Type	Connection type	Connection		Pressure drop across valve		K_V - value [2]	C_V - value [2]	Code no.
		[in]	[mm]	Δp [bar] [1]	Δp [psig] [1]	[m³/h]	[G/h]	
NRV 6s	Straight-way - Solder	1/4	–	0.07	1.01	0.56	148	020-1010
	Straight-way - Solder	–	6	0.07	1.01	0.56	148	020-1014
NRV 6s [3])	Straight-way - Solder	3/8	–	0.07	1.01	0.56	148	020-1057
	Straight-way - Solder	–	10	0.07	1.01	0.56	148	020-1050
NRV 10s	Straight-way - Solder	3/8	–	0.07	1.01	1.20	317	020-1011
	Straight-way - Solder	–	10	0.07	1.01	1.20	317	020-1015
NRV 10s [3])	Straight-way - Solder	1/2	–	0.07	1.01	1.20	317	020-1058
	Straight-way - Solder	–	12	0.07	1.01	1.20	317	020-1051
NRV 12s	Straight-way - Solder	1/2	–	0.05	0.72	2.05	542	020-1012
	Straight-way - Solder	–	12	0.05	0.72	2.05	542	020-1016
NRV 12s [3])	Straight-way - Solder	5/8	16	0.05	0.72	2.05	542	020-1052
NRV 16s	Straight-way - Solder	5/8	16	0.05	0.72	3.60	951	020-1018
NRV 16s [3])	Straight-way - Solder	–	18	0.05	0.72	3.60	951	020-1053
	Straight-way - Solder	3/4	19	0.05	0.72	3.60	951	020-1059
NRV 19s	Straight-way - Solder	–	18	0.05	0.72	5.50	1453	020-1017
	Straight-way - Solder	3/4	19	0.05	0.72	5.50	1453	020-1019
NRV 19s [3])	Straight-way - Solder	7/8	22	0.05	0.72	5.50	1453	020-1054

[1]) Δp = the minimum pressure at which the valve is completely open. The NRVH with a stronger spring is used in the discharge line from compressors connected in parallel.
[2]) The K_V / C_V value is the flow of water in [m²/h] / [G/h] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.
[3]) Oversize connections.

NRV - Check valve, angle-way, solder ODF



Ordering

Type	Connection type	Connection		Pressure drop across valve		K_V - value [2]	C_V - value [2]	Code no.
		[in]	[mm]	Δp [bar] [1]	Δp [psig] [1]	[m³/h]	[G/h]	
NRV 22s	Angle-way - solder	7/8	22	0.04	0.58	8.5	2245	020-1020
NRV 22s [3])	Angle-way - solder	1 1/8	–	0.04	0.58	8.5	2245	020-1060
	Angle-way - solder	–	28	0.04	0.58	8.5	2245	020-1055
NRV 28s	Angle-way - solder	1 1/8	–	0.04	0.58	16.5	4359	020-1021
	Angle-way - solder	–	28	0.04	0.58	16.5	4359	020-1025
NRV 28s [3])	Angle-way - solder	1 3/8	35	0.04	0.58	16.5	4359	020-1056
NRV 35s	Angle-way - solder	1 3/8	35	0.04	0.58	29.0	7661	020-1026
NRV 35s [3])	Angle-way - solder	1 5/8	–	0.04	0.58	29.0	7661	020-1061
	Angle-way - solder	–	42	0.04	0.58	29.0	7661	020-1027

[1]) Δp = the minimum pressure at which the valve is completely open. The NRVH with a stronger spring is used in the discharge line from compressors connected in parallel.
[2]) The K_V / C_V value is the flow of water in [m²/h] / [G/h] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.
[3]) Oversize connections.

Technical data and ordering

NRVH - Check valve, straight-way, solder ODF

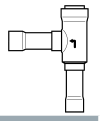


Ordering

Type	Version	Connection		Pressure drop across valve		K_V - value [2]	C_V - value [2]	Code no.
		[in]	[mm]	Δp [bar] [1]	Δp [psig] [1]	[m³/h]	[G/h]	
NRVH 6s [3]	Straight-way - solder	3/8	–	0.30	4.35	0.56	148	020-1069
	Straight-way - solder	–	10	0.30	4.35	0.56	148	020-1062
NRVH 10s	Straight-way - solder	3/8	–	0.30	4.35	1.20	317	020-1046
	Straight-way - solder	–	10	0.30	4.35	1.20	317	020-1036
NRVH 10s [3]	Straight-way - solder	1/2	–	0.30	4.35	1.20	317	020-1070
	Straight-way - solder	–	12	0.30	4.35	1.20	317	020-1063
NRVH 12s	Straight-way - solder	1/2	–	0.30	4.35	2.05	542	020-1039
	Straight-way - solder	–	12	0.30	4.35	2.05	542	020-1037
NRVH 12s [3]	Straight-way - solder	5/8	16	0.30	4.35	2.05	542	020-1064
NRVH 16s	Straight-way - solder	5/8	16	0.30	4.35	3.60	951	020-1038
NRVH 16s [3]	Straight-way - solder	–	18	0.30	4.35	3.60	951	020-1065
	Straight-way - solder	3/4	19	0.30	4.35	3.60	951	020-1071
NRVH 19s	Straight-way - solder	–	18	0.30	4.35	5.50	1453	020-1008
	Straight-way - solder	3/4	19	0.30	4.35	5.50	1453	020-1023
NRVH 19s [3]	Straight-way - solder	7/8	22	0.30	4.35	5.50	1453	020-1066

[1] Δp = the minimum pressure at which the valve is completely open. The NRVH with a stronger spring is used in the discharge line from compressors connected in parallel.
[2] The K_V / C_V value is the flow of water in [m³/h] / [G/h] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.
[3] Oversize connections..

NRVH - Check valve, angle-way, solder ODF

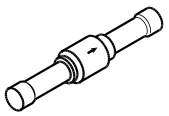


Ordering

Type	Connection type	Connection		Pressure drop across valve		K_V - value [2]	C_V - value [2]	Code no.
		[in]	[mm]	Δp [bar] [1]	Δp [psig] [1]	[m³/h]	[G/h]	
NRVH 22s	Angle-way - solder	7/8	22	0.30	4.35	8.5	2245	020-1032
NRVH 22s [3]	Angle-way - solder	1 1/8	–	0.30	4.35	8.5	2245	020-1072
	Angle-way - solder	–	28	0.30	4.35	8.5	2245	020-1067
NRVH 28s	Angle-way - solder	1 1/8	–	0.30	4.35	16.5	4359	020-1029
	Angle-way - solder	–	28	0.30	4.35	16.5	4359	020-1033
NRVH 28s [3]	Angle-way - solder	1 3/8	35	0.30	4.35	16.5	4359	020-1068
NRVH 35s	Angle-way - solder	1 3/8	35	0.30	4.35	29.0	7661	020-1034
NRVH 35s [3]	Angle-way - solder	1 5/8	–	0.30	4.35	29.0	7661	020-1073
	Angle-way - solder	–	42	0.30	4.35	29.0	7661	020-1035

[1] Δp = the minimum pressure at which the valve is completely open. The NRVH with a stronger spring is used in the discharge line from compressors connected in parallel.
[2] The K_V / C_V value is the flow of water in [m³/h] / [G/h] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.
[3] Oversize connections.

NRV 10s H - Check valve for R744 (CO_2)



Technical data

Type	Description
Refrigerants	R744 (CO_2)
Oil	POE, PAG
Temperature range	-50 – 140 °C / -58 – 285 °F
Max. working pressure (PS / MWP)	90 bar / 1305 psig
Approvals	C UL US LISTED

NRV 10s H - Check valve, straight-way - solder ODF

Ordering

Type	Connection type	Connection size		Differential pressure to start opening the valve		Pressure drop across valve ΔP_2		K_V - value [2]	C_V - value [2]	Code no.
		[in]	[mm]	[bar] [1]	[psi] [1]	[bar] [1]	[psi] [1]	[m³/h]	[G/h]	
NRV 10s H	Straightway Solder ODF	3/8	–	0.4	5.8	1.1	15.95	0.9	238	020-4000
	Straightway Solder ODF	–	10	0.4	5.8	1.1	15.95	0.9	238	020-4300

[1] ΔP_1 = the minimum pressure at which the valve start opening.
ΔP_2 = the minimum pressure at which the valve is completely open.
[2] The K_V / C_V value is the flow of water in [m³/h] / [G/h] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.

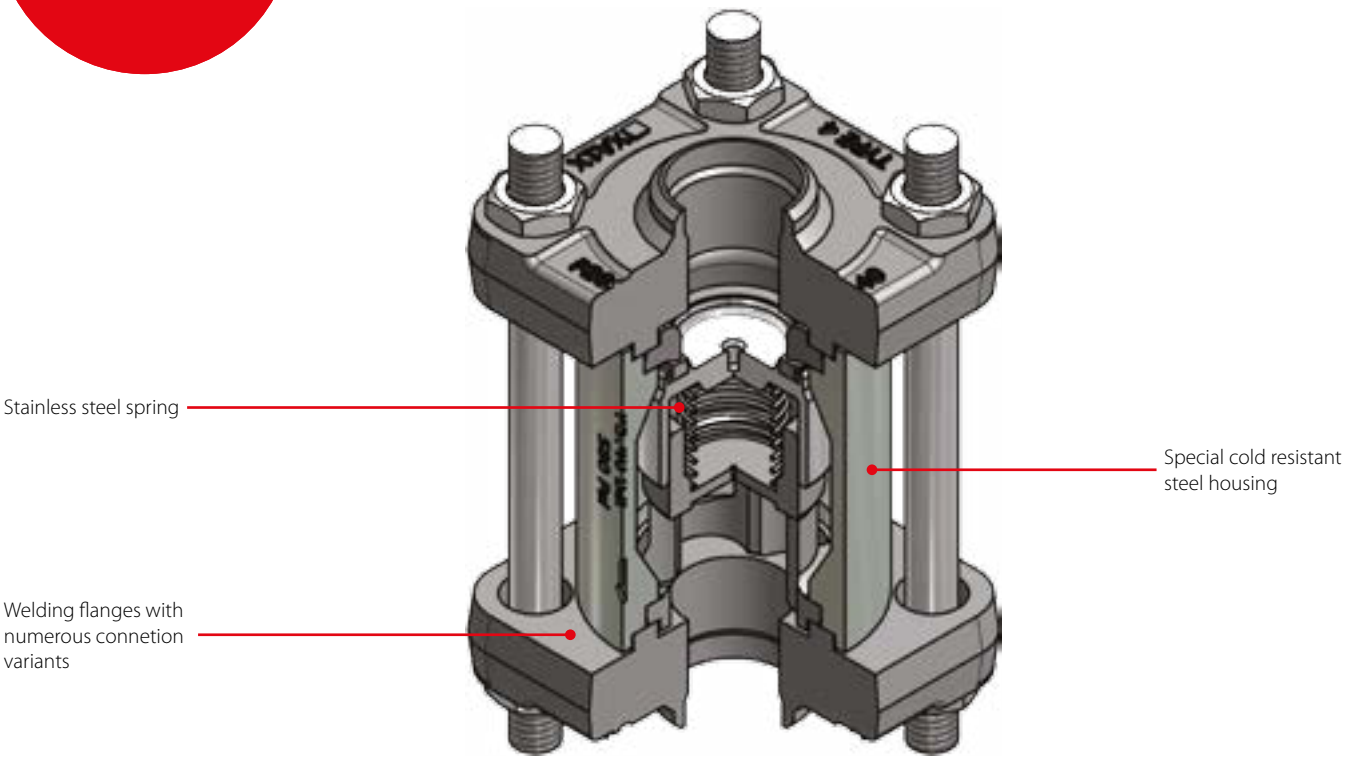
Quick Selection Notes:

NRVA - Check valve

NRVA check valves can be used in liquid, suction and hot gas lines in refrigeration and air conditioning plant with HCFC, HFC and R717 (Ammonia).

The valves ensure the correct flow direction and prevent back-condensation from a warm part of the system to the cold evaporator.





Facts

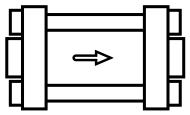
- Ensures correct direction of flow
- Valve housing made of steel
- Available for 40 bar g / 580 psig working pressure
- Large range of flanges with connection dimensions in accordance with standards: DIN, ANSI, SOC, SA and FPT
- Fitted with damping piston that makes the valves suitable for installation in lines where pulsation can occur, e.g. in the discharge line from the compressor

Technical data and ordering

NRVA - Check valve

Technical data

Type	Description
Refrigerants	Can be used for all normal, non-flammable refrigerants, including R 717, and non-corrosive gases / liquids. For further information please see installation instruction for NRVA. Use with flammable hydrocarbons cannot be recommended.
Pressure range	Max. working pressure PS / MWP: 40 bar g / 580 psig
Temperature range	-50 – 140 °C / -58 – 284 °F



NRVA - Complete valves incl. DIN 2448 flange

Ordering

Type	Weld flange connection	Δp [1]				K_V value [2]	C_V value [3]	Code no.
		With standard spring		With special spring				
	[in]	[bar]	[psig]	[bar]	[psig]	[m³/h]	[gal/min]	
NRVA 15	1/2	0.12	1.7	0.3	4.4	5	6	020-2000
NRVA 20	3/4	0.12	1.7	0.3	4.4	6	7	020-2001
NRVA 25	1	0.12	1.7	0.3	4.4	19	22	020-2002
NRVA 32	1 1/4	0.12	1.7	0.3	4.4	20	23	020-2003
NRVA 40	1 1/2	0.07	1.0	0.4	5.8	44	51	020-2004
NRVA 50	2	0.07	1.0	0.4	5.8	44	51	020-2005
NRVA 65	2 1/2	0.07	1.0	0.4	5.8	75	87	020-2006

[1]) Δp = the minimum pressure differential at which the valve is completely open.
[2]) The K_V value is the flow of water in [m³/h] at a pressure drop across valve of 1 [bar, ρ] = 1000 [kg/m³].
[3]) The C_V value is the flow of water in [gal/min] at a pressure drop across valve of 1 [psig, ρ] = 10 [lbs/gal].

Special spring for NRVA used in liquid lines where cold, thick oil or impurities may be present

Ordering

For type		Code no.
NRVA 15		020-2307
NRVA 20		020-2307
NRVA 25		020-2317
NRVA 32		020-2317
NRVA 40		020-2327
NRVA 50		020-2327
NRVA 65		020-2337

Valve body without flanges

Ordering

Type		Code no.
NRVA 15		020-2020
NRVA 20		020-2020
NRVA 25		020-2022
NRVA 32		020-2022
NRVA 40		020-2024
NRVA 50		020-2024
NRVA 65		020-2026

Staybolts and gaskets

Ordering

Type	Dimensions	Code no.
NRVA 15 / 20	M 12 × 115 mm	006-1107
NRVA 25 / 32	M 12 × 148 mm	006-1135
NRVA 40 / 50	M 12 × 167 mm	006-1137
NRVA 65	M 16 × 200 mm	006-1138

SCA-X, Check & stop valve / CHV-X, Check valve

SCA-X are check & stop valves with a built-in stop valve function. SCA-X are equipped with vented cap and have internal backseating enabling the spindle seal to be replaced whilst the valve still under pressure. CHV-X are check valves only.
SCA-X / CHV-X are available in angleway versions.
Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2), Propane, Butane, Iso-Butane and Ethane.

SCA-X and CHV-X are members of the SVL modular concept product family, so each valve housing is available with several different connection types and sizes, and it is possible to convert SCA-X or CHV-X to any other product in the SVL family by replacing the complete top part.
The valves are designed to open at very low differential pressures, allow favourable flow conditions and are easy to disassemble for inspection and service.





Facts

- Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2), Propane, Butane, Iso-Butane and Ethane
- Housing is Standard SVL angleway housing allowing other inserts from the SVL platform to be installed
- Designed to open at a very low differential pressure of 0.04 bar / 0.58 psig
- Designed with a built-in damping chamber preventing valve flutter in case of low refrigerant velocity and / or low density
- Each valve is clearly marked with type, size and performance range
- Easy to disassemble for inspection and service
- Internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure
- Optimal flow characteristics ensuring quick opening to the fully open position
- Protection against pulsation by built-in damping facility
- Housing and bonnet material is low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities
- Equipped with Stainless steel bolts
- Max. working pressure PS / MWP: 52 bar g / 754 psi g
- Temperature range: -60 – 150 °C / -76 – 302 °F

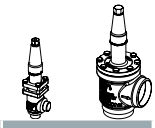
Technical data and ordering

SCA-X / CHV-X, Check valves

Technical data

Type	Description
Refrigerants	Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2), Propane, Butane, Iso-Butane and Ethane
Pressure range	52 bar g / 754 psig
Temperature range	-60 – 150 °C / -76 – 302 °F

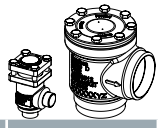
SCA-X, Check & stop valve, factory assembled



Ordering

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 15	1/2	15	Angleway	Butt weld, EN 10220	D	148B5208
	1/2	15	Angleway	Butt weld, ANSI (B 36.10)	A	148B5209
SCA-X 20	3/4	20	Angleway	Butt weld, EN 10220	D	148B5308
	3/4	20	Angleway	Butt weld, ANSI (B 36.10)	A	148B5309
SCA-X 25	1	25	Angleway	Butt weld, EN 10220	D	148B5408
	1	25	Angleway	Butt weld, ANSI (B 36.10)	A	148B5409
SCA-X 32	1 1/4	32	Angleway	Butt weld, EN 10220	D	148B5508
	1 1/4	32	Angleway	Butt weld, ANSI (B 36.10)	A	148B5509
SCA-X 40	1 1/2	40	Angleway	Butt weld, EN 10220	D	148B5608
	1 1/2	40	Angleway	Butt weld, ANSI (B 36.10)	A	148B5609
SCA-X 50	2	50	Angleway	Butt weld, EN 10220	D	148B5702
	2	50	Angleway	Butt weld, ANSI (B 36.10)	A	148B5703
	2	50	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5704
SCA-X 65	2 1/2	65	Angleway	Butt weld, EN 10220	D	148B5803
	2 1/2	65	Angleway	Butt weld, ANSI (B 36.10)	A	148B5802
SCA-X 80	3	80	Angleway	Butt weld, EN 10220	D	148B5902
	3	80	Angleway	Butt weld, ANSI (B 36.10)	A	148B5903
SCA-X 100	4	100	Angleway	Butt weld, EN 10220	D	148B6002
	4	100	Angleway	Butt weld, ANSI (B 36.10)	A	148B6004
SCA-X 125	5	125	Angleway	Butt weld, EN 10220	D	148B6102
	5	125	Angleway	Butt weld, ANSI (B 36.10)	A	148B6103

CHV-X, Check valve, factory assembled

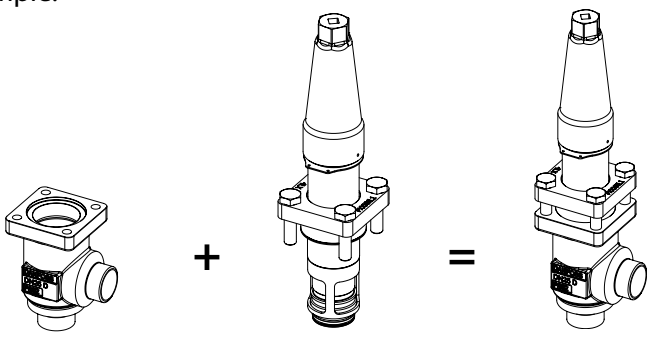


Ordering

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 15	1/2	15	Angleway	Butt weld, EN 10220	D	148B5236
	1/2	15	Angleway	Butt weld, ANSI (B 36.10)	A	148B5237
CHV-X 20	3/4	20	Angleway	Butt weld, EN 10220	D	148B5336
	3/4	20	Angleway	Butt weld, ANSI (B 36.10)	A	148B5337
CHV-X 25	1	25	Angleway	Butt weld, EN 10220	D	148B5436
	1	25	Angleway	Butt weld, ANSI (B 36.10)	A	148B5437
CHV-X 32	1 1/4	32	Angleway	Butt weld, EN 10220	D	148B5536
	1 1/4	32	Angleway	Butt weld, ANSI (B 36.10)	A	148B5537
	1 1/4	32	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5539
CHV-X 40	1 1/2	40	Angleway	Butt weld, EN 10220	D	148B5636
	1 1/2	40	Angleway	Butt weld, ANSI (B 36.10)	A	148B5637
CHV-X 50	2	50	Angleway	Butt weld, EN 10220	D	148B5736
	2	50	Angleway	Butt weld, ANSI (B 36.10)	A	148B5737
	2	50	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5740
CHV-X 65	2 1/2	65	Angleway	Butt weld, EN 10220	D	148B5838
	2 1/2	65	Angleway	Butt weld, ANSI (B 36.10)	A	148B5837
CHV-X 80	3	80	Angleway	Butt weld, EN 10220	D	148B5936
	3	80	Angleway	Butt weld, ANSI (B 36.10)	A	148B5937
CHV-X 100	4	100	Angleway	Butt weld, EN 10220	D	148B6036
	4	100	Angleway	Butt weld, ANSI (B 36.10)	A	148B6037
CHV-X 125	5	125	Angleway	Butt weld, EN 10220	D	148B6136
	5	125	Angleway	Butt weld, ANSI (B 36.10)	A	148B6137

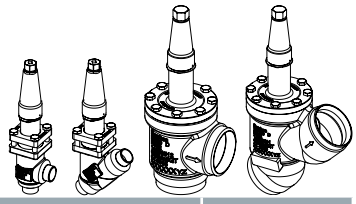
Ordering

Ordering SCA-X from the parts programme (valve body + top part)
Example:



Valve body, size 25 (1 in), DIN butt weld, angleway, **148B5452**

Top part, SCA-X size 25 (1 in) **148B5482**



SCA-X 15

Valve body

Type	Connection size [in]	Connection size [mm]	Execution	Connection type	Connection designation	Code no.
SCA-X 15	1/2	15	Angleway	Butt weld, EN 10220	D	148B5252
	1/2	15	Angleway	Butt weld, ANSI (B 36.10)	A	148B5254
	1/2	15	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5258
	1/2	15	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5256
	1/2	15	Angleway	Butt weld, F	F	148B6414
SCA-X 15	1/2	15	Straightway	Butt weld, EN 10220	D	148B5253
	1/2	15	Straightway	Butt weld, ANSI (B 36.10)	A	148B5255
	1/2	15	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5259
	1/2	15	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5257
	1/2	15	Straightway	Butt weld, F	F	148B6424

Top part [1])

Type	Code no.
SCA-X 15	148B5282

SCA-X 20

Valve body

Type	Connection size [in]	Connection size [mm]	Execution	Connection type	Connection designation	Code no.
SCA-X 20	3/4	20	Angleway	Butt weld, EN 10220	D	148B5352
	3/4	20	Angleway	Butt weld, ANSI (B 36.10)	A	148B5354
	3/4	20	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5358
	3/4	20	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5356
	3/4	20	Angleway	Butt weld, F	F	148B6415
SCA-X 20	3/4	20	Straightway	Butt weld, EN 10220	D	148B5353
	3/4	20	Straightway	Butt weld, ANSI (B 36.10)	A	148B5355
	3/4	20	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5359
	3/4	20	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5357
	3/4	20	Straightway	Butt weld, F	F	148B6425

Top part [1])

Type	Code no.
SCA-X 20	148B5282

SCA-X 25

Valve body

Type	Connection size [in]	Connection size [mm]	Execution	Connection type	Connection designation	Code no.
SCA-X 25	1	25	Angleway	Butt weld, EN 10220	D	148B5452
	1	25	Angleway	Butt weld, ANSI (B 36.10)	A	148B5454
	1	25	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5458
	1	25	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5456
	1	25	Angleway	Butt weld, F	F	148B6416
SCA-X 25	1	25	Straightway	Butt weld, EN 10220	D	148B5453
	1	25	Straightway	Butt weld, ANSI (B 36.10)	A	148B5455
	1	25	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5459
	1	25	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5457
	1	25	Straightway	Butt weld, F	F	148B6426

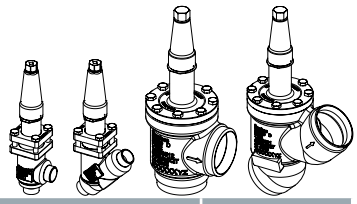
Top part [1])

Type	Code no.
SCA-X 25	148B5482

[1]) Including gaskets and bolts.

Ordering

Ordering SCA-X from the parts programme (valve body + top part)



SCA-X 32

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 32	1 1/4	32	Angleway	Butt weld, EN 10220	D	148B5576
	1 1/4	32	Angleway	Butt weld, ANSI (B 36.10)	A	148B5578
	1 1/4	32	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5582
	1 1/4	32	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5580
	1 1/4	32	Angleway	Butt weld, F	F	148B6417
SCA-X 32	1 1/4	32	Straightway	Butt weld, EN 10220	D	148B5577
	1 1/4	32	Straightway	Butt weld, ANSI (B 36.10)	A	148B5579
	1 1/4	32	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5583
	1 1/4	32	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5581
	1 1/4	32	Straightway	Butt weld, F	F	148B6427

Top part [1])

Type	Code no.
SCA-X 32	148B5482

SCA-X 40

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 40	1 1/2	40	Angleway	Butt weld, EN 10220	D	148B5652
	1 1/2	40	Angleway	Butt weld, ANSI (B 36.10)	A	148B5654
	1 1/2	40	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5656
	1 1/2	40	Angleway	Butt weld, F	F	148B6418
SCA-X 40	1 1/2	40	Straightway	Butt weld, EN 10220	D	148B5653
	1 1/2	40	Straightway	Butt weld, ANSI (B 36.10)	A	148B5655
	1 1/2	40	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5657
	1 1/2	40	Straightway	Butt weld, F	F	148B6428

Top part [1])

Type	Code no.
SCA-X 40	148B5482

SCA-X 50

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 50	2	50	Angleway	Butt weld, EN 10220	D	148B5741
	2	50	Angleway	Butt weld, ANSI (B 36.10)	A	148B5743
	2	50	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5745
	2	50	Angleway	Butt weld, F	F	148B6419
SCA-X 50	2	50	Straightway	Butt weld, EN 10220	D	148B5742
	2	50	Straightway	Butt weld, ANSI (B 36.10)	A	148B5744
	2	50	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5746
	2	50	Straightway	Butt weld, F	F	148B6429

Top part [1])

Type	Code no.
SCA-X 50	148B5735

SCA-X 65

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 65	2 1/2	65	Angleway	Butt weld, EN 10220	D	148B5816
	2 1/2	65	Angleway	Butt weld, ANSI (B 36.10)	A	148B5818
	2 1/2	65	Angleway	Butt weld, F	F	148B6420
SCA-X 65	2 1/2	65	Straightway	Butt weld, EN 10220	D	148B5817
	2 1/2	65	Straightway	Butt weld, ANSI (B 36.10)	A	148B5819
	2 1/2	65	Straightway	Butt weld, F	F	148B6430

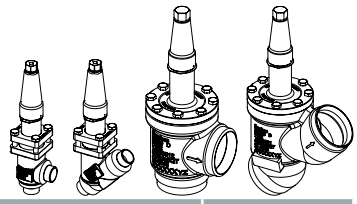
Top part [1])

Type	Code no.
SCA-X 65	148B5825

[1]) *Including gaskets and bolts.*

Ordering

Ordering SCA-X from the parts programme (valve body + top part)



SCA-X 80

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 80	3	80	Angleway	Butt weld, EN 10220	D	148B5912
	3	80	Angleway	Butt weld, ANSI (B 36.10)	A	148B5914
	3	80	Angleway	Butt weld, F	F	148B6421
SCA-X 80	3	80	Straightway	Butt weld, EN 10220	D	148B5913
	3	80	Straightway	Butt weld, ANSI (B 36.10)	A	148B5915
	3	80	Straightway	Butt weld, F	F	148B6431

Top part [1])

Type	Code no.
SCA-X 80	148B5918

SCA-X 100

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 100	4	100	Angleway	Butt weld, EN 10220	D	148B6014
	4	100	Angleway	Butt weld, ANSI (B 36.10)	A	148B6016
	4	100	Angleway	Butt weld, F	F	148B6422
SCA-X 100	4	100	Straightway	Butt weld, EN 10220	D	148B6015
	4	100	Straightway	Butt weld, ANSI (B 36.10)	A	148B6017
	4	100	Straightway	Butt weld, F	F	148B6432

Top part [1])

Type	Code no.
SCA-X 100	148B6019

SCA-X 125

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
SCA-X 125	5	125	Angleway	Butt weld, EN 10220	D	148B6112
	5	125	Angleway	Butt weld, ANSI (B 36.10)	A	148B6114
	5	125	Angleway	Butt weld, F	F	148B6423
SCA-X 125	5	125	Straightway	Butt weld, EN 10220	D	148B6113
	5	125	Straightway	Butt weld, ANSI (B 36.10)	A	148B6115
	5	125	Straightway	Butt weld, F	F	148B6433

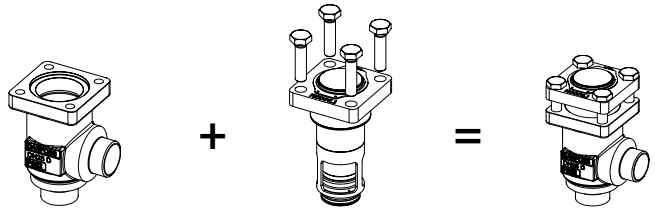
Top part [1])

Type	Code no.
SCA-X 125	148B6118

[1]) Including gaskets and bolts.

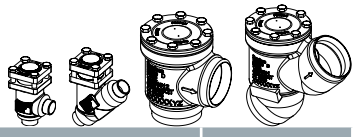
Ordering

Ordering CHV-X from the parts programme (valve body + top part)
Example:



Valve body, size 25 (1 in), DIN butt weld, angleway, **148B5452**

Top part, CHV-X size 25 (1 in) **148B5483**



CHV-X 15

Valve body

Type	Connection size [in]	Connection size [mm]	Execution	Connection type	Connection designation	Code no.
CHV-X 15	1/2	15	Angleway	Butt weld, EN 10220	D	148B5252
	1/2	15	Angleway	Butt weld, ANSI (B 36.10)	A	148B5254
	1/2	15	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5258
	1/2	15	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5256
	1/2	15	Angleway	Butt weld, F	F	148B6414
CHV-X 15	1/2	15	Straightway	Butt weld, EN 10220	D	148B5253
	1/2	15	Straightway	Butt weld, ANSI (B 36.10)	A	148B5255
	1/2	15	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5259
	1/2	15	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5257
	1/2	15	Straightway	Butt weld, F	F	148B6424

Top part [1])

Type	Code no.
CHV-X 15	148B5283

CHV-X 20

Valve body

Type	Connection size [in]	Connection size [mm]	Execution	Connection type	Connection designation	Code no.
CHV-X 20	3/4	20	Angleway	Butt weld, EN 10220	D	148B5352
	3/4	20	Angleway	Butt weld, ANSI (B 36.10)	A	148B5354
	3/4	20	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5358
	3/4	20	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5356
	3/4	20	Angleway	Butt weld, F	F	148B6415
CHV-X 20	3/4	20	Straightway	Butt weld, EN 10220	D	148B5353
	3/4	20	Straightway	Butt weld, ANSI (B 36.10)	A	148B5355
	3/4	20	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5359
	3/4	20	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5357
	3/4	20	Straightway	Butt weld, F	F	148B6425

Top part [1])

Type	Code no.
CHV-X 20	148B5283

CHV-X 25

Valve body

Type	Connection size [in]	Connection size [mm]	Execution	Connection type	Connection designation	Code no.
CHV-X 25	1	25	Angleway	Butt weld, EN 10220	D	148B5452
	1	25	Angleway	Butt weld, ANSI (B 36.10)	A	148B5454
	1	25	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5458
	1	25	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5456
	1	25	Angleway	Butt weld, F	F	148B6416
CHV-X 25	1	25	Straightway	Butt weld, EN 10220	D	148B5453
	1	25	Straightway	Butt weld, ANSI (B 36.10)	A	148B5455
	1	25	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5459
	1	25	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5457
	1	25	Straightway	Butt weld, F	F	148B6426

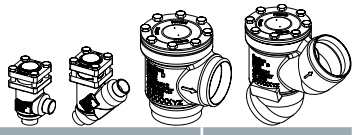
Top part [1])

Type	Code no.
CHV-X 25	148B5483

[1]) *Including gaskets and bolts.*

Ordering

Ordering CHV-X from the parts programme (valve body + top part)



CHV-X 32

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 32	1 1/4	32	Angleway	Butt weld, EN 10220	D	148B5576
	1 1/4	32	Angleway	Butt weld, ANSI (B 36.10)	A	148B5578
	1 1/4	32	Angleway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5582
	1 1/4	32	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5580
	1 1/4	32	Angleway	Butt weld, F	F	148B6417
CHV-X 32	1 1/4	32	Straightway	Butt weld, EN 10220	D	148B5577
	1 1/4	32	Straightway	Butt weld, ANSI (B 36.10)	A	148B5579
	1 1/4	32	Straightway	Female pipe thread (ANSI / ASME B 1.20.1)	FPT	148B5583
	1 1/4	32	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5581
	1 1/4	32	Straightway	Butt weld, F	F	148B6427

Top part [1])

Type	Code no.
CHV-X 32	148B5483

CHV-X 40

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 40	1 1/2	40	Angleway	Butt weld, EN 10220	D	148B5652
	1 1/2	40	Angleway	Butt weld, ANSI (B 36.10)	A	148B5654
	1 1/2	40	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5656
	1 1/2	40	Angleway	Butt weld, F	F	148B6418
CHV-X 40	1 1/2	40	Straightway	Butt weld, EN 10220	D	148B5653
	1 1/2	40	Straightway	Butt weld, ANSI (B 36.10)	A	148B5655
	1 1/2	40	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5657
	1 1/2	40	Straightway	Butt weld, F	F	148B6428

Top part [1])

Type	Code no.
CHV-X 40	148B5483

CHV-X 50

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 50	2	50	Angleway	Butt weld, EN 10220	D	148B5741
	2	50	Angleway	Butt weld, ANSI (B 36.10)	A	148B5743
	2	50	Angleway	Socket weld, ANSI (B 16.11)	SOC	148B5745
	2	50	Angleway	Butt weld, F	F	148B6419
CHV-X 50	2	50	Straightway	Butt weld, EN 10220	D	148B5742
	2	50	Straightway	Butt weld, ANSI (B 36.10)	A	148B5744
	2	50	Straightway	Socket weld, ANSI (B 16.11)	SOC	148B5746
	2	50	Straightway	Butt weld, F	F	148B6429

Top part [1])

Type	Code no.
CHV-X 50	148B5747

CHV-X 65

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 65	2 1/2	65	Angleway	Butt weld, EN 10220	D	148B5816
	2 1/2	65	Angleway	Butt weld, ANSI (B 36.10)	A	148B5818
	2 1/2	65	Angleway	Butt weld, F	F	148B6420
CHV-X 65	2 1/2	65	Straightway	Butt weld, EN 10220	D	148B5817
	2 1/2	65	Straightway	Butt weld, ANSI (B 36.10)	A	148B5819
	2 1/2	65	Straightway	Butt weld, F	F	148B6430

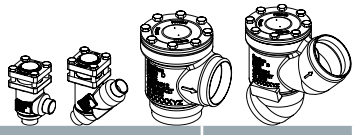
Top part [1])

Type	Code no.
CHV-X 65	148B5827

[1]) *Including gaskets and bolts.*

Ordering

Ordering CHV-X from the parts programme (valve body + top part)



CHV-X 80

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 80	3	80	Angleway	Butt weld, EN 10220	D	148B5912
	3	80	Angleway	Butt weld, ANSI (B 36.10)	A	148B5914
	3	80	Angleway	Butt weld, F	F	148B6421
CHV-X 80	3	80	Straightway	Butt weld, EN 10220	D	148B5913
	3	80	Straightway	Butt weld, ANSI (B 36.10)	A	148B5915
	3	80	Straightway	Butt weld, F	F	148B6431

Top part [1])

Type		Code no.
CHV-X 80		148B5919

CHV-X 100

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 100	4	100	Angleway	Butt weld, EN 10220	D	148B6014
	4	100	Angleway	Butt weld, ANSI (B 36.10)	A	148B6016
	4	100	Angleway	Butt weld, F	F	148B6422
CHV-X 100	4	100	Straightway	Butt weld, EN 10220	D	148B6015
	4	100	Straightway	Butt weld, ANSI (B 36.10)	A	148B6017
	4	100	Straightway	Butt weld, F	F	148B6432

Top part [1])

Type		Code no.
CHV-X 100		148B6022

CHV-X 125

Valve body

Type	Connection size		Execution	Connection type	Connection designation	Code no.
	[in]	[mm]				
CHV-X 125	5	125	Angleway	Butt weld, EN 10220	D	148B6112
	5	125	Angleway	Butt weld, ANSI (B 36.10)	A	148B6114
	5	125	Angleway	Butt weld, F	F	148B6423
CHV-X 125	5	125	Straightway	Butt weld, EN 10220	D	148B6113
	5	125	Straightway	Butt weld, ANSI (B 36.10)	A	148B6115
	5	125	Straightway	Butt weld, F	F	148B6433

Top part [1])

Type		Code no.
CHV-X 125		148B6119

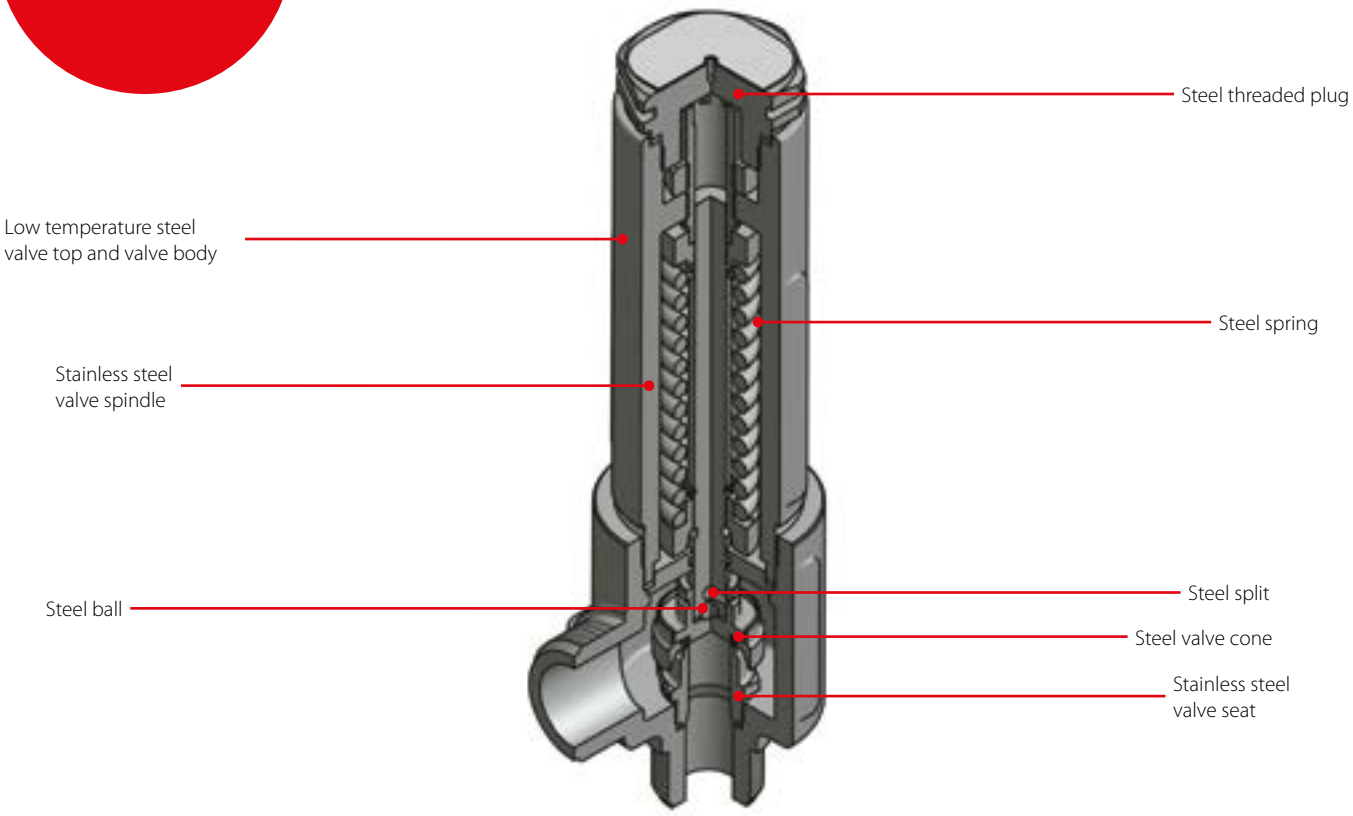
[1]) Including gaskets and bolts.

SFA 15 and SFA 15-50, Safety relief valves

SFA 15 and SFA 15-50 are standard, back pressure dependent safety relief valves in angleway execution, specially designed for protection of vessels and other components against excessive pressure.
SFA 15-50 has a 50% reduced capacity compared to SFA 50.

The valve is designed to meet the strict quality demands and safety requirements for refrigeration installations, specified by the international classification societies.
The valve is recommended as an external and internal safety relief valve in refrigeration plants.





Facts

- Applicable for the refrigerants HCFC, HFC, R717 (Ammonia), R744 (CO_2) within a temperature range of -50 °C* / 100 °C (-58 °F* / 212 °F)
- The spring housing is closed tightly to avoid refrigerant leakage
- The valves can be delivered with set pressures between:
  10 – 40 bar g / 145 – 580 psi g

** Below 30 °C (-22 °F) full tightness can only be guaranteed when refrigerant pressure is equal to or lower than 0.5 × P_{set}.*

Technical data and ordering

SFA 15 and SFA 15-50, Safety relief valve

Technical data

Type	Description
Refrigerants	Applicable for the refrigerants HCFC, HFC, R717 (Ammonia), R744 (CO_2) within a temperature range of -50 °C* / 100 °C (-58 °F* / 212 °F) Flammable hydrocarbons are not recommended.
Pressure setting range	10 – 40 bar g / 145 – 580 psi g
Pressure setting	The operating pressure of the plant should be at least 15% below the set pressure. This allows a perfect re-seating of the safety relief valve after having been activated.
Temperature range	-50 °C* / 100 °C (-58 °F* / 212 °F)

** Below 30 °C (-22 °F) full tightness can only be guaranteed when refrigerant pressure is equal to or lower than 0.5 × P_{set}.*

Important:
The SFA safety relief valve is dependent on the back pressure (if the back pressure is higher than the atmospheric pressure, the opening pressure will be higher than stated set pressure).
Special circumstances such as vibrations (which should be avoided) and oscillating pressure may require an increased difference between the operational pressure and the closing pressure.

Certified SFA valves with standard set pressure

Ordering

Type	Size		Set pressure		Code no.
	[mm]	[in]	[bar g]	[psi g]	
SFA 15 T 210	15	1/2	10	145	148F3210
SFA 15 T 211	15	1/2	11	160	148F3211
SFA 15 T 212	15	1/2	12	174	148F3212
SFA 15 T 213	15	1/2	13	189	148F3213
SFA 15 T 214	15	1/2	14)	203	148F3214
SFA 15 T 215	15	1/2	15	218	148F3215
SFA 15 T 216	15	1/2	16	232	148F3216
SFA 15 T 217	15	1/2	17	247	148F3217
SFA 15 T 218	15	1/2	18	261	148F3218
SFA 15 T 219	15	1/2	19	276	148F3219
SFA 15 T 220	15	1/2	20	290	148F3220
SFA 15 T 221	15	1/2	21	305	148F3221
SFA 15 T 222	15	1/2	22	319	148F3222
SFA 15 T 223	15	1/2	23	334	148F3223
SFA 15 T 224	15	1/2	24	348	148F3224
SFA 15 T 225	15	1/2	25	363	148F3225
SFA 15 T 226	15	1/2	26	377	148F3226
SFA 15 T 227	15	1/2	27	392	148F3227
SFA 15 T 228	15	1/2	28	406	148F3228
SFA 15 T 229	15	1/2	29	421	148F3229
SFA 15 T 230	15	1/2	30	435	148F3230
SFA 15 T 231	15	1/2	31	450	148F3231
SFA 15 T 232	15	1/2	32	464	148F3232
SFA 15 T 233	15	1/2	33	479	148F3233
SFA 15 T 234	15	1/2	34	493	148F3234
SFA 15 T 235	15	1/2	35	508	148F3235
SFA 15 T 236	15	1/2	36	522	148F3236
SFA 15 T 237	15	1/2	37	537	148F3237
SFA 15 T 238	15	1/2	38	551	148F3238
SFA 15 T 239	15	1/2	39	566	148F3239
SFA 15 T 240	15	1/2	40	580	148F3240

Technical data and ordering

Certified SFA valves with standard set pressure

Ordering

Type	Size		Set pressure		Code no.
	[mm]	[in]	[bar g]	[psi g]	
SFA 15-50 T 210	15	½	10	145	148F4000
SFA 15-50 T 211	15	½	11	160	148F4001
SFA 15-50 T 212	15	½	12	174	148F4002
SFA 15-50 T 213	15	½	13	189	148F4003
SFA 15-50 T 214	15	½	14	203	148F4004
SFA 15-50 T 215	15	½	15	218	148F4005
SFA 15-50 T 216	15	½	16	232	148F4006
SFA 15-50 T 217	15	½	17	247	148F4007
SFA 15-50 T 218	15	½	18	261	148F4008
SFA 15-50 T 219	15	½	19	276	148F4009
SFA 15-50 T 220	15	½	20	290	148F4010
SFA 15-50 T 221	15	½	21	305	148F4011
SFA 15-50 T 222	15	½	22	319	148F4012
SFA 15-50 T 223	15	½	23	334	148F4013
SFA 15-50 T 224	15	½	24	348	148F4014
SFA 15-50 T 225	15	½	25	363	148F4015
SFA 15-50 T 226	15	½	26	377	148F4016
SFA 15-50 T 227	15	½	27	392	148F4017
SFA 15-50 T 228	15	½	28	406	148F4018
SFA 15-50 T 229	15	½	29	421	148F4019
SFA 15-50 T 230	15	½	30	435	148F4020
SFA 15-50 T 231	15	½	31	450	148F4021
SFA 15-50 T 232	15	½	32	464	148F4022
SFA 15-50 T 233	15	½	33	479	148F4023
SFA 15-50 T 234	15	½	34	493	148F4024
SFA 15-50 T 235	15	½	35	508	148F4025
SFA 15-50 T 236	15	½	36	522	148F4026
SFA 15-50 T 237	15	½	37	537	148F4027
SFA 15-50 T 238	15	½	38	551	148F4028
SFA 15-50 T 239	15	½	39	566	148F4029
SFA 15-50 T 240	15	½	40	580	148F4030

Technical data and ordering

Certified SFA valves with standard set pressure and TÜV pressure setting certificate with each valve

Ordering

Type	Size		Set pressure		Code no.
	[mm]	[in]	[bar g]	[psi g]	
SFA 15 T 310	15	½	10	145	148F3310
SFA 15 T 311	15	½	11	160	148F3311
SFA 15 T 312	15	½	12	174	148F3312
SFA 15 T 313	15	½	13	189	148F3313
SFA 15 T 314	15	½	14	203	148F3314
SFA 15 T 315	15	½	15	218	148F3315
SFA 15 T 316	15	½	16	232	148F3316
SFA 15 T 317	15	½	17	247	148F3317
SFA 15 T 318	15	½	18	261	148F3318
SFA 15 T 319	15	½	19	276	148F3319
SFA 15 T 320	15	½	20	290	148F3320
SFA 15 T 321	15	½	21	305	148F3321
SFA 15 T 322	15	½	22	319	148F3322
SFA 15 T 323	15	½	23	334	148F3323
SFA 15 T 324	15	½	24	348	148F3324
SFA 15 T 325	15	½	25	363	148F3325
SFA 15 T 326	15	½	26	377	148F3326
SFA 15 T 327	15	½	27	392	148F3327
SFA 15 T 328	15	½	28	406	148F3328
SFA 15 T 329	15	½	29	421	148F3329
SFA 15 T 330	15	½	30	435	148F3330
SFA 15 T 331	15	½	31	450	148F3331
SFA 15 T 332	15	½	32	464	148F3332
SFA 15 T 333	15	½	33	479	148F3333
SFA 15 T 334	15	½	34	493	148F3334
SFA 15 T 335	15	½	35	508	148F3335
SFA 15 T 336	15	½	36	522	148F3336
SFA 15 T 337	15	½	37	537	148F3337
SFA 15 T 338	15	½	38	551	148F3338
SFA 15 T 339	15	½	39	566	148F3339
SFA 15 T 340	15	½	40	580	148F3340
SFA 15-50 T 210	15	½	10	145	148F4100
SFA 15-50 T 211	15	½	11	160	148F4101
SFA 15-50 T 212	15	½	12	174	148F4102
SFA 15-50 T 213	15	½	13	189	148F4103
SFA 15-50 T 214	15	½	14	203	148F4104
SFA 15-50 T 215	15	½	15	218	148F4105
SFA 15-50 T 216	15	½	16	232	148F4106
SFA 15-50 T 217	15	½	17	247	148F4107
SFA 15-50 T 218	15	½	18	261	148F4108
SFA 15-50 T 219	15	½	19	276	148F4109
SFA 15-50 T 220	15	½	20	290	148F4110
SFA 15-50 T 221	15	½	21	305	148F4111
SFA 15-50 T 222	15	½	22	319	148F4112
SFA 15-50 T 223	15	½	23	334	148F4113
SFA 15-50 T 224	15	½	24	348	148F4114
SFA 15-50 T 225	15	½	25	363	148F4115
SFA 15-50 T 226	15	½	26	377	148F4116
SFA 15-50 T 227	15	½	27	392	148F4117
SFA 15-50 T 228	15	½	28	406	148F4118
SFA 15-50 T 229	15	½	29	421	148F4119
SFA 15-50 T 230	15	½	30	435	148F4120
SFA 15-50 T 231	15	½	31	450	148F4121
SFA 15-50 T 232	15	½	32	464	148F4122
SFA 15-50 T 233	15	½	33	479	148F4123
SFA 15-50 T 234	15	½	34	493	148F4124
SFA 15-50 T 235	15	½	35	508	148F4125
SFA 15-50 T 236	15	½	36	522	148F4126
SFA 15-50 T 237	15	½	37	537	148F4127
SFA 15-50 T 238	15	½	38	551	148F4128
SFA 15-50 T 239	15	½	39	566	148F4129
SFA 15-50 T 240	15	½	40	580	148F4130

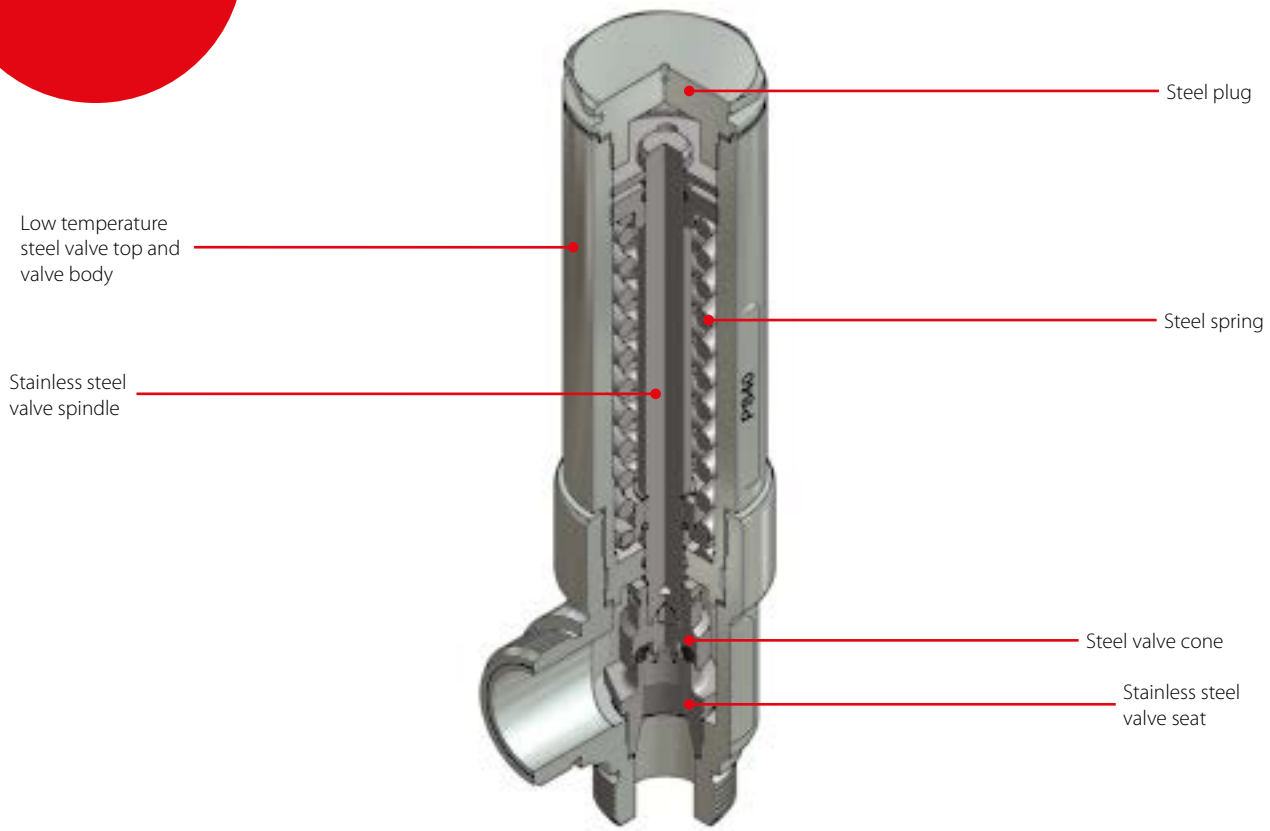
SFV - Safety relief valve

SFV 20 – SFV 25 are standard, back pressure dependent safety relief valves in angleway execution, specially designed for protection of vessels and other components against excessive pressure.

The valve is designed to meet the strict quality demands and safety requirements for refrigeration installations, specified by the international classification societies.

Features SFV





Facts

- Applicable for the refrigerants HCFC, HFC, R717 (Ammonia), R744 (CO_2) within a temperature range:
  -30 – 100 °C / -22 – 212 °F
- The inlet flow diameters of the valves are:
  - 18 mm (¾ in) for SFV 20
  - 23 mm (1 in) for SFV 25
- The valves can be delivered with set pressures between:
  10 – 25 bar g / 145 – 363 psi g

Technical data and ordering

SFV - Safety relief valve

Technical data

Type	Description
Refrigerants	Applicable for the refrigerants HCFC, HFC, R717 (Ammonia), R744 (CO_2) within a temperature range of -30 – 100 °C / -22 – 212 °F. Flammable hydrocarbons are not recommended.
Pressure	Pressure setting range: 10 – 40 bar g / 145 – 580 psi g
Pressure setting	The operating pressure of the plant should be at least 15% below the set pressure. This allows a perfect re-seating of the safety relief valve after having been activated.
Temperature range	-30 – 100 °C / -22 – 212 °F

Important:
the SFA safety relief valve is dependent on the back pressure (if the back pressure is higher than the atmospheric pressure, the opening pressure will be higher than stated set pressure).
Special circumstances such as vibrations (which should be avoided) and oscillating pressure may require an increased difference between the operational pressure and the closing pressure.

Certified SFV valves with standard set pressure

Ordering

Type	Size		Set pressure		Code no.
	[mm]	[in]	[bar g]	[psi g]	
SFV 20 T 210	20	3/4	10	145	2416+254
SFV 20 T 211	20	3/4	11	160	2416+255
SFV 20 T 212	20	3/4	12	174	2416+256
SFV 20 T 213	20	3/4	13	189	2416+150
SFV 20 T 214	20	3/4	14	203	2416+257
SFV 20 T 215	20	3/4	15	218	2416+258
SFV 20 T 216	20	3/4	16	232	2416+259
SFV 20 T 217	20	3/4	17	247	2416+260
SFV 20 T 218	20	3/4	18	261	2416+151
SFV 20 T 219	20	3/4	19	276	2416+261
SFV 20 T 220	20	3/4	20	290	2416+262
SFV 20 T 221	20	3/4	21	305	2416+152
SFV 20 T 222	20	3/4	22	319	2416+241
SFV 20 T 223	20	3/4	23	334	2416+263
SFV 20 T 224	20	3/4	24	348	2416+264
SFV 20 T 225	20	3/4	25	363	2416+183

Certified SFV valves with standard set pressure

Ordering

Type	Size		Set pressure		Code no.
	[mm]	[in]	[bar g]	[psi g]	
SFV 25 T 210	25	1	10	145	2416+265
SFV 25 T 211	25	1	11	160	2416+266
SFV 25 T 212	25	1	12	174	2416+267
SFV 25 T 213	25	1	13	189	2416+153
SFV 25 T 214	25	1	14	203	2416+268
SFV 25 T 215	25	1	15	218	2416+269
SFV 25 T 216	25	1	16	232	2416+270
SFV 25 T 217	25	1	17	247	2416+271
SFV 25 T 218	25	1	18	261	2416+154
SFV 25 T 219	25	1	19	276	2416+272
SFV 25 T 220	25	1	20	290	2416+273
SFV 25 T 221	25	1	21	305	2416+155
SFV 25 T 222	25	1	22	319	2416+242
SFV 25 T 223	25	1	23	334	2416+274
SFV 25 T 224	25	1	24	348	2416+275
SFV 25 T 225	25	1	25	363	2416+184

Technical data and ordering

Certified SFV valves with standard set pressure and TÜV pressure setting certificate with each valve

Ordering

Type	Size		Set pressure		Code no.
	[mm]	[in]	[bar g]	[psi g]	
SFV 20 T 310	20	3/4	10	145	2416+285
SFV 20 T 311	20	3/4	11	160	2416+286
SFV 20 T 312	20	3/4	12	174	2416+287
SFV 20 T 313	20	3/4	13	189	2416+160
SFV 20 T 314	20	3/4	14	203	2416+288
SFV 20 T 315	20	3/4	15	218	2416+289
SFV 20 T 316	20	3/4	16	232	2416+290
SFV 20 T 317	20	3/4	17	247	2416+291
SFV 20 T 318	20	3/4	18	261	2416+161
SFV 20 T 319	20	3/4	19	276	2416+292
SFV 20 T 320	20	3/4	20	290	2416+293
SFV 20 T 321	20	3/4	21	305	2416+162
SFV 20 T 322	20	3/4	22	319	2416+294
SFV 20 T 323	20	3/4	23	334	2416+295
SFV 20 T 324	20	3/4	24	348	2416+296
SFV 20 T 325	20	3/4	25	363	2416+186

Certified SFV valves with standard set pressure and TÜV pressure setting certificate with each valve

Ordering

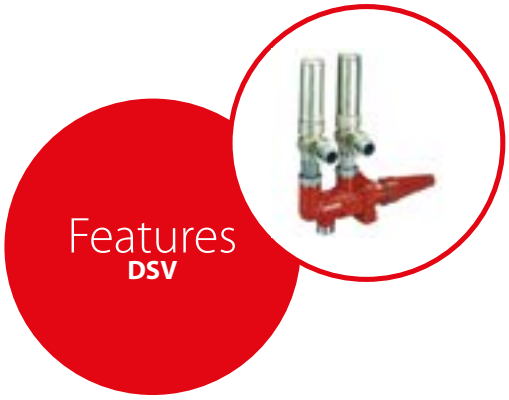
Type	Size		Set pressure		Code no.
	[mm]	[in]	[bar g]	[psi g]	
SFV 25 T 310	25	1	10	145	2416+297
SFV 25 T 311	25	1	11	160	2416+298
SFV 25 T 312	25	1	12	174	2416+299
SFV 25 T 313	25	1	13	189	2416+163
SFV 25 T 314	25	1	14	203	2416+300
SFV 25 T 315	25	1	15	218	2416+301
SFV 25 T 316	25	1	16	232	2416+302
SFV 25 T 317	25	1	17	247	2416+303
SFV 25 T 318	25	1	18	261	2416+164
SFV 25 T 319	25	1	19	276	2416+304
SFV 25 T 320	25	1	20	290	2416+305
SFV 25 T 321	25	1	21	305	2416+165
SFV 25 T 322	25	1	22	319	2416+306
SFV 25 T 323	25	1	23	334	2416+307
SFV 25 T 324	25	1	24	348	2416+308
SFV 25 T 325	25	1	25	363	2416+187

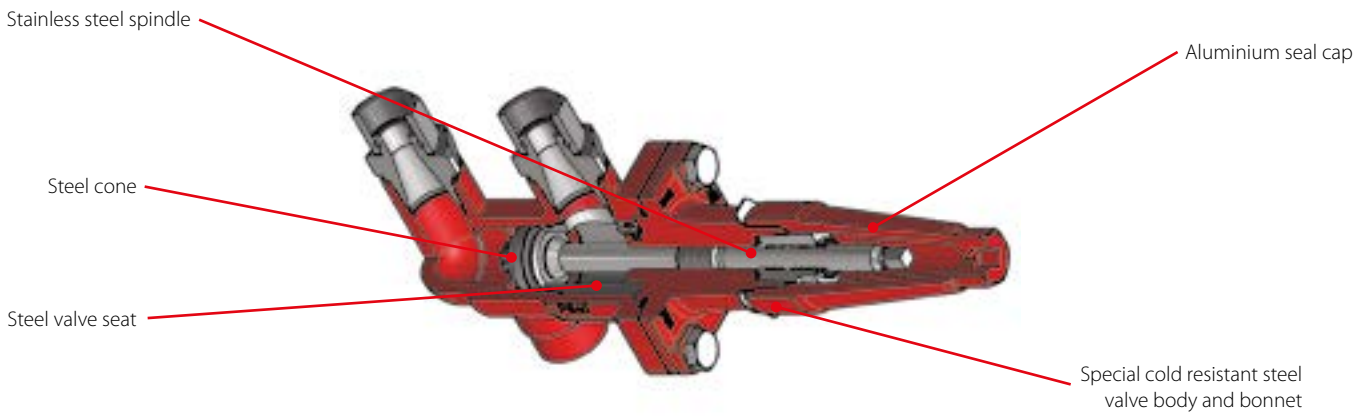
Quick Selection Notes:

DSV, Change-over valve

DSV are 3-way valves designed specifically for use with double safety valve systems, but also suitable for other purposes. The valves are equipped with threads for nipple / flange connection for easy inspection or replacement of safety valves.
DSV are designed to meet the strict quality demands on industrial refrigeration installations specified by the international classification societies.

DSV valves are carefully designed to establish favourable flow conditions. The valve cone is designed to ensure perfect closing. Even a light tightening of the valve will close the valve effectively. All valves are equipped with vented cap.





Facts

- Applicable to HCFC, non flammable HFC, R717 (Ammonia) and R744 (CO_2)
- Each valve type is clearly marked with type, size and performance range
- The valves and caps are prepared for sealing, to prevent operation by unauthorised persons, using a seal wire
- Accepts flow in both directions
- Housing and bonnet are made from low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities
- Max. operating pressure: 0 bar g / 580 psi g
- Temperature range: -50 – 100 °C / -58 – 212 °F
- DSV 1 when fitted with 2 × SFA 15 or DSV 2 when fitted with a combination of either 2 × SFA 15, or 2 × SFV 20, or 2 × SFV 25, meet the requirements according to EN13136 "*Safety Valves Calculations*" regarding max. 3% pressure drop in upstream line

Technical data

DSV, Change-over valve

Technical data

Type	Description	
Refrigerants	Applicable to all common non-flammable refrigerants, including R717 and non corrosive gases / liquids, dependent on sealing material compatability. Flammable hydrocarbons are not recommended. The valve is only recommended for use in closed circuits.	
Temperature range	-50 – 100 °C / -58 – 212 °F	
Pressure	Pressure setting range: 10 – 40 bar g / 145 – 580 psi g	
Capacity	K_v - value [m^3/h]	C_v - value [gal/min]
DSV 1	17.5	20.3
DSV 2	30.0	34.8

DSV, Change-over valve

Ordering

Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range.

Valve type	DSV inlet connection [in]	DSV outlet connection [in]	SFV outlet connection [in]	Safety valve combination	Code no.
DSV 1	D25 (1)	G ¾ Union	ND20 (¾)	SFA15	148F3005
DSV 2	FD20 (¾)	G ¾ thread flange	ND20 (¾)	SFA15	148F3006
DSV 2	FD25 (1)	G ¾ thread flange	ND20 (¾)	SFA15	148F3007
DSV 2	FD32 (1 ¼)	G ¾ thread flange	ND20 (¾)	SFA15	148F3008
DSV 2	FD25 (1)	G 1 ¼ thread flange	FD25 (1)	SFV20	148F3009
DSV 2	FD32 (1 ¼)	G 1 ¼ thread flange	FD25 (1)	SFV20	148F3010
DSV 2	FD32 (1 ¼)	G 1 ¼ thread flange	FD32 (1 ¼)	SFV25	148F3011
Connection fittings:	Weld branches DIN 2448		DSV valves are supplied with DSV inlet connection fittings, DSV outlet connection fittings, and SFA / SFV outlet connection fittings.		
	Weld nipples DIN 2448				
	Weld flanges DIN 2448				

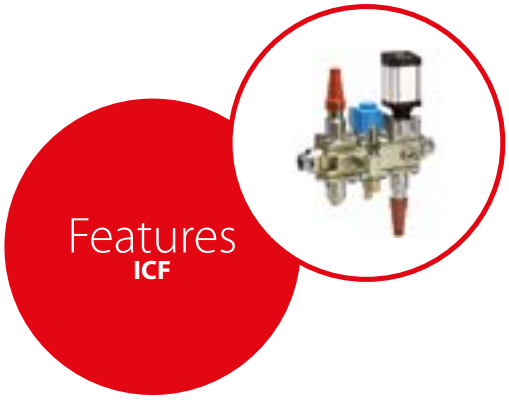
Important:

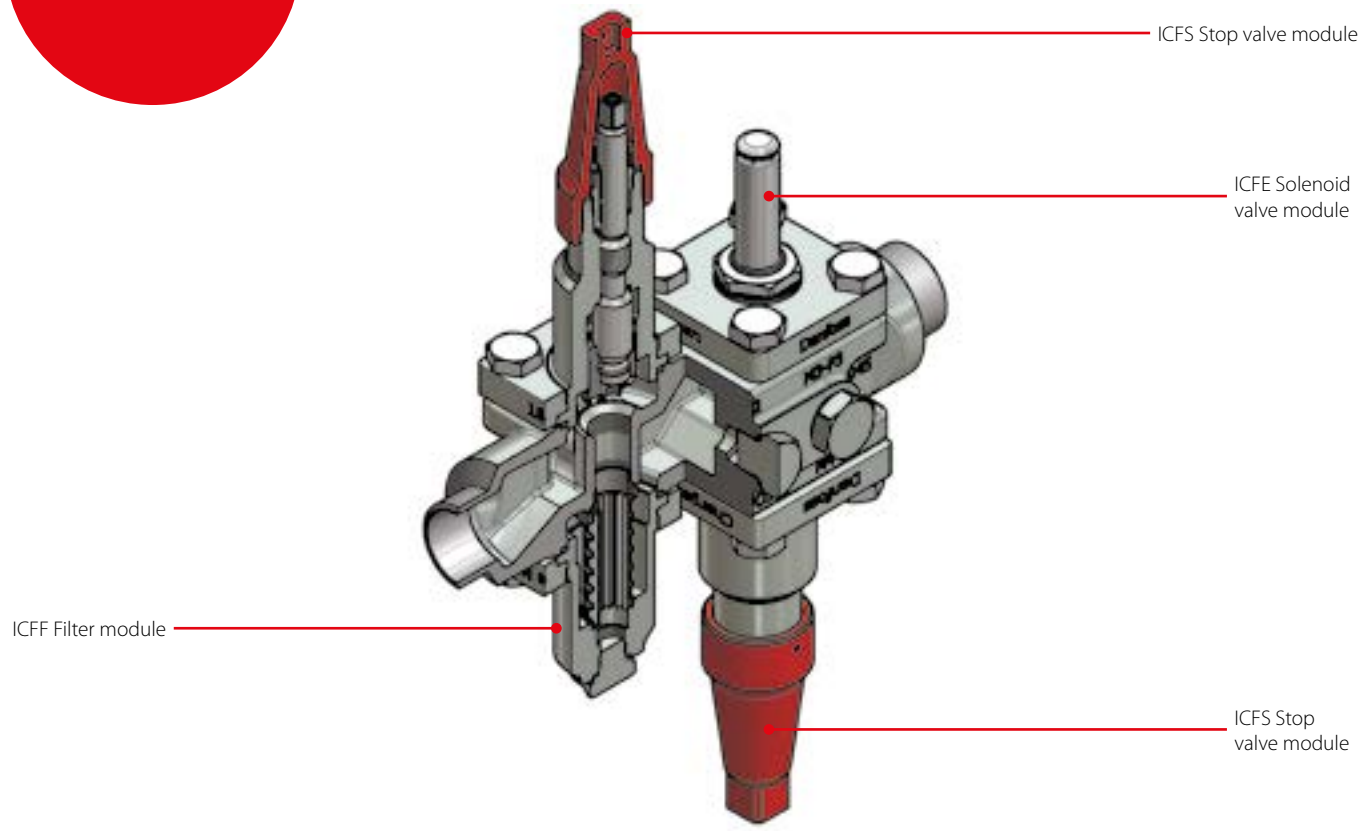
Where products need to be certified according to specific certification societies or where higher pressures are required, the relevant information should be included at the time of order.

ICF - Valve station

ICF valve stations can substitute a series of conventional mechanical, electro-mechanical and electronically operated valves, thereby providing a number of advantages in the design phase of a refrigeration plant as well as in the installation, service and maintenance. ICF control solutions consist of valve housing plus a maximum of four or six function modules.

The ICF valve stations are designed for low and high pressure refrigerants and can be used in liquid lines, compressor injection lines and hot gas lines with HCFC, non flammable HFC, R717 (Ammonia) or R744 (CO_2). ICF is Supplied as a complete assembly, it is fully tested at high pressure and its functions are tested under factory controlled conditions.





Configuration example
ICF 20-4-9

Facts

- Applicable to HCFC, non flammable HFC, R717 (Ammonia) and R744 (CO_2)
- The main components of the ICF valve station are:
  - A valve housing
  - A maximum of four or six function modules
- Designed for low and high pressure refrigerants and can be used in liquid lines, compressor injection and hotgas lines
- The ICF concept is designed to fulfil global refrigeration requirements. For specific approval information, please contact Danfoss
- One code number equals one application solution
- Modular concept:
  Each housing is available with several different connection types and sizes
- The ICF is leak tested at high pressure and its functions are tested under factory controlled conditions
- The ICF valve is a compact valve train ready for the jobsite. No need to disassembly prior to installation under normal welding procedures
- Down time during service is reduced to a fraction compared to conventional valve trains. The unique design of the ICF ensures a quick pump down and faster access to valve modules
- Valve service is performed by replacing the function module
- Standard side ports to fit service valves, pressure transmitters and sight glasses
- Direct weld connections (no leaks through flanges)
- Available with DIN and ANSI connections
- Low temperature steel housing
- High capacities, low pressure drop
- Compact design
- Low weight design

Technical data and application examples

ICF - Valve station

Technical data

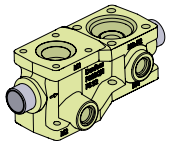
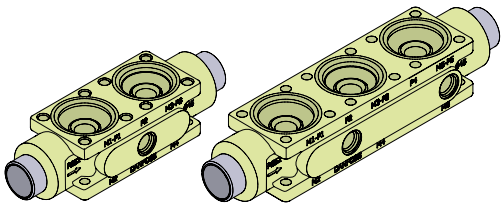
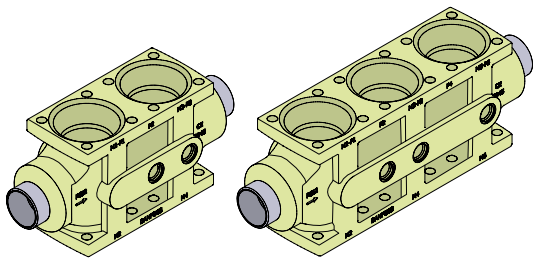
Refrigerants	Applicable to HCFC, non flammable HFC, R717 (Ammonia) or R744 (CO_2)
Temperature range	-60 – 120 °C / -76 – 248 °F
Presssure range	The ICF is designed for max. working pressure: 52 bar g / 754 psig
Modules	4 or 6, depending on housing version
Connections	Butt weld, DIN (EN 10220): 20D (¾ in) to 40D (1½ in) Butt weld, ANSI (B 36.10) : 20A (¾ in) to 32A (1½ in)

The ICF concept

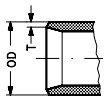
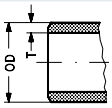
The main components of the ICF valve station are:

- A housing
- A maximum of four or six function modules

The valve body

Small frame	Medium frame		Large frame	
				
ICF 15-4	**ICF 20-4**	**ICF 20-6**	**ICF 25-4**	**ICF 25-6**

Available connection types:

D	A
	
Butt-weld DIN	**Butt-weld ANSI**

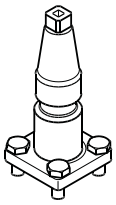
The function modules for ICF 15 and ICF 20

Description of the function modules for ICF 15 and ICF 20

ICF 15 and ICF 20 have the same function modules except for the two fixed modules M1 (stop valve ICFS 15) and M2 (filter ICFF 15) in ICF 15.

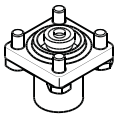
ICFS 15 / ICF 20
Stop valve module
This module has the function of a stop valve, and has a red cap.

ICFR 20A
Manual regulating valve module
This module has the function of a hand regulating valve, and has a yellow cap.



ICFS 15 / ICF 20 / ICFR 20A

ICFC 20
Check valve module
This module has the function of a check valve.

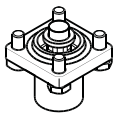


ICFC 20

ICFF 15 / ICF 20 / ICFF 20E
Filter module
This module functions as a filter.

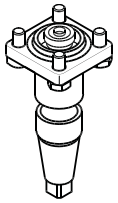
ICF 15, all connections:
Filter element 150µ (100 mesh)
60 cm² (9.3 in²)
ICF 20, with DIN / ANSI connections:
Pleated 150µ (100 mesh) 45 cm² (7.0 in²)

ICF 20 with SOC connections (ICFF 20E):
Pleated 250µ (72 mesh) / 160 cm² (24.8 in²)



ICFF 15 / ICF 20 / ICFF 20E

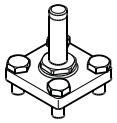
ICFN 20
Stop / check valve module
This module has the function of a combined stop and check valve, and has a red cap.



ICFN 20

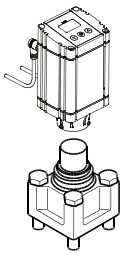
ICFE 20
Solenoid valve module
This module has the function of a normally closed solenoid valve for controlling the refrigerant flow.

ICFA 20
Electronic expansion valve module
This module has the function of an electronic pulse width modulating (PWM) expansion valve.



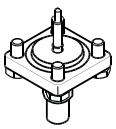
ICFE 20 / ICFA 20

ICM 20-A, B or C
Motor valve module
This module is a stepper motor actuator valve for on / off and modulating control of the refrigerant flow.



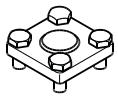
ICM 20-A, B or C

ICFO 20
Manual opening module
This module facilitates the manual opening of the solenoid valve (type ICFE).



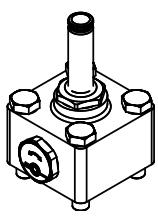
ICFO 20

ICFB 20
Blank top cover
This provides a blanking cover for unused module ports.



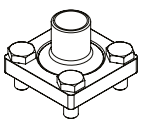
ICFB 20

ICFE 20H
Solenoid valve module with integrated manual opener
This module has the function of a normally closed solenoid valve for controlling the refrigerant flow.



ICFE 20H

ICFW 20
Welding module 20 DIN or ¾" SOC
This module is used for drain connection during hot-gas defrosting - in case of high capacity.

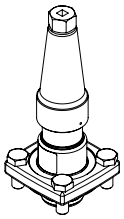


ICFW 20

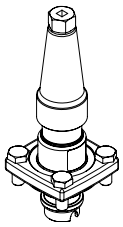
Note:
At about 10 % of maximum mass flow of ICFE 20H, the pressure differential correspond to about 0.07 Bar / 1 psi.
ICFE 20H will start to open at these conditions. At a pressure differential of minimum 0.2 Bar / 2.9 psi ICFE 20H will be 100 % open.

The function modules for ICF 25

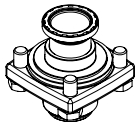
ICFS 25
Stop valve module
This module has the function of a stop valve, and has a red cap.


ICFS 25

ICFR 25, A or B
Manual regulating valve module
This module has the function of a hand regulating valve, and has a yellow cap.


ICFR 25

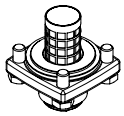
ICFC 25
Check valve module
This module has the function of a check valve.


ICFC 25

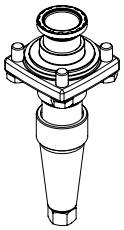
ICFF 25 / ICFF 25E
Filter module
This module functions as a filter.

Filter size:
ICF with DIN and ANSI (ICFF 25) connections: Pleated 150µ (100 mesh) / 160 cm² (24.8 in²)

ICF with SOC connections (ICF 25E):
Pleated 250µ (72 mesh) / 330 cm² (51.2 in²)

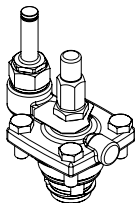

ICFF 25 / ICFF 25E

ICFN 25
Stop / check valve module
This module has the function of a combined stop and check valve, and has a red cap.

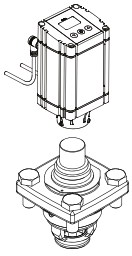

ICFN 25

ICFE 25
Solenoid valve module
This module has the function of a normally closed solenoid valve for controlling the refrigerant flow.

It has a built-in manual opening function.

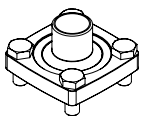

ICFE 25

ICM 25-A or B
Motor valve module
This module is a stepper motor actuator valve for on / off and modulating control of the refrigerant flow.

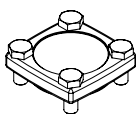

ICM 25-A or B

Note:
At about 10 % of maximum mass flow of ICFE 25 – 40, the pressure differential correspond to about 0.07 Bar / 1 psi. ICFE 25 – 40 will start to open at these conditions.
At a pressure differential of minimum 0.2 Bar / 2.9 psi ICFE 25 – 40 will be 100 % open.

ICFW 25
Welding module, 25 DIN or 25 (1") SOC
This module is used for drain connection during hot-gas defrosting - in case of high capacity.


ICFW 25

ICFB 25
Blank top cover
This provides a blanking cover for unused module ports.


ICFB 25

Selection

To determine the correct ICF valve station follow steps 1 through 4.

Step 1

Determine application and function requirements:

- Line: liquid DX, flooded or hot gas
- Control: on / off solenoid valve, motorised valve
- Defrost: electric or hot gas

From the above determine the application reference number (see the ordering section)

Step 2

Selection criteria
(Please use ICF calculation software - download the software from www.danfoss.com/ir)

- Refrigerant
- Capacity
- Temperature
- Circulation rate

From the above determine the valve station required, e.g.: ICF 20 complete with ICM 20-C

Step 3

Establish connection sizes and type

- 20 mm (¾ in), 25 mm (1 in), 32 (1¼ in) or 40 mm (1½ in)
- DIN butt-weld or ANSI butt-weld

Step 4

Establish code number
(see the ordering section)

To facilitate selection of the right ICF valve station Danfoss has predefined and grouped a large number of code numbers matching common applications:

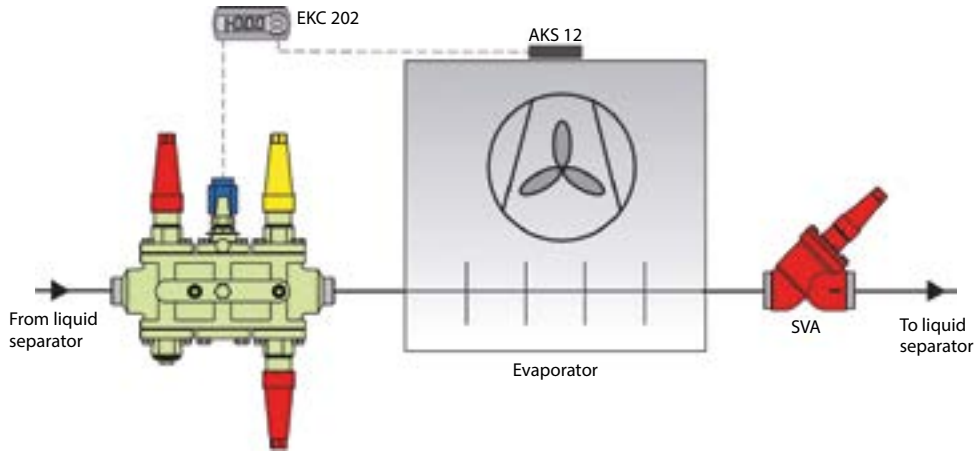
Application #		Sequence of functions					
Liquid feed							
1	Liquid feed (No hotgas defrost)	Stop	Filter	Solenoid	Man Open	Regul.	Stop
2	Liquid feed	Stop	Filter	Solenoid	Man Open	Regul.	Stop / Check
3	Liquid feed	Stop	Filter	Solenoid	Check	Regul.	Stop
10	Liquid feed (No hotgas defrost)	Stop	Filter	Solenoid	Regul.		
15	Liquid feed w. external Conn.	Stop	Filter	Solenoid	Check	Welding	Regul.
Solenoid common							
4	Solenoid - Liquid & Hot gas lines	Stop	Filter	Solenoid	Man Open	Stop	
8	Solenoid - Liquid & Hot gas lines	Stop	Filter	Solenoid	Man Open		
Liquid injection							
5	Liquid injection (expansion)	Stop	Filter	Solenoid	Man Open	Motor	Stop
12	Liquid injection (expansion) PWM	Stop	Filter	El. Exp.	Stop		
14	Liquid injection (expansion)	Stop	Filter	Motor	Stop		
Hot gas defrost							
9	Hot gas defrost	Stop	Filter	Solenoid	Stop		
Solenoid multiple evaporators							
11	Solenoid - Multiple evaporators	Stop	Filter	Solenoid	Check		
18	Solenoid - Multiple evaporators	Stop	Filter	Solenoid	Stop / Check		
Liquid PWM							
13	Liquid injection & liquid feed PWM	Stop	Filter	El. Exp.	Stop / Check		
Miscellaneous							
90	Multipurpose configurations						

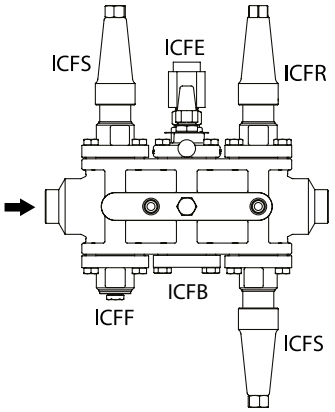
For specific identification of the different codes and flow capacity (K_v) please refer to ordering section.

Application example

Example of application: Liquid feed line

A valve combination for a flooded evaporator operating on / off from a thermostat and with electric defrost is required.
Manual override of the solenoid valve is requested. Common ICF configurations for this kind of application is shown here:

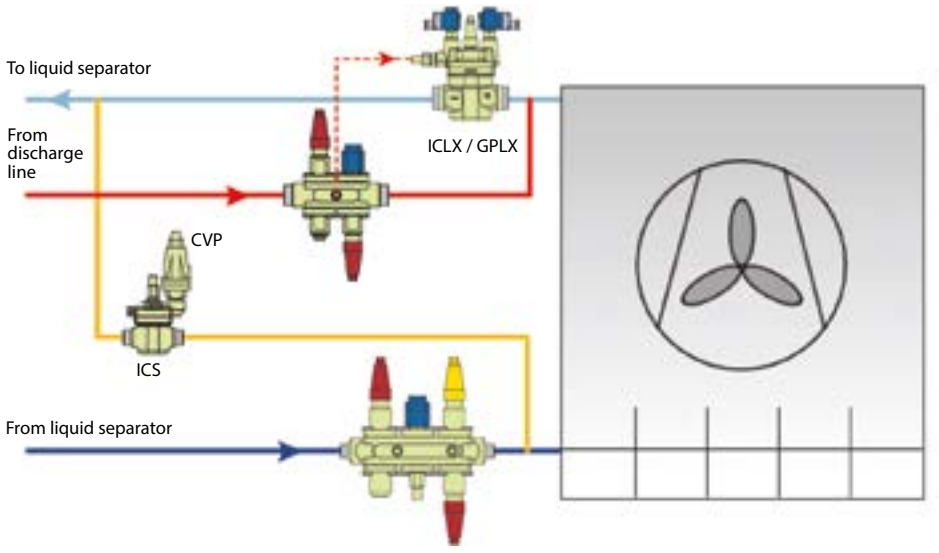


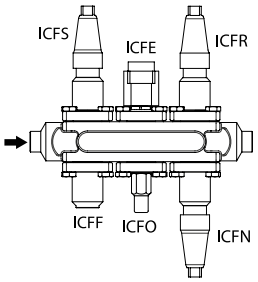


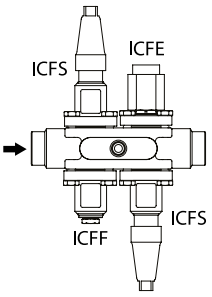
Not all valves are shown. Not to be used for construction purposes.

Example of application: Liquid feed line / Hot gas defrost line

Evaporator with soft opening gas powered valve ICLX in the suction line and hot gas defrost featuring:
ICF liquid feed station and ICF Hot gas station with side port to power ICLX.
ICS+CVP as a defrost regulator
(OFV optional depending on capacity).





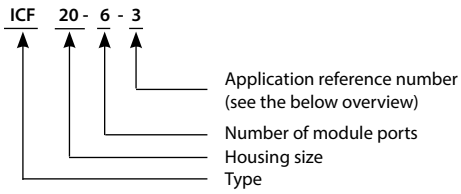


Not all valves are shown. Not to be used for construction purposes.

Ordering

Below Nomenclature show the generic configuration and application by identification of housing size, type and application group.

This designation is often used for discussion on possible solutions and will be the final identification on the valve label (see label example).



For ordering, connection size and type must be chosen to get the final identification.
The final identification is done by code number only (see next pages).

Label example:



Application overview (generic configuration - connection type and size excluded)

Application #		Sequence of functions					
Liquid feed							
1	Liquid feed (No hotgas defrost)	Stop	Filter	Solenoid	Man Open	Regul.	Stop
2	Liquid feed	Stop	Filter	Solenoid	Man Open	Regul.	Stop / Check
3	Liquid feed	Stop	Filter	Solenoid	Check	Regul.	Stop
10	Liquid feed (No hotgas defrost)	Stop	Filter	Solenoid	Regul.		
15	Liquid feed with external connection	Stop	Filter	Solenoid	Check	Welding	Regul.
Solenoid common							
4	Solenoid - Liquid & Hot gas lines	Stop	Filter	Solenoid	Man Open	Stop	
8	Solenoid - Liquid & Hot gas lines	Stop	Filter	Solenoid	Man Open		
Liquid injection							
5	Liquid injection (expansion)	Stop	Filter	Solenoid	Man Open	Motor	Stop
12	Liquid injection (expansion) PWM	Stop	Filter	El. Exp.	Stop		
14	Liquid injection (expansion)	Stop	Filter	Motor	Stop		
Hot gas defrost							
9	Hot gas defrost	Stop	Filter	Solenoid	Stop		
Solenoid multiple evaporators							
11	Solenoid - Multiple evaporators	Stop	Filter	Solenoid	Check		
18	Solenoid - Multiple evaporators	Stop	Filter	Solenoid	Stop / Check		
Liquid PWM							
13	Liquid injection & liquid feed PWM	Stop	Filter	El. Exp.	Stop / Check		
Miscellaneous							
90	Multipurpose configurations						

Ordering

Liquid feed

Application 1: Liquid feed (no hot gas defrost)

Type	# of modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 20	6	1	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	2.1	9.5	20.9	027L3004
ICF 20	6	1	1	25	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	2.1	10.1	22.2	027L3373
ICF 25	6	1	1 1/4	32	Butt-weld ANSI (B 36.10)	A	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICFR 25B	ICFS 25	7.3	23.8	52.4	027L4012
ICF 20	6	1	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	2.1	9.5	20.9	027L3000
ICF 20	6	1	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	2.1	9.7	21.3	027L3002
ICF 20	6	1	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICFR 20B	ICFS 20	2.8	10.3	22.7	027L3406
ICF 25	6	1	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICFR 25A	ICFS 25	5.3	23.6	51.9	027L4002
ICF 20	6	1	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	2.1	9.7	21.3	027L3003
ICF 20	6	1	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICFR 20B	ICFS 20	2.8	10.3	22.7	027L3407
ICF 25	6	1	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICFR 25A	ICFS 25	5.3	23.6	51.9	027L4006
ICF 25	6	1	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICFR 25B	ICFS 25	7.3	23.6	51.9	027L4011
ICF 25	6	1	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICFR 25B	ICFS 25	7.3	22.7	49.9	027L4016

Application 2: Liquid feed

Type	# of Modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 20	6	2	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFN 20	2.1	9.8	21.6	027L3013
ICF 20	6	2	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFN 20	2.1	9.7	21.3	027L3009
ICF 20	6	2	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFN 20	2.1	9.7	21.3	027L3011
ICF 20	6	2	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICFR 20B	ICFN 20	2.6	9.2	20.2	027L3410
ICF 20	6	2	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFN 20	2.1	9.7	21.3	027L3012
ICF 20	6	2	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICFR 20B	ICFN 20	2.6	9.2	20.2	027L3411
ICF 25	6	2	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICFR 25A	ICFN 25	5.3	23.3	51.3	027L4135

Application 3: Liquid feed

Type	# of Modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 20	6	3	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFR 20A	ICFS 20	2.1	9.9	21.8	027L3022
ICF 20	6	3	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFR 20A	ICFS 20	2.1	9.6	21.1	027L3018
ICF 20	6	3	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFR 20A	ICFS 20	2.1	9.7	21.3	027L3020
ICF 20	6	3	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFC 20	ICFR 20B	ICFS 20	2.6	10.6	23.3	027L3414
ICF 25	6	3	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25A	ICFS 25	5.3	23.4	51.5	027L4020
ICF 20	6	3	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFR 20A	ICFS 20	2.1	10.4	22.9	027L3021
ICF 20	6	3	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFC 20	ICFR 20B	ICFS 20	2.6	10.6	23.3	027L3415
ICF 25	6	3	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25A	ICFS 25	5.3	23.2	51.0	027L4024
ICF 25	6	3	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25B	ICFS 25	7.2	23.8	52.4	027L4029
ICF 25	6	3	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25B	ICFS 25	7.2	24.0	52.8	027L4034

Application 10: Liquid feed (no hot gas defrost)

Type	# of Modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 20	4	10	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFR 20A	–	–	2.3	6.6	14.5	027L3077
ICF 25	4	10	1 1/4	32	Butt-weld ANSI (B 36.10)	A	ICFS 25	ICFF 25	ICFE 25	ICFR 25A	–	–	5.5	16.1	35.4	027L4081
ICF 20	4	10	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFR 20A	–	–	2.3	6.7	14.7	027L3073
ICF 20	4	10	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFR 20B	–	–	3.0	7.9	17.4	027L3383
ICF 15	4	10	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 15*)	ICFF 15*)	ICFE 20H	ICFR 20B	–	–	3.1	7.0	15.4	027L4524
ICF 20	4	10	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFR 20A	–	–	2.3	7.2	15.8	027L3075
ICF 20	4	10	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFR 20B	–	–	3.0	7.9	17.4	027L3400
ICF 25	4	10	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFR 25A	–	–	5.5	15.9	35.0	027L4076
ICF 25	4	10	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFR 25B	–	–	7.9	15.9	35.0	027L4169
ICF 20	4	10	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFR 20A	–	–	2.3	6.7	14.7	027L3076
ICF 20	4	10	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFR 20B	–	–	3.0	7.9	17.4	027L3401
ICF 25	4	10	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFR 25A	–	–	5.5	15.8	34.8	027L4080
ICF 25	4	10	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFR 25B	–	–	7.9	15.4	33.9	027L4085
ICF 25	4	10	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFR 25B	–	–	7.9	15.8	34.8	027L4090

**) Fixed module*
ICAD and coils are not included and must be ordered separately.

***Note**:*
When used in systems with CO_2, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body. ICAD and coils are not included and must be ordered separately.

Ordering

Liquid feed

Application 15: Liquid feed with external connection

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						K_v total	Weight		Code no.
			[in]	[mm]			M1	M2	M3	M4	M5	M6		[kg]	[lbs]	
ICF 20	6	15	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFW 20D	ICFR 20A	2.1	9.1	20.0	027L3157
ICF 25	6	15	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFW 25D	ICFR 25A	5.3	21.8	48.0	027L4121
ICF 25	6	15	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFW 25D	ICFR 25B	7.3	22.7	49.9	027L4126
ICF 25	6	15	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFW 25D	ICFR 25B	7.3	21.9	48.2	027L4130

Solenoid common

Application 4: Solenoid - Liquid & hot gas lines

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						K_v total	Weight		Code no.
			[in]	[mm]			M1	M2	M3	M4	M5	M6		[kg]	[lbs]	
ICF 20	6	4	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFB 20	ICFS 20	3.0	9.2	20.2	027L3028
ICF 20	6	4	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFB 20	ICFS 20	3.0	9.2	20.2	027L3029

Application 8: Solenoid - Liquid & hot gas lines

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						K_v total	Weight		Code no.
			[in]	[mm]			M1	M2	M3	M4	M5	M6		[kg]	[lbs]	
ICF 15	4	8	1/2	15	Butt-weld ANSI (B 36.10)	A	ICFS 15*)	ICFF 15*)	ICFE 20	ICFO 20			3.2	5.7	12.6	027L4533
ICF 15	4	8	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 15*)	ICFF 15*)	ICFE 20	ICFO 20			3.2	5.7	12.6	027L4535
ICF 20	4	8	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFO 20			3.2	6.3	13.9	027L3062
ICF 15	4	8	1/2	15	Butt-weld DIN-EN 10220	D	ICFS 15*)	ICFF 15*)	ICFE 20	ICFO 20			3.2	5.7	12.6	027L4532
ICF 15	4	8	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 15*)	ICFF 15*)	ICFE 20	ICFO 20			3.2	5.7	12.6	027L4520
ICF 20	4	8	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20			3.2	7.2	15.8	027L3060
ICF 25	4	8	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25			9.9	12.4	27.3	027L4054
ICF 20	4	8	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20			3.2	6.3	13.9	027L3061
ICF 25	4	8	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25			9.9	14.5	31.9	027L4133
ICF 25	4	8	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25			9.9	14.5	31.9	027L4059

Liquid injection

Application 5: Liquid injection (expansion)

Type	# of modules	Appl. #	Connection size		Connection type		Module location						K_v total	Weight		Code no.
			[in]	[mm]			M1	M2	M3	M4	M5	M6		[kg]	[lbs]	
ICF 20	6	5	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-A	ICFS 20	0.6	9.6	21.1	027L3037
ICF 20	6	5	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-B	ICFS 20	1.9	9.9	21.8	027L3043
ICF 25	6	5	1 1/4	32	Butt-weld ANSI (B 36.10)	A	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICM 25-A	ICFS 25	5.0	23.0	50.6	027L4043
ICF 20	6	5	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-A33	ICFS 20	0.2	10.1	22.2	027L3367
ICF 20	6	5	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20-74	ICFE 20	ICFO 20	ICM 20-A33	ICFS 20	0.2	9.8	21.6	027L3151
ICF 20	6	5	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-A	ICFS 20	0.6	9.8	21.6	027L3034
ICF 20	6	5	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20-74	ICFE 20	ICFO 20	ICM 20-A	ICFS 20	0.6	9.8	21.6	027L3147
ICF 20	6	5	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-B66	ICFS 20	1.4	9.6	21.1	027L3161
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20-74	ICFE 20	ICFO 20	ICM 20-A33	ICFS 20	0.2	9.6	21.1	027L3153
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-A	ICFS 20	0.6	9.8	21.6	027L3036
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICM 20-A	ICFS 20	0.6	10.4	22.9	027L3322
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20-74	ICFE 20	ICFO 20	ICM 20-A	ICFS 20	0.6	9.8	21.6	027L3148
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-B	ICFS 20	1.9	9.6	21.1	027L3042
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20-74	ICFE 20	ICFO 20	ICM 20-B	ICFS 20	1.9	9.8	21.6	027L3149
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICM 20-B	ICFS 20	2.0	11.4	25.1	027L3325
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-C	ICFS 20	2.5	9.9	21.8	027L3047
ICF 20	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICM 20-C	ICFS 20	3.0	11.4	25.1	027L3328
ICF 25	6	5	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICM 25-A	ICFS 25	5.0	22.8	50.2	027L4038
ICF 20	6	5	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-B66	ICFS 20	1.4	9.6	21.1	027L3374
ICF 20	6	5	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-C	ICFS 20	2.5	9.8	21.6	027L3048
ICF 20	6	5	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFB 20	ICM 20-C	ICFS 20	3.0	10.3	22.7	027L3329
ICF 25	6	5	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFB 25	ICM 25-A	ICFS 25	5.0	23.0	50.6	027L4042
ICF 25	6	5	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25E	ICFE 25	ICFB 25	ICM 25-A	ICFS 25	5.0	21.9	48.2	027L4148

**) Fixed module*
ICAD and coils are not included and must be ordered separately.

***Note**:*
When used in systems with CO_2, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body. ICAD and coils are not included and must be ordered separately.

Ordering

Liquid injection

Application 12: Liquid injection (expansion) PWM

Type	# of modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 15	4	12	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 15*)	ICFF 15*)	ICFA 20	ICFS 20	–	–	0.3	6.2	13.7	027L4522
ICF 20	4	12	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFA 20	ICFS 20	–	–	0.3	6.8	15.0	027L3089

Application 14: Liquid injection (expansion)

Type	# of modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 15	4	14	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 15*	ICFF 15*	ICM 20-A	ICFS 20	–	–	0.6	6.8	15.0	027L4525
ICF 20	4	14	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICM 20-A	ICFS 20	–	–	0.6	7.3	16.1	027L3095
ICF 20	4	14	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICM 20-B66	ICFS 20	–	–	1.5	7.2	15.8	027L4155
ICF 20	4	14	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICM 20-A33	ICFS 20	–	–	0.2	6.6	14.5	027L3365
ICF 20	4	14	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICM 20-A	ICFS 20	–	–	0.6	7.3	16.1	027L3097
ICF 20	4	14	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICM 20-B	ICFS 20	–	–	2.1	7.2	15.8	027L3103
ICF 20	4	14	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICM 20-C	ICFS 20	–	–	3.3	7.2	15.8	027L3108
ICF 25	4	14	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICM 25-A	ICFS 25	–	–	5.4	15.5	34.1	027L4103
ICF 20	4	14	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICM 20-C	ICFS 20	–	–	3.3	7.3	16.1	027L3109
ICF 25	4	14	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICM 25-A	ICFS 25	–	–	5.4	15.4	33.9	027L4107

Hot gas defrost

Application 9: Hot gas defrost

Type	# of Modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 20	4	9	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFS 20	–	–	3.3	7.2	15.8	027L3069
ICF 20	4	9	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFS 20	–	–	3.3	6.7	14.7	027L3120
ICF 15	4	9	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 15*)	ICFF 15*)	ICFE 20H	ICFS 20	–	–	4.2	7.2	15.4	027L4521
ICF 20	4	9	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFS 20	–	–	3.3	7.2	15.8	027L3067
ICF 20	4	9	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFS 20	–	–	4.1	8.2	18.0	027L3333
ICF 25	4	9	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFS 25	–	–	9.7	15.8	34.8	027L4063
ICF 20	4	9	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFS 20	–	–	3.3	6.8	15.0	027L3068
ICF 20	4	9	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFS 20	–	–	4.1	7.6	16.7	027L3334
ICF 25	4	9	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFS 25	–	–	9.7	15.7	34.5	027L4067
ICF 25	4	9	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFS 25	–	–	9.7	15.7	34.5	027L4072

Solenoid multiple evaporators

Application 11: Solenoid - Multiple evaporators

Type	# of Modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 20	4	11	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20	ICFE 20	ICFC 20	–	–	3.0	6.5	14.3	027L3085
ICF 20	4	11	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	–	–	3.0	6.4	14.1	027L3083
ICF 20	4	11	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFC 20	–	–	3.7	8.0	17.6	027L3345
ICF 20	4	11	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	–	–	3.0	6.5	14.3	027L3084
ICF 20	4	11	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFC 20	–	–	3.7	7.4	16.3	027L3346
ICF 25	4	11	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	–	–	9.6	14.9	32.8	027L4094
ICF 25	4	11	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	–	–	9.6	13.7	30.1	027L4099

Application 18: Solenoid - Multiple evaporators

Type	# of Modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 25	4	18	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFN 25	–	–	9.6	16.6	36.5	027L4164
ICF 25	4	18	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFN 25	–	–	9.6	16.6	36.5	027L4165

**) Fixed module*
ICAD and coils are not included and must be ordered separately.

***Note**:*
When used in systems with CO_2, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body. ICAD and coils are not included and must be ordered separately.

Ordering

Liquid PWM

Application 13: Liquid injection & liquid feed PWM

Type	# of Modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 15	4	13	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 15*)	ICFF 15*)	ICFA 20	ICFN 20	–	–	0.3	6.2	13.7	027L4523

Miscellaneous

Application 90: Miscellaneous

Type	# of modules	Appl. #	Connection size [in]	Connection size [mm]	Connection type		Module location M1	M2	M3	M4	M5	M6	K_v total	Weight [kg]	Weight [lbs]	Code no.
ICF 20	4	90	3/4	20	Butt-weld ANSI (B 36.10)	A	ICFS 20	ICFF 20E	ICFE 20	ICFN 20	–	–	3.0	7.2	15.8	027L3371
ICF 20	4	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFR 20A	ICFF 20	ICFA 20	ICFN 20	–	–	0.3	6.4	14.1	027L3156
ICF 20	4	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFA 20	ICFC 20	–	–	0.3	6.8	15.0	027L3092
ICF 20	4	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFR 20A	ICFF 20	ICFE 20	ICFN 20	–	–	2.2	6.4	14.1	027L3155
ICF 20	4	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFN 20	–	–	3.0	7.2	15.8	027L3379
ICF 20	4	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFW 20-D	ICFE 20	ICFS 20	–	–	3.5	5.9	13.0	027L3385
ICF 20	4	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFB 20	ICFC 20	–	–	3.9	5.9	13.0	027L3141
ICF 20	4	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFN 20	–	–	3.0	6.7	14.7	027L3134
ICF 20	4	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFB 20	–	–	3.3	5.9	13.0	027L3364
ICF 20	4	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFN 20	–	–	3.7	7.2	15.8	027L3380
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFA 20	ICFS 20	0.3	9.4	20.7	027L3053
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFA 20	ICFC 20	ICFB 20	ICFS 20	0.3	9.9	21.8	027L3056
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICM 20-A	ICFN 20	0.6	9.7	21.3	027L3372
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFB 20	ICFR 20-A	ICFN 20	2.1	9.7	21.3	027L3133
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFB 20	ICFR 20A	2.1	9.4	20.7	027L3144
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICM 20-C	ICFS 20	2.5	9.7	21.3	027L3152
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFS 20	ICFC 20	2.8	9.8	21.6	027L3360
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFB 20	ICFC 20	ICFE 20	ICFO 20	ICFS 20	ICFB 20	2.9	6.2	13.6	027L3121
ICF 20	6	90	3/4	20	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFC 20	ICFB 20	ICFS 20	3.4	9.6	21.1	027L3387
ICF 20	6	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFA 20	ICFS 20	0.3	9.8	21.6	027L3361
ICF 20	6	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFR 20A	ICFB 20	2.1	9.1	20.0	027L3363
ICF 20	6	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20H	ICFC 20	ICFR 20B	ICFW 20D	2.6	12.0	26.4	027L3376
ICF 20	6	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFR 20B	ICFW 20D	2.6	11.5	25.3	027L3375
ICF 20	6	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 20	ICFF 20	ICFE 20	ICFC 20	ICFB 20	ICFS 20	2.9	9.4	20.7	027L3123
ICF 25	6	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25B	ICFW 25D	7.3	23.6	51.9	027L4168
ICF 25	6	90	1	25	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFS 25	ICFB 25	8.6	22.0	48.4	027L4151
ICF 25	6	90	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25B	ICFB 25	7.3	21.7	47.7	027L4143
ICF 25	6	90	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFR 25B	ICFW 25D	7.3	22.7	49.9	027L4160
ICF 25	6	90	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25B	ICFW 25D	7.3	21.9	48.2	027L4161
ICF 25	6	90	1 1/4	32	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFB 25	ICFS 25	8.6	21.9	48.2	027L4162
ICF 25	6	90	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25A	ICFW 25D	5.3	23.6	51.9	027L4157
ICF 25	6	90	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFR 25B	ICFW 25D	7.3	23.6	51.9	027L4166
ICF 25	6	90	1 1/2	40	Butt-weld DIN-EN 10220	D	ICFS 25	ICFF 25	ICFE 25	ICFC 25	ICFR 25B	ICFW 25D	7.3	21.7	47.7	027L4167

Note!
For special applications that cannot be covered by our predefined ICF code numbers please consult ***Coolselector® 2*** *or your local Danfoss Sales company.*

**) Fixed module*
ICAD and coils are not included and must be ordered separately.

Note*:*
When used in systems with CO_2, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body. ICAD and coils are not included and must be ordered separately.

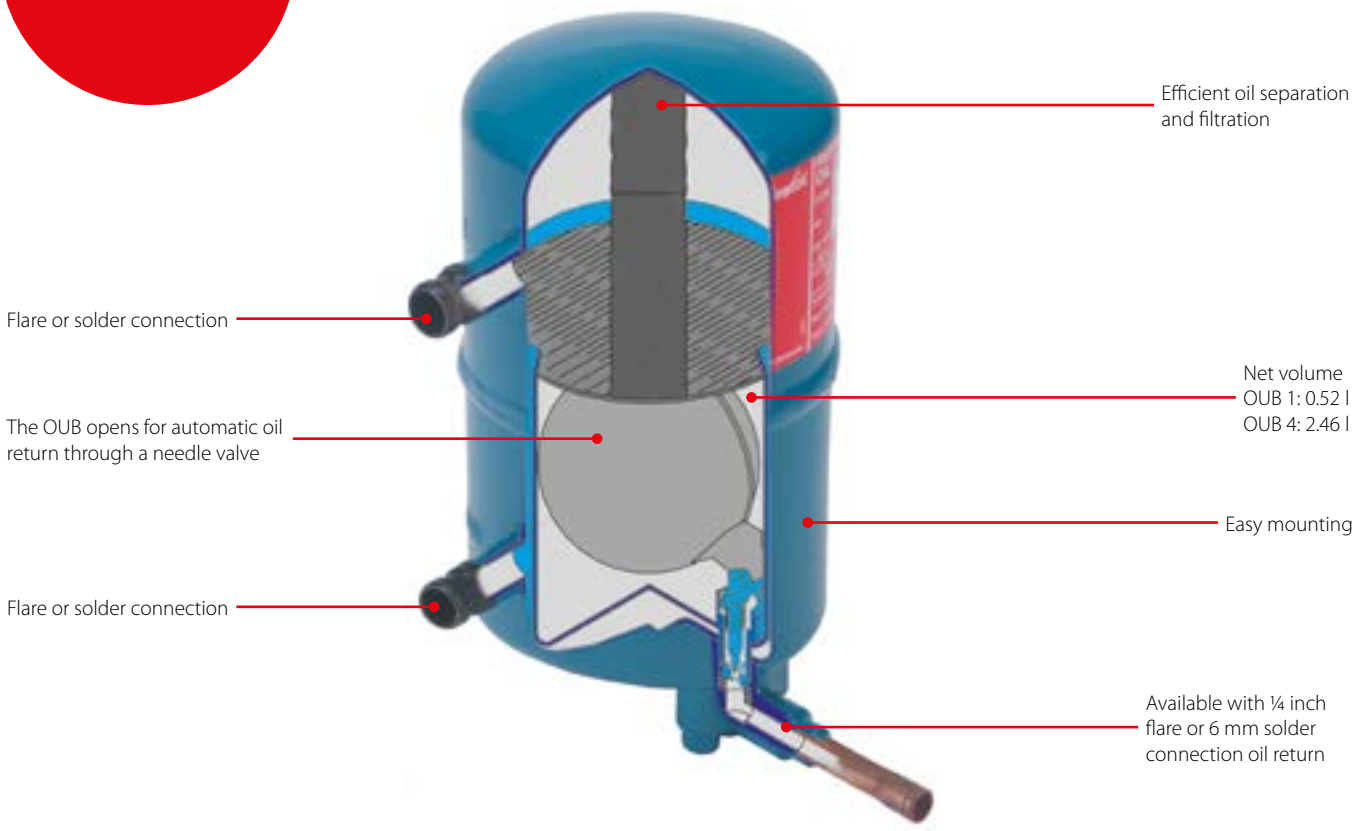
Quick Selection Notes:

OUB - Oil separator

OUB oil separators are for use in all refrigeration plants where the compressor lubricating oil must be returned direct to the compressor oil sump under all operation conditions.

In this way lubricating oil from the compressor is prevented from circulating with the refrigerant in the refrigeration system itself.



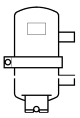


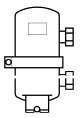
Facts

Application:
- Traditional refrigeration
- Air conditioning units

- High efficiency due to the interaction of reduced flow and a change of flow direction for oil concentration, and due to the collection of the separated oil at high temperature and the automatic return of the oil to the crankcase
- High efficiency protects against liquid hammer in compressor
- Better utilisation of condenser and evaporator capacity (no oil-gas collection)
- Prevents compressor breakdown caused by lack of lubrication
- Increases compressor operating life
- Ensures oil return to compressor oil sump
- Pulsation and noise damping on high- pressure side of system
- Max. working pressure: PS 28 bar
- OUB 1: for use with HCFC, HFC and HC
- OUB 1: compliant with ATEX hazard zone 2
- OUB 4: for use with HCFC and non flammable HFC
- Temperature of medium: -40 – 120 °C
- Net volume:
  - OUB 1: 0.52 l
  - OUB 4: 2.46 l

Technical data and ordering


OUB 1s


OUB 1/OUB 4

OUB - Oil separator

Ordering

Type	Connection			Rated plant capacity [kW]					Code no. for OUB + unions (straightway)
	[in]	[mm]	Version	R22	R134a	R404A	R507	R407C	
OUB 1	3/8	10	Flare	3.1	2.5	3.5	3.5	4.4	040B0010 + 2 × 040B0132
	3/8	–	Solder	3.1	2.5	3.5	3.5	4.4	040B0010 + 2 × 040B0140
	1/2	12	Flare	3.1	2.5	3.5	3.5	4.4	040B0010 + 2 × 040B0134
	1/2	–	Solder	3.1	2.5	3.5	3.5	4.4	040B0010 + 2 × 040B0142
	5/8	16	Flare	3.1	2.5	3.5	3.5	4.4	040B0010 + 2 × 040B0136
	5/8	16	Solder	3.1	2.5	3.5	3.5	4.4	040B0010 + 2 × 040B0144
	Without connection unions								040B0010
OUB 1s 1)	–	10	Solder	3.1	2.5	3.5	3.5	4.4	040B0023
OUB 1s 2)	–	10	Solder	3.1	2.5	3.5	3.5	4.4	040B0029
OUB 4	5/8	16	Flare	11.6	9.6	12.8	12.8	16.0	040B0040 + 2 × 040B0256
	5/8	16	Solder	11.6	9.6	12.8	12.8	16.0	040B0040 + 2 × 040B0266
	3/4	–	Solder	11.6	9.6	12.8	12.8	16.0	040B0040 + 2 × 040B0268
	7/8	–	Solder	11.6	9.6	12.8	12.8	16.0	040B0040 + 2 × 040B0270
	–	22	Solder	11.6	9.6	12.8	12.8	16.0	040B0040 + 2 × 040B0264
	1 1/8	–	Solder	11.6	9.6	12.8	12.8	16.0	040B0040 + 2 × 040B0274
	Without connection unions								040B0040

1) ¼ inch flare connection to oil return line.
2) 6 mm ODF solder connection to oil return line.

Electronic controls – Overview

Type	Code number	Relay / temperature sensor	Defrost heating	Cooling or heating function	Rail heat	Fan	Alarm / light / misc.	2nd compressor	DI / DO / AI / AO	Batterie for clock (optional)	HACCP via system / HACCP integrated	Application module	Definition and waiting of thermostat sensors	Defrost / defrost on demand / defrost on demand via bus	Voltage 230 V	Voltage 115 V	Voltage 24 V	With screw terminals	With plug connection	Valve control	Room thermostat	UPS connection	Pressure controls	0-10 V / 4-20 mA input	0-10 V / 4-20 mA output	Superheat regulation	Reference displacement	External display	Data communication optional / on board	Note – language
Case controller																														
EKC 202A	084B8521	3/2	x				x/-/-		x/x/-/-	x	x/-			x/-/x	x					TEV	x						x		x/-	
EKC 202B	084B8522	4/2	x			x	x/-/-		x/x/-/-	x	x/-			x/-/x	x					TEV	x						x		x/-	
EKC 202C	084B8523	4/2	x			x	x/x/-		x/x/-/-	x	x/-			x/-/x	x					TEV	x						x		x/-	
EKC 202C-MS	084B8543	4/2	x			x	x/x/-		x/x/-/-	x	-/-			x/-/x	x					TEV	x						x		x/-	NTC
EKC 302A	084B4162	2/2					x/-/-		x/x/-/-		x/-			x/-/x	x				x	TEV	x								x/+	
EKC 302B	084B4163	3/2	x			x			x/x/-/-		x/-			x/-/x	x				x	TEV	x								x/+	
EKC 302D	084B4164	4/3	x		x	x	x/x/x		x/x/-/-		x/-	x		x/-/x	x				x	TEV	x								x/+	
AK-CC 210	084B8520	4/3	x		x	x	x/x/x	x	x/x/-/-	x	x/x	x	x	x/x/x	x					TEV	x						x		x/-	
AK-CC 250A	084B8528	4/3	x		x	x	x/x/x	x	x/x/-/-	x	x/x	x	x	x/x/x	x					TEV	x						x		-/x	
AK-CC 350	084B4165	4/3	x		x	x	x/x/x	x	x/x/-/-		x/x	x	x	x/x/x	x				x	TEV	x						x		+/+	
AK-CC 450	084B8022	6/5	x		x	x	x/x/x		x/x/-/-		x/x	x	x	x/x/x	x			x		TEV	x							x	+/+	
AK-CC 550A	084B8030	6/5	x		x	x	x/x/x		x/x/-/-		x/-	x	x	x/x/x	x			x		AKV	x					x		x	+/+	
AK-CC 750	080Z0125	9/5	x		x	x	x/x/x		x/x/ x/x		x/-	x	x	x/x/x	x		x		x	4xAKV	x					x		x	-/x	EN, DE, FR, IT, NL, EN, ES, PT, PL, RU, CZ, CH, DK, FI
Superheat Controller																														
EKC 315A	084B7086	2/2					x/-/-										x	x		AKV/ ICM	x	x	x	-/x	-/x	x	x		x/-	
EKC 312	084B7250	1/2					x/-/-										x	x		ETS			x	-/-	-/-	x			x/-	
EKC 316A	084B7088	2/2					x/-/-										x	x		ETS	x	x	x	-/x	-/x	x	x		x/-	
EKD 316	084B8040	1/2					x/-/-										x	x		ETS		x	x	x/x	-/-	x			x/-	
Temperature Controller																														
EKC 368	084B7079	4/2	x			x	x/-/-											x		KVS		x		-/x			x		-/x	
ERC 211	080G3290	1/1		x					x/x/x/-					x/-/-		x		x			x						x		x/-	
ERC 211	080G3293	1/1		x					x/x/x/-					x/-/-	x			x			x						x		x/-	
ERC 213	080G3291	3/2	x			x	x/-/-		x/x/x/-					x/x/-		x		x			x						x		x/-	
ERC 213	080G3294	3/2	x			x	x/-/-		x/x/x/-					x/x/-	x			x			x						x		x/-	
ERC 214	080G3292	4/2	x			x	x/x/-		x/x/x/-					x/x/-		x		x			x						x		x/-	
ERC 214	080G3295	4/2	x			x	x/x/-		x/x/x/-					x/x/-	x			x			x						x		x/-	
Liquid level Controller																														
EKE 347	080G5000																	x		ICM, AKV/A									-/x	EN, CN, PT, RU, SP, FR, IT, GER, ARAB

Electronic controls – Overview

Type	Code number	Relay / temperature sensor	Defrost heating	Cooling or heating function	Rail heat	Fan	Alarm / light / misc.	2nd compressor	DI / DO / AI / AO	Batterie for clock (optional)	HACCP via system / HACCP integrated	Application module	Definition and waiting of thermostat sensors	Defrost / defrost on demand / defrost on demand via bus	Voltage 230 V	Voltage 115 V	Voltage 24 V	With screw terminals	With plug connection	Valve control	Room thermostat	UPS connection	Pressure controls	0-10 V / 4-20 mA input	0-10 V / 4-20 mA output	Superheat regulation	Reference displacement	External display	Data communication optional / on board	Note – language
Capacity Controller																														
AK-PC 351	080G0289	6/4				x	x		x/x/ x/x								x		x						x				-/x	EN, PT, IT, CH, RU
AK-PC 551	080G0281	8/8				x	x		x/x/ x/x						x				x						x				-/x	EN, DE, FR, DK, ES, IT, PT, NL, RU, PL, CZ, TR, UY, HR, SR, RO
AK-PC 551	080G0283	8/8				x	x		x/x/ x/x								x		x						x				-/x	EN, DE, FR, DK, ES, IT, PT, NL, RU, PL, CZ, TR, UY, HR, SR, RO
AK-PC 651	080G0312	15/10				x	x		x/x/ x/x						x				x						x				-/x	EN, DE, FR, DK, ES, IT, PT, NL, RU, PL, CZ, TR, UY, HR, SR, RO
AK-PC 772	080Z0200	8/11				4x			x/x/ x/x								x		x										-/x	EN, DE, FR, IT, NL
AK-PC 781	080Z0186	8/11				8x			x/x/ x/x								x		x										-/x	EN, DE, FR, IT, NL, ES, PT, RU, CZ, DK, FI, PL, CN
AK-PC 783	080Z0196	8/11				8x			x/x/ x/x								x		x										-/x	EN, DE, FR, IT, NL, ES, PT
Condensing unit Controller																														
AK-RC 101	080Z3200	Single-phase																											-/x	
AK-RC 103	080Z3201	Three-phase (3 kW), 4.5-6.3 A																											-/x	
AK-RC 103	080Z3202	Three-phase (3 kW), 7-10 A																											-/x	
AK-RC 103	080Z3206	Three-phase (5 kW), 11-16 A																											-/x	
AK-RC 103	080Z3207	Three-phase (5 kW), 14-20 A																											-/x	
Front end full store solution																														
AK-SM820	080Z4004	System Manager for Small Stores w / Display / Keypad																												
AK-SM850	080Z4001	System Manager for Refrigeration Only w / Display / Keypad																												
AK-SM880	080Z4008	System Manager for Total Store Control w / Display / Keypad																												

EKC 202 - Refrigeration controller

The series of EKC 202 controllers can be used for a wide range of different refrigeration applications - from control of air temperatures and defrost to more advanced applications, including control of light and fans.

Features
EKC 202

Thermostat
- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC
- Day / night control
- Thermostat band
- Alarm thermostat with delay

DI input
- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band



Fan
- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high S5 temperature

Light control
- Light control of day / night, door, or via network

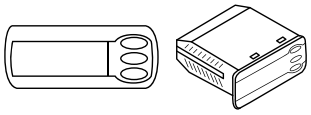
Defrost
- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

Compressor
- Anti cycle timers for optimum compressor protection
- High-effect 16 A relays for connection of compressors without use of intermediate relay

Facts

- Integrated refrigeration-technical functions
- Defrost on demand in 1:1 systems
- Buttons and seal imbedded in the front
- IP65 density from the front panel
- Digital input for either:
  - door contact function with alarm
  - defrost start
  - start/stop of regulation
  - night operation
  - change-over between two temperature reference
  - case cleaning function
- Instant programming via programming key
- HACCP
  Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration
  (Pt 1000 ohm sensor)

Technical data and ordering



EKC 202 - Refrigeration controller

Technical data

Features	Description		
Supply voltage	230 V AC 10 – 15%. 1.5 V A		
Sensors for EKC 202A, 202B, 202C	Pt 1000 ohm (0 °C)		
	PTC 1000 ohm (25 °C)		
	NTC 5000 ohm (25 °C) M 2020		
Sensors for EKC 202C-MS	NTC 2000 ohm (25 °C)		
	NTC 2500 ohm (0 °C)		
	NTC 3000 ohm (25 °C)		
	NTC 5000 ohm (25 °C) M 2020		
	NTC 10000 ohm (25 °C)		
	NTC 10000 ohm (25 °C) Beta 3435		
Accuracy	Measuring range: -60 – 99 °C		
	Controller: ± 1 K below -35 °C, ± 0,5 K between -35 – 25 °C, ± 1 K above 25 °C		
	Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad		
Display	LED, 3 digits		
Digital inputs	Signal from contact functions		
	Requirements to contacts: gold plating		
	Cable length must be max. 15 m		
	Use auxiliary relays when the cable is longer		
Electrical connection cable	Max. 1.5 mm² multi-core cable on supply and relays		
	Power current terminals are mounted on the circuit board		
	Max. 1 mm² on sensors - and DI inputs		
Relays *)	DO1 DO2 DO3 DO4	CE (250 V AC)	UL ***) (240 V AC)
	DO1. Refrigeration	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO2. Defrost	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO3. Fan	6 (3) A	6 A Resistive 3 FLA, 18 LRA - 131 V A Pilot duty
	DO4. Alarm or light	4 (1) A Min. 100 mA **)	4 A Resistive 131 V A Pilot duty
Environments	0 – 55 °C, During operations, -40 – 70 °C, During transport		
	20 – 80% Rh, not condensed		
	No shock influence / vibrations		
Enclosure	IP65 from front Buttons and packing are imbedded in the front		
Escapement reserve for the clock	4 hours		
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2		

**) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be keept*
***) Gold plating ensures make function with small contact loads*
****) UL-approval based on 30000 couplings*

Ordering

Type	Description	Code no.
EKC 202A	Refrigeration controller	084B8521
EKC 202B	Refrigeration controller with fan function	084B8522
EKC 202C	Refrigeration controller for electric defrost	084B8523
EKC 202C-MS	Refrigeration controller multi sensor (only NTC)	084B8543

Accessory

Type	Description	Code no.
EKA 178A	Data communication module MODBUS	084B8564
EKA 179A	RS485 LON	084B8565
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B8577
EKA 182A	Copy key EKC - EKC	084B8567
EKA 183A	Programming key EKC	084B8582
AKS 12	Pt 1000 Sensor, 1.5 m	084N0036
EKS 111	PTC 1000 Sensor, 1.5 m	084N1178
EKS 211	NTC 5000 Sensor, 1.5 m	084N1220
EKS 221	NTC 10000 Beta 3435 Sensor, 3.5 m	084N3206

EKC 302 - Refrigeration controller

The series of EKC 302 controllers can be used for a wide range of different refrigeration applications - from control of air temperatures and defrost to more advanced applications, including control of light and fans. For DIN rail mounting.

Features
EKC 302

DI input
- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band

Thermostat
- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC
- Day / night control
- Thermostat band
- Alarm thermostat with delay



Light control
- Light control of day / night, door, or via network

Defrost
- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

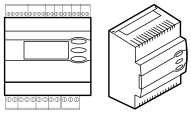
Compressor
- Anti cycle timers for optimum compressor protection
- High-effect 16 A relays for connection of compressors without use of intermediate relay

Fan
- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high "*S5*" temperature

Facts

- Integrated refrigeration-technical functions
- Defrost on demand in 1:1 systems
- Buttons and seal imbedded in the front
- Digital input for either:
  - door contact function with alarm
  - defrost start
  - start / stop of regulation
  - night operation
  - change-over between two temperature reference
  - case cleaning function
- Fixed MODBUS data communication
- Instant programming via programming key
- HACCP
  Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration
  (Pt 1000 ohm sensor)
- EKC 302D: Several applications in the same unit

Technical data and ordering



EKC 302 - Refrigeration controller

Technical data

Features	Description		
Supply voltage	230 V AC 10 – 15%. 1.5 V A		
Sensors for EKC 302	Pt 1000 ohm (0 °C)		
	PTC 1000 ohm (25 °C)		
	NTC 5000 ohm (25 °C) M 2020		
Accuracy	Measuring range: -60 – 99 °C		
	Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above 25 °C		
	Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad		
Display	LED, 3 digits		
Digital inputs	Signal from contact functions		
	Requirements to contacts: gold plating		
	Cable length must be max. 15 m		
	Use auxiliary relays when the cable is longer		
Electrical connection cable	Max. 1.5 mm² multi-core cable on supply and relays		
	Power current terminals are mounted on the circuit board		
	Max. 1 mm² on sensors - and DI inputs		
Relays *)	DO1 DO2 DO3 DO4	IEC 60 730	
	DO1. Refrigeration	10 (6) A and (5 FLA, 30 LRA)	1)
		16 (8) A and (10 FLA, 60 LRA)	2)
	DO2. Defrost	6 (3) A and (3 FLA, 18 LRA)	1)
		10 (6) A and (3 FLA, 30 LRA)	2)
	DO3. Fan	6 (3) A and (3 FLA, 18 LRA)	1)
		10 (6) A and (5 FLA, 30 LRA)	2)
	DO4. Alarm	4 (1) A Min. 100 mA **)	
Environments	0 – 55 °C, During operations, -40 – 70 °C, During transport		
	20 – 80% Rh, not condensed		
	No shock influence / vibrations		
Enclosure	IP20		
Escapement reserve for the clock	4 hours		
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2		

**) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be keept*
***) Gold plating ensures make function with small contact loads*

Ordering

Type	Description	Code no.
EKC 302A	Refrigeration controller	084B4162
EKC 302B	Refrigeration controller with fan and defrost function	084B4163
EKC 302D	Refrigeration controller with fan and defrost function	084B4164

Accessory

Type	Description	Code no.
EKA 178B	Data communication module MODBUS	084B8571
EKA 175	RS485 LON	084B8579
EKA 183A	Programming key EKC	084B8582
AKS 12	Pt 1000 Sensor 1.5 m	084N0036
EKS 111	PTC 1000 Sensor 1.5 m	084N1178
EKS 211	NTC 5000 Sensor 1.5 m	084N1220

AK-CC 210, Universal refrigeration controller

The controller is used for evaporator control refrigeration appliances in supermarkets. With many predefined applications one unit will offer you many options. Flexibility has been planned both for new installations and for service in the refrigeration trade.

Features
AK-CC 210

Thermostat
- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC5000
- Day / night control
- Thermostat band
- Alarm thermostat with delay

DI input
- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band

Fan
- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high "S5" temperature



Light control
- Light control of day / night, door, or via network
  Other functions:
- "S5" sensor can be used for monitoring of condenser temperature or as product sensor
- Door function with alarm monitoring
- Manual control of outputs
- Case cleaning function

Supplementary options
- RS 485 network card for connection to network
- Battery back-up card for real time clock
- "Copy key" programming key

Defrost
- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

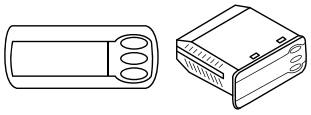
Compressor
- Anti cycle timers for optimum protection
- High-effect 16 A relays for connection of compressors without use of intermediate relays

Facts

- Many applications in the same unit
- The controller has integrated refrigeration-technical functions, so that it can replace a whole collection of thermostats and timers
- Buttons and seal imbedded in the front
- Can control two compressors
- Easy to remount data communication
- Quick setup
- Two temperature references
- HACCP
  (Hazard Analysis and Critical Control Points):
  - temperature monitoring and registration of period with too high temperature
  - factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration
    (Pt 1000 ohm sensor)
- Digital inputs for various functions
- Clock function with backup

Technical data and ordering

AK-CC 210, Universal refrigeration controller



Technical data

Features	Description		
Supply voltage	230 V AC 10 – 15%. 2.5 V A		
Sensors 3 pcs off either	Pt 1000 ohm (0 °C) PTC (1000 ohm / 25 °C)		
	NTC-M2020 (5000 ohm / 25 °C)		
Accuracy	Measuring range: -60 – 99 °C		
	Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above +25 °C		
	Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad		
Display	LED, 3 digits		
Digital inputs	Signal from contact functions		
	Requirements to contacts: gold plating		
	Cable length must be max. 15 m		
	Use auxiliary relays when the cable is longer		
Electrical connection cable	Max. 1.5 mm² multi-core cable		
Relays *)		CE (250 V AC)	UL ***) (240 V AC)
	DO1. Refrigeration	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO2. Defrost	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO3. Fan	6 (3) A	6 A Resistive 3 FLA, 18 LRA - 131 VA Pilot duty
	DO4. Alarm	4 (1) A Min. 100 mA **)	4 A Resistive 131 VA Pilot duty
Environments	0 – 55 °C, During operations		
	-40 – 70 °C, During transport		
	20 – 80% Rh, not condensed		
	No shock influence / vibrations		
Enclosure	IP65 from front Buttons and packing are embedded in the front		
Escapement reserve for the clock	4 hours		
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2		

***) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be keept*
***) Gold plating ensures make function wiht small contact loads*
****) UL-approval based on 30000 couplings*

Ordering

Type	Description	Code no.
AK-CC 210	Refrigeration controller without data communication but prepared for a module	084B8520

Accessory

Type	Description	Code no.
EKA 163A	External display for AK-CC 210	084B8562
EKA 178A	Data communication module MODBUS	084B8564
EKA 179A	Data communication module Lon RS 485	084B8565
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B8577
EKA 182A	Copy key EKC - EKC	084B8567
AKS 12	Pt 1000 Sensor 1.5 m	084N0036
EKS 111	PTC 1000 Sensor 1.5 m	084N1178
EKS 211	NTC 5000 Sensor 1.5 m	084N1220

AK-CC 250A, Universal refrigeration controller

The controller is used for evaporator control refrigeration appliances in supermarkets. With many predefined applications one unit will offer you many options. Flexibility has been planned both for new installations and for service in the refrigeration trade.

Features
AK-CC 250A

Thermostat
- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC5000
- Day / night control
- Thermostat band
- Alarm thermostat with delay

DI input
- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band

Fan
- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high "S5" temperature



Light control
- Light control of day / night, door, or via network
  Other functions:
- "S5" sensor can be used for monitoring of condenser temperature or as product sensor
- Door function with alarm monitoring
- Manual control of outputs
- Case cleaning function

Supplementary options
- Battery back-up card for real time clock
- "Copy key" programming key

Defrost
- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

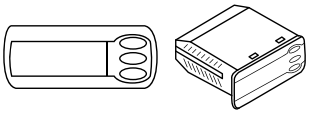
Compressor
- Anti cycle timers for optimum protection
- High-effect 16 A relays for connection of compressors without use of intermediate relays

Facts

- Many applications in the same unit
- The controller has integrated refrigeration-technical functions, so that it can replace a whole collection of thermostats and timers
- Buttons and seal imbedded in the front
- Can control two compressors
- Fixed MODBUS data communication
- Easy to remount data communication
- Quick setup
- Two temperature references
- HACCP
  (Hazard Analysis and Critical Control Points):
  - temperature monitoring and registration of period with too high temperature
  - factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration
    (Pt 1000 ohm sensor)
- Digital inputs for various functions
- Clock function with backup

Technical data and ordering

AK-CC 250A, Universal refrigeration controller



Technical data

Features	Description		
Supply voltage	230 V AC 10 – 15%. 2.5 V A		
Sensors for AK-CC 250A, 3 pcs off either	Pt 1000 ohm (0 °C) PTC (1000 ohm / 25 °C)		
	NTC-M2020 (5000 ohm / 25 °C)		
Accuracy	Measuring range: -60 – 99 °C		
	Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above +25 °C		
	Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad		
External display	EKA 163 A (only in stand alone)		
Digital inputs	Signal from contact functions		
	Requirements to contacts: Gold plating		
	Cable length must be max. 15 m		
	Use auxiliary relays when the cable is longer		
Electrical connection cable	Max. 1.5 mm² multi-core cable		
Relays *)		CE (250 V AC)	UL *** (240 V AC)
	DO1. Refrigeration	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO2. Defrost	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO3. Fan	6 (3) A	6 A Resistive 3 FLA, 18 LRA - 131 VA Pilot duty
	DO4. Alarm	4 (1) A Min. 100 mA **)	4 A Resistive 131 VA Pilot duty
Environments	0 – 55 °C, During operations		
	-40 – 70 °C, During transport		
	20 – 80% Rh, not condensed		
	No shock influence / vibrations		
Enclosure	IP65 from front Buttons and packing are embedded in the front		
Escapement reserve for the clock	4 hours		
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2		

**) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be keept*
***) Gold plating ensures make function wiht small contact loads*
****) UL-approval based on 30000 couplings*

Ordering

Type	Description	Code no.
AK-CC 250A	Refrigeration controller with MODBUS data communication for Pt or PTC sensors	084B8528

Accessory

Type	Description	Code no.
EKA 163A	External display for AK-CC 250	084B8562
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B8577
EKA 182A	Copy key EKC - EKC	084B8567
AKS 12	Pt 1000 Sensor 1.5 m	084N0036
EKS 111	PTC 1000 Sensor 1.5 m	084N1178

AK-CC 550A, Controller for appliance control

AK-CC 550A is a complete refrigeration appliance control with great flexibility to adapt to all types of refrigeration appliances and cold storage rooms.

Features
AK-CC 550A

Thermostat
- ON / OFF or modulating control
- Product sensor "S6" with separate alarm limits
- Day / night control
- Switch between thermostat settings via digital input
- Pulsing of fans when thermostat is satisfied
- Heat thermostat

Calibration
- Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)

Light control



Supplementary options
- Rail heat control via day / night load or dew point
- Door function
- Control of night blinds
- Integrated MODBUS communication with the option of mounting a LonWorks communication card
- Adaptive control of superheat

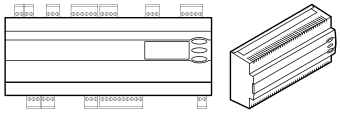
Compressor
- Control of two compressors

Defrost
- Electrical, natural or hot gas defrost
- Start of defrost via schedule, digital input or network
- Coordination of defrost across several controls
- Case cleaning function for documentation of HACCP procedure
- Stop of defrost on time and / or temperature
- Adaptive defrosting based on evaporator performance

Facts

- Energy optimisation of the whole refrigeration appliance
- One controller for several different refrigeration appliances
- Integrated display at the front of the controller
- Quick set-up with predefined settings
- Built-in data communication
- Built-in clock function with power reserve
- Can be used on CO_2 systems

Technical data and ordering



AK-CC 550A, Controller for appliance control

Technical data

Features	Description	
Supply voltage	230 V AC 10 – 15%. 5 V A, 50 / 60 Hz	
Sensor S2	Pt 1000	
Sensor S3, S4, S5, S6	Pt 1000	
	PTC 1000 ohm / 25 °C (All 4 must be of the same type)	
Accuracy	Measuring range: -60 – 120 °C	
	Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above 25 °C	
	Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad	
Measuring of Pe	Pressure transmitter: AKS 32R	
Display	LED, 3-digits	
External display	EKA 163B or 164B. (any EKA 163A or 164A)	
Digital inputs DI1, D2	Signal from contact functions	
	Requirements to contacts: Gold plating	
	Cable length must be max. 15 m	
	Use auxiliary relays when the cable is longer	
Digital input DI3	230 V AC	
Electrical connection cable	Max.1.5 mm² multi-core cable	
Solid state output	DO1 (for AKV coil)	Max. 240 V AC, Min. 28 V AC
		Max. 0.5 A
		Leak < 1 mA
		Max. 1 pcs. AKV
Relays *)		CE (250 V AC)
	DO3, DO4	4 (3) A
	DO2, DO5, DO6	4 (3) A
Environments	0 – 55 °C, During operations	
	-40 – 70 °C, During transport	
	20 – 80% Rh, not condensed	
	No shock influence / vibrations	
Enclosure	IP20	
Mounting	DIN-rail or wall	
Weight	0.4 Kg	
Data communication	Fixed: MODBUS	
	Extension options: LON RS485 / DANBUSS / TCP / IP(OEM) / MODBUS	
	The controller cannot be hooked up with a monitoring unit type m2	
Power reserve for the clock	4 hours	
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9, A1, A2 - EMC tested acc. EN50082-1 and EN 60730-2-9, A2	

**) DO3 and DO4 are 16 A relays. DO2, DO5 and DO6 are 8 A relays. Max. load must be observed*

Ordering

Type	Description	Code no.
AK-CC 550A	Case controller with MODBUS data communication	084B8030

Accessory

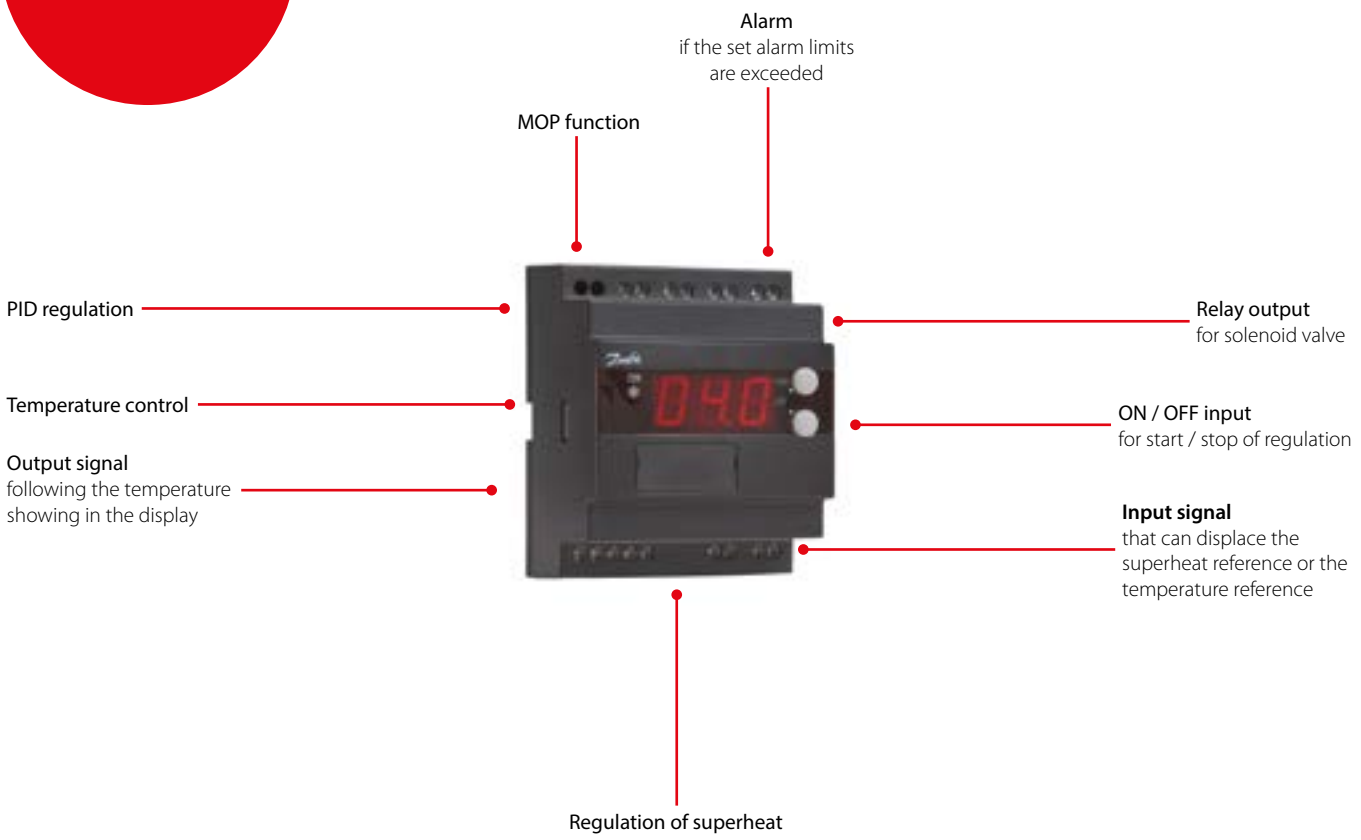
Type	Description	Code no.
EKA 175	Data communication module LON RS 485	084B8579
EKA 176	Data communication module DANBUSS	084B8583
EKA 178B	Data communication module MODBUS	084B8571
EKA 163B	External display with plug for direct connection	084B8574
EKA 164B	External display with operation buttons and plug for direct connections	084B8575
EKA 163A	External display with screw terminals 084B8562 EKA	084B8562
EKA 164A	External display with operation buttons and screw terminals	084B8563

EKC 315A - Refrigeration control

The controller and valve can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration:

- Cold store (air coolers)
- Processing plant (water chillers)
- A/C plant

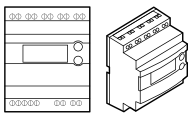
Features
EKC 315A



Facts

- The evaporator is charged optimally - even when there are great variations of load and suction pressure
- Energy savings - the adaptive regulation of the refrigerant injection ensures optimum utilisation of the evaporator and hence a high suction pressure
- Exact temperature control - the combination of adaptive evaporator and temperature control ensures great temperature accuracy for the media
- The superheating is regulated to the lowest possible value at the same time as the media temperature is controlled by the thermostat function

Technical data and ordering



EKC 315A - Refrigeration control

Technical data

Features	Description
Supply voltage	24 V AC ± 15%, 50 / 60 Hz, 80 V A (the supply voltage is galvanically separated from the input and output signals)
Power consumption	Controller: 5 V A
	AKV coil: 55 V A
Input signal	Current signal: 4 – 20 mA or 0 – 20 mA
	Pressure transmitter: 4-20 mA from AKS 33
	Digital input from external contact function
Sensor input	2 pcs. Pt 1000 ohm
Output signal	Current signal: 4 – 20 mA or 0 – 20 mA
	Load: Max. 200 ohm
Relay output	1 pcs. SPST: AC-1: 4 A (ohmic)
Alarm relay	1 pcs. SPST: AC-15: 3 A (inductive)
ICAD	ICAD mounted on ICM Current signal: 4 – 20 mA or 0 – 20 mA
Data communication	Possible to connect a data communication module
Environments	-10 – 55 °C, during operations
	-40 – 70 °C, during transport
	20 – 80% Rh, not condensed
	No shock influence / vibrations
Enclosure	IP20
Weight	300 g
Mounting	DIN rail
Display	LED, 3 digits
Terminals	max. 2.5 mm^2 multicore
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD-tested acc. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN50081-1 and EN 50082-2

The installation of data communications must comply with the requirements described in literature sheet no. RC8AC

Ordering

Type	Description	Code no.
EKC 315A	Superheat controller	084B7086
EKC 315A	Superheat controller, pressure transmitter signal from AKS 32R	084B7085
EKC 315A	I-pack of 084B7085	084B7128

Accessory

Type	Description	Code no.
EKA 174	Data communication module (accessories), (RS 485 module) with galvanic separation	084B7124
EKA 175	RS485 LON	084B8579
AKS 11	Pt 1000 Sensor	084N0003
AKS 32R	Pressure transmitter -1/12 bar	060G1036
AKS 33	Pressure transmitter -1/12 bar, 0.3%	060G2049
AKS 3000	Pressure transmitter -1/12 bar, 1%	060G1323

EKC 316A - Superheat controller

The controller and valve can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration:

- Processing plant (water chillers)
- Cold store (air coolers)
- A/C plant

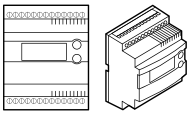
Features
EKC 316A



Facts

- The evaporator is charged optimally - even when there are great variations of load and suction pressure
- Energy savings - the adaptive regulation of the refrigerant injection ensures optimum utilisation of the evaporator and hence a high suction pressure
- The superheating is regulated to the lowest possible value at the same time as the media temperature is controlled by the thermostat function

Technical data and ordering



EKC 316A - Superheat controller

Technical data

Features	Description
Supply voltage	24 V AC ± 15%, 50 / 60 Hz, 10 V A (the supply voltage is galvanically separated from the input and output signals)
Power consumption	Controller: 5 V A
	ETS 12.5 - ETS 400 step motor: 1.3 VA
Input signal	Current signal: 4 – 20 mA or 0 – 20 mA
	Pressure transmitter: 4 – 20 mA from AKS 33
	Digital input from external contact function
Sensor input	2 pcs. Pt 1000 ohm
Alarm relay	1 pcs. SPST: AC-1: 4 A (ohmic)
	1 pcs. SPST: AC-15: 3 A (inductive)
Step motor output	Pulsating 100 mA
Data communication	Possible to connect a data communication module
Environments	-10 – 55 °C / 14 – 131 °F, during operations
	-40 – 70 °C / -40 – 158 °F, during transport
	20 – 80% Rh, not condensed
	No shock influence/vibrations
Enclosure	IP20
Weight	300 g / 10.6 oz
Mounting	DIN rail
Display	LED, 3 digits
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD-tested acc. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN50081-1 and EN 50082-2

If battery backup is used: Battery requirements: 18 V DC min. 100 mAh

Ordering

Type	Description	Code no.
EKC 316A	Superheat controller	084B7088

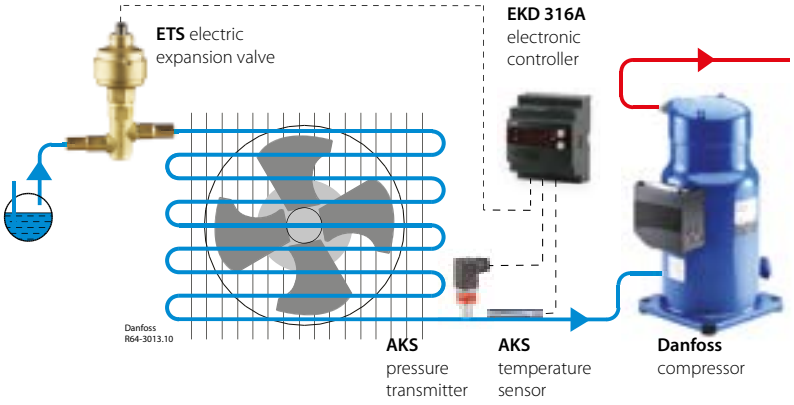
Accessory

Type	Description	Code no.
EKA 175	Data communication module (accessories), (RS 485 module)	084B8579
EKA 174	Data communicationsmodule (accessories), (RS 485 module) with galvanic separation	084B7124

Temperature sensor Pt 1000 ohm / Pressure transmitter type AKS 33.

Related products

Electric expansion valves
ETS 12.5 - ETS 400
Temperature sensors and pressure transmitters
Type AKS



EKD 316 - Superheat controller

The controller and valve can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration:

- Processing plant (water chillers)
- Cold store (air coolers)
- A/C plant

Features
EKD 316



MOP function

PID regulation

Alarm
if the set alarm limits are exceeded

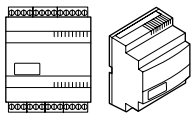
ON / OFF input
for start / stop of regulation

Regulation of superheat

Facts

- The evaporator is charged optimally - even when there are great variations of load and suction pressure
- Energy savings - the adaptive regulation of the refrigerant injection ensures optimum utilisation of the evaporator and hence a high suction pressure
- The superheating is regulated to the lowest possible value

Technical data and ordering



EKD 316 - Superheat controller

Technical data

Features	Description
Supply voltage	24 V AC ± 15%, 50 / 60 Hz, 10 V A (the supply voltage is galvanically separated from the input and output signals)
Power consumption	Controller: 5 V A
	Type ETS 6 - ETS 400, CCM and CCMT
Input signal	Current signal [1]): 4 – 20 mA or 0 – 20 mA
	Voltage signal [1]): 0 – 10 V or 1 – 5 V
	Pressure transmitter: AKS 32R
	Digital input from external contact function
Sensor input	2 pcs. Pt 1000 ohm
Alarm relay	1 pcs. SPST: AC-1: 4 A (ohmic)
	1 pcs. SPST: AC-15: 3 A (inductive)
Step motor output	Pulsating 30 – 300 mA
Data communication	Mounted with MODBUS data communication
Environments	0 – 55 °C / 32 – 131 °F, during operations
	-40 – 70 °C / -40 – 158 °F, during transport
	20 – 80% Rh, not condensed
	No shock influence / vibrations
Enclosure	IP20
Weight	300 g / 10.6 oz
Mounting	DIN rail
Display	No, external Display optional (LED, 3 digits)
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD-tested acc. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN50081-1 and EN 50082-2

[1]) Ri: mA 400 ohm V: 50 kohm
If battery backup is used: Battery requirements: 18 – 24 V DC min. 120 mAh

Ordering

Type	Description	Code no.
EKD 316	Superheat controller [2])	084B8040

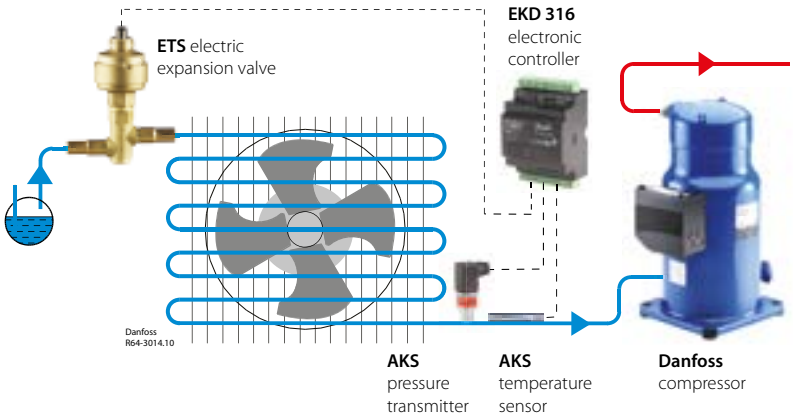
Accessory

Type	Description	Code no.
EKA 164A	Display with buttons to change settings (with MODBUS communication) [2])	084B8563

[2]) In order to change seetings either display EKA 164A or software AK-ST 500 (Plus accessories) is needed Temperature sensor Pt 1000 ohm / Pressure transmitter type AKS 32R

Related products

Electric suction modulating valves
Type ETS 6 - ETS 400, CCM and **CCMT**
Temperature sensors and pressure transmitters
Type AKS



EXD 316 - Superheat controller

The EXD superheat controller and valve can be used where there are requirements for accurate control of superheat in connection with refrigeration.

- Processing plant (water chillers)
- Cold store (air coolers)
- A/C plant
- Heat pumps
- Air conditioning

Features
EXD 316



MOP function

CAN Bus communication

Rs485 Modbus communication

PID regulation

ON / OFF input
for start / stop of regulation

Alarm
if the set alarm limits are exceeded

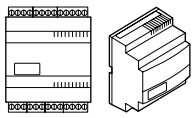
Relay output
for alarm or solenoid valve

Regulation of superheat

Facts

- The superheat is regulated to the lowest possible value
- The evaporator is charged optimally even when there are great variations of load and suction pressure
- Energy savings – the adaptive regulation of the refrigerant injection ensures optimum utilisation of the evaporator and thus a high suction pressure
- Regulation of superheat
- MOP function
- ON / OFF input for start / stop of regulation
- Relay output to alarm
- CANbus communication
- Safety features and
- Alarm indications

Technical data and ordering



EXD 316 - Superheat controller

Technical data

Features	Description
Supply voltage	24 V AC / DC ± 15%, 50 / 60 Hz, 10 V A (the supply voltage is not galvanically separated from the input and output signals)
Power consumption	Controller ETS step motor
	5 VA, 1.3 VA
Input signal *)Ri: mA: 400 ohm V: 50 kohm	Current signal *): 4 – 20 mA or 0 – 20 mA
	Voltage signal *): 0 – 10 V or 1 – 5 V
	Pressure transmitter: AKS 32R
	Digital input from external contact function
Sensor input	2 pcs. Pt 1000 ohm
Alarm relay	1 pcs. SPST: AC-1: 4 A (ohmic)
	1 pcs. SPST: AC-15: 3 A (inductive)
Step motor output	Pulsating 30 – 300 mA
Data communication	Via CANBUS
Environments	0 – 55 °C / 32 – 131 °F, during operations
	-40 – 70 °C / -40 – 158 °F, during transport
	20 – 80% Rh, not condensed
	No shock influence / vibrations
Enclosure	IP20
Weight	300 g / 10.6 oz
Montage	DIN rail
Operation	Via CANBUS
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD-tested acc. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN50081-1 and EN 50082-2 c UL us
Battery backup	If battery backup is used, the requirements for the battery are: 18 – 24 V DC
Max. distance between controller and valve	30 m

**) If battery backup is used: Battery requirements: 18 – 24 V DC min. 120 mAh*
Compatible valves - Unipolar and bi-polar stepper motor valves

Ordering

Type	Description	Code no.
EXD 316	superheat controller (with terminals)	084B8042

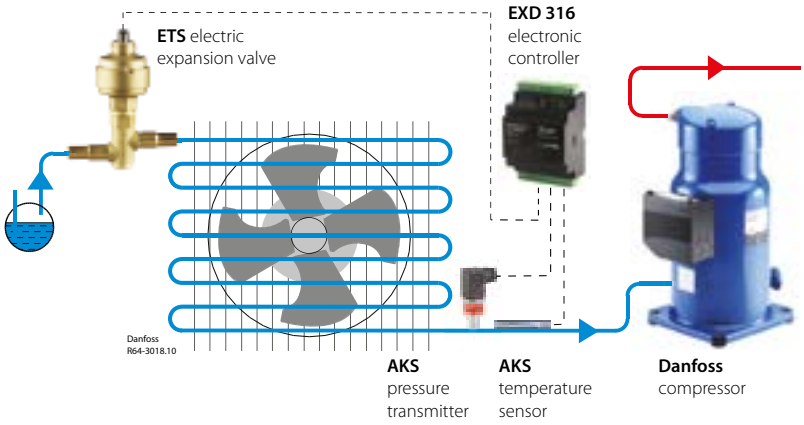
Accessory

Type	Description	Code no.
EKA 164A	Display with buttons to change settings (with MODBUS communication) [2]	084B8563

[2] In order to change seetings either display EKA 164A or software AK-ST 500 (Plus accessories) is needed Temperature sensor Pt 1000 ohm / Pressure transmitter type AKS 32R
EKA 183A Programming key 084B8582

Related products

Electric expansion valves
Type ETS 6 - ETS 400, CCM and **CCMT**
Temperature sensors and pressure transmitters
Type AKS



EKE 347 - Liquid level controller

The EKE347 controller is used for regulation of the liquid level in pump reservoirs, separators, intermediate coolers, economisers, condensers and receivers.
The controller is communicating with a transmitter that continuously measures the liquid level in the actual reservoir.

By comparing the measured value with the level setpoint entered by the customer, the controller dictates the valve to increase or decrease the liquid flow to or from the reservoir.

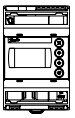
Features
EKE 347



Facts

- User friendly and easy setup Wizard for first time configuration
- Programming menu with 3 access levels and separate passwords
- With the AKS 4100 / 4100U liquid level transmitter it is possible to set the refrigerant level within a wide range
- EKE 347 can be used with ICM or AKV / A expansion valves
- ICM are direct operated motor valves driven by digital stepper motor type ICAD
- AKVA or AKV are pulse-width modulating expansion valves
- EKE 347 include as standard RS 485 based MODBUS-RTU bus communication interface to third party equipment like PLC
- Connection to other EKE347 controllers possible
- Wired remote display possible

Technical data and ordering



EKE 347 - Liquid level controller

Technical data

Features	Description	
Supply voltage	24 V AC ± 20%, 50 / 60 Hz or 24 V DC ± 20% (the supply voltage is galvanically separated from the input and output signals. Input / output are not individual galvanic isolated)	
Power consumption	Controller 20 W coil for AKV	15 VA / 10 W 55 VA
Input signal ***) Ri =0(4)-20 mA: 33 ohm** **0(2)-10 V: 100 kohm**	Level signal *)	4 – 20 mA or 0 – 10 V
	ICM valve feedback signal *)	From ICAD 0 / 4 – 20 mA
	Contact function start / stop of regulation	
Relay output	3 pcs. SPDT (Lower level alarm, Upper level alarm, Common alarm / NC Solenoid)	3 A (ohmic) 1 A (inductive) Max 240 V AC or 24 V AC / DC. can be used, but same voltage type must be used on DO3 and DO2
Current output	0 – 20 mA or 4 – 20 mA Max. load: 500 ohm	
Valve connection	ICM - via current output AKV / A- via 24 V AC. Pulse-Width Modulating output	
Data communication	MODBUS RTU: Communication to system controller, MODBUS on RS485: galvanic isolation (500 V DC) CAN: Communication to other EKE controllers	
Environments	-20 – 55 °C, during operation -30 – 80 °C, during storage	
	90% Rh, not condensed	
	No shock influence / vibrations	
Enclosure	IP20 / IP40 for the front mounted into a panel	
Weight	193 g	
Mounting	DIN rail	
Display	Graphical LCD display	
Terminals	plugs 1.5 or 2.5 mm^2 multicore	
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD-tested acc. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN61000-6-3 and EN 61000-6-2	

Ordering

Type	Description	Code no.
EKE 347	Liquid level controller	080G5000
MMIGRS2	Remote display, Panel, S	080G0294

AK-PC 351, Capacity Controller

AK-PC 351 is used for capacity regulation of compressors and condensers in small refrigeration applications.
A maximum of 4 compressors and one condenser can be regulated:

- One suction group + one condenser group, max. 6 steps
- One compressor group, max. 4 steps
- One condenser group, max. 4 steps

Features
AK-PC 351

Solid state
output 1 pcs
control of bypass on a digital scroll or for controlling unloader on a stream compressor.
If the output is not used for the function, it can be used as ordinary relay output

Analogue inputs
max. 4 pcs signal from pressure transmitters, temperature sensors

Analogue outputs
max. 2 pcs
speed control of compressors and condenser fans



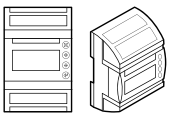
Digital inputs
max. 8 pcs signal from automatic safety control, day / night signal

Relay outputs
max. 5 pcs connection of compressors, condenser fans

Facts

- Energy savings via:
  - optimisation of suction pressure
  - night time increase
  - floating condensing pressure

Technical data and ordering



AK-PC 351, Capacity Controller

Technical data

Features	Description	
Supply voltage	24 V AC ± 15%, 50 / 60 Hz, 17 V A	
	24 V DC (20 – 60 V), 17 V A	
4 analog Input	Pressure measuring: Ratiometric pressure transmitter type AKS 32R 1 – 5 volt pressure transmitter type AKS 32 0 – 20 (4 – 20) mA pressure transmitter type AKS 33	
	Temperature measurement Pt 1000 ohm / 0 °C NTC - 86 K from digital scroll / stream	
8 digital input	From contact function E.g. to: Start / stop of regulation Monitoring of safety circuits General alarm function	
Relay output to capacity control	5 pcs. SPST (5 A): AC-1: 5 A (ohmic)	
	5 pcs. SPST (5 A): AC-15: 2 (inductive)	
	1 pc. Solid State PWM for scroll -unload	Imax. = 0.5 A
		Imin. = 50 mA
		Leak<1.5 mA
2 Voltage output	0-10 V DC Ri = 1 kohm	
Display output	For type MMIGRS2	
Data communication	Modbus for AK-SM 850	
Environments	-20 – 60 °C, During operations	
	-40 – 70 °C, During transport	
	20 – 80% Rh, not condensed	
	No shock influence / vibrations	
Enclosure	IP40	
Weight	0.2 kg	
Mounting	DIN-rail	
Connection terminals	max. 2.5 mm^2 multi core	
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9 EMC-tested acc. EN61000-6-2 and 3	

Ordering

Type	Description	Code no.
AK-PC 351	24 V AC / 20 – 60 V DC, LCD, RS485, 1SSR S	080G0289

AK-PC 551, Capacity Controller

AK-PC 551 is used for capacity regulation of compressors and condensers in small refrigeration applications.
A maximum of 8 compressors and one condenser can be regulated:

- One suction group + one condenser group
- Two suction groups + one shared condenser, max. 4 + 4 steps
- One compressor group, max. 8 steps
- One condenser group, max. 8 steps

Features
AK-PC 551

Solid state outputs
max. 2 pcs.
- Control of capacity valve on a Copeland digital scroll
- Control of unloaders on a
- Copeland stream compressor.
- Control of unloaders on a Bitzer CRII Ecoline compressor.

If the outputs are not used for these functions, they can be used as ordinary relay outputs

Analogue inputs
max. 8 pcs signal from pressure transmitters, temperature sensors, voltage signal

Analogue outputs
max. 2 pcs speed control of compressors and condenser fans



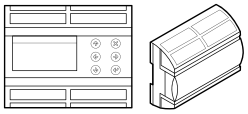
Digital inputs
max. 8 pcs signal from automatic safety control, day / night signal

Relay outputs
max. 6 pcs connection of compressors, condenser fans

Facts

- Energy savings via:
  - optimisation of suction pressure
  - night time increase
  - floating condensing pressure
  - load limitation

Technical data and ordering



AK-PC 551, Capacity Controller

Technical data

Features	Description	
Supply voltage	24 V AC ± 15%, 50 / 60 Hz, 17 V A	
	24 V DC (20 – 60 V), 17 V A	
	230 V AC (85 – 265 V) 50 / 60 Hz, 20 V A	
8 analog Input	Pressure measuring: Ratiometric pressure transmitter type AKS 32R 1 – 5 volt pressure transmitter type AKS 32 0 – 20 (4 – 20) mA pressure transmitter type AKS 33	
	Temperature measurement Pt 1000 ohm / 0 °C NTC - 86 K from digital scroll / stream	
8 digital input	From contact function E.g. to: Start / stop of regulation Monitoring of safety circuits General alarm function	
Relay output to capacity control	4 pcs. SPDT (8 A): AC-1: 6 A (ohmic)	
	4 pcs. SPDT (8 A): AC-15: 4 A (inductive)	
	2 pcs. SPST (16 A): AC-1: 10 A (ohmic)	
	2 pcs. SPST (16 A): AC-15: 3.5 A (inductive)	
	2 pcs. Solid State. PWM for scroll -unload	Imax. = 0.5 A
		Imin. = 50 mA
		Leak<1.5 mA
2 Voltage output	0-10 V DC Ri = 1kohm, Separate 24 V supply required	
Display output	For type MMIGRS2	
Data communication	Modbus for AK-SM 850	
Environments	-20 – 60 °C, During operations	
	-40 – 70 °C, During transport	
	20 – 80% Rh, not condensed	
	No shock influence / vibrations	
Enclosure	IP20	
Weight	0.4 kg	
Mounting	DIN-rail	
Connection terminals	max. 2.5 mm^2 multi core	
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9 EMC-tested acc. EN61000-6-2 and 3	

Ordering - AK-PC 551

Type	Description	Code no.
AK-PC 551	230 V, LCD, 2SSR, RS485, S	080G0281
AK-PC 551	24 V, LCD, 2SSR, RS485, S	080G0283

Ordering - AK-PC 551 kit

Type	Description	Code no.
AK-PC 551 kit	230 V, for remote display, 2SSR, RS485, S + MMIGRS2 + 1.5m CABLE	080G0282
AK-PC 551 kit	24 V, for remote display, 2SSR, RS485, S + MMIGRS2 + 1.5m CABLE	080G0288

Accessories

Type	Description	Code no.
MMIGRS2	MMIGRS2, REMOTE DISPLAY, PANEL, S	080G0294
ACCCBI	TELEPHONE CABLE USER INTERFACE CONNECTOR, 1.5 M CABLE	080G0075
ACCCBI	TELEPHONE CABLE USER INTERFACE CONNECTOR, 3 M CABLE	080G0076

Optyma™ Control, Single-phase

The Optyma™ Control is particularly suitable for the Optyma™ and Optyma™ **Plus** condensing units from Danfoss but is also compatible with other condensing units on the market.
The control features an attractive new design and simple flexible programming.

It offers both control and protection in a single unit, thanks to the unique built-in differential magnetothermic circuit breaker, which guarantees safety by cutting the general power supply.

Features Optyma™



Stylish new design

Simple wiring
and live outputs

Transparent cover
for access to magnetothermic breaker, all with IP65 protection rating

New hinged cover
ease of installation and opening

Integration of control
and protection in a single room dedicated unit reduces installation time and costs

Simple, flexible programming
for optimum versatility

Compressor
can be run in pump-down stop mode

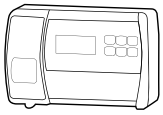
RS485 Modbus
for data communication and integration into a complete ADAP-KOOL® system

Guaranteed certified safety and protection
thanks to incorporated differential magnetothermic circuit breaker, which cuts the general power supply

Facts

- Direct control of defrosting elements, evaporator fans, room light with outputs directly connectable to the various units
- Automatic fuse protect the refrigeration unit
- Stylish ABS housing with transparent cover for access to the automatic fuse, all with an IP65 protection rating so that panel can be used outside the room
- LED indicators and large display show system status
- User-friendly keypad
- Display resolution to 0.1 °C
- Standard and ADAP-KOOL® compatible Modbus data communication

Technical data and ordering



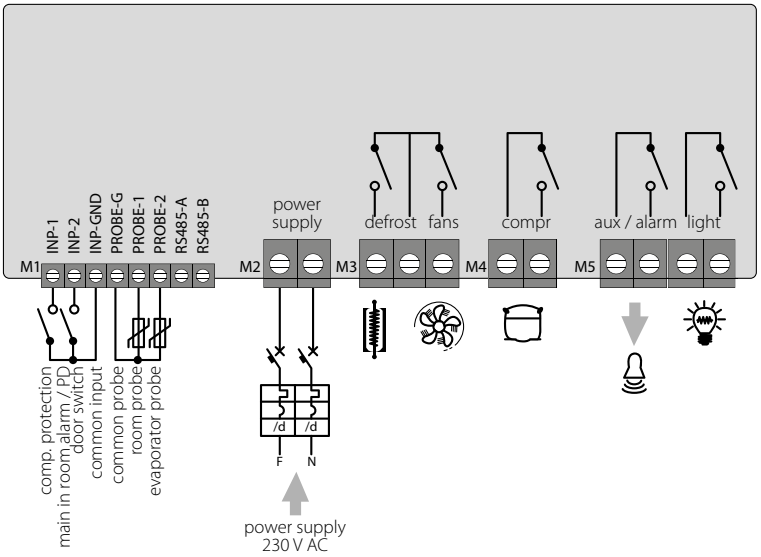
Optyma™ Control, Single phase

Technical data

Features	Description	
Power supply	Voltage	230 V AC ± 10%, 50 / 60 Hz
	Max absorbed power (electronic control)	~ 7 V A
Ambient conditions	Operating temperature	-5 – 50 °C
	Storage temperature	-30 – 70 °C
	Relative humidity	< 90% RH
General characteristics	Connectable sensor types	NTC 10 K 1%
	Resolution	0.1 °K
	Probe read precision	± 0.5 °K
	Read range	-45 – 45 °C
Output characteristics max. applicable load (230 V AC)	Compressor	1500 W (AC3)
	Defrost	3000 W (AC1)
	Fans	500 W (AC3)
	Room light	800 W (AC1)
	Configurable alarm contact / aux (voltage-free contact)	100 W
General electric protection	Bipolar differential magnetothermic circuit breaker	16 A Id = 300 mA switching power 4.5 kA Id = 30 mA (on request)
Insulation and mechanical characteristics	Cover protection rating	IP65
	Cover material	self-extinguishing ABS
	Type of insulation	Class II
	Box dimensions	262 x 168 x 97

Connection diagram

AK-RC 101



Ordering

Type	Description	Code no.
AK-RC 101	Optyma™ Control, single-phase	080Z3200

Optyma™ Control, Three-phase

The Optyma™ Control is particularly suitable for the Optyma™ and Optyma™ **Plus** condensing units from Danfoss but is also compatible with other condensing units on the market. The control features an attractive new design and simple flexible programming.

It offers both control and protection in a single unit, thanks to the unique built-in differential magnetothermic circuit breaker, which guarantees safety by cutting the general power supply.

Features Optyma™

Direct control
of the compressor, condenser fans, compressor oil heater, defrosting heaters, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards

Transparent cover
for access to magnetothermic circuit breaker, all with IP65 protection rating

Electronic control
with wide LED display and easy-to-use buttons

Auxiliary relay
with activation configurable by parameter

RS485 Modbus
for data communication and integration into a complete ADAP-KOOL® system



Differential
magnetothermic circuit breaker (for cutting the general power supply) accessible from the front panel

Adjustable motor circuit
breaker for compressor protection accessible from the front panel

Status signaling
with LED icons

Easy wiring
on the internal terminal block

Facts

- LED icons to signal plant status
- Electronic control with wide LED display and easy to use buttons
- Display and adjustment of cold room temperature accurate to 0.1 °C
- Display of evaporator temperature from parameter
- System control activation / deactivation
- Alarm signalling: sensor errors, minimum and maximum temperature alarm, compressor protection (man-in-cold-room alarm in preset models)
- Evaporator fan control
- Automatic and manual defrost control (static, heating element)
- Direct or pump-down control of motor compressor unit (selectable by terminal block connection in preset models)
- Room light activation, via panel key or door switch
- Auxiliary relay with activation configurable by parameter
- Parameter access with password (4 different selectable restriction levels)
- General automatic fuse accessible from the front panel, which cuts the general power supply
- Adjustable motor protector for compressor protection accessible from the front panel (in preset models)
- Standard and ADAP-KOOL® compatible Modbus data communication

Technical data and ordering



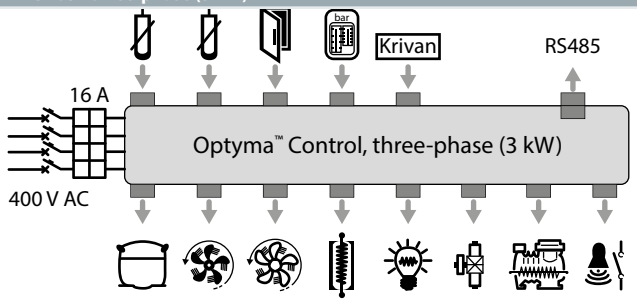
Optyma™ Control, three phase

Technical data

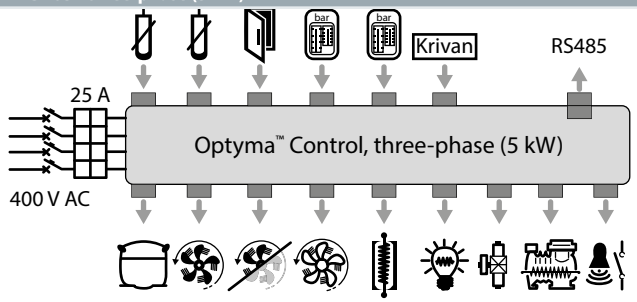
Features	Optyma™ Control AK-RC 103, three-phase (3 kW)	Optyma™ Control AK-RC 103, three-phase (5 kW)
Case dimensions	400 × 300 × 135 mm	400 × 300 × 135 mm
Protection rating	IP65	IP65
Power supply (3F + N + T)	400 V AC ± 10% 50 / 60 Hz	400 V AC ± 10% 50 / 60 Hz
Load type	three-phase	three-phase
Operating temperature	-5 – 40 °C	-5 – 40 °C
Storage temperature	-25 – 55 °C	-25 – 55 °C
Relative ambient humidity	< 90% RH	< 90% RH
Main switch / general protection	4 poles magnetothermic 16 A	4 poles magnetothermic 25 A
Compressor protection	motor circuit breaker	motor circuit breaker
Defrosting	electrical	electrical
Status indicators	LED + display	LED + display
Alarm signals	LED + buzzer	LED + buzzer
Ambient probe	NTC 10 K 1%	NTC 10 K 1%
Evaporator probe	NTC 10 K 1%	NTC 10 K 1%
Door switch	present	present
High/low pressure switch	present	present
Kriwan® connection	present	present
Compressor functioning mode selection	pump-down / thermostat	pump-down / thermostat
Compressor	370 W – 3000 W	3000 W – 5500 W
Condenser fans output 1	800 W (1 ph)	800 W (1 ph)
Condenser fans output 2 (separated)		total (1 ph)
Evaporator fans	500 W (1 ph)	2000 W (1 ph/3 ph)
Defrosting heaters	6000 W	9000 W
Room light	800 W (AC1) resistive load	800 W (AC1) resistive load
Solenoid valve	present	present
Compressor oil heater	present	present
Alarm relay	100 W	100 W

Connection diagram

AK-RC 103 - three-phase (3 kW)



AK-RC 103 - three-phase (5 kW)



Ordering

Type	Description	Code no.
AK-RC 103	Optyma™ Control, three-phase (3 kW) 4.5-6.3 A	080Z3201
AK-RC 103	Optyma™ Control, three-phase (3 kW) 7-10 A	080Z3202
AK-RC 103	Optyma™ Control, three-phase (5 kW) 11-16 A	080Z3206
AK-RC 103	Optyma™ Control, three-phase (5 kW) 14-20 A	080Z3207

AK-SM 800 series, System Manager

The System Manager controller from Danfoss is the global control and supervisory solution for the food retail industry.
The System Manager uses the latest technology to provide the maximum benefit to the end user, both in terms of energy saving optimization, control options and full web useraccess.

Designed specifically for the food retail and food processing / handling market, the System Manager provides comprehensive functionality and support tools to cover small to large stores.

Features AK-SM 800



3 main versions
AK-SM 820 (C-Store), AK-SM 850 (Refrigeration) and AK-SM 880 (Full store)

Configuration
web based wizards to assist in initial setup

Available support tool
Remote Management Tool (RMT) that facilitates full offline programming, remote software updating and graphical screen creation

Full
web browser navigation

Custom graphic screen
(seen in web and local screen)

SVGA 800x600
local color screen

Support of Service Tool
via tunnelling over IP (AK2 only)

Site Service App
for Remote access from tablet or smart phone for service technitians

Seamless view
of multiple System Manager units that are interconnected (host network)

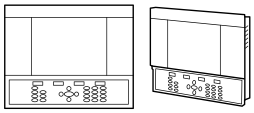
Automatically created plant
view screens showing main refrigeration systems in one screen

All new hardware casing
providing easy access to power and field bus connections, designed for wall or panel door mounting

Facts

- Product highlights:
  - direct support to EM-800 (AKM not supported / needed)
  - supports centralized and decentralized control strategy; compatible with Danfoss case and pack controllers and Danfoss I/O
  - open XML data transfer allowing remote access to key system parameters
- Design features:
  - active TFT SVGA color screen 800x600
  - front alarm status LED
  - removable keyboard panel (revealing connections)
  - easy access to USB flash drive
  - wall and panel mounting options
  - built in alarm relay output
- Hardware capability features:
  - built in web server
  - no back up battery required
  - RS485 LonWorks®
  - ethernet
  - EKC Modbus
  - USB

Technical data and ordering



AK-SM 800 series, System Manager

Technical data

SM800 version comparison	SM820 - C-Store Version	SM850 - Refrig version	SM880 - Full version
Refrigeration Control			
All SM800 variants come with Centralized I/O and Pack / Case control options. EKC AK2 SLV FC102	Max 32 generic device support	Max 120 generic support	Max 120 generic support
Lighting Control			
All SM800 variants come with built in lighting control via I/O modules. The number of zones differ	10	30	30
HVAC			
Only the SM820 and SM880 support built in HVAC control via I/O	10	n/a	45
Alarms			
Capacity	250	250	250
Miscellaneous points (via IO modules)			
Relay (R), Sensor (S), ON / OFF (O / F), Variable (V)	R=20, S=20, O / F=20, V=20	R=70, S=80, O / F=70, V=70	R=70, S=80, O / F=70, V=70
Master control			
Po Optimization, Master Schedules, AKC ON *Note: Adaptive Defrost not currently supported*	X	X	X
Misc Calculations			
Boolean Logic statements	96	96	96
History			
The SM800 has the ability to record datapoints for history and view	600 points	600 points	600 points
Leak Detectors			
Refrigerant gas detectors (connected via AK I/O)	10	50	50
Energy Meters			
Pulse Input (via I/O module), Carlo Garvazi, Wattnode, Wattnode Plus Modbus, Veris Modbus	32	80	80
Service Tool Support			
Tunneling via front end (IP connection only)	X	X	X

Ordering

Type	Description	Options	Code no.
AK-SM 820	C-Store (Refrigertion / HVAC / Lighting)	Convienience Store version with 32 device capacity	080Z4004
AK-SM 850	Refrigeration (including lighting)	Refrigeration version with 120 device capacity	080Z4001
AK-SM 880	Full (Refrigertion / HVAC / Lighting)	Full store version with 120 device capacity	080Z4008

GD - Gas detecting sensor

Danfoss Gas detecting sensors, type GD are a range of products designed to meet all industrial refrigeration and air conditioning application requirements.

GD detects a wide range of commonly used refrigerants including Ammonia, Carbon Dioxide, Halo-Carbons and Hydro-Carbons.

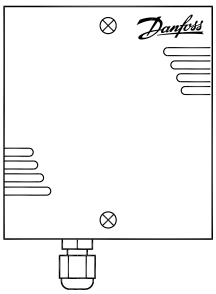
Features
GD



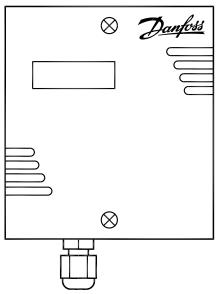
Facts

- GD is specifically developed for refrigeration applications
- Interchangeable precalibrated sensors
- Optional models:
  - LCD display
  - IP65 enclosure
  - EExd (Explosion Protected)
- Linear analog outputs, current [mA] / volt [V] proportional to the gas concentration
- Two digital outputs. Low Level and High Level Alarm
- Adjustable setting for alarm levels and output contacts with optional NO or NC switches
- GD can be connected directly to a Danfoss monitoring unit system
- Available with a range of different sensor technologies to monitor industrial refrigeration gases:
  - Electro-Chemical
  - Semi-Conductor
  - Catalytic
  - Infra-Red

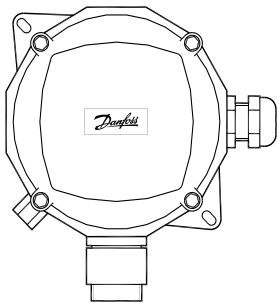
Product range



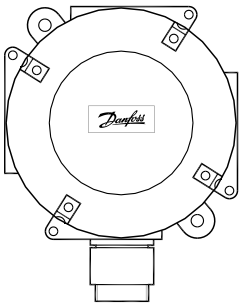
Standard



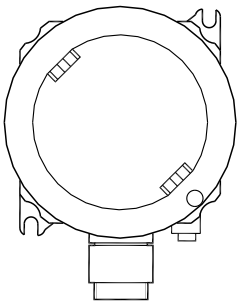
LCD display



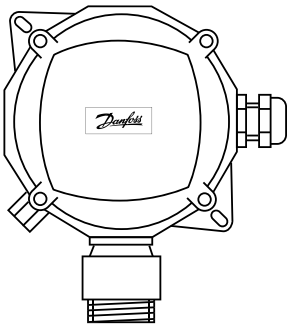
IP65 with stainless steel



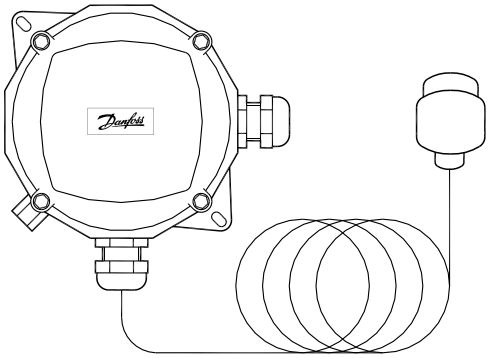
EExd Low temperature sensor head



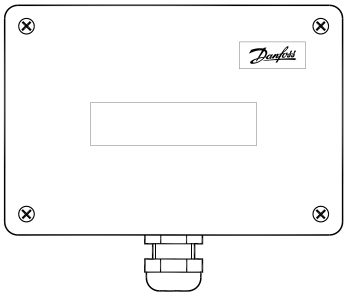
EExd Low temperature for CO_2



IP65 enclosure



IP66 enclosure 5m remote IP65 sensor
IP66 enclosure 5m remote IP65 EExd sensor



Remote LCD display IP41

Standard
Basic standard model for machine / engine rooms and cold rooms.

Standard with LCD display
Basic standard model for machine / engine rooms with the actual reading of present ppm level in the room and Alarm messages.

IP65
Two models with IP65 available:
- IP65 with stainless steel sensor head
- Temperature down to -20 °C / -4 °F
- IP65 enclosure. Temperature down to -40 °C / -40 °F

EExd
Like Standard but applicable in explosive areas Zone 1 and 2 and higher IP (NEMA).
The sensor is mounted in an external Stainless Steel head.

Remote LCD (accessory)
Remote LCD display with 5 m cable.

Remote sensor
Models with 5 m cable. Can be used in connection with safety valves / vent pipe applications.
Also available with remote EExd sensor.

Technical data

GD - Gas detecting sensors

Technical data

Features	Description
Refrigerants	Ammonia (R717)
	Type GDA: 0 – 100 ppm, 0 – 300 ppm, 0 – 1.000 ppm, 0 – 10.000 ppm, 0 – 30.000 ppm
	Carbon Dioxide (R744)
	Type GDC: 0 – 10.000 ppm, 0 – 20.000 ppm, 0 – 40.000 ppm
	Halo-Carbon - HCFC (R22, R123)
	Type GDHC: 0 – 1.000 ppm
	HFC (R404A, R410A, R134a, R407C, R507)
	Type GDHF: 0 – 1.000 ppm
	Hydro-carbon - Propane (R290), R600, R600a, R1270
	Type GDH: 0 – 5.000 ppm
Versions / temperature range	Standard, LCD display, IP65 and EExd: -20 – 50 °C
	Low temperature model: -40 – 50 °C
Cable connection	1 gland for 6 – 13 mm / 0.2 – 0.5 inch, 1 cable ø20 mm / 0.8 inch hole with blanking plug
	1 extra gland can be fitted (only Standard, LCD display and EExd)
Approvals	CE: EN55011 EN61326 Following the provisions of 89 / 336 / EEC, EMC directives and, Cenelec EN61010-2 : 2001 Following the provisions of 73 / 23 / EEC, Low Voltage directive (LVD) ATEX for EExd model: Directive 94 / 9 / EC Group 2, Category2, G and D, Zones 1 and 2

Models / Sensor	Standard Basic	Standard Basic with LCD display	IP65 with stainless steel sensor head	IP65 enclosure		EExd model	EExd model Low Temperature	IP66 enclosure 5 m remote IP65 sensor	IP66 enclosure 5 m remote IP65 EExd sensor	Remote LCD display IP41 5 m cable [3]
Temperature range										
EC [1]	-20 – 40 °C -4 – 104 °F	0 – 40 °C 32 – 104 °F	-20 – 40 °C -4 – 104 °F	-20 – 40 °C -4 – 104 °F	-40 – 40 °C -40 – 104 °F	-20 – 40 °C -4 – 104 °F	-40 – 40 °C -40 – 104 °F	-20 – 40 °C -4 – 104 °F	-20 – 40 °C -4 – 104 °F	0 – 40 °C 32 – 104 °F
SC, CT	-20 – 50 °C -4 – 122 °F	0 – 50 °C 32 – 122 °F	-20 – 50 °C -4 – 122 °F	-40 – 50 °C / -40 – 122 °F		-20 – 50 °C -4 – 122 °F	-40 – 50 °C -40 – 122 °F	-20 – 50 °C -4 – 122 °F	-20 – 50 °C -4 – 122 °F	0 – 50 °C 32 – 122 °F
IR	0 – 50 °C 32 – 122 °F	0 – 50 °C 32 – 122 °F	-20 – 50 °C -4 – 122 °F	-40 – 50 °C / -40 – 122 °F		-20 – 50 °C -4 – 122 °F	not available	not available	not available	0 – 50 °C 32 – 122 °F
Electrical data										
EC SC, CT	12 – 24 V DC, 0.23 A 12 – 24 V AC, 4 W					12 – 24 V DC, 0.23 A 12 – 24 V AC, 4 W	12 – 24 V DC, 0.23 A 12 – 24 V AC, 4 W	12 – 24 V DC, 0.23 A 12 – 24 V AC, 4 W		Supplied from connector on GD motherboard
IR	12 – 24 V DC, 0.3 A					12 – 24 V DC, 0.24 A	not available	not available	not available	
Enclosure										
EC SC, CT	IP30 (~NEMA 1)	IP30 (~NEMA 1)	IP65 (~NEMA 4)	IP65 (~NEMA 4)		IP65 (~NEMA 4)	IP65 (~NEMA 4)	[2] IP66 (~NEMA 4x)	[2] IP66 (~NEMA 4x)	IP41 (~NEMA 1)
IR							not available	not available	not available	

[1] Two models
[2] Remote sensor: IP65
[3] For all models except EExd and EExd Low Temperature

Sensor head

Models / Sensor	Standard Basic	Standard Basic with LCD display	IP65 for High RH and Fast response	IP65 enclosure	EExd model	EExd model Low Temperature	IP66 enclosure 5 m remote IP65 sensor	IP66 enclosure 5 m remote IP65 EExd sensor
Thread on external sensor								
EC	–	–	M 42 x 1.5 mm	M 42 x 1.5 mm	M 42 x 1.5 mm	M 42 x 1.5 mm	M 42 x 1.5 mm	M 42 x 1.5 mm
SC	–	–	M 42 x 1.5 mm	M 42 x 1.5 mm	1"5 / 16 x 20 UNF	1"5 / 16 x 20 UNF	M 42 x 1.5 mm	1"5 / 16 x 20 UNF
CT	–	–	M 35 x 1.5 mm	M 42 x 1.5 mm	1"5 / 16 x 20 UNF	M 35 x 1.5 mm	M 35 x 1.5 mm	M 35 x 1.5 mm
IR	–	–	M 42 X 1.5 mm	M 42 x 1.5 mm	M 42 X 1.5 mm	not available	not available	not available
Material for external sensor								
EC	–	–	Stainless Steel	Plastic	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
SC, CT	–	–	Stainless Steel	Plastic	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
IR	–	–	Stainless Steel	Plastic	Stainless Steel	not available	not available	not available

Ordering complete GD gas detecting sensors

GD - Standard basic

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5000
		GDA EC 300	0 – 300	100 / 200	0	Electro-chemical	148H5060
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5010
			0 – 1000	25 / 500	0	Electro-chemical	148H5050
		GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	148H5040
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5020
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	148H5030
Carbon Dioxide - CO_2	R744	GDC IR 10000	0 – 10000	5000 / 9000	0	Infrared	148H5070
		GDC IR 20000	0 – 20000	10000 / 18000	0	Infrared	[1])
		GDC IR 40000	0 – 40000	20000 / 36000	0	Infrared	[1])
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5100
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5110
	HFC R134a	GDHF-R3 SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5120
Hydro-Carbon	R290, R600, R600a, R1270	GDH SC 5000	0 – 5000	800 / 2500	–	Semi-Conductor	148H5190

GD - Standard basic with LCD display

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5001
		GDA EC 300	0 – 300	100 / 200	0	Electro-chemical	[1])
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5011
		GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	[1])
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5021
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	148H5031
Carbon Dioxide - CO_2	R744	GDC IR 10000	0 – 10000	5000 / 9000	0	Infrared	148H5071
		GDC IR 20000	0 – 20000	10000 / 18000	0	Infrared	[1])
		GDC IR 40000	0 – 40000	20000 / 36000	0	Infrared	[1])
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5101
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5111
	HFC R134a	GDHF-R3 SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5121
Hydro-Carbon	R290, R600, R600a, R1270	GDH SC 5000	0 – 5000	800 / 2500	–	Semi-Conductor	148H5191

IP65 with stainless steel sensor head

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5002
		GDA EC 300	0 – 300	100 / 200	0	Electro-chemical	[1])
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5012
			0 – 1000	25 / 500	0	Electro-chemical	148H5052
		GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	148H5042
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5022
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	148H5032
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5102
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5112

IP65 (-20 – 40 °C / -4 – 104 °F)

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5009
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5019
			0 – 1000	25 / 500	0	Electro-chemical	148H5059

[1]) *Please contact your local Danfoss sales office*

Ordering complete GD gas detecting sensors

IP65 (-40 – 50 °C / -40 – 122 °F)

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	148H5049
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5029
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	148H5039
Carbon Dioxide - CO_2	R744	GDC IR 10000	0 – 10000	5000 / 9000	0	Infrared	148H5072
		GDC IR 20000	0 – 20000	10000 / 18000	0	Infrared	148H5082
		GDC IR 40000	0 – 40000	20000 / 36000	0	Infrared	148H5092
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5109
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5119
	HFC R134a	GDHF-R3 SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5129

IP65 (-40 – 40 °C / -40 – 104 °F)

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5005
		GDA EC 300	0 – 300	100 / 200	0	Electro-chemical	148H5065
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5015
			0 – 1000	25 / 500	0	Electro-chemical	148H5055

EExd

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5003
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5013
			0 – 1000	25 / 500	0	Electro-chemical	148H5053
		GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	[1]
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5023
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	148H5033
Carbon Dioxide - CO_2	R744	GDC IR 10000	0 – 10000	5000 / 9000	0	Infrared	148H5073
		GDC IR 20000	0 – 20000	10000 / 18000	0	Infrared	[1]
		GDC IR 40000	0 – 40000	20000 / 36000	0	Infrared	[1]
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1]
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5113
	HFC R134a	GDHF-R3 SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1]
Hydro-Carbon	R290, R600, R600a, R1270	GDH SC 5000	0 – 5000	800 / 2500	–	Semi-Conductor	148H5193

EExd Low Temperature

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5006
		GDA EC 300	0 – 300	100 / 200	0	Electro-chemical	[1]
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5016
			0 – 1000	25 / 500	0	Electro-chemical	[1]
		GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	[1]
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5026
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	[1]
Carbon Dioxide - CO_2	R744	GDC IR 10000	0 – 10000	5000 / 9000	0	Infrared	[1]
		GDC IR 20000	0 – 20000	10000 / 18000	0	Infrared	[1]
		GDC IR 40000	0 – 40000	20000 / 36000	0	Infrared	[1]
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1]
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1]
	HFC R134a	GDHF-R3 SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1]

[1]) Please contact your local Danfoss sales office

Ordering complete GD gas detector

IP66 enclosure, 5 m remote, IP65 sensor

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	148H5007
		GDA EC 300	0 – 300	100 / 200	0	Electro-chemical	[1])
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	148H5017
		GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	[1])
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5027
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	[1])
Carbon Dioxide - CO_2	R744	GDC IR 10000	0 – 10000	5000 / 9000	0	Infrared	[1])
		GDC IR 20000	0 – 20000	10000 / 18000	0	Infrared	[1])
		GDC IR 40000	0 – 40000	20000 / 36000	0	Infrared	[1])
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5107
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5117
	HFC R134a	GDHF-R3 SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	148H5127

IP66 enclosure, 5 m remote, IP65 EExd sensor

Ordering

Type of gas	Refrigerant	Type	Range [ppm]	Alarm limits Low / High [ppm]	Respons delay [s]	Sensor type	Code no.
Ammonia - NH_3	R717	GDA EC 100	0 – 100	25 / 35	0	Electro-chemical	[1])
		GDA EC 300	0 – 300	100 / 200	0	Electro-chemical	[1])
		GDA EC 1000	0 – 1000	500 / 1000	0	Electro-chemical	[1])
		GDA SC 1000	0 – 1000	80 / 250	0	Semi-Conductor	[1])
		GDA SC 10000	0 – 10000	5000 / 9000	0	Semi-Conductor	148H5028
		GDA CT 30000	0 – 30000	3000 / 28000	0	Catalytic	[1])
Carbon Dioxide - CO_2	R744	GDC IR 10000	0 – 10000	5000 / 9000	0	Infrared	[1])
		GDC IR 20000	0 – 20000	10000 / 18000	0	Infrared	[1])
		GDC IR 40000	0 – 40000	20000 / 36000	0	Infrared	[1])
Halo-Carbon	HCFC R22, R123	GDHC SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1])
	HFC R404A, R507	GDHF SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1])
	HFC R134a	GDHF-R3 SC 1000	0 – 1000	500 / 900	0	Semi-Conductor	[1])

[1]) Please contact your local Danfoss sales office

Ordering

GD sensor PCB

Ordering

Type	Description	Code No.
GDA EC 100	Sensor PCB	148H5200
GDA EC 1000	Sensor PCB	148H5201
GDA SC 10000	Sensor PCB	148H5202
GDA CT 30000	Sensor PCB	148H5203
GDC IR 10000	Sensor PCB for Standard Basic and Standard Basic with LCD display	148H5204
GDHC SC 1000	Sensor PCB	148H5205
GDHF SC 1000	Sensor PCB	148H5206
GDH CT 5000	Sensor PCB	148H5207
GDA EC 100	Sensor PCB Ext for IP65 / EExd enclosure	148H5208
GDA EC 1000	Sensor PCB Ext for IP65 / EExd enclosure	148H5209
GDA SC 10000	Sensor PCB Ext for IP65 enclosure	148H5210
GDA CT 30000	Sensor PCB Ext for IP65 / EExd enclosure	148H5211
GDHC SC 1000	Sensor PCB Ext for IP65 enclosure	148H5212
GDHF SC 1000	Sensor PCB Ext for IP65 enclosure	148H5213
GDH CT 5000	Sensor PCB Ext for EExd enclosure	148H5214
GDA EC 300	Sensor PCB Ext for IP65 / EExd enclosure	148H5240
GDA EC 300	Sensor PCB	148H5215
GDA SC 10000	Sensor PCB Ext for EExd enclosure / EExd Low Temperature enclosure	148H5241
GDHC SC 1000	Sensor PCB Ext for EExd enclosure	148H5242
GDHF SC 1000	Sensor PCB Ext for EExd enclosure	148H5243
GDHF-R3 SC 1000	Sensor PCB	148H5246
GDHF-R3 SC 1000	Sensor PCB Ext for IP65 enclosure	148H5247
GDE EC 500	Sensor PCB Ext for IP65	148H5248
GDA SC 1000	Sensor PCB	148H5249
GDC IR 10000	Sensor PCB Ext for EExd enclosure	148H5250
GDA SC 1000	Sensor PCB Ext for IP65 enclosure	148H5254
GDH SC 5000	Sensor PCB Ext for EExd enclosure	148H5260
GDA SC 10000	Sensor PCB with 5 m remote IP65 sensor. For IP66 enclosure	148H5261
GDHC SC 1000	Sensor PCB with 5 m remote IP65 sensor. For IP66 enclosure	148H5262
GDHF SC 1000	Sensor PCB with 5 m remote IP65 sensor. For IP66 enclosure	148H5263
GDHF-R3 SC 1000	Sensor PCB with 5 m remote IP65 sensor. For IP66 enclosure	148H5264
GDA SC 10000	Sensor PCB with 5 m remote IP65 EExd sensor. For IP66 enclosure	148H5265
GDH SC 5000	Sensor PCB	148H5267
GDA EC 100	Sensor PCB Ext for EExd Low Temperature enclosure	148H5268
GDA EC 1000	Sensor PCB Ext for EExd Low Temperature enclosure	148H5269
GDA EC 100	Sensor PCB with 5 m remote IP65 sensor. For IP66 enclosure	148H5273
GDA EC 1000	Sensor PCB with 5 m remote IP65 sensor. For IP66 enclosure	148H5275

Accessories

Ordering

Description	Code No.
GD Test Kit • GD Tester all models. To test mother PCB at Sensor PCB replacement • Beaker M42 • EC / SC / CT-Adapter. Fit Beaker M42 • M35 Adapter. Fit Beaker M42	148H5230
GD mother PCB all models	148H5232
GD Tester for mother PCB, all models	148H5239
I-PACK (10) GD Ampoules 100 ppm ammonia	148H5234
I-PACK (10) GD Ampoules 1000 ppm ammonia	148H5235
I-PACK (10) GD Ampoules 2000 ppm CO_2	148H5236
Remote LCD display IP41	148H5238

Quick Selection Notes:

DGS - Gas sensors

DGS helps to comply to environmental F-Gas Regulations and / or Health and Safety requirements, on new or existing systems in:

- Supermarkets
- Process refrigeration plants
- Refrigerated storage and warehousing
- Special applications areas / zones



Utilizing
either Semi-Conductor (SC) or Infrared (IR) technologies

Can be used
in stand-alone or integrated systems, where continuous real-time, automatic monitoring with Danfoss ADAP-KOOL® Refrigeration Control and Monitoring System and / or Building Management Systems is applied

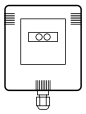


Gives
quick and immediate response in detecting a wide range of different gases typically applied in Refrigeration and Air Conditioning systems

Facts

- Typical Refrigerant gas applications include:
  - Halocarbons: HFC's, HCFC's, CFCs
  - Carbon Dioxide (CO_2 / R744)
  - Hydrocarbons (e.g. R290, R600a)
  - Other special application gases to customer request

Technical data and ordering



DGS - Gas Sensors

Technical data

Features	Description
Power Supply	12 / 24 V AC / DC ± 20%
Power Consumption	SC:153 mA / IR: 136 mA
Power Monitoring	Green LED indication
Visual Alarm	RED LED indication
Audible Alarm	Sounder, enabled / disabled
Fault Monitoring	Red LED ON ~ Green LED OFF
Fault State	0 – 0.5 V (1 – 5 V), 0 – 1 V (2 – 10 V), 0 – 2 mA (4 – 20 mA)
Analogue Outputs	0 – 5 V, 1 – 5 V, 0 – 10 V, 2 – 10 V, 4 – 20 mA
Digital Outputs	1-Relay 1 A / 24 V DC / 120 V AC Selectable Delay: 0.1 min., 5 min., 10 min.
IP Enclosure rating	IP41 or IP66
Standard Compliance	WEEE RoHS EuP

Sensor Information	Value	Semi-Conductor with filter (multigas) SC Halocarbons	Semi-Conductor (multigas) SC Hydrocarbons	Infrared IR CO_2
Typical Measurement Range	–	0 – 1.000 ppm	0 – 1.000 ppm	0 – 10.000 ppm 0 – 20.000 ppm 0 – 50.000 ppm
Temperature Range	IP41	-20 – 50 °C / -4 – 122 °F	20 – 50 °C / -4 – 122 °F	20 – 50 °C / -4 – 122 °F
	IP66	-40 – 50 °C / -40 – 122 °F	-40 – 50 °C / -40 – 122 °F	-40 – 50 °C / -40 – 122 °F
Relay Factory Default Setting	–	50% of Range	50% of Range	50% of Range
Humidity Range non-condensing	–	0 – 95%	0 – 95%	0 – 95%
Typical sensor life	–	5-years	5-years	5-years
Alarm threshold	T50	76 sec (filtered)	50 sec (filtered)	50 sec
Recovery time	T90	215 sec (filtered) 600 sec	90 sec (filtered) 200 sec	120 sec 235 sec
Linearity	–	Linear over calibrated range		
Calibration requirements	–	Standards generally require annual test and calibration See Danfoss Manual for Instructions *Note: Semi-Conductor sensors are non-selective, but calibrated to a specfic gas*		

Danfoss DGS - IP41 Enclosure Versions

Ordering

Refrigerant	Type	Description	Code no.
R404A, R507	DGS-SC	Gas Detector (IP41) Std. default R404A / R507 (min. -20 °C)	080Z2098
R134a	DGS-SC	Gas Detector (IP41) std. default R134a (min. -20 °C)	080Z2092
R407A	DGS-SC	Gas Detector (IP41) std. default R407A (min. -20 °C)	080Z2093
R410A	DGS-SC	Detector (IP41) std. default R410 (min. -20 °C)	Contact Danfoss
CO_2 (R744)	DGS-IR-CO_2	Gas Detector (IP41) for CO_2 std. (min.-20 °C)	080Z2095
	DGS-IR-CO_2-FS	Fail safe. Gas Detector (IP41) for CO_2 std. (min. -20 °C)	080Z2294

Danfoss DGS - IP66 Enclosure Versions

Ordering

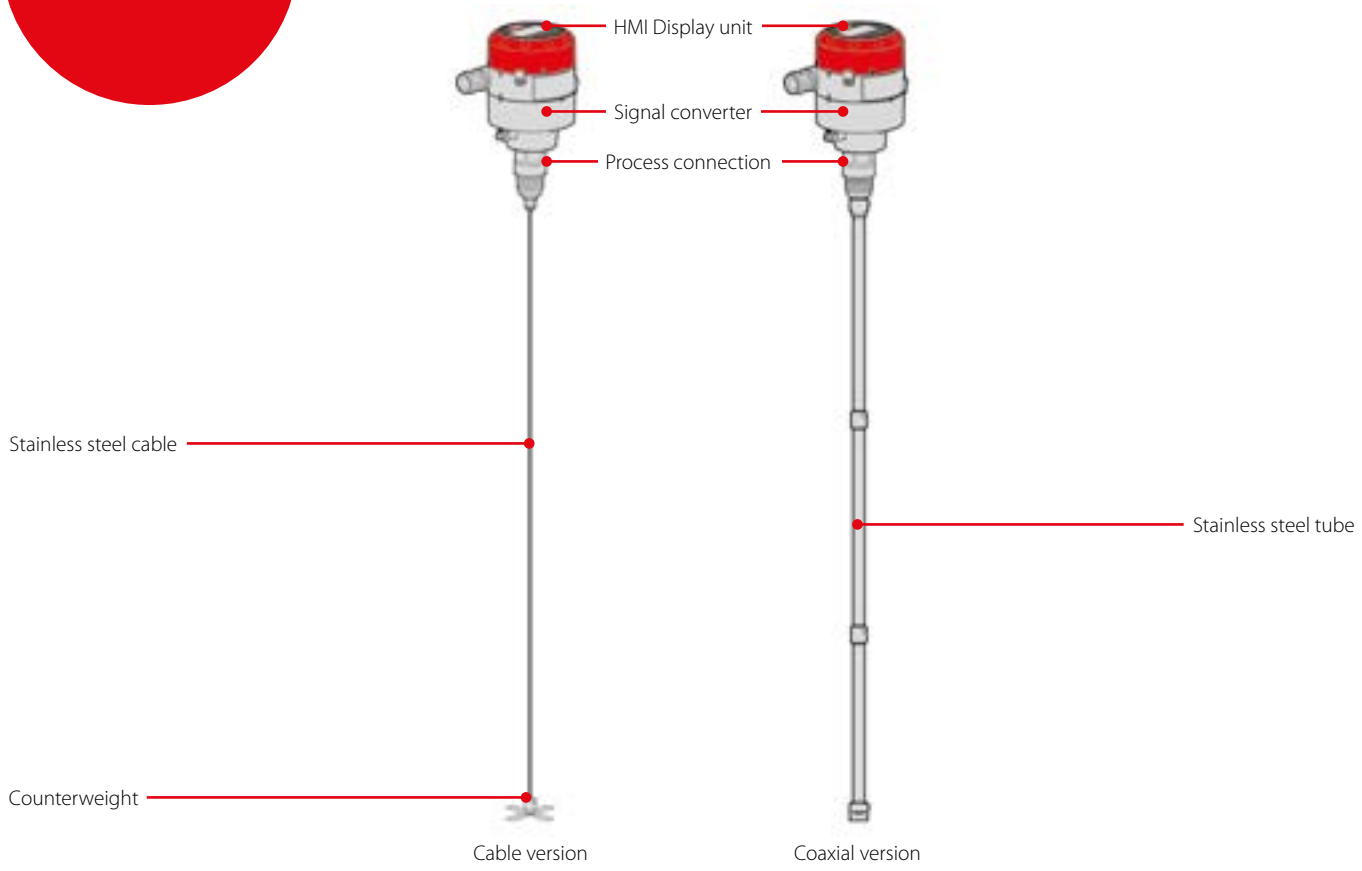
Refrigerant	Type	Description	Code no.
R404A, R507	DGS-SC	Gas Detector (IP66) Std. default R404A / R507 (min. -40 °C)	080Z2099
R134a	DGS-SC	Gas Detector (IP66) std. default R134a (min. -40 °C)	080Z2089
R407A	DGS-SC	Gas Detector (IP66) std. default R407A (min. -40 °C)	080Z2094
R410A	DGS-SC	Detector (IP66) std. default R410 (min. -40 °C)	Contact Danfoss
CO_2 (R744)	DGS-IR-CO_2	Gas Detector (IP66) for CO_2 std. (min.-40 °C)	080Z2096
	DGS-IR-CO_2	Remote, 3 m. Gas Detector (IP66) for CO_2 std. (min. -40 °C)	080Z2097
	DGS-IR-CO_2-FS	Fail safe. Gas Detector (IP66) for CO_2 std. (min. -40 °C)	080Z2293
	DGS-IR-CO_2-FS	Remote, 3 m. Fail safe. Gas Detector (IP66) for CO_2 std. (min. -40 °C)	080Z2292

AKS 4100 / AKS 4100U - Liquid level sensor

The AKS 4100 / AKS 4100U liquid level sensor is designed specifically to measure liquid levels in a wide range of refrigeration applications. The liquid level sensor is based on a proven techhology called Time Domain Reflectometry (TDR) or Guided Micro Wave.

AKS 4100 / AKS 4100U liquid level sensor can be used to measure the liquid level of many different refrigerants in vessels, accumulators, receivers, standpipes, etc.

Features
AKS 4100 / 4100U



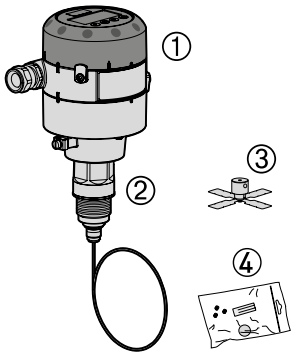
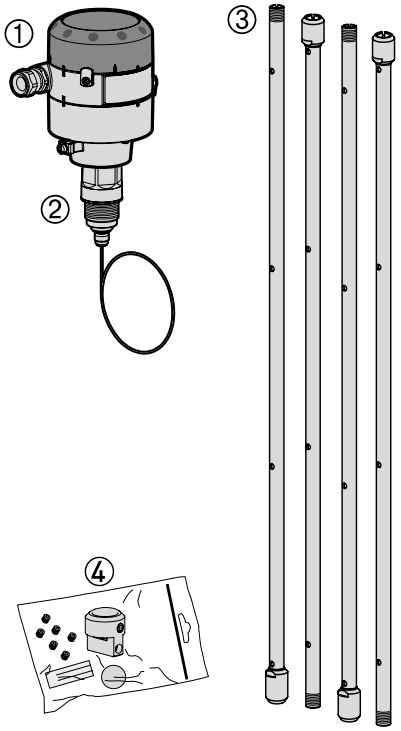
Facts

- Approved and qualified by Danfoss for refrigeration applications
- One product covering several probe lengths (cable version)
- A single product for all commonly used refrigerants (cable version)
- Cable version requires less top-end clearance for installation and service
- Proven operation with all refrigerants in combination with oil
- No need to clean cable version when fully covered by oil
- The cable version is very compact and easy to handle, ship, install and use with different lengths and refrigerants
- Changes of the liquid dielectric constant (εr) does not affect operation
- Up to 5000 mm / 197 inch probe length with cable version
- 2-wire loop powered; no separate transformer needed
  Please Note: if used together with Danfoss EKC 347 Level Controller, a 14 – 30 V DC supply is required
- Multi language HMI
- Level and setting readout in [mm], [cm], [m] / [ft], [in]

The AKS 4100 / AKS 4100U concept

AKS 4100 / AKS 4100U is available in two different versions:
- Cable version
- Coaxial version

Both cable and coaxial versions are available with two different mechanical process connections:
- AKS 4100: G1 inch pipe thread. Aluminium gasket included
- AKS 4100U: ¾ inch NPT

CABLE version:	COAXIAL D14 version:
	

Cable version
The cable version consists of:
1. Signal converter, which can be supplied with or without HMI
2. Process connection with 5 m / 197 in, ø2 mm / 0.08 in stainless cable
3. Counterweight
4. Accessory bag comprising:
   - 3 mm set screws
   - Red cover to protect process connection (2) prior to mounting signal converter
   - Setting label

With the cable version it is possible to adapt the AKS 4100 / AKS 4100U to any length:
800 mm / 31.5 in – 5000 mm / 196.9 in

Coaxial version
The Coaxial version consists of:
1. Signal Converter (with or without HMI)
2. Process connection with 5 m / 197 in, ø2 mm / 0.08 in stainless wire
3. Tube(s) depending on required length
4. Accessory bag comprising:
   - End Connector (incl. 3 mm / 0.12 in set screws)
   - 3 mm / 0.12 in set crews (1 set screw pr. tube)
   - Red cover to protect mechanical process connection (2), before Signal Converter is mounted
   - Setting label

The coaxial version is available in the following probe lengths:
500 mm, 800 mm, 1000 mm, 1200 mm, 1500 mm, 1700 mm, 2200 mm

Technical data

Measuring system

Measuring principle	2-wire loop-powered level transmitter; Time Domain Reflectometry (TDR)
Application range	Level measurement of liquid refrigerants Approved refrigerants: Halogen Free / Environmently friendly: R717 / NH_3 / R744 CO_2 / HCFC and non flammable HFC
Primary measured value	Time between the emitted and received signal
Secondary measured value	Distance or level

Display and User interface	
Display	Integrated LCD display
	128 × 64 pixels in 8-step greyscale with 4-button keypad
Interface languages	English (default), German, French, Spanish, Japanese, Chinese, Russian

Operating conditions

Ambient temperature	-40 – 80 °C / -40 – 175 °F For HMI: -20 – 60 °C / -4 – 140 °F
Storage temperature	-40…85 °C / -40…185 °F
Process connection temperature	Standard -60 – 100 °C / -76 – 212 °F
Operating pressure	Standard: -1 – 100 barg / -14.5 – 1450 psig
Liquid dielectric constant (εr)	Cable version to be used in R717 / NH_3, HCFC and HFC εr, liquid > 5.6 Coaxial version is mandatory in R744 / CO_2 εr, liquid > 1.3
Vibration resistance	EN 60721-3-4 (1...9 Hz: 3 mm / 10...200 Hz:1g; 10g shock half-wave sinusoidal: 11 ms)
Enclosure rating	IP66 / IP67 equivalent to NEMA type 4X (housing) and type 6P (probe)

Process connections

Thread	
Cable Ø2 mm / 0.08 in	AKS 4100: G1 inch pipe thread. Aluminium gasket included AKS 4100U: ¾ inch NPT
Coaxial	AKS 4100: G1 inch pipe thread. Aluminium gasket included AKS 4100U: ¾ inch NPT

Electrical connections

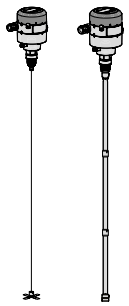
Power supply	Terminals output: 14 – 30 V DC. Min. / Max. Value for an output of 22 mA at the terminal Ambient temperature limitations: -40 – 80 °C / -40 – 176 °F: 16 – 30 V DC -20 – 80 °C / -4 – 176 °F: 14 – 30 V DC
Current output load	RL [Ω] ≤ ((Uext -14 V) / 20 mA) – Default (Error output set to 3.6 mA) RL [Ω] ≤ ((Uext -14 V) / 22 mA) – (Error output set to 22 mA)
Cable gland	AKS 4100: PG 13, M20×1.5; (cable diameter: 6 – 8 mm / 0.24 – 0.31 in AKS 4100U: ½ inch NPT
Cable entry capacity (terminal)	0.5 – 1.5 mm^2 (~20 – 15 AWG)

Input and output

Current output	
Output signal	4…20 mA or 3.8…20.5 mA acc. to NAMUR NE 43
Resolution	±3 µA
Temperature drift	Typically 75 ppm / K
Error signal	High: 22 mA; Low: 3.6 mA acc. to NAMUR NE 43; Hold (frozen value - not available with NAMUR NE 43 compliant output)

Technical data Ordering

When ordering without HMI please note:
Each AKS 4100 / AKS 4100 must always be programmed via the HMI display unit.



The HMI display unit can be ordered separately:

- **084H4540 / 084H4590**
  AKS 4100 / AKS 4100U HMI display unit with rear cover and mounting bracket for easy programming.
  The same AKS 4100 / AKS 4100U HMI display unit can be used to programme more AKS 4100 / AKS 4100U.
- **084H4548 / 084H4598**
  AKS 4100 / AKS 4100U HMI display unit (usually spare part).

AKS 4100 / AKS 4100U - Cable version

Technical data

Type	Description	Languages	HMI	Code no.
			with / without	
AKS 4100	with 5 m (197 in) ø2 mm (ø0.08 in) stainless cable and counterweight	English (default), German, French, Spanish	with	084H4501
AKS 4100	with 5 m (197 in) ø2 mm (ø0.08 in) stainless cable and counterweight	English (default), Japanese, Chinese, Russian	with	084H4550
AKS 4100	with 5 m (197 in) ø2 mm (ø0.08 in) stainless cable and counterweight	–	without	084H4500
AKS 4100U	with 5 m (197 in) ø2 mm (ø0.08 in) stainless cable and counterweight	English (default), German, French, Spanish	with	084H4521
AKS 4100U	with 5 m (197 in) ø2 mm (ø0.08 in) stainless cable and counterweight	English (default), Japanese, Chinese, Russian	with	084H4571
AKS 4100U	with 5 m (197 in) ø2 mm (ø0.08 in) stainless cable and counterweight	–	without	084H4520

AKS 4100 / AKS 4100U - Coaxial version

Technical data

Type	Description	Languages	Probe length		HMI	Code no.
			[mm]	[in]	with / without	
AKS 4100	Coaxial	English (default), German, French, Spanish	500	–	with	084H4510
AKS 4100	Coaxial	English (default), Japanese, Chinese, Russian	500	–	with	084H4560
AKS 4100	Coaxial	–	500	–	without	084H4503
AKS 4100	Coaxial	English (default), German, French, Spanish	800	–	with	084H4511
AKS 4100	Coaxial	English (default), Japanese, Chinese, Russian	800	–	with	084H4561
AKS 4100	Coaxial	–	800	–	without	084H4504
AKS 4100	Coaxial	English (default), German, French, Spanish	1000	–	with	084H4512
AKS 4100	Coaxial	English (default), Japanese, Chinese, Russian	1000	–	with	084H4562
AKS 4100	Coaxial	–	1000	–	without	084H4505
AKS 4100	Coaxial	English (default), German, French, Spanish	1200	–	with	084H4513
AKS 4100	Coaxial	English (default), Japanese, Chinese, Russian	1200	–	with	084H4563
AKS 4100	Coaxial	–	1200	–	without	084H4506
AKS 4100	Coaxial	English (default), German, French, Spanish	1500	–	with	084H4514
AKS 4100	Coaxial	English (default), Japanese, Chinese, Russian	1500	–	with	084H4564
AKS 4100	Coaxial	–	1500	–	without	084H4507
AKS 4100	Coaxial	English (default), German, French, Spanish	1700	–	with	084H4515
AKS 4100	Coaxial	English (default), Japanese, Chinese, Russian	1700	–	with	084H4565
AKS 4100	Coaxial	–	1700	–	without	084H4508
AKS 4100	Coaxial	English (default), German, French, Spanish	2200	–	with	084H4516
AKS 4100	Coaxial	English (default), Japanese, Chinese, Russian	2200	–	with	084H4566
AKS 4100	Coaxial	–	2200	–	without	084H4509
AKS 4100U	Coaxial	English (default), German, French, Spanish	–	19.2	with	084H4530
AKS 4100U	Coaxial	English (default), Japanese, Chinese, Russian	–	19.2	with	084H4580
AKS 4100U	Coaxial	–	–	19.2	without	084H4524
AKS 4100U	Coaxial	English (default), German, French, Spanish	–	30	with	084H4531
AKS 4100U	Coaxial	English (default), Japanese, Chinese, Russian	–	30	with	084H4581
AKS 4100U	Coaxial	–	–	30	without	084H4525
AKS 4100U	Coaxial	English (default), German, French, Spanish	–	45	with	084H4532
AKS 4100U	Coaxial	English (default), Japanese, Chinese, Russian	–	45	with	084H4582
AKS 4100U	Coaxial	–	–	45	without	084H4526
AKS 4100U	Coaxial	English (default), German, French, Spanish	–	55	with	084H4533
AKS 4100U	Coaxial	English (default), Japanese, Chinese, Russian	–	55	with	084H4583
AKS 4100U	Coaxial	–	–	55	without	084H4527
AKS 4100U	Coaxial	English (default), German, French, Spanish	–	65	with	084H4534
AKS 4100U	Coaxial	English (default), Japanese, Chinese, Russian	–	65	with	084H4584
AKS 4100U	Coaxial	–	–	65	without	084H4528
AKS 4100U	Coaxial	English (default), German, French, Spanish	–	85	with	084H4535
AKS 4100U	Coaxial	English (default), Japanese, Chinese, Russian	–	85	with	084H4585
AKS 4100U	Coaxial	–	–	85	without	084H4529

Technical data Ordering

AKS 4100 / AKS 4100U - HMI

Accessories

Type	Description	Languages	Code no.
AKS 4100 / AKS 4100U HMI	Service / Display unit with rear cover and mounting bracket	English (default), German, French, Spanish	084H4540
AKS 4100 / AKS 4100U HMI	Service / Display unit with rear cover and mounting bracket	English (default), Japanese, Chinese, Russian	084H4590
AKS 4100 / AKS 4100U HMI	Display	English (default), German, French, Spanish	084H4548
AKS 4100 / AKS 4100U HMI	Display	English (default), Japanese, Chinese, Russian	084H4598
AKS 4100 / AKS 4100U	Signal Converter without HMI, excluding cable gland	–	084H4541

Quick Selection Notes:

Secop reciprocating compressors produced for Danfoss - Direct current

BD range is the leading and widest AC / DC compressor range tailored for cooling on the move.

The excellent performance of the BD series safeguards food, medical and telecommunication.





Facts

Applications:
- 12 / 24 V DC mobile refrigerators and freezers
- 12 V DC LBP / MBP van cooling boxes
- 12 / 24 V DC HBP mobile spot cooling systems
- 48 V DC HBP telecommunication applications

- Operation under extreme conditions
- Minimal energy consumption
- Portable beyond traditional limits

- Safety against destructive battery discharge, electronic thermostat and fan speed control
- Low sound emission
- Application possible at extreme voltage rate

Technical data and ordering

Compressors R134a R404A/R507 * R600a ** R290 ***	Code numbers	Electronic units (voltages & code numbers)														
		Standard 12 – 24 V DC 101N0210	EMI 12 – 24 V DC 101N0220	High Start 12 – 24 V DC 101N0230	High Speed 12 – 24 V DC 101N0290	AEO EMI 12 – 24 V DC 101N0320	AEO High Start 12 – 24 V DC 101N0330	Solar 10 – 30 V DC 101N0400	Solar 20 – 45 V DC 101N0410	AC/DC converter 12 – 24 V DC & 100 – 240 V AC 101N0500	Automotive 12 – 24 V DC 101N0600 101N0630	101N8xxx 12 V DC 101N0820+0800 (alt.: 101N0830)	101N8xxx 24 V DC 101N0820+0810	101N07xx 24 V DC 101N0715	Telecom 48 V DC 101N0720	Telecom 48 V DC 101N0732
BD35F	101Z0200	x	x	–	–	x	–	x	x	x	x	–	–	–	–	–
BD35F (inch con.)	101Z0204	x	x	–	–	x	–	x	x	x	x	–	–	–	–	–
BD35F-B	101Z0205	x	x	–	–	x	–	–	–	x	x	–	–	–	–	–
BD35F-HD	101Z0206	x	–	–	–	–	–	–	–	–	–	–	–	–	–	–
BD50F	101Z1220	x	x	x	–	x	x	–	–	x	–	–	–	–	–	–
BD50F (inch con.)	101Z0203	x	x	x	–	x	x	–	–	x	–	–	–	–	–	–
BD80F	101Z0280	–	–	–	x	–	–	–	–	–	–	–	–	–	–	–
BD250GH.2	101Z0406	–	–	–	x	–	–	–	–	–	–	–	–	–	–	–
BD250GH.2 (48V)	101Z0405	–	–	–	–	–	–	–	–	–	–	–	–	–	–	x
BD350GH (12V)	102Z3015	–	–	–	–	–	–	–	–	–	–	x+x	–	–	–	–
BD350GH (24V)	102Z3016	–	–	–	–	–	–	–	–	–	–	–	x+x	x	–	–
BD350GH (48V)	102Z3031	–	–	–	–	–	–	–	–	–	–	–	–	–	x	–
BD350GH Twin (12V)	102Z3018	–	–	–	–	–	–	–	–	–	–	x+x x	–	–	–	–
BD350GH Twin (24V)	102Z3017	–	–	–	–	–	–	–	–	–	–	–	x+x	x x	–	–
BD220CL *	102Z3020	–	–	–	–	–	–	–	–	–	–	x+x	–	–	–	–
BD35K **	101Z0211	x	x	–	–	–	–	x	x	–	–	–	–	–	–	–
BD80CN ***	101Z0403	–	–	x	–	–	x	–	–	–	–	–	–	–	–	–
BD100CN ***	101Z0401	–	–	–	x	–	–	–	–	–	–	–	–	–	–	–
TOOL4COOL® applicable		–	–	–	–	–	–	–	–	–	–	x	–	x	x	x

Compressors R134a	Code numbers	Electronic units (voltages & code numbers)				
		Variable Speed (VSD) 12 – 24 V DC 101N2100	Fixed Speed (FSD) 12 – 24 V DC 101N2600	VSD w. AC/DC converter 12 – 24 V DC & 100 – 240 V AC 101N5100	FSD w. AC/DC converter 12 – 24 V DC & 100 – 240 V AC 101N5200	Automotive 12 V DC 101N1010
BD1.4F-AUTO	109Z0102	–	–	–	–	x
BD1.4F-FSD	109Z0305	–	x	–	x	–
BD1.4F-VSD	109Z0200	x	–	x	–	–
BD1.4F-VSD-HD	109Z0250	x	–	–	–	–
BD1.4F-VSD (inch connectors)	109Z0202	x	–	x	–	–
BD1.4F-VSD-HD (inch connectors)	109Z0251	x	–	–	–	–
TOOL4COOL® applicable		x	x	x	x	x

Applications	Compressors														
	BD1.4F-AUTO	BD1.4F-VSD	BD1.4F-VSD-HD	BD1.4F-FSD	BD35F	BD35F-B	BD35F-HD	BD35K	BD50F	BD80F	BD80CN	BD100CN	BD150F	BD250GH	BD350GH	BD220CL
Truck refrigerators	–	x	x	–	x	–	x	–	x	–	–	–	–	–	–	–
Boat refrigerators	–	x	–	–	x	–	–	–	x	x	–	–	–	–	–	–
Bus refrigerators	–	x	–	–	x	x	–	–	–	–	–	–	–	–	–	–
Portable boxes	–	x	–	x	x	–	–	–	x	x	–	–	–	–	–	–
Car minbars (high end)	x	x	–	–	x	–	–	–	–	–	–	–	–	–	–	–
Car minibars (SUV, MPV)	–	x	–	–	x	–	–	–	–	–	–	–	–	–	–	–
Spot cooling (e.g. trucks)	–	–	–	–	–	–	–	–	–	–	–	–	–	x	x	–
Van boxes	–	–	–	–	–	–	–	–	x	x	–	–	x	x	x	x
Battery cooling	–	–	–	–	–	–	–	–	–	–	–	–	–	x	x	–
Solar cabinets	–	–	–	–	x	–	–	x	x	–	x	x	–	–	–	–

Technical data and ordering

Compressors R134a R404A/R507 * R600a **, R290 ***	Capacity [W] at max. speed **** EN12900 Household/CECOMAF | ASHRAE Evaporating temperature [°C]													
	-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
BD35F /-B /-HD	–	–	26 | 32	36 | 44	40 | 50	51 | 62	70 | 86	94 | 115	122 | 150	–	–	–	–	–
BD50F	–	–	37 | 45	52 | 64	58 | 72	71 | 88	95 | 117	123 | 152	157 | 194	–	–	–	–	–
BD80F	–	–	55 | 68	78 | 96	87 | 107	105 | 130	138 | 170	176 | 218	221 | 274	–	–	–	–	–
BD250GH.2	–	–	–	61 | 76	69 | 86	87 | 108	119 | 148	156 | 194	200 | 248	251 | 311	308 | 383	336 | 418	373 | 464	446 | 556
BD250GH.2 (48V)	–	–	–	64 | 80	73 | 91	91 | 113	124 | 153	162 | 201	208 | 257	261 | 323	322 | 400	352 | 437	392 | 488	472 | 589
BD350GH (12V)	–	–	–	126 | 156	139 | 173	169 | 209	220 | 273	282 | 349	355 | 440	440 | 546	540 | 670	588 | 731	654 | 814	786 | 979
BD350GH (24V)	–	–	–	126 | 156	139 | 173	169 | 209	220 | 273	282 | 349	355 | 440	440 | 546	540 | 670	588 | 731	654 | 814	786 | 979
BD350GH (48V)	–	–	–	121 | 150	135 | 167	164 | 203	216 | 267	277 | 343	350 | 434	436 | 540	535 | 664	584 | 725	650 | 808	781 | 973
BD350GH Twin (12 V)	–	–	–	251 | 312	279 | 346	337 | 418	440 | 546	564 | 698	710 | 880	880 | 1092	1080 | 1340	1176 | 1462	1308 | 1628	1572 | 1958
BD350GH Twin (24 V)	–	–	–	252 | 312	278 | 346	338 | 418	440 | 546	564 | 698	710 | 880	880 | 1092	1080 | 1340	1176 | 1462	1308 | 1628	1572 | 1958
BD220CL *	83 | 96	121 | 140	166 | 193	220 | 255	240 | 279	283 | 328	355 | 413	439 | 511	535 | 624	–	–	–	–	–
BD35K **	–	–	25 | 30	36 | 44	41 | 49	49 | 60	65 | 79	84 | 102	106 | 129	–	–	–	–	–
BD80CN ***	31 | 35	45 | 51	62| 69	82 | 91	90 | 100	105 | 118	133 | 148	164 | 184	–	–	–	–	–	–
BD100CN ***	45 | 50	62 | 70	83 | 93	108 | 121	117 | 131	137 | 153	170 | 190	209 | 233	–	–	–	–	–	–
BD1.4F-VSD /-HD	–	–	12 | 15	23 | 29	27 | 34	36 | 45	52 | 65	71 | 88	92 | 114	116 | 144	144 | 179	158 | 197	178 | 222	218 | 272
BD1.4F-FSD	–	–	5 | 6	13 | 17	16 | 21	23 | 29	35 | 44	49 | 62	66 | 82	85 | 106	–	–	–	–
BD1.4F-AUTO	–	–	–	14 | 18	18 | 22	24 | 31	36 | 45	50 | 62	66 | 83	86 | 106	108 | 134	–	–	–

Compressors R134a R404A/R507 * R600a **, R290 ***	Code numbers	Power consumption [W] at max. speed **** Evaporating temperature [°C]													
		-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
BD35F /-B /-HD	101Z0200 /0204 /0205 /0206	–	–	36	43	45	51	60	69	79	–	–	–	–	–
BD50F	101Z1220 /0203	–	–	47	59	63	71	83	95	108	–	–	–	–	–
BD80F	101Z0280	–	–	69	87	93.0	105	123	144	168	–	–	–	–	–
BD250GH.2	101Z0406	–	–	–	68	72	82	95	108	122	138	156	165	177	202
BD250GH.2 (48V)	101Z0405	–	–	–	72	77	85	99	113	128	143	160	167	177	196
BD350GH (12V)	102Z3015	–	–	–	140	149	168	197	228	259	292	325	340	358	391
BD350GH (24V)	102Z3016	–	–	–	122	129	144	169	194	221	248	276	288	303	330
BD350GH (48V)	102Z3031	–	–	–	131	139	155	181	208	236	265	294	307	323	352
BD350GH Twin (12V)	102Z3018	–	–	–	280	298	336	394	456	518	584	650	680	716	782
BD350GH Twin (24V)	102Z3017	–	–	–	244	258	288	338	388	442	496	552	576	606	660
BD220CL *	102Z3020	121	147	173	200	209	227	255	284	314	–	–	–	–	–
BD35K **	101Z0211	–	–	35	43	45	50	56	63	70	–	–	–	–	–
BD80CN ***	101Z0403	47	55	63	72	75	81	89	97	–	–	–	–	–	–
BD100CN ***	101Z0401	57	69	81	93	96	104	115	125	–	–	–	–	–	–
BD1.4F-VSD /-HD	109Z0200 /0202 /0250 /0251	–	–	27	34	36	41	48	55	61	68	76	79	83	90
BD1.4F-FSD	109Z0305	–	–	16	23	25	29	35	40	44	49	–	–	–	–
BD1.4F-AUTO	109Z0102	–	–	–	26	28	30	35	40	45	50	56	–	–	–

Quick Selection Notes:

Secop reciprocating compressors produced for Danfoss - Light commercial

Specially optimised for use in household and light commercial applications, hermetic reciprocating compressors from Secop for Danfoss provide high cooling capacity in an energy saving design.

Compressor models are available for R134a, R290, R404A / R507A, R407C and R600a, for cooling needs from 20 W to 6 kW.





Facts

Applications:

- Laboratory and medical equipment
- Compressed air dryers
- Glass door merchandisers
- Display cabinets
- Fridges and freezers
- Ice cream cabinets
- Vending machines
- Drink dispensers
- Ice making machines
- Bottle coolers
- Heat pumps
- Milk cooling tanks
- Wine cellars

- Easy installation
- Low noise and high energy efficiency
- Robust in tough operating conditions
- Immune to unstable power supply
- Environmentally friendly solutions

Secop inverter reciprocating compressors produced for Danfoss - Light Commercial

Cut a slice out of your energy bill with variable speed techology in supermarket and convenience store cabinets with SLV compressors. SLV inverter compressor with intelligent 220 V 50 / 60 Hz controller is the natural choice when you need a versatile package for a wide range of light commercial LBP and MBP applications like freezers and cabinets.

SLV compressors are available for R404A / R507 and the environmentally friendly refrigerant, R290.





Facts

Applications:
- Freezers
- Display cabinets

- Advanced efficiency reduces energy consumption dramatically
- Reduces food loss and increases food quality
- Environmentally friendly
- Enables shop owners to comply with the HACCP standard on food quality

- Easy integration in existing and new monitoring systems
- Simpler installation, less room for errors, easier field service
- Reduces food losses and increases food quality
- Lower noise level

Technical data and ordering

Reciprocating compressors - Light Commercial

R134a

Application	Compressor	Code numbers		Capacity [W] at test conditions															Power consumption [W]				Displacement
		Compressor	Compressor with oil cooling	Evaporating temperature [°C]																			
				-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	15	20	-35	-25	-10	5	[cm³]
HBP / MBP / (LBP)	PL35G	101G0250	–	–	–	28	31.6	39.3	53	69.4	82	89	112	140	153	172	209	–	–	48	66.6	90	2.00
	TL2.5G	102G4251	–	11	22.4	35.5	40.5	50.9	69	90.4	107	116	145	179	196	219	264	–	47.6	59.6	83.9	113	2.61
	TL3G	102G4350	–	–	25.3	40.9	46.7	59.1	80.5	106	125	136	170	211	231	258	312	–	–	65.8	96.2	133	3.13
	TL4G	102G4452	–	–	40.8	58.3	65.3	80.3	107	140	165	180	226	280	306	342	413	–	–	82.7	118	154	3.86
	TL5G	102G4550	–	–	55.6	79	87.9	107	139	178	208	224	278	341	372	414	497	–	–	100	149	205	5.08
	FR6G	103G6660	–	–	47.7	83.3	96.5	124	171	226	267	290	365	452	494	552	–	–	–	109	172	241	6.23
	FR7.5G	103G6680	103G6690	–	61.7	99	113	142	193	254	299	325	408	505	553	618	–	–	–	126	194	272	6.93
	FR8.5G	103G6780	103G6790	–	84.9	123	138	171	228	298	351	381	478	592	647	722	–	–	–	151	231	321	7.95
	FR10G	103G6880	103G6890	–	91.9	136	152	188	250	324	380	412	516	638	697	779	–	–	–	179	265	362	9.05
	FR11G	103G6980	–	–	115	170	191	233	307	395	463	501	628	780	–	–	–	–	–	202	317	445	11.15
	SC10G	104G8000	–	23	60	113	135	183	268	369	445	486	618	764	833	925	1100	–	93	181	290	383	10.29
	SC12G	104G8240	104G8250	64.6	113	175	199	252	348	464	553	603	768	960	1054	1182	1437	–	148	227	355	493	12.87
	SC15G	104G8520	104G8530	–	–	164	206	290	424	568	672	728	908	1110	1207	1340	1600	–	–	233	440	595	15.28
	SC18G	104G8820	104G8830	–	–	283	318	394	526	684	804	870	1087	1337	1459	1624	1950	–	–	331	507	695	17.69
	SC21G	104G8140	–	–	–	333	370	453	606	792	934	1012	1268	1560	1700	1889	2257	–	–	382	575	789	20.95
	SC12/ 12G	104G8280	–	129	226	350	399	505	696	928	1106	1206	1535	1920	2108	2364	2875	–	296	454	710	986	2×12.87
	SC15/ 15G	104G8580	–	–	–	328	413	581	847	1137	1344	1457	1815	2220	2415	2679	3201	–	–	465	879	1190	2×15.28
	SC18/ 18G	104G8880	–	–	–	566	636	788	1052	1368	1607	1740	2174	2674	2918	3248	3900	–	–	662	1014	1390	2×17.69
	SC21/ 21G	104G8180	–	–	–	667	741	907	1212	1584	1868	2025	2536	3120	3400	3778	4511	–	–	771	1156	1581	2×20.95
LBP	PL50F	101G0222	–	14.2	26.2	40	45.1	55.8	74.1	95.2	111	120	148	–	–	–	–	–	43.6	60	85.6	–	2.50
	TLS3FT	102G4324	–	21	34	50	56	69	92	120	–	–	–	–	–	–	–	–	45	62	92	–	3.13
	TLS4FT	102G4424	–	27	43	63	71	88	117	152	–	–	–	–	–	–	–	–	68	87	123	–	3.86
	TLS5FT	102G4524	–	47.8	70.7	98	109	131	170	216	–	–	–	–	–	–	–	–	84.5	114	165	–	5.08
	TLES5.7FT.3	102G4615	–	66.3	90.3	120	132	156	200	253	–	–	–	–	–	–	–	–	90	120	170	–	5.70
	NL6.1FT	105G6620	–	60	84	115	127	152	198	253	–	–	–	–	–	–	–	–	93	123	184	–	6.13
	NL7.3FT	105G6726	–	71	100	136	150	181	235	299	–	–	–	–	–	–	–	–	108	145	220	–	7.27
	NL8.4FT	105G6865	–	87	120	162	178	213	275	350	–	–	–	–	–	–	–	–	127	169	252	–	8.35
	NL10FT	105G6829	105G6839	115	158	210	235	274	352	444	–	–	–	–	–	–	–	–	159	215	316	–	10.10
	SC12FT	104G8205	104G8215	103	163	233	259	314	408	517	599	645	–	–	–	–	–	–	184	265	380	–	12.87
	SC15FT	104G8505	104G8515	126	197	280	311	376	489	620	718	772	–	–	–	–	–	–	223	311	451	–	15.28
	SC18FTX	104G8805	–	144	229	325	361	437	567	719	833	896	–	–	–	–	–	–	257	365	517	–	17.69
	SC21FTX 50 Hz	104G8105	–	192	296	415	460	553	713	901	1041	1119	–	–	–	–	–	–	296	428	613	–	20.95
	SC21FTX 60 Hz	104G8106	–	240	345	470	518	620	800	1012	1173	1262	–	–	–	–	–	–	342	475	707	–	20.95
MBP	NL6.1MF	105G6660	–	–	–	–	–	141	189	245	288	312	390	482	527	588	709	–	–	–	187	243	6.13
	NL7.3MF	105G6772	–	–	–	–	–	179	236	304	356	385	480	591	645	719	867	–	–	–	227	298	7.27
	NL8.4MF	105G6879	–	–	–	–	–	213	277	353	412	445	553	679	741	825	994	–	–	–	261	349	8.35
	NL10MF	105G6885	–	–	–	–	–	266	346	441	513	554	687	843	919	1023	1231	–	–	–	323	435	10.10
	NL11MF	105G6151	–	–	–	–	–	292	380	485	565	609	756	927	1011	1125	1354	–	–	–	360	495	11.15
	NLE10MF	105G6888	–	88	137	194	216	262	343	440	513	554	688	845	922	–	–	–	134	198	308	426	10.10
	GS26MFX	107B0700	–	–	–	–	–	754	989	1266	1476	1591	1970	2411	2626	–	–	–	–	–	696	942	26.30
	GS34MFX	107B0701	–	–	–	–	–	998	1296	1648	1918	2063	2550	3115	3392	–	–	–	–	–	909	1234	33.80
HBP	TL4GH	102G4455	–	–	–	–	–	–	104	140	167	182	230	287	315	353	429	–	–	–	121	159	3.86
	FR7GH	103G6683	103G6692	–	–	–	–	–	199	255	301	327	417	525	580	655	807	–	–	–	192	258	6.93
	SC10GH	104G8041	–	–	–	–	–	–	233	352	434	478	613	762	832	927	113	1323	–	–	281	395	10.29
	SC12GH	104G8261	–	–	–	–	–	–	–	429	524	577	752	957	1058	1196	1471	1787	–	–	356	487	12.87
	SC15GH	104G8561	–	–	–	–	–	–	–	559	664	723	915	1139	1429	1398	1698	2041	–	–	424	565	15.28
	SC18GH	104G8860	–	–	–	–	–	–	539	676	789	855	1077	1340	1469	1645	1990	–	–	–	498	697	17.69
	SC18GH	104G8861	–	–	–	–	–	–	485	639	758	825	1047	1310	1440	1618	1976	2389	–	–	452	605	17.69
	SC15GHH	–	104G8571	–	–	–	–	–	435	570	670	726	911	1135	1247	1405	1731	–	–	–	377	505	15.28
	GS26GHX	107B0702	–	–	–	–	–	–	937	1198	1400	1510	1880	2316	2531	2826	3417	4098	–	–	737	970	26.30

Applications
LBP = Low Back Pressure
MBP = Medium Back Pressure
HBP = High Back Pressure

Motor types
RSIR = Resistant Start Induction Run
RSCR = Resistant Start Capacitor Run
CSIR = Capacitor Start Induction Run
CSR = Capacitor Start Run

Voltage and frequencies
1 = 198 – 254 V, 50Hz 5 = 198 – 254 V, 60Hz, MBP
2 = 187 – 254 V, 50Hz, LBP 6 = 207 – 254 V, 60Hz, HBP
3 = 198 – 254 V, 60Hz, LBP 7 = 187 – 254 V, 50Hz
4 = 198 – 254 V, 60Hz 8 = 187 – 254 V, 60Hz

Compressor cooling
S *= Static cooling normally sufficient*
O *= Oil cooling*
F_1 *= Fan cooling 1.5 m/s*
(compressor compartment temp. equal to ambient temperature)
F_2 *= Fan cooling 3.0 m/s necessary*
*** = O / F1 possible at 220 V nominal (187 – 242 V)*

Starting devices
LST *= Low Starting Torque*
LST is used with capillary tube control and pressure equalizing. (Pressure equalizing may exceed 10 minutes). The PTC starting device requires 5 minutes cooling before each start.
HST *= HST consisting of relay and starting capacitor is used for expansion valve control or for capillary tube control without pressure equalizing.*

Electrical Equipment
*** Cover, clamp, gasket parts of compressor*

Technical data and ordering

Recommended compressor cooling at ambient temperatures									Voltage and frequency	Electrical equipment							Dimensions [mm]					
32 °C			38 °C			43 °C				LST (RSIR)		HST (CSIR)		HST(CSR)	LST / HST		Height		Connectors location / I.D			
										PTC starting device		Starting relay	Starting capacitor	Starting device					Suc-tion	Pro-cess	Dis-charge	Oil cooler
LBP	MBP	HBP	LBP	MBP	HBP	LBP	MBP	HBP		Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Spades 6.3 mm	Spades 6.3 mm	Cord relief	Cover	A	B	C	D	E	F
–	F_2	F_2	–	F_2	F_2	–	–	–	1/5	103N0011	103N0018	117U6021	117U5014	–	103N1010	103N0491	137	135	6.2	6.2	5.0	–
S	S	S	S	S	S	S	S	F_2	1/2/3/6	103N0011	103N0018	117U6007	117U5014	–	103N1010	103N2011	163	159	6.2	6.2	5.0	–
S	S	F_2	S	S	F_2	S	S	F_2	1/2/3	103N0011	103N0018	117U6009	117U5014	–	103N1010	103N2010	163	159	6.2	6.2	5.0	–
S	S	F_2	S	S	F_2	S	S	F_2	1/2/3	103N0011	103N0018	117U6004	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0	–
S	S	F_2	S	S	F_2	S	S	F_2	1/2/3	103N0011	103N0018	117U6000	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0	–
S	F_2	F_2	S	F_2	F_2	S	F_2	F_2	1/2/3	103N0011	103N0018	117U6000	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2	–
S	F_2	F_2	S	F_2	F_2	O/F_1	F_2	F_2	1/2/3	103N0011	103N0018	117U6001	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2	6.2
S	F_2	F_2	S	F_2	F_2	O/F_1	F_2	F_2	1/2/3	103N0011	103N0018	117U6015	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2	6.2
S	F_2	F_2	S	F_2	F_2	O/F_1	F_2	F_2	1/2/3	103N0011	103N0018	117U6010	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2	6.2
F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	1/2	103N0011	103N0018	117U6010	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2	–
F_1	F_2	F_2	F_1	F_2	F_2	F_1	F_2	F_2	1/2/3	103N0011	–	117U6002	117U5017	–	103N1004	103N2009	199	193	8.2	6.2	6.2	–
O/F_1	F_2	F_2	O/F_1	F_2	F_2	O/F_1	F_2	F_2	1/2/3	103N0011	–	117U6003	117U5017	–	103N1004	103N2009	209	203	8.2	6.2	6.2	6.2
O/F_1	F_2	F_2	O/F_1	F_2	F_2	O/F_1	F_2	F_2	1/2/3	–	–	117U6005	117U5017	–	103N1004	103N2009	209	203	10.2	6.2	6.2	6.2
O/F_1	F_2	F_2	O/F_1	F_2	F_2	O/F_1	F_2	F_2	1/2/3	–	–	117U6019	117U5017	–	103N1004	103N2009	219	213	10.2	6.2	6.2	6.2
F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	1/2/3	–	–	–	–	117-7029	103N1004	103N2009	219	213	10.2	6.2	6.2	–
F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	1	–	–	117U6003	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2	–
F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	1	–	–	117U6005	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2	–
F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	1	–	–	117U6019	117U5017	–	103N1004	103N2009	259	254	16	6.2	6.2	–
F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	F_2	1	–	–	–	–	117-7029	103N1004	103N2009	259	254	16	6.2	6.2	–
–	F_2	–	–	F_2	–	–	F_2	–	1	–	–	117U6021	117U5014	–	103N1010	103N0491	137	135	6.2	6.2	5.0	–
S	–	–	S	–	–	S	–	–	2	103N0011	103N0018	117U6007	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0	–
S	–	–	S	–	–	S	–	–	2	103N0011	103N0018	117U6004	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0	–
S	–	–	S	–	–	S	–	–	2	103N0011	103N0018	117U6000	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0	–
S	–	–	S	–	–	S	–	–	2	103N0011	103N0018	117U6004	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0	–
S	–	–	S	–	–	S	–	–	2/3	103N0011	103N0018	117U6000	117U5015	–	103N1010	103N2010	188	182	6.2	6.2	5.0	–
S	–	–	S	–	–	F_1	–	–	2	103N0011	103N0018	117U6001	117U5015	–	103N1010	103N2010	188	182	6.2	6.2	5.0	–
S	–	–	F_1	–	–	F_1	–	–	2	103N0011	103N0018	117U6001	117U5015	–	103N1010	103N2010	190	184	6.2	6.2	5.0	–
S	–	–	O/F_1	–	–	O/F_1	–	–	2	103N0011	103N0018	117U6002	117U5015	–	103N1010	103N2010	203	197	8.2	6.2	6.2	6.2
O/F_1	–	–	O/F_1	–	–	F_2*	–	–	2/3	103N0011	–	117U6003	117U5017	–	103N1004	103N2009	209	203	8.2	6.2	6.2	6.2
F_1	–	–	F_1	–	–	F_2	–	–	2/3	103N0011	–	117U6005	117U5017	–	103N1004	103N2009	209	203	10.2	6.2	6.2	6.2
F_2	–	–	F_2	–	–	F_2	–	–	2/3	–	–	117U6019	117U5017	–	103N1004	103N2009	219	213	10.2	6.2	6.2	–
F_2	–	–	F_2	–	–	F_2	–	–	2	–	–	117U6019	117U5017	–	103N1004	103N2009	219	213	10.2	6.2	6.2	–
F_2	–	–	F_2	–	–	F_2	–	–	8	–	–	–	–	117-7039	103N1004	103N2008	219	213	10.2	6.2	6.2	–
–	F_1	F_1	–	F_1	F_1	–	F_1	F_1	5/7	103N0011	103N0018	117U6015	117U5015	–	103N1010	103N2011	190	184	8.2	6.2	6.2	–
–	F_1	F_1	–	F_1	F_1	–	F_1	F_1	5/7	103N0011	103N0018	117U6016	117U5015	–	103N1010	103N2011	197	191	8.2	6.2	6.2	–
–	F_1	F_1	–	F_1	F_1	–	F_1	F_1	5/7	103N0011	103N0018	117U6016	117U5015	–	103N1010	103N2011	197	191	8.2	6.2	6.2	–
–	F_1	F_1	–	F_1	F_1	–	F_1	F_1	5/7	103N0011	103N0018	117U6022	117U5018	–	103N1010	103N2011	203	197	8.2	6.2	6.2	–
–	F_2	F_2	–	F_2	F_2	–	F_2	F_2	7	103N0011	103N0018	117U6022	117U5018	–	103N1010	103N2011	203	197	8.2	6.2	6.2	–
F_1	F_1	–	F_1	F_1	–	F_1	F_1	–	1	103N0011	103N0018	117U6003	117U5015	–	103N1010	103N2011	203	197	8.2	6.2	6.2	–
–	F_2	–	–	F_2	–	–	F_2	–	1	Starting device (start relay, start & run capacitor):117-7055					107B9100/9101/9104**		259	247	12.9	6.5	8.2	–
–	F_2	–	–	F_2	–	–	F_2	–	1	Starting device (start relay, start & run capacitor):117-7056					107B9100/9101/9104**		259	247	12.9	6.5	8.2	–
–	–	F_2	–	–	F_2	–	–	F_2	1/4	–	–	117U6000	117U5014	–	103N1010	103N2011	173	169	6.2	6.2	5.0	–
–	–	O/F_1	–	–	O/F_1	–	–	O/F_1	1/4	–	–	117U6016	117U5015	–	103N1010	103N2011	196	191	8.2	6.2	8.2	8.2
–	–	F_2	–	–	F_2	–	–	F_2	1/4	–	–	117U6005	117U5017	–	103N1004	103N2008	199	193	10.2	6.2	8.2	–
–	–	F_2	–	–	F_2	–	–	F_2	1/4	–	–	117U6011	117U5017	–	103N1004	103N2008	209	203	10.2	6.2	8.2	–
–	–	F_2	–	–	F_2	–	–	F_2	1/4	–	–	117U6011	117U5017	–	103N1004	103N2008	209	203	10.2	6.2	8.2	–
–	–	F_2	–	–	F_2	–	–	F_2	1	–	–	117U6019	117U5017	–	103N1004	103N2009	219	213	10.2	6.2	8.2	–
–	–	F_2	–	–	F_2	–	–	F_2	1/4	–	–	–	–	117-7039	103N1004	103N2008	219	213	10.2	6.2	8.2	–
–	–	O	–	–	O	–	–	O	1	–	–	–	–	117-7027	103N1004	103N2009	209	203	10.2	6.2	8.2	8.2
–	–	F_2	–	–	F_2	–	–	F_2	1	Starting device (start relay, start & run capacitor):117-7070					107B9100/9101/9104**		259	247	12.9	6.5	8.2	–

Test conditions EN 12900 CECOMAF (220 V / 50 Hz)
Compressors: PL / TL / TLS / TLES / NL / NLE / FR / SC
Condensing temperature: 55 °C
Ambient temperature: 32 °C
Suction gas temperature: 32 °C
Liquid temperature: 55 °C

Test conditions EN 12900 MBP (220 V / 50 Hz)
Compressors: GS
Condensing temperature: 45 °C
Ambient temperature: 32 °C
Suction gas temperature: 20 °C
Liquid temperature: no sub cooling

Test conditions EN 12900 HBP (220 V / 50 Hz)
Compressors: GS
Condensing temperature: 45 °C
Ambient temperature: 32 °C
Suction gas temperature: 20 °C
Liquid temperature: no sub cooling

Technical data and ordering

Reciprocating compressors - Light Commercial

R404A / R507 / R407C - 50Hz

Refrigerant	Application	Frequency	Compressor	Code numbers	Capacity (W) at test conditions															Power consumption [W]				Displacement
					Evaporating temperature [°C]																			
					-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	15	-35	-25	-10	5	[cm³]
R404A/ R507	LBP	50 Hz	TL4CL	102U2071	52	65	84	110	142	155	182	230	286	328	352	–	–	–	–	–	105	140	198	–	3.86
			TL4.5CLX	102U2111	–	80	106	139	181	197	232	294	366	–	–	–	–	–	–	–	138	181	252	–	4.63
			FR6CL	103U2670	77	108	145	189	243	263	307	383	473	541	578	–	–	–	–	–	180	242	353	–	6.23
			FR7.5CL	103U2790	86	114	154	202	262	285	333	418	515	587	630		–	–	–	–	197	267	395	–	6.93
			FR8.5CL	103U2890	99	126	168	222	290	317	372	468	577	–	–	–	–	–	–	–	231	315	472	–	7.95
			NL7CLX	105F3710	102	146	199	263	340	369	430	536	657	746	796	–	–	–	–	–	214	274	381	–	7.27
			NL8.4CLX	105F3800	111	158	216	287	370	402	583	715	812	866	–	–	–	–	–	–	238	305	428	–	8.35
			SC10L	104L2523	–	–	168	258	365	405	489	634	800	923	991	–	–	–	–	–	243	350	530	–	10.29
			SC10CLX	104L2533	–	–	166	255	360	400	483	625	789	910	977	1190	1430	–	–	–	258	352	508	–	10.29
			SC12CL	104L2623	58	140	237	353	490	541	650	835	1048	1205	1292	–	–	–	–	–	316	445	654	–	12.87
			SC12CLX.2	104L2697	130	205	294	399	522	569	666	834	1026	–	–	–	–	–	–	–	365	475	659	–	12.87
			SC15CLX.2	104L2896	159	250	358	486	637	694	813	1017	1251	1424	–	–	–	–	–	–	433	565	783	–	15.28
			SC18CLX.2	104L2197	194	306	439	595	780	849	995	1245	1532	–	–	–	–	–	–	–	517	680	949	–	17.68
			SCE18CLX.2	104L2196	194	306	439	595	780	849	995	1245	1532	–	–	–	–	–	–	–	459	621	888	–	17.68
			SC21CL	104L2322	226	325	455	617	813	887	1042	1306	1606	–	–	–	–	–	–	–	534	702	989	–	20.95
			GS26CLX	107B0500	325	497	703	949	1240	1348	1580	1974	2427	–	–	–	–	–	–	–	669	888	1285	–	26.30
			GS34CLX	107N0501	–	729	1003	1330	1715	1857	2165	2687	3289	–	–	–	–	–	–	–	924	1196	1721	–	33.80
			SC12/12CL	104L4088	115	279	475	706	980	1083	1299	1670	2096	2411	2583	–	–	–	–	–	633	891	1308	–	2x12.87
			SC15/15CL	104L4089	–	302	599	905	1230	1347	1584	1976	2417	2739	2916	–	–	–	–	–	801	1120	1580	–	2x15.28
			SC18/18CL	104L4090	333	541	789	1083	1430	1562	1836	2307	2849	3249	3469	–	–	–	–	–	910	1230	1788	–	2x17.68
			SC21/21CL	104L4094	452	650	910	1235	1626	1774	2084	2613	3213	–	–	–	–	–	–	–	1068	1404	1978	–	2x20.95
		60 Hz	SC10CLX	104L2533	–	–	224	335	455	499	588	738	906	–	–	–	–	–	–	–	304	430	623	–	10.29
			SC12CLX.2	104L2699	141	233	343	473	626	683	804	1011	1248	–	–	–	–	–	–	–	401	515	705	–	12.87
			SC12CLX.2	104L2697	141	233	343	473	626	683	804	1011	1248	–	–	–	–	–	–	–	398	541	777	–	12.87
			SC15CLX.2	104L2897	194	305	437	593	776	846	991	1239	1525	–	–	–	–	–	–	–	469	611	848	–	15.28
			SC18CLX.2	104L2195	113	338	542	737	938	1010	1157	1410	1708	–	–	–	–	–	–	–	563	752	990	–	17.68
			SC10/10CLX	104L4033	–	–	448	670	910	998	1176	1476	1812	–	–	–	–	–	–	–	608	860	1246	–	2x10.29
			SC12/12CLX	104L4034	–	292	564	858	1180	1298	1540	1944	2400	–	–	–	–	–	–	–	752	1080	1568	–	2x12.87
			SC15/15CLX	104L4097	–	358	702	1060	1440	1576	1856	2316	2834	–	–	–	–	–	–	–	828	1220	1728	–	2x15.28
	MBP	50 Hz	NF7MLX	105F3720	–	–	–	–	–	–	–	511	635	726	777	940	1125	1215	1336	–	–	–	408	488	7.27
			SC10MLX	104L2506	–	–	–	–	–	465	546	687	855	981	1051	1278	1537	1663	–	–	–	–	518	633	10.29
			SC12MLX	104L2606	–	–	–	–	–	572	669	838	1038	1188	1272	1542	1852	2001	–	–	–	–	620	762	12.87
			SC15MLX	104L2869	–	–	–	–	–	710	829	1038	1285	1471	1574	1909	2293	2478	–	–	–	–	780	979	15.28
			SC18MLX	104L2139	–	–	–	–	–	831	968	1210	1497	1712	1832	2220	2665	2880	–	–	–	–	860	1080	17.68
			SC18MLX.3	104L2146	–	–	–	–	–	876	1018	1266	1557	1779	1898	2292	2743	2964	–	–	–	–	878	1096	17.68
			GS21MLX	107B0502	–	–	–	–	–	–	1096	1394	1748	2018	2164	2650	3211	3483	–	–	–	–	965	1252	21.20
			GS26MLX	107B0503	–	–	–	–	–	–	1426	1810	2254	2586	2764	3351	4022	4345	–	–	–	–	1210	1532	26.30
			GS34MLX	107B0504	–	–	–	–	–	–	1929	2408	2953	3358	3575	4283	5088	5476	–	–	–	–	1725	2235	33.80
		60 Hz	NF7MLX	105F3720	–	–	–	–	–	413	489	618	768	879	940	1137	1362	1470	–	–	–	–	473	629	7.27
			SC10MLX	104L2506	–	–	–	–	–	547	646	816	1015	1164	1246	1510	1812	1958	–	–	–	–	612	817	10.29
			SC12MLX	104L2606	–	–	–	–	–	659	773	970	1199	1370	1465	1770	2118	2286	–	–	–	–	729	975	12.87
			SC15MLX.2	104L2803	–	–	–	–	–	784	915	1145	1418	1623	1737	2107	2531	2735	–	–	–	–	860	1080	15.28
			SC18MLX	104L2138	–	–	–	–	–	986	1140	1412	1732	1972	2106	2538	3034	3273	–	–	–	–	1051	1317	17.68
	HBP	50 Hz	TL4DL	102U2038	–	–	–	–	–	–	196	229	281	324	349	432	527	572	631	–	–	–	203	256	3.86
			FR6DL	103U2680	–	–	–	–	–	–	317	385	471	538	576	698	840	907	999	1177	–	–	354	456	6.23
			SC10DL	104L2525	–	–	–	–	–	–	471	611	775	899	968	1192	1450	1576	1747	2085	–	–	479	590	10.29
			SC12DL	104L2625	–	–	–	–	–	–	609	806	1028	1190	1279	1565	1890	2046	2258	2674	–	–	624	750	12.87
			SC15DL	104L2856	–	–	–	–	–	–	759	964	1207	1391	1493	1825	2210	2397	2652	3156	–	–	722	865	15.28
			SC10/10DL	104L4091	–	–	–	–	–	–	943	1222	1550	1798	1935	2383	2900	3152	3494	4169	–	–	957	1180	2x10.29
			SC12/12DL	104L4092	–	–	–	–	–	–	1217	1612	2055	2380	2559	3130	3780	4092	4516	5348	–	–	1248	1500	2x12.87
			SC15/15DL	104L4093	–	–	–	–	–	–	1518	1928	2414	2781	2985	3651	4420	4795	5304	6311	–	–	1445	1730	2x15.28
R407C	MBP/ HBP	50 Hz	SC10DL	104L2525	–	–	–	–	–	–	–	480	636	755	821	1039	1293	1417	1588	1927	–	–	394	510	10.29
			SC12DL	104L2625	–	–	–	–	–	–	–	632	831	981	1065	1340	1660	1817	2031	2456	–	–	512	643	12.87
			SC15DL	104L2856	–	–	–	–	–	–	–	777	1011	1192	1293	1629	2023	2217	2483	3014	–	–	590	726	15.28
			SC10/10DL	104L4091	–	–	–	–	–	–	–	961	1272	1509	1642	2077	2586	2835	3176	3855	–	–	788	1020	2x10.29
			SC12/12DL	104L4092	–	–	–	–	–	–	–	1263	1662	1962	2130	2680	3321	3634	4062	4913	–	–	1025	1287	2x12.87
			SC15/15DL	104L4093	–	–	–	–	–	–	–	1554	2022	2383	2586	3257	4047	4434	4966	6027	–	–	1180	1452	2x15.28

Applications
LBP = Low Back Pressure
MBP = Medium Back Pressure
HBP = High Back Pressure

Motor types
RSIR = Resistant Start Induction Run
RSCR = Resistant Start Capacitor Run
CSIR = Capacitor Start Induction Run
CSR = Capacitor Start Run

Voltage and frequencies
1 = 198 – 254 V, 50Hz
2 = 187 – 254 V, 50Hz, LBP
3 = 198 – 254 V, 60Hz, LBP
4 = 198 – 254 V, 60Hz
5 = 198 – 254 V, 60Hz, MBP
6 = 207 – 254 V, 60Hz, HBP
7 = 187 – 254 V, 50Hz
8 = 187 – 254 V, 60Hz

Compressor cooling
S *= Static cooling normally sufficient*
O *= Oil cooling*
F1 *= Fan cooling 1.5 m/s (compressor compartment temp. equal to ambient temperature)*
F2 *= Fan cooling 3.0 m/s necessary*

Starting devices
LST *= Low Starting Torque*
LST is used with capillary tube control and pressure equalizing. (Pressure equalizing may exceed 10 minutes). The PTC starting device requires 5 minutes cooling before each start.
HST *= HST consisting of relay and starting capacitor is used for expansion valve control or for capillary tube control without pressure equalizing.*

Technical data and ordering

Recommended compressor cooling at ambient temperatures									Voltage and frequency	Electrical equipment							Dimensions [mm]				
32 °C			38 °C			43 °C				LST (RSIR)		HST (CSIR)		HST(CSR)	LST / HST		Height		Connectors location / I.D		
										PTC starting device		Starting relay	Starting capacitor	Starting device					Suction	Process	Dis-charge
LBP	MBP	HBP	LBP	MBP	HBP	LBP	MBP	HBP		Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Spades 6.3 mm	Spades 6.3 mm	Cord relief	Cover	A	B	C	D	E
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	117U6000	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0
F_2	–	–	F_2	–	–	F_2	–	–	7	–	–	117U6001	117U5014	–	–	117U1022	173	169	6.2	6.2	5.0
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	117U6015	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	117U6016	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2
F_2	–	–	F_2	–	–	–	–	–	1	–	–	117U6010	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2
F_1	F_1	–	F_1	F_1	–	F_2	F_2	–	1	103N0011	103N0018	117U6002	117U5015	–	103N1010	103N2010	203	197	8.2	6.2	6.2
F_2	F_2	–	F_2	F_2	–	F_2	F_2	–	7	103N0011	103N0018	117U6003	117U5015	–	103M1010	103N2010	203	197	8.2	6.2	6.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	117U6003	117U5017	–	103N1004	103N2009	209	203	8.2	6.2	6.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1/3	–	–	117U6005	117U5017	–	103N1004	103N2008	209	203	8.2	6.2	6.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	117U6005	117U5017	–	103N1004	103N2009	209	203	8.2	6.2	6.2
F_2	–	–	F_2	–	–	–	–	–	1/4	–	–	117U6019	117U5017	–	103N1004	103N2008	219	213	8.2	6.2	6.2
F_2	–	–	F_2	–	–	F_2	–	–	1	–	–	117U6019	117U5017	–	103N1004	103N2009	219	213	8.2	6.2	6.2
F_2	–	–	F_2	–	–	F_2	–	–	1	–	–	117U6013	117U5012	–	103N1004	103N2009	219	213	10.2	6.2	6.2
F_2	–	–	F_2	–	–	F_2	–	–	1	–	–	–	–	117-7027	103N1004	103N2009	219	213	10.2	6.2	6.2
F_2	–	–	F_2	–	–	–	–	–	1	–	–	–	–	117-7027	103N1004	103N2009	219	213	10.2	6.2	6.2
F_2	–	–	F_2	–	–	F_2	–	–	1	Starting device (start. Relay, start & run capacitor): 117-7056					107B9100/ 9101/ 9104		259	247	12.9	6.5	8.2
F_2	–	–	F_2	–	–	–	–	–	1	Starting device (start. Relay, start & run capacitor): 117-7074					107B9100/ 9101/ 9104		279	267	12.9	6.5	8.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	117U6005	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	117U6019	117U5017	–	103N1004	103N2009	259	254	12	6.2	6.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1	–	–	–	–	117-7027	103N1004	103N2009	259	254	16	6.2	6.2
F_2	–	–	F_2	–	–	–	–	–	1	–	–	–	–	117-7027	103N1004	103N2009	259	254	16	6.2	6.2
F_2	F_2	–	F_2	F_2	–	–	–	–	1/3	–	–	117U6005	117U5017	–	103N1004	103N2008	209	203	8.2	6.2	6.2
F_2	–	–	F_2	–	–	F_2	–	–	8	–	–	–	–	117-7027	103N1004	103N2008	219	213	9.7	6.5	6.5
F_2	–	–	F_2	–	–	F_2	–	–	1/4	–	–	117U6019	117U5017	–	103N1004	103N2008	219	213	8.2	6.2	6.2
F_2	–	–	F_2	–	–	–	–	–	8	–	–	–	–	117-7039	103N1004	103N2008	219	213	9.7	6.5	6.5
F_2	–	–	F_2	–	–	F_2	–	–	8	–	–	–	–	117-7066	103N1004	103N2008	219	213	9.7	6.5	6.5
F_2	F_2	–	F_2	F_2	–	–	–	–	4	–	–	117U6005	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2
F_2	–	–	F_2	–	–	–	–	–	4	–	–	117U6019	117U5017	–	103N1004	103N2009	259	254	12	6.2	6.2
F_2	–	–	F_2	–	–	–	–	–	4	–	–	–	–	117-7029	103N1004	103N2009	259	254	12	6.2	6.2
–	F_2	–	–	F_2	–	–	F_2	–	7	–	–	117U4139	117U5018	–	2×117U0349	117U1021	203	197	9.7	6.5	6.5
–	F_2	–	–	F_2	–	–	F_2	–	7	–	–	117U6011	117U5017	–	103N1004	103N2008	209	203	8.2	6.5	6.5
–	F_2	–	–	F_2	–	–	F_2	–	7	–	–	117U6011	117U5017	–	103N1004	103N2008	219	213	8.2	6.5	6.5
–	F_2	–	–	F_2	–	–	–	–	1	–	–	117U6013	117U5012	–	103N1004	103N2009	219	213	10.2	6.2	6.2
–	F_2	–	–	F_2	–	–	–	–	1	–	–	–	–	117-7027	103N1004	103N2009	219	213	10.2	6.2	6.2
–	F_2	–	–	F_2	–	–	–	–	1	–	–	–	–	117-7027	103N1004	103N2009	219	213	10.2	6.2	6.2
–	F_2	–	–	F_2	–	–	F_2	–	1	Starting device (start. Relay, start & run capacitor): 117-7070					107B9100/ 9101/ 9104		259	247	12.9	6.5	8.2
–	F_2	–	–	F_2	–	–	F_2	–	1	Starting device (start. Relay, start & run capacitor): 117-7072					107B9100/ 9101/ 9104		279	267	16.1	6.5	9.7
–	F_2	–	–	F_2	–	–	F_2	–	1	Starting device (start. Relay, start & run capacitor): 117-7056					107B9100/ 9101/ 9104		279	267	16.1	6.5	9.7
–	F_2	–	–	F_2	–	–	F_2	–	8	–	–	117U4139	117U5018	–	2×117U0349	117U1021	203	197	9.7	6.5	6.5
–	F_2	–	–	F_2	–	–	F_2	–	8	–	–	117U6011	117U5017	–	103N1004	103N2008	209	203	8.2	6.5	6.5
–	F_2	–	–	F_2	–	–	F_2	–	8	–	–	117U6011	117U5017	–	103N1004	103N2008	219	213	8.2	6.5	6.5
–	F_2	–	–	F_2	–	–		–	8	–	–	–	–	117-7058	103N1004	103N2008	219	213	9.7	6.5	6.5
–	F_2	–	–	F_2	–	–	F_2	–	8	–	–	–	–	117-7066	103N1004	103N2008	219	213	9.7	6.5	6.5
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6001	117U5014	–	103N1010	103N2010	173	169	6.2	6.2	5.0
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6010	117U5015	–	103N1010	103N2010	196	191	8.2	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6005	117U5017	–	103N1004	103N2009	209	203	8.2	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6019	117U5017	–	103N1004	103N2009	219	213	10.2	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	–	–	117-7029	103N1004	103N2009	219	213	10.2	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6005	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6019	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	–	–	117-7029	103N1004	103N2009	259	254	16	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6005	117U5017	–	103N1004	103N2009	209	203	8.2	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6019	117U5017	–	103N1004	103N2009	219	213	10.2	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	–	–	117-7029	103N1004	103N2009	219	213	10.2	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6005	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	117U6019	117U5017	–	103N1004	103N2009	249	244	12	6.2	6.2
–	F_2	F_2	–	F_2	F_2	–	–	–	1	–	–	–	–	117-7029	103N1004	103N2009	259	254	16	6.2	6.2

Test conditions
EN 12900-CECOMAF
Compressors: TL / NL / NF / FR / SC
Application: R404A / R507
Condensing temperature: 45 °C
Ambient and suction gas temperature: 32 °C
Liquid temperature: No sub cooling

Test condition
EN 12900-MBP
Compressors: GS
Application: R404A / R507
Condensing temperature: 45 °C
Ambient temperature: 32 °C
Suction gas temperature: 20 °C
Liquid temperature: No sub cooling

Test condition
EN 12900-LBP
Compressors: GS
Application: R404A / R507
Condensing temperature: 40 °C
Ambient temperature: 32 °C
Suction gas temperature: 20 °C
Liquid temperature: No sub cooling

Test condition
EN 12900-CECOMAF
Compressors: SC
Application: R407
Condensing temperature: 45 °C
Ambient and suction gas temperature: 32 °C
Liquid temperature: No sub cooling

Technical data and ordering

Reciprocating compressors - Light Commercial

R290

Voltage	Application	Motor types	Compressor	Code numbers	Capacity [W] at EN12900 / CECOMAF														Power consumption [W]		Displacement	Recommended compressor cooling at ambient temperatures					
					Evaporating temperature [°C]																	32 °C		38 °C		43 °C	
					-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	-25	-10	[cm³]	LBP	MBP	LBP	MBP	LBP	MBP
220 - 240 V 50 Hz	LBP/MBP	LST/HST	TL3CN	102H4380	38	54	75	99	108	128	161	200	228	244	294	351	–	–	108	135	3.13	F1	F1	F1	F1	F1	F1
			TL4CN	102H4490	57	78	103	132	143	166	205	250	283	302	360	426	–	–	127	162	3.86	F1	F1	F1	F1	F1	F1
			TL5CN	102H4590	81	109	143	183	198	230	283	345	391	416	496	586	–	–	162	211	5.08	F1	F1	F1	F1	F1	F1
			NL7CN	105H6756	118	166	223	290	315	368	458	561	637	679	814	965	–	–	221	291	7.27	F1	F1	F1	F1	F1	F2
			NL9CN	105H6856	138	194	259	335	364	423	526	643	730	778	930	1102	–	–	250	334	8.35	F1	F1	F1	F1	F2	F2*
			NL9CN	105H6780	138	194	259	335	364	423	526	643	730	778	930	1102	–	–	250	334	8.35	F1	F1	F1	F1	F2	F2*
	LBP/MBP	HST	SC10CNX	104H8065	126	179	245	325	355	420	531	660	748	809	979	1172	–	–	274	362	10.29	F2	F2	F2	F2	F2	F2
			SC12CNX	104H8265	178	250	331	426	462	540	678	846	976	1050	1293	1582	–	–	344	456	12.87	F2	F2	F2	F2	F2	F2
			SC12CNX	104H8267	178	250	331	426	462	540	678	846	976	1050	1293	1582	–	–	344	456	12.87	F2	F2	F2	F2	F2	F2
			SC15CNX	104H8565	195	297	415	550	601	707	887	1093	1245	1328	1594	1894	–	–	420	560	15.28	F2	F2	F2	F2	F2	F2
			SC15CNX	104H8576	195	297	415	550	601	707	887	1093	1245	1328	1594	1894	–	–	420	560	15.28	F2	F2	F2	F2	F2	F2
			SC18CNX	104H8865	219	341	480	640	700	824	1033	1272	1448	1543	1849	2193	–	–	500	707	17.69	F2	F2	F2	F2	F2	F2
			SC18CNX	104H8867	219	341	480	640	700	824	1033	1272	1448	1543	1849	2193	–	–	500	707	17.69	F2	F2	F2	F2	F2	F2
	LBP	HST	SC12CNX.2	104H8266	186	258	346	453	493	578	725	895	–	–	–	–	–	–	379	502	12.87	F2	-	F2	-	F2	-
			SC15CNX.2	104H8566	252	332	434	560	609	714	900	1120	–	–	–	–	–	–	445	610	15.28	F2	-	F2	-	F2	-
			SC18CNX.2	104H8866	244	384	531	689	747	863	1057	1273	–	–	–	–	–	–	541	682	17.69	F2	-	F2	-	F2	-
			SC21CNX.2	104H8166	339	492	654	828	891	1020	1233	1471	–	–	–	–	–	–	623	855	20.95	F2	-	F2	-	F2	-
	MBP	HST	SC10MNX	104H8075	–	149	234	332	368	445	575	724	834	894	1088	1307	1412	1554	295	405	10.29	-	F2	-	F2	-	F2
			SC12MNX	104H8275	–	224	327	446	490	582	738	918	1050	1123	1356	1620	1747	1918	392	503	12.87	-	F2	-	F2	-	F2
			SC15MNX	104H8575	–	–	–	–	611	715	893	1098	1249	1332	1598	1900	2044	2239	-	597	15.28	-	F2	-	F2	-	F2
			SC18MNX	104H8875	–	–	–	675	730	844	1039	1263	1428	1519	1810	2140	2298	2512	544	709	17.69	-	F2	-	F2	-	F2

Voltage	Application	Motor types	Compressor	Code numbers	Capacity [BTU/h] at ASHRAE															Power consumption [W]			Displacement	Recommended compressor cooling at ambient temperatures					
					Evaporating temperature [°F]																			32 °C		38 °C		43 °C	
					-49	-40	-30	-20	-13	-10	0	10	14	20	30	40	41	45	-13	14	41	[cu. inch]	LBP	MBP	LBP	MBP	LBP	MBP
115V 60 Hz	LBP/MBP	HST	SC10CNX.2	104H7070	–	204	571	1007	1359	1523	2133	2848	3167	3682	4649	5762	5882	6378	366	495	573	0.63	F2	F2	F2	F2	F2	F2
			SC12CNX.2	104H7270	268	589	1005	1500	1899	2085	2776	3587	3949	4533	5627	6887	7022	7583	456	606	731	0.78	F2	F2	F2	F2	F2	F2

Applications
LBP = *Low Back Pressure*
MBP = *Medium Back Pressure*
HBP = *High Back Pressure*

Compressor cooling
S = *Static cooling normally sufficient*
O = *Oil cooling*
F_1 = *Fan cooling 1.5 m/s (compressor compartment temp. equal to ambient temperature)*
F_2 = *Fan cooling 3.0 m/s necessary*
* = *Run capacitor 4 µF compulsory in 43°C ambient temperature at MBP conditions.*

Motor types
RSIR = *Resistant Start Induction Run*
RSCR = *Resistant Start Capacitor Run*
CSIR = *Capacitor Start Induction Run*
CSR = *Capacitor Start Run*

Starting devices
LST = *Low Starting Torque*
LST is used with capillary tube control and pressure equalizing. (Pressure equalizing may exceed 10 minutes). The PTC starting device requires 5 minutes cooling before each start.
HST = *HST consisting of relay and starting capacitor is used for expansion valve control or for capillary tube control without pressure equalizing.*

Test conditions
EN 12900-CECOMAF (220 V / 50 Hz)
Compressors: TL / NL / SC-CNX and CNX 2
Condensing temperature: 45 °C
Ambient and suction gas temperature: 32 °C
Liquid temperature: No sub cooling

Test condition
EN 12900-MBP (220 V / 50 Hz)
Compressors: SC-MNX
Condensing temperature: 45 °C
Ambient temperature: 32 °C
Suction gas temperature: 20 °C
Liquid temperature: No sub cooling

Test condition
ASHRAE-LBP (115 V / 60 Hz)
Compressors: SC-CNX 2
Condensing temperature: 130 °F
Ambient temperature: 90 °F
Suction gas temperature: 90 °F
Liquid temperature: 90 °F

Technical data and ordering

Electrical equipment										Dimensions [mm]				
LST (RSIR)		LST (RSCR)		HST (CSIR)		HST (CSR)		LST / HST		Height		Connectors location / I.D		
PTC starting device		PTC starting device		Starting relay	Starting capacitor	Starting device	Starting kit					Suction	Process	Dis-charge
Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Spades 6.3 mm	Spades 6.3 mm	Spades 6.3 mm	Cord relief	Cover	A	B	C	D	E
103N0011	103N0018	–	–	117U7004	117U5014	–	–	103N1010	103N2010	163	159	6.2	6.2	5
103N0011	103N0018	–	–	117U7004	117U5014	–	–	103N1010	103N2010	173	169	6.2	6.2	5
103N0011	103N0018	103N0016	103N0021	117U7000	117U5014	–	–	103N1010	103N2010	173	169	6.2	6.2	5
103N0011	103N0018	103N0016	103N0021	117U7002	117U5015	–	–	103N1010	103N2010	203	197	8.2	6.2	6.2
103N0011	103N0018	103N0016	103N0021	117U7002	117U5015	–	–	103N1010	103N2010	203	197	8.2	6.2	6.2
103N0011	103N0018	103N0016	103N0021	117U7002	177U5015	–	–	103N1010	103N2010	203	197	9.7	6.5	6.5
–	–	–	–	–	–	117-7025	117-9719	103N1004	103N2009	209	203	8.2	6.2	6.2
–	–	–	–	–	–	117-7025	117-9719	103N1004	103N2009	209	203	8.2	6.2	6.2
–	–	–	–	–	–	117-7025	117-9719	103N1004	103N2009	209	203	9.7	6.5	6.5
–	–	–	–	–	–	117-7031	117-9711	103N1004	103N2009	209	203	10.2	6.2	6.2
–	–	–	–	–	–	117-7031	117-9711	103N1004	103N2009	209	203	9.7	6.5	6.5
–	–	–	–	–	–	117-7052	117-9718	103N1004	103N2009	209	203	10.2	6.2	6.2
–	–	–	–	–	–	117-7052	117-9718	103N1004	103N2009	209	203	9.7	6.5	6.5
–	–	–	–	117U7003	117U5017	–	–	103N1004	103N2009	209	203	8.2	6.2	6.2
–	–	–	–	117U7005	117U5017	–	–	103N1004	103N2009	209	203	8.2	6.2	6.2
–	–	–	–	117U7011	117U5017	–	–	103N1004	103N2009	209	203	10.2	6.2	6.2
–	–	–	–	117U7013	117U5012	–	–	103N1004	103N2009	219	213	10.2	6.2	6.2
–	–	–	–	117U7005	117U5017	–	–	103N1004	103N2008	209	203	8.2	6.2	6.2
–	–	–	–	117U7019	117U5017	–	–	103N1004	103N2008	219	213	8.2	6.2	6.2
–	–	–	–	117U7019	117U5017	–	–	103N1004	103N2008	219	213	8.2	6.2	6.2
–	–	–	–	117U7011	117U5017	–	–	103N1004	103N2008	219	213	8.2	6.2	6.2

Electrical equipment										Dimensions [in]				
LST (RSIR)		LST (RSCR)		HST (CSIR)		HST (CSR)		LST / HST		Height		Connectors location / I.D		
PTC starting device		PTC starting device		Starting relay	Starting capacitor	Starting device	Starting kit					Suction	Process	Dis-charge
Spades ¼ in	Spades 3/16 in	Spades ¼ in	Spades 3/16 in	Spades ¼ in	Spades ¼ in	Spades ¼ in	Spades ¼ in	Cord relief	Cover	A	B	C	D	E
–	–	–	–	117U7020	117U5023	–	–	103N1004	103N2008	8.23	8.00	0.378	0.252	0.252
–	–	–	–	117U7020	117U5023	–	–	103N1004	103N2008	8.23	8.00	0.378	0.252	0.252

Technical data and ordering

R600a

Level	Generation	Compressor	Code numbers	Capacity [W] at EN12900 / CECOMAF								EN 12900 (CECOMAF) at LBP rating point -25 °C / 55 °C			ASHRAE subcooled at LBP rating point -23.3 °C / 54.4 °C						Displace-ment
				Evaporating temperature [°C]								Cooling Capacity	COP without Run Capaci-tor	COP with Run Capacitor	Cooling Capacity		COP without Run Capacitor		COP with Run Capacitor		
				-35	-30	-20	-15	-10	-5	0	5	[W]	[W]/[W]	[W/W]	[W]	[kcal/h]	[W/W]	[kcal/Wh]	[W]/[W]	[kcal/Wh]	[cm³]
Energy-optimized	1	PLE35K	101H0360	–	–	38	52	68	87	109	–	27	–	0.68	38	33	–	–	0.90	0.77	3.00
	3	TLES4KK.3	102H4438	19	29	57	75	96	–	–	–	42	0.90	–	57	49	1.18	–	–	–	4.01
		TLES4.8KK.3	102H4538	28	40	73	94	119	–	–	–	55	1.00	–	74	65	1.30	–	–	–	4.78
		TLES5.7KK.3	102H4638	36	50	89	114	144	–	–	–	68	1.02	–	91	79	1.32	–	–	–	5.70
		TLES6.5KK.3	102H4738	45	61	105	134	168	–	–	–	81	1.02	–	108	94	1.31	–	–	–	6.49
		TLES7.5KK.3	102H4838	53	71	122	155	194	–	–	–	94	1.02	1.07	126	108	1.32	1.14	1.38	1.19	7.48
		TLES8.7KK.3	102H4938	62	83	143	181	228	–	–	–	110	1.03	1.08	147	126	1.33	1.14	1.39	1.19	8.67
		TLES10KK.3	102H4038	73	97	162	205	255	–	–	–	126	0.98	1.06	168	145	1.26	1.08	1.36	1.17	10.14
	4	NLE8.8KK.4	105H6800	63	84	141	179	223	–	–	–	110	1.18	1.22	147	127	1.51	1.30	1.56	1.34	8.76
		NLE10KK.4	105H6867	74	98	164	207	257	–	–	–	128	1.19	1.23	170	146	1.51	1.30	1.57	1.35	10.09
		NLE11KK.4	105H6952	82	109	184	232	290	–	–	–	143	1.19	1.22	191	165	1.52	1.31	1.56	1.34	11.15
		NLE13KK.4	105H6959	99	131	217	274	340	–	–	–	170	1.18	1.23	226	194	1.50	1.29	1.57	1.35	13.25
		NLE15KK.4	105H6968	110	146	243	307	382	–	–	–	190	1.20	1.25	253	213	1.53	1.32	1.59	1.37	14.65

Applications
LBP = *Low Back Pressure*
MBP = *Medium Back Pressure*
HBP = *High Back Pressure*

Motor types
RSIR = *Resistant Start Induction Run*
RSCR = *Resistant Start Capacitor Run*

Starting devices
LST = *Low Starting Torque*
HST = *High Starting Torque*

Compressor cooling
S = *Static cooling normally sufficient*
O = *Oil cooling*
F_1 = *Fan cooling 1.5 m/s*
(compressor compartment temp. equal to ambient temperature)
F_2 = *Fan cooling 3.0 m/s necessary*

Voltage and frequencies
1 = 198 – 254 V, 50Hz
2 = 187 – 254 V, 50Hz
3 = 198 – 254 V, 60Hz, LBP, F_1
4 = 198 – 254 V, 50 - 60Hz
Note: To fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device.

Run capacitors
117-7117.....4 µF
117-7119.....4 µF

Test conditions
EN 12900-CECOMAF (220 V / 50 Hz)
Application: R600a
Condensing temperature: 55 °C
Ambient and suction gas temperature: 32 °C
Liquid temperature: 55 °C

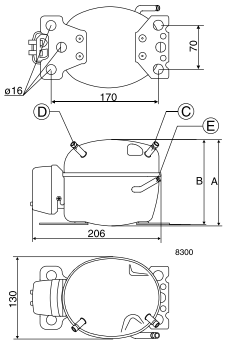
Test condition
ASHRAE (220 V / 50 Hz)
Application: R600a
Condensing temperature: 54.4 °C
Ambient and suction gas temperature: 32 °C
Liquid temperature: 32 °C

Technical data and ordering

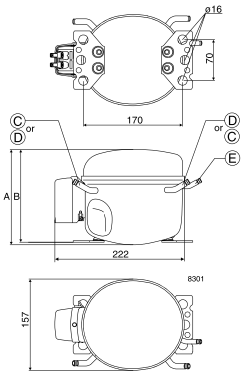
Recommended compressor cooling at ambient temperatures			Voltage and frequency	Electrical equipment								Dimensions [mm]				
32 °C	38 °C	43 °C		LST (RSIR)		LST (RSCR)		Run capacitor		LST / HST		Height		Connectors location / I.D		
				PTC device w/o run capacitor connector		PTC device with run capacitor connector		1 optional 2 compulsory						Suction	Process	Discharge
LBP	LBP	LBP		Spades 4.8 mm	Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Cord relief	Cover	A	B	C	D	E
S*	S*	–	1	–	–	103N0021	103N0016	117-7119[2]	117-7117[2]	103N1010	103N0491	137	135	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	163	159	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	163	159	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	163	159	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	163	159	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	163	159	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	163	159	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	173	169	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	190	183	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	190	183	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	190	183	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	190	183	6.2	6.2	5.0
S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N1010	103N2010	197	190	6.2	6.2	5.0

Diagram and dimensions

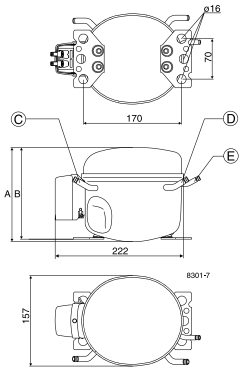
PL / PLE



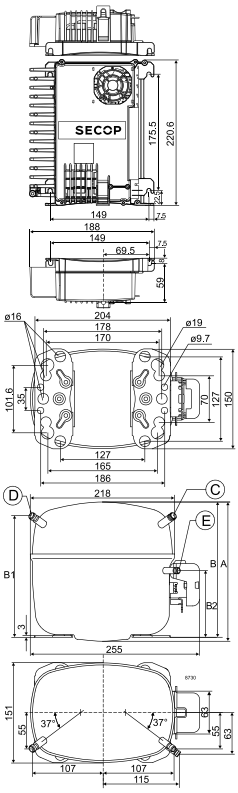
TL



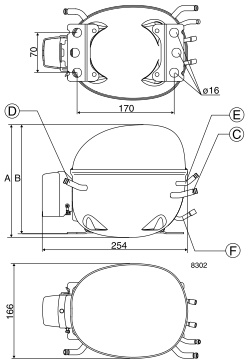
TLS / tLES / tLX



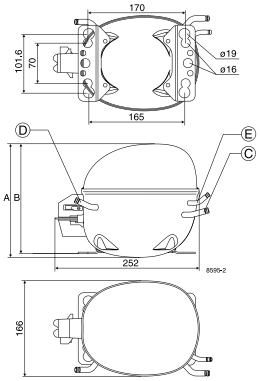
SLV



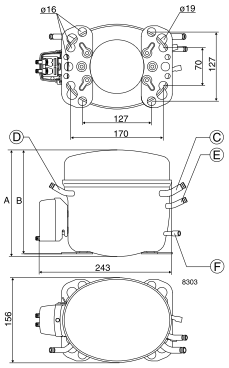
NL / NLE / NLX



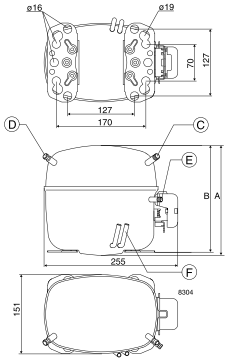
NF



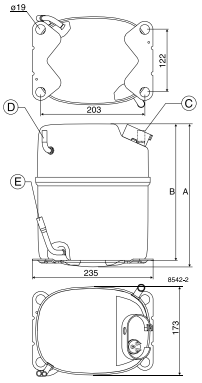
FR



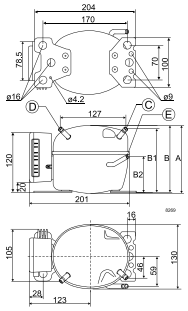
SC



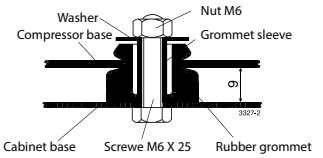
GS



BD

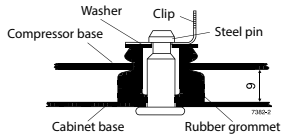


Mounting accessories



Bolt joint for
one compressor: 118-1917
in quantities: 118-1918

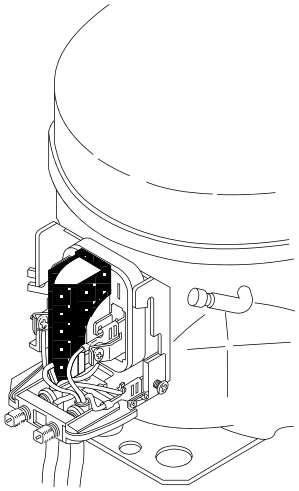
Bolt joint for
one GS compressor: 107B9150 (M8 × 40, base plate distance: 17 mm)



Snap-on
in quantities: 118-1919

Protection Screen for PTC

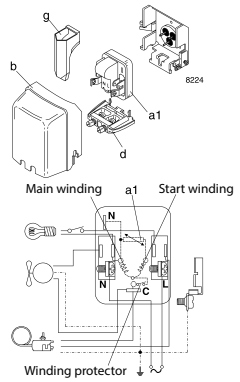
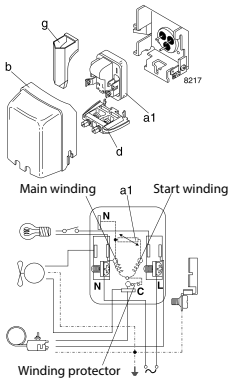
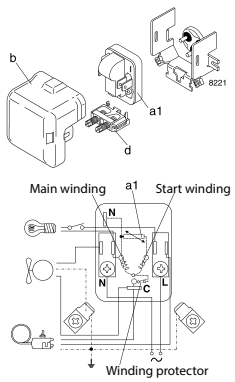
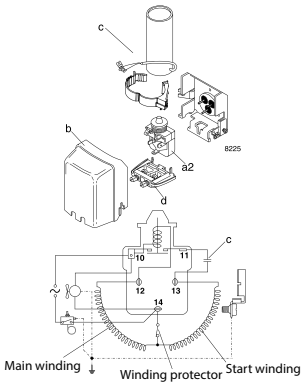
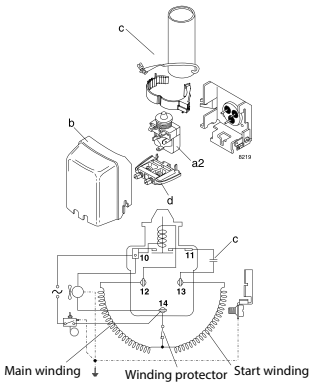
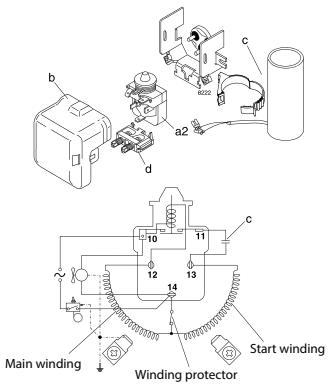
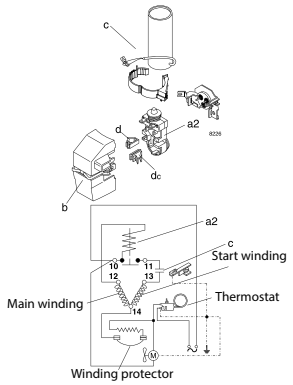
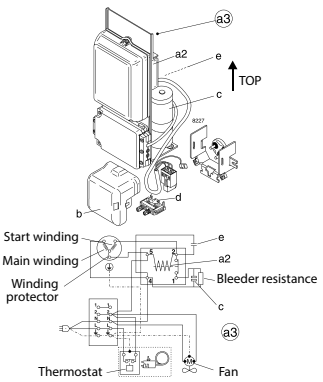
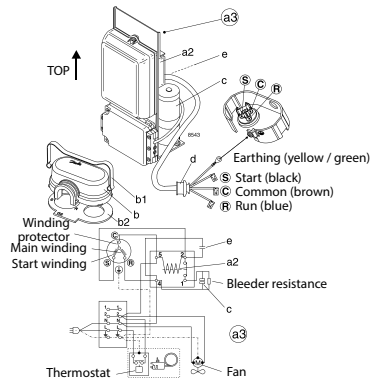
Note:
to fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device



Compressor design	Optimization level	Compressor size	Application range	Start characteristics	Generation
PL TL NL FR SC GS	***Blank*** Standard energy level ***S*** Semi-direct intake ***E*** Energy-optimized	***Nominal*** displacement in cm^3 ***Exception***: For PL compressors the capacity at rating point is stated	***CL R404A / R507*** LBP ***CN R290*** LBP (MBP) ***DL R404A / R507*** HBP ***F R134a*** LBP / (MBP) ***FT R134a*** LBP tropical ***G R134a*** LBP / MBP/hBP ***GH R134a*** Heat Pumps ***GHH R134a*** Heat Pumps optimized ***K R600a*** LBP / (MBP) ***MF R134a*** MBP ***ML R404A / R507*** MBP	***Blank*** => universal (principal rule) ***X = HST*** characteristics (expansion valve)	***Blank*** => first generation ***.2*** => second generation ***.3*** => third generation etc.

Examples					
TL	ES	5.7	FT		.3
NL	E	10	MF		
SC		15	CN	X	.2

Diagram and dimensions

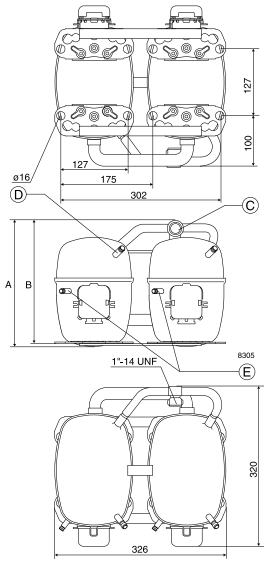
LST / RSIR - PL	LST / RSIR - TL-TLS-TLES-NL-NLE-FR	LST / RSIR - SC
		
HST / CSIR - PL	**HST / CSIR - TL-TLS-TLES-NL-NLE-FR**	**HST / CSIR - SC**
		
HST / CSIR - NF	**HST / CSR - SC**	**HST / CSR - GS**
		

Legend

a1) PTC starting device
a2) Starting relay
a3) Starting device
b) Cover
b1) Clamp (part of compressor)
b2) Gasket (part of compressor)
c) Starting capacitor
d) Cord relief
e) Run capacitor
g) Protection screen for PTC

Diagram and dimensions

SC Twin



Accessories for SC Twin

SC10 / 10, SC12 / 12 and SC15 / 15:

Service valve for 12 mm tube	*118-7350*
Solder connector for 12 mm tube	*104B0584*

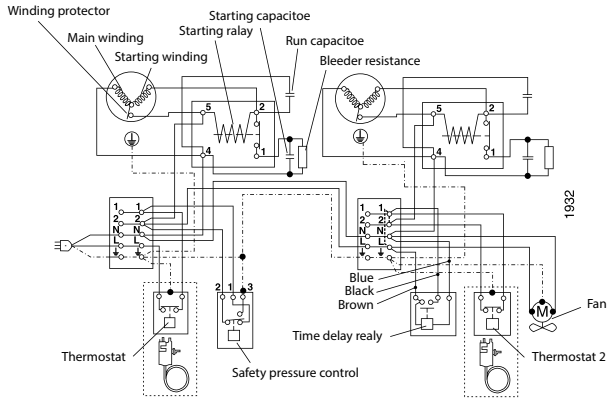
SC18 / 18 and SC21 / 21:

Service valve for 16 mm tube	*118-7351*
Solder connector for 16 mm tube	*118-7405*

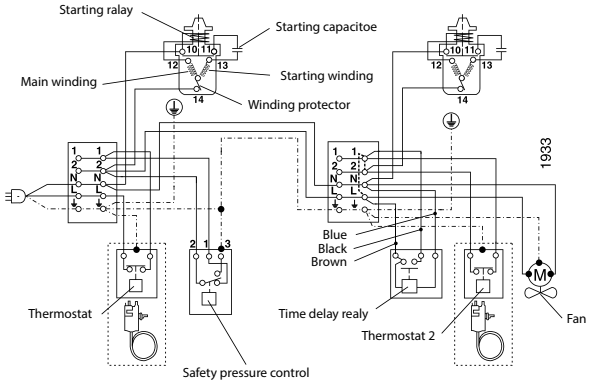
SC10 / 10, SC12 / 12, SC15 / 15, SC18 / 18 and SC21 / 21:

Seal ring for service valve and solder connector	*118-3638*
Time-delay relay	*117N0001*
Check valve (to be used with time-delay relay)	*020-1014*

HST / CSR - SC Twin



HST / CSIR - SC Twin



Applications
LBP: Low Back Pressure
MBP: Medium Back Pressure
HBP: High Back Pressure

Motor types
RSIR: Resistant Start Induction Run
RSCR: Resistant Start Capacitor Run
CSIR: Capacitor Start Induction Run
CSR: Capacitor Start Run

Starting devices
LST: Low Starting Torque
LST is used with capillary tube control and pressure equalizing. (Pressure equalizing may exceed 10 minutes)
The PTC starting device requires 5 minutes cooling before each start
HST: High Starting Torque
HST consisting of relay and starting capacitor, is used for expansion valve control or for capillary tube control without pressure equalizing

Test conditions EN 12900 (CECOMAF)
PL / tL / tLS / NL / FR / SC / BD

Application	*R134a*	*R404A / R507*
	R600a	*R290*
Condensing temperature	*55 °C*	*45 °C*
Ambient temperature	*32 °C*	*32 °C*
Suction gas temperature	*32 °C*	*32 °C*

No subcooling
PL / tL / tLS / NL / FR / SC: 220 V 50 Hz
BD: 12 V, 24 V or 56 V DC

Test conditions ASHRAE
BD

Application	*R600a*	*R404A / R507*
	R134a	*R290*
Condensing temperature	*54.4 °C*	*45 °C*
Ambient temperature	*32 °C*	*32 °C*
Suction gas temperature	*32 °C*	*32 °C*
Liquid temperature	*32 °C*	*32 °C*

12 V, 24 V or 56 V DC

Test conditions EN 12900
GS

Application	*LBP*	*MBP*	*HBP*
Condensing temperature	*40 °C*	*45 °C*	*50 °C*
Ambient temperature	*32 °C*	*32 °C*	*32 °C*
Suction gas temperature	*20 °C*	*20 °C*	*20 °C*
Liquid temperature	*no subcooling*		

220 V, 50 Hz

Electrical equipment GS compressors
**) Gasket / cover / clamp are parts of compressor*

Compressor cooling
S) Static cooling normally sufficient
O) Oil cooling
F_1) Fan cooling 1.5 m/s
(compressor compartment temperature equal to ambient temperature)
F_2) Fan cooling 3.0 m/s necessary
***) run capacitor 4 µF compulsory*

Voltages and frequencies
1) 198 – 254 V, 50 Hz
2) 187 – 254 V, 50 Hz, LBP
3) 198 – 254 V, 60 Hz, LBP
4) 198 – 254 V, 60 Hz, HBP
5) 198 – 254 V, 60 Hz, MBP
6) 207 – 254 V, 60 Hz, HBP
7) 187 – 254 V, 50 Hz, MBP
8) 187 – 254 V, 60 Hz, MBP
9) 187 – 254 V, 60 Hz, LBP

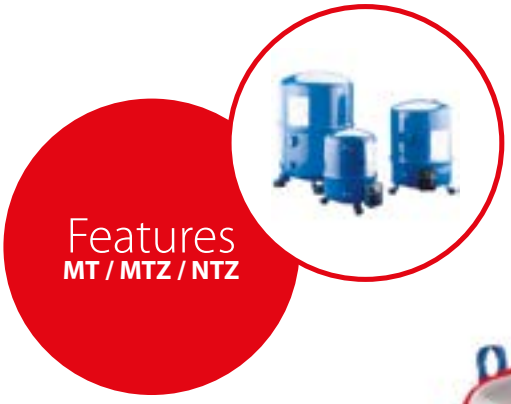
1 Watt = 0.86 kcal/h
1 Watt = 3.41 Btu/h

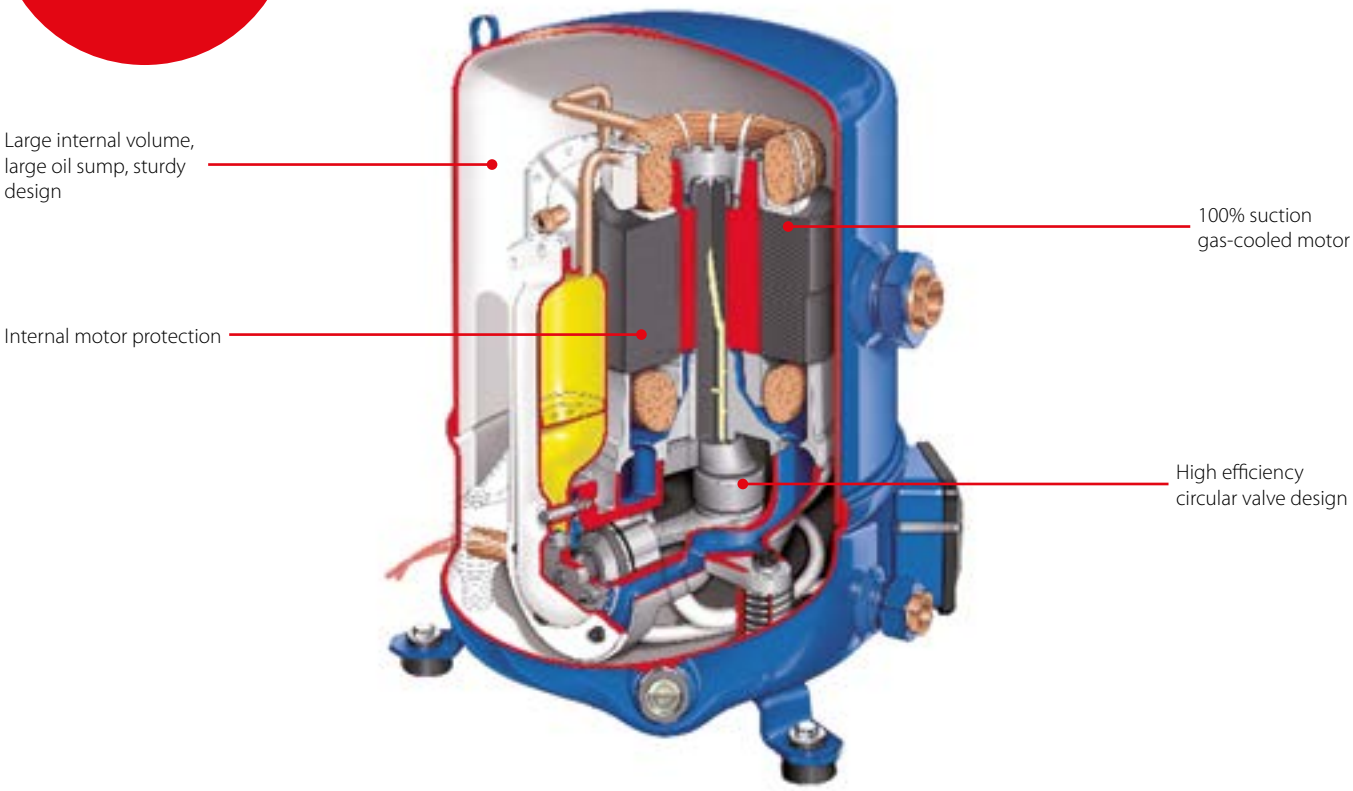
Quick Selection Notes:

MT / MTZ / NTZ - Reciprocating compressors

Maneurop® MT and MTZ series compressors are of the hermetic reciprocating type and are designed for medium and high evaporating temperature applications.

Available in a large variety of single and tandem models for refrigerants R404A, R134a, R407A / F, the compressors fit in lots of different applications.





Facts

Applications:
- Walk-in freezers and cold rooms
- Frozen food processing and storage
- Blast freezers
- Low temperature racks
- Ice cream machines
- Display cabinets
- Water chillers
- Large packaged air conditioners

- Operation under extreme conditions
- Versatile

- No need for air circulation around the compressor
- Long lifetime expectancy and reliability

Technical data and ordering

MT / MTZ / NTZ - Reciprocating compressors

Technical data

Type		4 460 / 3 / 60 400 / 3 / 50	5 230 / 1 / 50	6 230 / 3 / 50	7 575 / 3 / 60 500 / 3 / 50	Swept volume [cm³/rev]	Displacement [m³/h] at 2900 [rpm]	Cylinder number	Oil charge [dm³]	Net weight [kg]
Low back pressure applications	NTZ048	120F0001	120F0087	–	–	48	8.4	1	0.95	21
	NTZ068	120F0002	120F0088	–	–	68	11.8	1	0.95	23
	NTZ096	120F0003	–	–	–	96	16.7	2	1.8	35
	NTZ108	120F0004	–	–	–	108	18.7	2	1.8	35
	NTZ136	120F0005	–	–	–	136	23.6	2	1.8	35
	NTZ215	120F0006	–	–	–	215	37.5	4	3.9	62
	NTZ271	120F0007	–	–	–	271	47.3	4	3.9	64
	NTZ430	120F0024	–	–	–	2 x 215	2 x 37.5	2 x 4	2 x 3.9	138
	NTZ542	120F0025	–	–	–	2 x 271	2 x 47.3	2 x 4	2 x 2.9	142
Medium -High back pressure applications	MT018	MT18-4VI	MT18-5VI	–	–	30	5.3	1	0.95	21
	MT022	MT22-4VI	MT22-5VI	MT22-6VI	–	38	6.6	1	0.95	21
	MT028	MT28-4VI	MT28-5VI	MT28-6VI	–	48	8.4	1	0.95	23
	MT032	MT32-4VI	MT32-5VI	MT32-6VI	–	54	9.4	1	0.95	24
	MT036	MT36-4VI	MT36-5VI	MT36-6VI	–	60	10.5	1	0.95	25
	MT040	MT40-4VI	–	MT40-6VI	–	68	11.8	1	0.95	26
	MT044	MT44-4VI	–	MT44-6VI	MT44-7VI	76	13.3	2	1.8	37
	MT050	MT50-4VI	–	MT50-6VI	MT50-7VI	86	14.9	2	1.8	37
	MT056	MT56-4VI	–	MT56-6VI	MT56-7VI	96	16.7	2	1.8	39
	MT064	MT64-4VI	–	MT64-6VI	–	108	18.7	2	1.8	39
	MT072	MT72-4VI	–	MT72-6VI	–	121	21.0	2	1.8	40
	MT080	MT80-4VI	–	MT80-6VI	–	136	23.6	2	1.8	40
	MT100	MT100-4VI	–	MT100-6VI	MT100-7VI	171	29.8	4	3.9	60
	MT125	MT125-4VI	–	MT125-6VI	MT125-7VI	215	37.5	4	3.9	64
	MT144	MT144-4VI	–	MT144-6VI	MT144-7VI	242	42.1	4	3.9	67
	MT160	MT160-4VI	–	MT160-6VI	MT160-7VI	272	47.3	4	3.9	67
	MTM200	MTM200T4SA	–	–	–	2 x 171	2 x 29.8	2 x 4	2 x 3.9	134
	MTM250	MTM250T4SA	–	–	–	2 x 215	2 x 37.5	2 x 4	2 x 3.9	142
	MTM288	MTM288T4SA	–	–	–	2 x 242	2 x 42.1	2 x 4	2 x 3.9	148
	MTM320	MTM320T4SA	–	–	–	2 x 272	2 x 47.3	2 x 4	2 x 3.9	148
	MTZ018	MTZ18-4VI	MTZ18-5VI	MTZ18-6VI	–	30	5.3	1	0.95	21
	MTZ022	MTZ22-4VI	MTZ22-5VI	MTZ22-6VI	–	38	6.6	1	0.95	21
	MTZ028	MTZ28-4VI	MTZ28-5VI	MTZ28-6VI	–	48	8.4	1	0.95	23
	MTZ032	MTZ32-4VI	MTZ32-5VI	MTZ32-6VI	MTZ32-7VI	54	9.4	1	0.95	24
	MTZ036	MTZ36-4VI	MTZ36-5VI	MTZ36-6VI	MTZ36-7VI	60	10.5	1	0.95	25
	MTZ040	MTZ40-4VI	–	MTZ40-6VI	–	68	11.8	1	0.95	26
	MTZ044	MTZ44-4VI	–	MTZ44-6VI	MTZ44-7VI	76	13.3	2	1.8	37
	MTZ050	MTZ50-4VI	–	MTZ50-6VI	MTZ50-7VI	86	14.9	2	1.8	37
	MTZ056	MTZ56-4VI	–	MTZ56-6VI	MTZ56-7VI	96	16.7	2	1.8	39
	MTZ064	MTZ64-4VI	–	MTZ64-6VI	–	108	18.7	2	1.8	39
	MTZ072	MTZ72-4VI	–	MTZ72-6VI	–	121	21.0	2	1.8	40
	MTZ080	MTZ80-4VI	–	MTZ80-6VI	–	136	23.6	2	1.8	40
	MTZ100	MTZ100-4VI	–	MTZ100-6VI	MTZ100-7VI	171	29.8	4	3.9	60
	MTZ125	MTZ125-4VI	–	MTZ125-6VI	MTZ125-7VI	215	37.5	4	3.9	64
	MTZ144	MTZ144-4VI	–	MTZ144-6VI	MTZ144-7VI	242	42.1	4	3.9	67
	MTZ160	MTZ160-4VI	–	MTZ160-6VI	MTZ160-7VI	272	47.3	4	3.9	67
	MTZ200	MTZ200T4SA	–	–	–	2 x 171	2 x 29.8	2 x 4	2 x 3.9	134
	MTZ250	MTZ250T4SA	–	–	–	2 x 215	2 x 37.5	2 x 4	2 x 3.9	142
	MTZ288	MTZ288T4SA	–	–	–	2 x 242	2 x 42.1	2 x 4	2 x 3.9	148
	MTZ320	MTZ320T4SA	–	–	–	2 x 272	2 x 47.3	2 x 4	2 x 3.9	148

Technical data and ordering

MTZ - R134a - 50 Hz - Reciprocating compressors

Performance table

Type	To	-15		-10		-5		0		5		10		15		20	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018	45	700	0.61	1 050	0.69	1 470	0.76	1 970	0.82	2 570	0.87	3 270	0.91	4 090	0.93	5 020	0.93
MTZ022	45	940	0.72	1 370	0.81	1 900	0.91	2 550	0.99	3 320	1.06	4 240	1.11	5 310	1.15	6 560	1.16
MTZ028	45	1 230	0.91	1 720	1.02	2 350	1.13	3 130	1.23	4 090	1.34	5 260	1.43	6 650	1.51	8 300	1.58
MTZ032	45	1 430	1.09	2 020	1.25	2 770	1.40	3 690	1.54	4 810	1.66	6 160	1.76	7 760	1.83	9 630	1.86
MTZ036	45	2 050	1.29	2 740	1.45	3 580	1.60	4 590	1.74	5 780	1.86	7 170	1.97	8 790	2.05	10 660	2.10
MTZ040	45	2 450	1.47	3 160	1.61	4 000	1.75	4 980	1.89	6 100	2.01	7 390	2.12	8 860	2.21	10 520	2.27
MTZ044	45	2 070	1.62	2 900	1.80	3 940	1.96	5 210	2.12	6 760	2.25	8 610	2.35	10 800	2.42	13 350	2.45
MTZ050	45	2 400	1.79	3 380	2.01	4 600	2.21	6 090	2.40	7 880	2.56	10 020	2.69	12 540	2.78	15 480	2.83
MTZ056	45	2 680	1.95	3 790	2.20	5 150	2.44	6 820	2.66	8 810	2.85	11 180	3.01	13 970	3.13	17 200	3.20
MTZ064	45	3 030	2.14	4 300	2.43	5 860	2.71	7 750	2.97	10 010	3.20	12 680	3.40	15 810	3.54	19 440	3.63
MTZ072	45	3 650	2.34	5 110	2.67	6 880	2.99	9 000	3.30	11 500	3.58	14 450	3.83	17 870	4.03	21 810	4.18
MTZ080	45	4 430	2.76	6 060	3.11	8 020	3.46	10 360	3.80	13 120	4.13	16 360	4.42	20 100	4.69	24 420	4.91
MTZ100	45	4 660	3.25	6 550	3.65	8 860	4.02	11 680	4.35	15 050	4.63	19 050	4.84	23 730	4.96	29 170	4.98
MTZ125	45	5 870	3.63	8 230	4.17	11 090	4.69	14 520	5.16	18 590	5.57	23 380	5.89	28 950	6.09	35 380	6.18
MTZ144	45	7 880	4.85	10 680	5.40	14 060	5.94	18 090	6.46	22 850	6.93	28 420	7.34	34 870	7.67	42 290	7.92
MTZ160	45	8 770	5.23	11 800	5.84	15 470	6.45	19 890	7.06	25 130	7.65	31 300	8.21	38 480	8.72	46 760	9.18
MTZ200	45	9 320	6.50	13 090	7.29	17 730	8.04	23 350	8.70	30 100	9.26	38 090	9.68	47 460	9.92	58 340	9.96
MTZ250	45	11 740	7.25	16 460	8.35	22 180	9.39	29 040	10.33	37 190	11.14	46 760	11.77	57 910	12.19	70 770	12.35
MTZ288	45	15 750	9.71	21 370	10.81	28 130	11.89	36 190	12.91	45 710	13.85	56 840	14.67	69 750	15.35	84 580	15.84
MTZ320	45	17 540	10.46	23 600	11.67	30 950	12.90	39 780	14.11	50 260	15.29	62 590	16.41	76 950	17.44	93 530	18.37

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling Capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage: *400 V / 3 / 50 Hz*

MTZ - R134a - 60 Hz - Reciprocating compressors

Performance table

Type	To	-15		-10		-5		0		5		10		15		20	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018	45	1070	0.73	1480	0.82	2010	0.91	2670	0.99	3470	1.06	4440	1.12	5600	1.16	6960	1.17
MTZ022	45	1430	0.90	2000	1.03	2700	1.15	3550	1.26	4580	1.36	5790	1.43	7220	1.48	8890	1.50
MTZ028	45	1890	1.14	2680	1.32	3600	1.50	4670	1.66	5900	1.80	7320	1.91	8940	1.98	10770	2.02
MTZ032	45	2050	1.37	2880	1.58	3870	1.78	5040	1.96	6430	2.12	8030	2.24	9890	2.31	12010	2.34
MTZ036	45	2580	1.53	3530	1.79	4660	2.04	5980	2.27	7530	2.48	9310	2.64	11350	2.77	13680	2.84
MTZ040	45	3120	1.68	4190	1.99	5440	2.28	6900	2.57	8590	2.82	10530	3.04	12740	3.22	15250	3.35
MTZ050	45	3090	1.97	4460	2.25	6110	2.49	8080	2.69	10400	2.87	13120	3.01	16280	3.12	19910	3.20
MTZ056	45	3420	2.20	5010	2.56	6910	2.87	9170	3.15	11850	3.38	14970	3.57	18590	3.72	22750	3.84
MTZ064	45	4040	2.42	5820	2.81	7950	3.15	10480	3.44	13440	3.69	16890	3.91	20870	4.09	25430	4.24
MTZ072	45	4670	2.78	6680	3.19	9060	3.58	11880	3.93	15170	4.25	19000	4.54	23420	4.78	28490	4.99
MTZ080	45	5540	3.17	7710	3.64	10310	4.06	13410	4.46	17070	4.82	21370	5.17	26350	5.51	32080	5.85
MTZ100	45	6010	3.80	8650	4.37	11810	4.92	15570	5.41	20010	5.83	25200	6.16	31200	6.37	38090	6.43
MTZ125	45	7680	4.33	10880	5.02	14740	5.71	19340	6.37	24780	6.98	31140	7.53	38510	7.99	46990	8.35
MTZ144	45	11010	6.06	14700	6.84	19030	7.56	24060	8.21	29850	8.74	36490	9.14	44040	9.36	52580	9.37
MTZ160	45	12270	6.52	16380	7.40	21180	8.26	26740	9.07	33120	9.82	40410	10.48	48690	11.03	58010	11.43
MTZ200	45	12030	7.59	17290	8.75	23620	9.84	31150	10.83	40030	11.67	50400	12.32	62400	12.73	76190	12.86
MTZ250	45	15370	8.65	21770	10.04	29480	11.42	38690	12.73	49560	13.96	62280	15.05	77030	15.98	93980	16.70
MTZ288	45	22010	12.12	29410	13.67	38060	15.12	48110	16.42	59710	17.49	72990	18.27	88090	18.71	105160	18.75
MTZ320	45	24540	13.05	32770	14.79	42360	16.51	53470	18.14	66240	19.64	80830	20.96	97370	22.05	116030	22.86

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling Capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 60 Hz*

Technical data and ordering

MTZ - R404A / R507A - 50 Hz - Reciprocating compressors

Performance table

Type	To	-30		-25		-20		-15		-10		-5		0		5		10	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018	45	390	0.69	650	0.83	980	0.96	1 400	1.09	1 900	1.21	2 520	1.31	3 250	1.40	4 110	1.47	5 120	1.53
MTZ022	45	640	0.86	980	1.03	1 410	1.19	1 960	1.34	2 620	1.48	3 440	1.61	4 410	1.72	5 550	1.82	6 880	1.90
MTZ028	45	760	1.05	1 250	1.30	1 850	1.53	2 570	1.75	3 430	1.96	4 450	2.14	5 640	2.31	7 040	2.45	8 640	2.56
MTZ032	45	1 040	1.20	1 580	1.46	2 240	1.71	3 030	1.94	3 980	2.16	5 110	2.36	6 440	2.55	7 980	2.71	9 760	2.86
MTZ036	45	1 300	1.50	1 930	1.78	2 690	2.06	3 600	2.33	4 670	2.58	5 930	2.81	7 400	3.01	9 100	3.19	11 050	3.34
MTZ040	45	1 600	1.70	2 320	2.05	3 160	2.37	4 160	2.67	5 330	2.95	6 700	3.20	8 290	3.44	10 130	3.65	12 230	3.84
MTZ044	45	1 320	2.00	1 970	2.29	2 800	2.59	3 850	2.88	5 150	3.16	6 750	3.42	8 690	3.64	11 010	3.83	13 750	3.96
MTZ050	45	1 680	2.27	2 440	2.61	3 420	2.95	4 640	3.29	6 150	3.61	8 000	3.90	10 220	4.15	12 870	4.36	15 990	4.50
MTZ056	45	1 650	2.40	2 640	2.81	3 840	3.22	5 280	3.62	7 000	4.00	9 030	4.35	11 420	4.66	14 190	4.90	17 390	5.08
MTZ064	45	2 080	2.77	3 200	3.21	4 560	3.66	6 190	4.11	8 130	4.54	10 420	4.94	13 090	5.30	16 190	5.61	19 760	5.84
MTZ072	45	2 490	3.05	3 730	3.52	5 220	4.01	7 010	4.50	9 150	4.99	11 680	5.45	14 640	5.88	18 080	6.26	22 040	6.59
MTZ080	45	2 770	3.63	4 250	4.17	6 010	4.72	8 080	5.29	10 520	5.84	13 360	6.38	16 640	6.88	20 400	7.34	24 680	7.73
MTZ100	45	3 240	4.01	4 930	4.80	6 960	5.53	9 390	6.18	12 280	6.76	15 700	7.26	19 710	7.70	24 370	8.06	29 760	8.34
MTZ125	45	4 660	5.16	6 620	6.02	9 060	6.86	12 060	7.67	15 710	8.44	20 080	9.16	25 250	9.83	31 300	10.44	38 310	10.98
MTZ144	45	5 700	6.08	8 060	7.05	10 920	8.00	14 370	8.91	18 490	9.78	23 380	10.60	29 110	11.36	35 770	12.06	43 450	12.69
MTZ160	45	6 280	6.80	8 870	7.95	12 010	9.04	15 790	10.08	20 310	11.08	25 640	12.05	31 900	13.01	39 160	13.97	47 540	14.95
MTZ200	45	6 480	8.02	9 860	9.60	13 920	11.05	18 770	12.36	24 560	13.52	31 400	14.53	39 420	15.39	48 750	16.11	59 510	16.68
MTZ250	45	9 320	10.32	13 230	12.05	18 110	13.73	24 120	15.34	31 420	16.88	40 160	18.32	50 500	19.66	62 600	20.88	76 620	21.96
MTZ288	45	11 410	12.17	16 120	14.11	21 840	16.00	28 740	17.82	36 990	19.56	46 760	21.20	58 220	22.72	71 550	24.12	86 900	25.37
MTZ320	45	12 550	13.61	17 740	15.90	24 030	18.08	31 590	20.15	40 610	22.15	51 280	24.10	63 790	26.03	78 330	27.95	95 070	29.90

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage: *400 V / 3 / 50 Hz*

MTZ - R404A / R507A - 60 Hz - Reciprocating compressors

Performance table

Type	To	-30		-25		-20		-15		-10		-5		0		5		10	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018	45	400	0.78	840	1.06	1370	1.29	2000	1.48	2750	1.64	3620	1.76	4650	1.85	5830	1.91	7180	1.96
MTZ022	45	950	1.08	1480	1.30	2110	1.51	2880	1.70	3790	1.87	4880	2.03	6160	2.17	7650	2.29	9370	2.39
MTZ028	45	1440	1.42	2120	1.71	2920	1.98	3860	2.23	4960	2.45	6250	2.66	7730	2.84	9440	2.99	11380	3.13
MTZ032	45	1570	1.52	2290	1.84	3150	2.15	4180	2.44	5420	2.72	6870	2.97	8590	3.19	10580	3.37	12880	3.51
MTZ036	45	1630	1.67	2490	2.01	3530	2.35	4770	2.69	6250	3.03	7990	3.36	10030	3.67	12400	3.97	15120	4.24
MTZ040	45	1930	1.93	2910	2.32	4080	2.69	5480	3.06	7140	3.42	9090	3.77	11380	4.12	14020	4.47	17050	4.82
MTZ050	45	2290	2.29	3530	2.80	5020	3.27	6790	3.69	8870	4.06	11320	4.38	14170	4.66	17460	4.90	21240	5.10
MTZ056	45	2510	2.41	3960	3.07	5680	3.64	7720	4.14	10120	4.58	12910	4.98	16140	5.35	19840	5.69	24060	6.03
MTZ064	45	3050	2.83	4600	3.53	6450	4.15	8650	4.70	11240	5.21	14290	5.67	17840	6.10	21950	6.51	26650	6.90
MTZ072	45	3670	3.44	5360	4.16	7400	4.83	9850	5.45	12770	6.01	16230	6.53	20260	7.00	24940	7.41	30320	7.78
MTZ080	45	4570	4.02	6440	4.91	8680	5.72	11360	6.47	14540	7.16	18280	7.80	22640	8.40	27690	8.96	33490	9.51
MTZ100	45	4390	4.61	6700	5.63	9440	6.54	12710	7.35	16560	8.06	21080	8.69	26350	9.23	32430	9.70	39390	10.10
MTZ125	45	6750	6.37	9570	7.47	12900	8.52	16830	9.52	21460	10.45	26860	11.30	33130	12.06	40350	12.72	48620	13.28
MTZ144	45	8350	7.40	11570	8.66	15400	9.83	19940	10.92	25300	11.95	31590	12.94	38900	13.92	47360	14.91	57040	15.91
MTZ160	45	9270	8.38	12730	9.64	16850	10.93	21730	12.23	27500	13.53	34260	14.80	42140	16.05	51240	17.26	61680	18.40
MTZ200	45	8780	9.21	13390	11.26	18890	13.08	25410	14.70	33120	16.13	42170	17.37	52700	18.46	64850	19.40	78790	20.21
MTZ250	45	13500	12.74	19140	14.94	25800	17.05	33670	19.04	42920	20.89	53720	22.59	66260	24.12	80710	25.45	97230	26.56
MTZ288	45	16700	14.81	23140	17.33	30800	19.65	39880	21.83	50600	23.89	63180	25.89	77810	27.85	94710	29.81	114090	31.82
MTZ320	45	18540	16.75	25470	19.28	33700	21.86	43460	24.46	55000	27.05	68530	29.61	84280	32.11	102480	34.51	123360	36.80

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K - Voltage: 400 V / 3 / 60 Hz*
Voltage: *400 V / 3 / 60 Hz*

Technical data and ordering

MTZ - R407A - 50 Hz - Reciprocating compressors

Performance table

Type	To	-30		-25		-20		-15		-10		-5		0		5		10	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018-4	45	260	0.49	510	0.63	830	0.76	1240	0.90	1740	1.02	2340	1.14	3070	1.24	3930	1.32	4940	1.39
MTZ022-4	45	430	0.60	760	0.77	1190	0.94	1730	1.10	2390	1.26	3200	1.40	4170	1.53	5300	1.64	6630	1.72
MTZ028-4	45	510	0.74	990	0.99	1570	1.23	2280	1.46	3130	1.67	4140	1.86	5330	2.03	6720	2.19	8330	2.32
MTZ032-4	45	700	0.85	1240	1.11	1890	1.37	2690	1.61	3630	1.84	4760	2.05	6080	2.25	7630	2.43	9400	2.59
MTZ036-4	45	870	1.06	1510	1.35	2270	1.64	3180	1.92	4260	2.19	5520	2.44	7000	2.66	8700	2.86	10670	3.03
MTZ040-4	45	1070	1.21	1830	1.56	2700	1.90	3710	2.22	4890	2.51	6250	2.79	7840	3.04	9670	3.27	11760	3.47
MTZ050-4	45	1140	1.36	1940	1.73	2950	2.08	4190	2.42	5700	2.73	7520	3.02	9670	3.28	12190	3.50	15120	3.69
MTZ056-4	45	1160	1.43	2030	1.84	3120	2.24	4470	2.62	6120	2.98	8100	3.32	10460	3.63	13240	3.91	16480	4.15
MTZ064-4	45	1450	1.64	2480	2.15	3760	2.64	5340	3.12	7270	3.57	9600	3.99	12360	4.38	15620	4.73	19420	5.03
MTZ072-4	45	1710	1.93	2850	2.46	4260	2.98	6010	3.49	8130	3.98	10670	4.44	13680	4.88	17190	5.27	21260	5.61
MTZ080-4	45	2130	2.23	3520	2.91	5190	3.57	7180	4.18	9540	4.76	12330	5.31	15590	5.81	19360	6.28	23710	6.72
MTZ100-4	45	2170	2.83	3860	3.64	5880	4.41	8300	5.11	11200	5.74	14620	6.31	18640	6.80	23310	7.22	28700	7.56
MTZ125-4	45	3130	3.65	5130	4.56	7610	5.46	10650	6.33	14330	7.17	18710	7.96	23890	8.70	29950	9.36	36940	9.95
MTZ144-4	45	3830	4.33	6270	5.37	9190	6.39	12700	7.38	16870	8.32	21780	9.21	27540	10.04	34220	10.81	41910	11.49
MTZ160-4	45	4220	4.84	6900	6.05	10120	7.21	13960	8.33	18520	9.42	23890	10.48	30180	11.51	37470	12.53	45860	13.53
MTZ200-4	45	4300	5.65	7700	7.29	11800	8.81	16600	10.21	22400	11.48	29200	12.61	37300	13.60	46600	14.44	57400	15.13
MTZ250-4	45	6300	7.31	10300	9.12	15200	10.91	21300	12.66	28700	14.34	37400	15.92	47800	17.39	59900	18.73	73900	19.89
MTZ288-4	45	7700	8.66	12500	10.74	18400	12.78	25400	14.75	33700	16.64	43600	18.42	55100	20.09	68400	21.61	83800	22.99
MTZ320-4	45	8400	9.69	13800	12.10	20200	14.42	27900	16.66	37000	18.84	47800	20.96	60400	23.02	74900	25.06	91700	27.06

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling Capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage: *400 V / 3 / 50 Hz*

MTZ - R407A - 60 Hz - Reciprocating compressors

Performance table

Type	To	-30		-25		-20		-15		-10		-5		0		5		10	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018-4	45	310	0.58	620	0.75	1000	0.92	1490	1.07	2080	1.23	2810	1.36	3690	1.48	4720	1.59	5930	1.66
MTZ022-4	45	520	0.72	910	0.93	1420	1.13	2070	1.32	2870	1.51	3840	1.68	5000	1.83	6360	1.97	7950	2.07
MTZ028-4	45	620	0.89	1190	1.19	1890	1.48	2740	1.75	3760	2.00	4970	2.23	6400	2.44	8070	2.63	9990	2.78
MTZ032-4	45	840	1.02	1490	1.34	2270	1.64	3220	1.93	4360	2.21	5710	2.46	7300	2.70	9150	2.92	11290	3.11
MTZ036-4	45	1050	1.27	1810	1.62	2730	1.97	3820	2.31	5110	2.62	6630	2.92	8400	3.19	10440	3.44	12800	3.64
MTZ040-4	45	1290	1.45	2190	1.88	3230	2.28	4450	2.66	5860	3.02	7510	3.35	9410	3.65	11600	3.92	14110	4.16
MTZ050-4	45	1370	1.64	2330	2.08	3540	2.50	5030	2.90	6840	3.28	9020	3.62	11600	3.93	14630	4.21	18140	4.43
MTZ056-4	45	1400	1.72	2440	2.21	3750	2.68	5370	3.14	7340	3.58	9720	3.99	12560	4.36	15890	4.69	19770	4.98
MTZ064-4	45	1740	1.97	2980	2.58	4520	3.17	6410	3.74	8730	4.29	11520	4.79	14840	5.26	18750	5.67	23300	6.03
MTZ072-4	45	2050	2.32	3420	2.95	5120	3.57	7210	4.18	9760	4.77	12810	5.33	16410	5.85	20630	6.32	25510	6.73
MTZ080-4	45	2560	2.67	4230	3.50	6230	4.28	8620	5.02	11450	5.71	14800	6.37	18700	6.97	23240	7.54	28450	8.06
MTZ100-4	45	2610	3.39	4630	4.37	7050	5.29	9960	6.13	13440	6.89	17540	7.57	22360	8.16	27970	8.67	34440	9.08
MTZ125-4	45	3750	4.39	6150	5.47	9130	6.55	12780	7.59	17190	8.60	22460	9.55	28670	10.44	35930	11.24	44330	11.94
MTZ144-4	45	4600	5.19	7520	6.45	11030	7.67	15240	8.85	20240	9.98	26140	11.05	33050	12.05	41070	12.97	50300	13.79
MTZ160-4	45	5060	5.81	8280	7.26	12140	8.65	16750	10.00	22220	11.30	28670	12.57	36210	13.82	44960	15.03	55030	16.24
MTZ200-4	45	5200	6.78	9300	8.75	14100	10.57	19900	12.25	26900	13.77	35100	15.13	44700	16.32	55900	17.33	68900	18.15
MTZ250-4	45	7500	8.77	12300	10.94	18300	13.09	25600	15.19	34400	17.20	44900	19.11	57300	20.87	71900	22.47	88700	23.87
MTZ288-4	45	9200	10.39	15000	12.89	22100	15.33	30500	17.70	40500	19.96	52300	22.10	66100	24.10	82100	25.94	100600	27.58
MTZ320-4	45	10100	11.63	16600	14.52	24300	17.30	33500	19.99	44400	22.61	57300	25.15	72400	27.63	89900	30.07	110100	32.47

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling Capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage: *460 V / 3 / 60 Hz*

Technical data and ordering

MTZ - R407F - 50 Hz - Reciprocating compressors

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018-4	45	540	0.70	890	0.83	1320	0.96	1850	1.08	2490	1.20	3260	1.30	4170	1.39	5230	1.44
MTZ022-4	45	810	0.86	1270	1.02	1840	1.18	2540	1.33	3400	1.48	4410	1.61	5620	1.72	7030	1.80
MTZ028-4	45	1030	1.09	1660	1.31	2420	1.54	3320	1.76	4390	1.97	5650	2.15	7130	2.31	8830	2.42
MTZ032-4	45	1310	1.22	2010	1.46	2850	1.70	3860	1.94	5050	2.17	6450	2.38	8080	2.56	9970	2.71
MTZ036-4	45	1610	1.49	2430	1.76	3390	2.04	4520	2.32	5860	2.57	7410	2.81	9210	3.01	11290	3.16
MTZ040-4	45	1930	1.71	2850	2.02	3920	2.34	5170	2.65	6620	2.94	8300	3.21	10250	3.44	12480	3.63
MTZ050-4	45	2090	1.88	3160	2.24	4470	2.58	6060	2.90	7970	3.19	10240	3.44	12910	3.67	16020	3.85
MTZ056-4	45	2180	2.04	3340	2.40	4770	2.78	6500	3.16	8590	3.51	11080	3.84	14020	4.11	17460	4.33
MTZ064-4	45	2670	2.38	4040	2.84	5700	3.31	7730	3.78	10180	4.22	13100	4.63	16540	4.97	20580	5.25
MTZ072-4	45	3060	2.74	4570	3.21	6410	3.71	8640	4.21	11310	4.69	14480	5.14	18190	5.53	22520	5.85
MTZ080-4	45	3790	3.23	5560	3.84	7650	4.44	10140	5.04	13070	5.61	16500	6.13	20490	6.60	25100	7.01
MTZ100-4	45	4090	4.01	6270	4.73	8840	5.42	11900	6.07	15500	6.66	19740	7.18	24680	7.59	30400	7.89
MTZ125-4	45	5520	5.07	8160	5.88	11360	6.73	15220	7.58	19830	8.41	25290	9.17	31700	9.84	39130	10.38
MTZ144-4	45	6730	5.92	9840	6.85	13530	7.81	17910	8.78	23090	9.72	29160	10.60	36220	11.36	44370	11.99
MTZ160-4	45	7420	6.70	10820	7.75	14870	8.84	19670	9.95	25320	11.05	31950	12.13	39650	13.16	48540	14.12
MTZ200-4	45	8200	8.01	12500	9.45	17700	10.84	23800	12.14	31000	13.33	39500	14.35	49400	15.18	60800	15.78
MTZ250-4	45	11000	10.14	16300	11.76	22700	13.46	30400	15.16	39700	16.81	50600	18.34	63400	19.67	78300	20.75
MTZ288-4	45	13500	11.85	19700	13.69	27100	15.62	35800	17.57	46200	19.45	58300	21.19	72400	22.73	88700	23.98
MTZ320-4	45	14800	13.40	21700	15.50	29700	17.68	39300	19.90	50600	22.11	63900	24.27	79300	26.32	97100	28.23

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling Capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage: *400 V / 3 / 50 Hz*

MTZ - R407F - 60 Hz - Reciprocating compressors

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018-4	45	650	0.84	1060	0.99	1580	1.15	2220	1.30	2990	1.44	3910	1.57	5010	1.67	6280	1.73
MTZ022-4	45	970	1.04	1520	1.22	2210	1.41	3050	1.60	4070	1.77	5300	1.93	6740	2.06	8430	2.16
MTZ028-4	45	1240	1.30	1990	1.57	2900	1.84	3980	2.11	5270	2.36	6780	2.58	8550	2.77	10600	2.91
MTZ032-4	45	1580	1.46	2420	1.75	3430	2.04	4630	2.33	6060	2.60	7740	2.85	9700	3.07	11960	3.25
MTZ036-4	45	1930	1.79	2910	2.12	4070	2.45	5430	2.78	7030	3.09	8890	3.37	11060	3.61	13550	3.79
MTZ040-4	45	2320	2.05	3420	2.43	4700	2.81	6200	3.18	7940	3.53	9970	3.85	12300	4.13	14980	4.36
MTZ050-4	45	2500	2.26	3790	2.69	5370	3.10	7270	3.48	9560	3.82	12290	4.13	15490	4.40	19220	4.62
MTZ056-4	45	2610	2.44	4010	2.88	5720	3.34	7800	3.79	10310	4.22	13300	4.61	16830	4.94	20950	5.19
MTZ064-4	45	3210	2.85	4840	3.41	6840	3.97	9280	4.53	12210	5.07	15710	5.55	19850	5.97	24690	6.30
MTZ072-4	45	3680	3.28	5490	3.86	7690	4.45	10370	5.05	13570	5.63	17370	6.17	21830	6.64	27030	7.02
MTZ080-4	45	4540	3.88	6670	4.60	9180	5.33	12170	6.05	15680	6.73	19800	7.36	24590	7.92	30120	8.41
MTZ100-4	45	4910	4.81	7520	5.67	10610	6.51	14270	7.29	18600	8.00	23690	8.61	29610	9.11	36480	9.47
MTZ125-4	45	6630	6.08	9790	7.06	13630	8.07	18260	9.10	23800	10.09	30350	11.00	38040	11.80	46960	12.45
MTZ144-4	45	8080	7.11	11810	8.22	16240	9.38	21500	10.54	27710	11.67	34990	12.72	43460	13.64	53240	14.39
MTZ160-4	45	8900	8.04	12990	9.30	17850	10.61	23600	11.94	30390	13.27	38340	14.56	47580	15.79	58250	16.94
MTZ200-4	45	9800	9.62	15000	11.34	21200	13.01	28600	14.57	37200	15.99	47400	17.22	59200	18.22	73000	18.94
MTZ250-4	45	13300	12.17	19600	14.11	27300	16.15	36500	18.19	47600	20.17	60700	22.00	76100	23.61	93900	24.90
MTZ288-4	45	16200	14.22	23600	16.43	32500	18.75	43000	21.08	55400	23.34	70000	25.43	86900	27.27	106500	28.77
MTZ320-4	45	17800	16.08	26000	18.60	35700	21.21	47200	23.88	60800	26.53	76700	29.12	95200	31.59	116500	33.88

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling Capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage: *460 V / 3 / 60 Hz*

Technical data and ordering

MTZ - R407C - 50 Hz - Reciprocating compressors

Performance table

Type	To	-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018	45	1 180	0.82	1 750	0.94	2 430	1.04	3 240	1.13	4 180	1.20	5 270	1.25	6 530	1.30
MTZ022	45	1 770	1.07	2 490	1.24	3 330	1.39	4 320	1.50	5 460	1.60	6 790	1.67	8 310	1.73
MTZ028	45	2 160	1.30	3 110	1.52	4 220	1.72	5 520	1.89	7 030	2.03	8 770	2.13	10 800	2.21
MTZ032	45	2 710	1.50	3 740	1.75	4 940	1.95	6 330	2.12	7 940	2.27	9 800	2.38	11 900	2.48
MTZ036	45	3 270	1.81	4 400	2.10	5 710	2.36	7 200	2.57	8 920	2.73	10 900	2.86	13 100	2.95
MTZ040	45	3 890	2.18	5 150	2.48	6 610	2.74	8 290	2.98	10 200	3.18	12 400	3.35	15 000	3.48
MTZ044	45	3 390	2.21	4 770	2.47	6 420	2.72	8 390	2.94	10 700	3.14	13 400	3.28	16 500	3.38
MTZ050	45	3 880	2.42	5 450	2.74	7 330	3.04	9 570	3.32	12 200	3.57	15 300	3.78	18 800	3.94
MTZ056	45	4 460	2.67	6 260	3.05	8 420	3.43	11 000	3.78	14 000	4.10	17 500	4.38	21 500	4.60
MTZ064	45	5 020	2.91	7 060	3.36	9 490	3.80	12 400	4.22	15 700	4.61	19 600	4.96	24 100	5.25
MTZ072	45	5 850	3.30	8 110	3.81	10 800	4.32	13 900	4.80	17 600	5.25	21 900	5.64	26 700	5.98
MTZ080	45	6 850	3.76	9 380	4.35	12 400	4.93	15 800	5.48	19 900	6.00	24 500	6.46	29 800	6.85
MTZ100	45	7 870	4.81	11 000	5.47	14 800	6.04	19 300	6.52	24 500	6.92	30 700	7.26	37 800	7.56
MTZ125	45	11 500	6.13	15 500	6.97	20 100	7.69	25 600	8.31	31 900	8.84	39 300	9.30	47 700	9.69
MTZ144	45	12 700	7.07	17 000	7.92	22 200	8.70	28 200	9.42	35 300	10.04	43 500	10.58	52 900	11.01
MTZ160	45	15 400	8.21	20 200	9.20	25 800	10.09	32 500	10.91	40 300	11.68	49 400	12.42	59 900	13.16
MTZ200	45	15 700	9.61	22 000	10.94	29 600	12.08	38 600	13.03	49 100	13.84	61 400	14.53	75 500	15.11
MTZ250	45	23 000	12.26	30 900	13.93	40 200	15.37	51 100	16.61	63 800	17.68	78 500	18.59	95 400	19.38
MTZ288	45	25 300	14.13	34 000	15.83	44 400	17.41	56 500	18.83	70 600	20.09	87 000	21.16	105 900	22.02
MTZ320	45	30 700	16.43	40 300	18.39	51 700	20.17	65 100	21.81	80 700	23.36	98 800	24.85	119 700	26.32

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 50 Hz*

MTZ - R407C - 60 Hz - Reciprocating compressors

Performance table

Type	To	-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MTZ018	45	1690	1.03	2420	1.20	3260	1.33	4250	1.42	5380	1.49	6680	1.54	8170	1.57
MTZ022	45	2320	1.32	3170	1.52	4170	1.68	5340	1.82	6710	1.93	8290	2.02	10120	2.10
MTZ028	45	3160	1.77	4190	1.96	5430	2.14	6910	2.30	8680	2.45	10760	2.58	13190	2.71
MTZ032	45	3590	1.94	4700	2.17	6030	2.37	7620	2.57	9510	2.74	11730	2.89	14320	3.03
MTZ036	45	3900	2.21	5130	2.54	6630	2.86	8450	3.15	10620	3.41	13180	3.63	16160	3.80
MTZ040	45	4310	2.46	5890	2.81	7740	3.18	9890	3.54	12400	3.90	15290	4.23	18610	4.52
MTZ050	45	5310	2.92	7120	3.32	9300	3.66	11910	3.95	15010	4.19	18660	4.38	22940	4.53
MTZ056	45	6050	3.24	8120	3.69	10610	4.07	13580	4.40	17100	4.69	21230	4.96	26040	5.22
MTZ064	45	6620	3.64	9050	4.14	11880	4.56	15170	4.93	18970	5.27	23340	5.58	28350	5.89
MTZ072	45	7840	4.25	10560	4.88	13750	5.43	17480	5.91	21800	6.33	26800	6.70	32530	7.03
MTZ080	45	8480	4.80	11490	5.47	15000	6.08	19130	6.64	23990	7.15	29710	7.64	36400	8.10
MTZ100	45	10390	5.95	14170	6.79	18630	7.47	23870	8.02	30010	8.48	37140	8.88	45370	9.25
MTZ125	45	14650	7.79	19270	8.75	24670	9.63	30960	10.43	38260	11.15	46680	11.82	56340	12.45
MTZ144	45	16610	8.78	21990	9.90	28140	10.88	35190	11.73	43240	12.47	52430	13.11	62860	13.68
MTZ160	45	18680	9.98	24390	11.22	31060	12.42	38850	13.54	47890	14.57	58320	15.46	70290	16.19
MTZ200	45	20770	11.91	28330	13.57	37250	14.93	47750	16.04	60020	16.96	74290	17.76	90740	18.49
MTZ250	45	29310	15.57	38550	17.50	49340	19.26	61910	20.85	76510	22.31	93360	23.65	112680	24.90
MTZ288	45	33220	17.56	43980	19.80	56280	21.76	70370	23.46	86480	24.94	104850	26.23	125710	27.36
MTZ320	45	37360	19.95	48770	22.44	62120	24.84	77690	27.09	95770	29.13	116640	30.91	140590	32.38

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K - Voltage: 400 V / 3 / 60 Hz*
Voltage: *400 V / 3 / 60 Hz*

Technical data and ordering

MT - R22 - 50 Hz - Reciprocating compressors

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MT018	45	570	0.64	890	0.76	1 300	0.88	1 810	1.00	2 450	1.10	3 220	1.19	4 150	1.26	5 260	1.31	6 550	1.33
MT022	45	740	0.77	1 280	0.95	1 920	1.12	2 670	1.29	3 540	1.44	4 560	1.56	5 720	1.66	7 040	1.73	8 550	1.76
MT028	45	1 460	1.22	2 190	1.43	3 030	1.63	4 000	1.81	5 090	1.98	6 330	2.11	7 720	2.20	9 280	2.25	11 000	2.24
MT032	45	1 550	1.46	2 310	1.68	3 190	1.90	4 230	2.11	5 440	2.31	6 830	2.47	8 420	2.60	10 200	2.69	12 300	2.74
MT036	45	1 960	1.68	2 890	1.90	3 950	2.13	5 150	2.35	6 500	2.56	8 020	2.76	9 710	2.93	11 600	3.07	13 700	3.17
MT040	45	2 050	1.77	3 080	2.08	4 260	2.39	5 590	2.67	7 090	2.93	8 780	3.15	10 700	3.32	12 800	3.42	15 100	3.45
MT044	45	2 350	1.82	3 240	2.13	4 340	2.44	5 680	2.72	7 310	2.98	9 250	3.19	11 600	3.34	14 200	3.43	17 400	3.44
MT050	45	2 560	1.99	3 530	2.31	4 740	2.63	6 230	2.95	8 050	3.25	10 200	3.54	12 800	3.79	15 900	4.00	19 400	4.16
MT056	45	2 660	2.21	3 990	2.64	5 530	3.05	7 320	3.44	9 380	3.78	11 700	4.07	14 400	4.28	17 500	4.40	20 900	4.42
MT064	45	3 090	2.57	4 500	3.02	6 190	3.46	8 190	3.89	10 500	4.28	13 300	4.62	16 500	4.91	20 100	5.11	24 300	5.22
MT072	45	3 470	3.07	5 070	3.47	6 950	3.88	9 130	4.29	11 700	4.69	14 600	5.08	17 900	5.44	21 600	5.76	25 900	6.03
MT080	45	3 950	3.46	5 780	3.91	7 930	4.38	10 400	4.84	13 300	5.30	16 600	5.74	20 400	6.14	24 700	6.51	29 500	6.83
MT100	45	4 570	4.06	6 650	4.66	9 150	5.25	12 100	5.79	15 700	6.27	19 900	6.66	24 700	6.94	30 400	7.09	36 800	7.08
MT125	45	6 690	5.48	9 360	6.17	12 500	6.87	16 400	7.55	20 800	8.18	26 100	8.75	32 200	9.24	39 300	9.63	47 400	9.88
MT144	45	7 700	6.16	10 700	6.94	14 200	7.71	18 500	8.47	23 600	9.17	29 600	9.81	36 600	10.36	44 700	10.80	54 000	11.09
MT160	45	8 660	6.93	11 900	7.79	15 800	8.65	20 600	9.49	26 200	10.28	32 800	11.00	40 500	11.61	49 500	12.10	59 800	12.44
MTM200	45	9 140	8.12	13 300	9.32	18 300	10.49	24 300	11.58	31 400	12.54	39 700	13.32	49 500	13.89	60 700	14.19	73 600	14.17
MTM250	45	13 400	10.95	18 700	12.35	25 100	13.74	32 700	15.09	41 700	16.36	52 200	17.51	64 500	18.49	78 600	19.25	94 800	19.77
MTM288	45	15 400	12.32	21 300	13.87	28 500	15.42	37 000	16.93	47 200	18.35	59 200	19.63	73 200	20.72	89 400	21.59	108 000	22.18
MTM320	45	17 300	13.86	23 800	15.58	31 700	17.30	41 100	18.98	52 300	20.57	65 600	22.00	81 000	23.23	98 900	24.20	119 500	24.88

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 50 Hz*

MT - R22 - 60 Hz - Reciprocating compressors

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
MT018	45	690	0.77	1070	0.92	1560	1.06	2170	1.20	2940	1.32	3860	1.43	4980	1.52	6310	1.57	7860	1.60
MT022	45	890	0.92	1540	1.14	2310	1.35	3210	1.54	4250	1.72	5470	1.88	6860	2.00	8450	2.08	10250	2.11
MT028	45	1750	1.46	2630	1.71	3640	1.95	4800	2.18	6110	2.37	7590	2.53	9260	2.64	11140	2.70	13220	2.69
MT032	45	1870	1.75	2770	2.02	3830	2.28	5080	2.54	6520	2.77	8190	2.97	10110	3.13	12290	3.23	14760	3.28
MT036	45	2350	2.01	3470	2.28	4740	2.55	6180	2.82	7800	3.07	9620	3.31	11660	3.51	13920	3.68	16410	3.80
MT040	45	2460	2.13	3700	2.50	5110	2.86	6710	3.21	8510	3.52	10540	3.78	12800	3.98	15310	4.11	18090	4.14
MT050	45	2950	2.43	4260	2.86	5830	3.24	7700	3.56	9900	3.85	12460	4.10	15430	4.31	18850	4.50	22740	4.66
MT056	45	3280	2.68	4820	3.14	6640	3.56	8770	3.93	11250	4.27	14110	4.57	17400	4.85	21150	5.09	25400	5.32
MT064	45	4260	3.24	5790	3.65	7680	4.05	9980	4.43	12720	4.80	15960	5.15	19730	5.48	24080	5.80	29050	6.10
MT072	45	4720	3.39	6560	3.97	8800	4.51	11500	5.03	14700	5.52	18460	5.97	22830	6.39	27850	6.76	33580	7.10
MT080	45	5420	3.97	7600	4.59	10180	5.19	13240	5.76	16820	6.30	21000	6.83	25820	7.35	31350	7.86	37640	8.36
MT100	45	5490	4.87	7980	5.59	10980	6.30	14570	6.95	18830	7.52	23840	7.99	29680	8.33	36430	8.51	44180	8.50
MT125	45	8030	6.57	11230	7.41	15060	8.24	19620	9.06	25020	9.82	31340	10.51	38690	11.09	47180	11.55	56880	11.86
MT144	45	9240	7.39	12790	8.32	17080	9.25	22220	10.16	28320	11.01	35510	11.78	43910	12.44	53630	12.95	64790	13.31
MT160	45	10400	8.31	14300	9.35	19020	10.38	24680	11.39	31410	12.34	39350	13.20	48620	13.94	59360	14.52	71700	14.93
MTM200	45	10970	9.75	15960	11.19	21960	12.59	29140	13.89	37660	15.05	47680	15.99	59360	16.67	72870	17.02	88360	17.00
MTM250	45	16060	13.14	22460	14.81	30120	16.49	39240	18.11	50030	19.64	62680	21.01	77390	22.18	94350	23.10	113770	23.72
MTM288	45	18470	14.79	25580	16.65	34160	18.51	44430	20.32	56640	22.02	71020	23.55	87820	24.87	107260	25.91	129590	26.61
MTM320	45	20790	16.63	28610	18.69	38040	20.77	49350	22.78	62820	24.68	78690	26.40	97240	27.87	118720	29.04	143400	29.85

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling Capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 60 Hz*

Technical data and ordering

NTZ - R404A / R507A - 50 Hz - Reciprocating compressors

Performance table

Type	To	-45 [1]		-40 [1]		-35 [1]		-30 [2]		-25 [2]		-20 [2]		-15 [2]		-10 [2]	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
NTZ048	45	190	0.35	420	0.59	710	0.84	1 240	1.09	1 700	1.34	2 240	1.57	2 860	1.79	3 570	1.99
NTZ068	45	520	1.02	870	1.28	1290	1.54	2110	1.81	2785	2.09	3570	2.38	4490	2.68	5540	2.99
NTZ096	45	–	–	910	1.29	1 420	1.67	2 430	2.09	3 360	2.53	4 510	2.99	5 900	3.47	7 550	3.97
NTZ108	45	–	–	1120	1.57	1770	2.03	3010	2.49	4080	2.95	5340	3.40	680	3.85	8530	4.29
NTZ136	45	–	–	1 570	2.27	2 360	2.86	3 890	3.47	5 200	4.08	6 750	4.69	8 570	5.29	10 710	5.87
NTZ215	45	1 190	2.31	2 240	3.17	3 540	4.08	5 970	5.01	8 030	5.94	10 440	6.86	13 220	7.72	16 420	8.52
NTZ271	45	2 120	3.57	3 470	4.61	5 140	5.66	8 380	6.73	11 050	7.81	14 190	8.90	17 840	10.00	22 040	11.10
NTZ430	45	2 370	4.61	4 480	6.33	7 080	8.15	11 930	10.02	16 060	11.89	20 880	13.71	26 450	15.44	32 840	17.04
NTZ542	45	4 240	7.14	6 940	9.21	10 290	11.32	16 760	13.46	22 110	15.62	28 380	17.80	35 670	19.99	44 080	22.20

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
[1] ***Superheat:*** *10 K* ***Subcooling:*** *0 K* ***Voltage:*** *400 V / 3 / 50 Hz*
[2] **Suction temperature:** *20 °C* ***Subcooling:*** *0 K* ***Voltage:*** *400 V / 3 / 50 Hz*

NTZ - R404A / R507A - 60 Hz - Reciprocating compressors

Performance table

Type	To	-45 [1]		-40 [1]		-35 [1]		-30 [2]		-25 [2]		-20 [2]		-15 [2]		-10 [2]	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
NTZ048	45	220	0.40	500	0.71	850	1.02	1480	1.33	2040	1.62	2690	1.89	3440	2.13	4310	2.33
NTZ068	45	610	1.20	1020	1.51	1530	1.82	2490	2.14	3290	2.47	4220	2.81	5290	3.16	6530	3.53
NTZ096	45	–	–	890	1.40	1630	1.96	2960	2.54	4160	3.12	5560	3.70	7190	4.24	9050	4.75
NTZ108	45	–	–	1240	2.04	2040	2.51	3530	3.04	4860	3.62	6440	4.24	8290	4.88	10460	5.53
NTZ136	45	–	–	1690	2.65	2720	3.31	4620	4.03	6260	4.80	8170	5.60	10380	6.44	12920	7.31
NTZ215	45	1400	2.72	2640	3.74	4170	4.81	7040	5.91	9480	7.01	12320	8.09	15600	9.11	19380	10.05
NTZ271	45	2500	4.22	4090	5.44	6070	6.68	9890	7.94	13040	9.21	16740	10.50	21050	11.80	26010	13.10
NTZ430	45	2800	5.44	5280	7.47	8350	9.62	14080	11.82	18950	14.03	24640	16.18	31210	18.22	38750	20.10
NTZ542	45	5000	8.43	8180	10.87	12140	13.36	19780	15.88	26090	18.43	33490	21.00	42090	23.59	52010	26.20

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
[1] ***Superheat:*** *10 K* ***Subcooling:*** *0 K* ***Voltage:*** *400 V / 3 / 60 Hz*
[2] **Suction temperature:** *20 °C* ***Subcooling:*** *0 K* ***Voltage:*** *400 V / 3 / 60 Hz*

Nomenclature and Dimensions

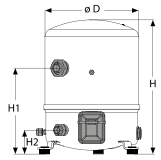
Nomenclature

MT Z 64 HM 4 C VE -

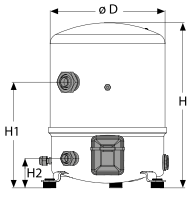
- Compressor type
- Polyolester oil
- Motor power
- Displacement code
- Motor voltage code:
  - **1:** 208 – 230 V / 1 ~ / 60 Hz
  - **3:** 200 – 230 V / 3 ~ / 60 Hz
  - **4:** 400 V / 3 ~ /50 Hz & 460 V / 3 ~ /60 Hz
  - **5:** 220 – 240 V / 1 ~ / 50 Hz
  - **6:** 230 V / 3 ~ / 50 Hz
  - **7:** 500 V / 3 ~ / 50 Hz & 575 V / 3 ~ / 60 Hz
  - **9:** 380 V / 3 ~ / 60 Hz
- Generation index
- Oil equalisation port and sight glass
- Option code

NT Z 048 A 4 L R1 A

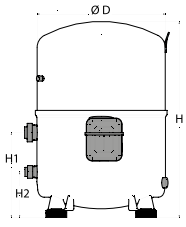
- **Compressor type:**
  NT: New low temperature reciprocating compressors
- **Lubricant:**
  Z: Polyolester
- **Displacement:**
  in [cm³ / rev]
- **Index indicator:**
  UL
- Motor voltage code
- **Motor protection:**
  L: Internal Motor Protection
- **Equipment version:**
  (R1: Rotolock connections, oil equalisation connection and sight glass)
- **Evolution index:**
  indicating compressor modifications



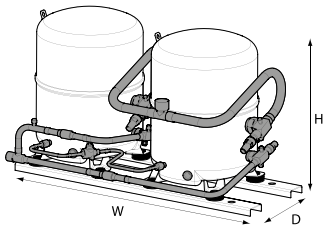
MT / MTZ / NTZ
1 cylinder



MT / MTZ / NTZ
2 cylinders



MT / MTZ / NTZ
4 cylinders



MT / MTZ / NTZ Tandem
2 x 4 cylinders

Single compressors [mm]

Type	D	H	H1	H2
1 cylinder	224	333 / 358	263	68
2 cylinders	288	413	265	74
4 cylinders	352	519 / 540	233	128

Tandem model [mm]

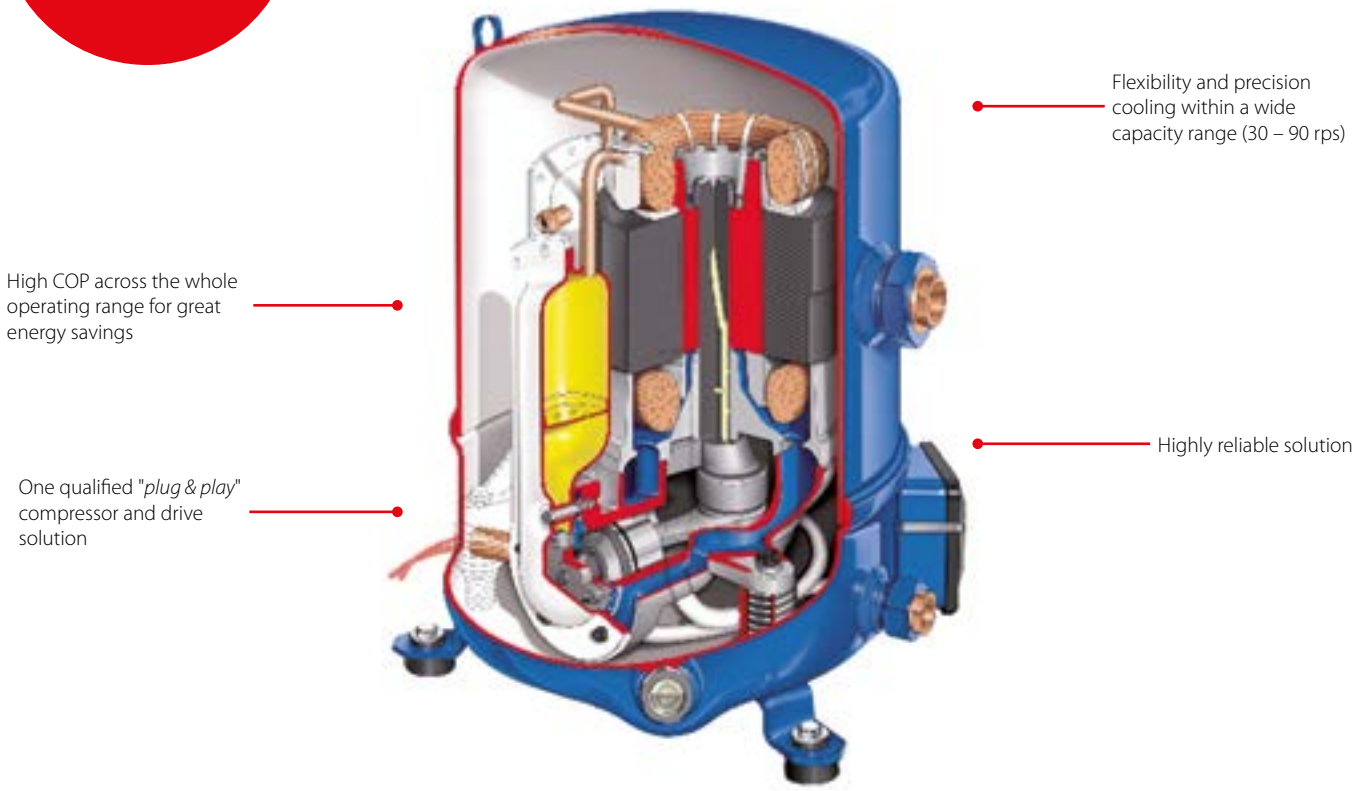
Type	D	H	W	
2 x 4 cylinders	515	544 / 565	925	–

VTZ - Inverter Reciprocating Compressors

Maneurop® - VTZ reciprocating inverter compressors 3 – 48 kW multirefrigerant units - R404A, R407C and R134a - for commercial and process cooling applications prevent you from oversized and short cycling systems by automatically adapting to the current load in your commercial package air conditioning, chillers and rooftops.

Use the innovative and intelligent compressor package that utilizes variable speed technology to ensure superior efficiency across the entire operating range.





Facts

Applications:
- Packaged air conditioning
- Rooftops
- Chillers
- Close controls
- Heat pumps
- Data centers

- Capacity modulation: adapts motorspeed to varying load continuously, quickly and smoothly
- Tight temperature control ± 0.3 °C
- Pre-qualified compressor and drive package
- Drive protection
- Multi-refrigerant capacibility inverter reciprocating compressors
- Advanced energy efficiency cuts the electric bill and easily meets the energy standards

- Improves comfort and process reliability, greater humidity control
- Lower noise level during part-load operations
- Faster time to market, saves time on development and enhances overall system reliability
- Reduces the size of needed power back up systems
- Reduces installation costs with eliminationof components

Technical data and ordering

VTZ - Inverter Reciprocating Compressors - Voltage code G 380 – 480 V and CD302

Ordering

Compressor			Frequency converter				
Type	Code no.		Model & power	IP class	RFI class	LCP	Code no.
	Single pack	Industrial pack					Single pack
VTZ038-G	120B0001	NA	CD302 - 4.0 kW	IP20	H1	yes	131B3543
	120B0001	NA	CD302 - 4.0 kW	IP20	H1	no	131B3544
	120B0001	NA	CD302 - 4.0 kW	IP20	H2	yes	131B3545
	120B0001	NA	CD302 - 4.0 kW	IP20	H2	no	131B3546
	120B0001	NA	CD302 - 4.0 kW	IP55	H1	yes	131B3547
	120B0001	NA	CD302 - 4.0 kW	IP55	H1	no	131B3548
	120B0001	NA	CD302 - 4.0 kW	IP55	H2	yes	131B3550
	120B0001	NA	CD302 - 4.0 kW	IP55	H2	no	131B3549
VTZ054-G	120B0002	NA	CD302 - 5.5 kW	IP20	H1	yes	131B3552
	120B0002	NA	CD302 - 5.5 kW	IP20	H1	no	131B3553
	120B0002	NA	CD302 - 5.5 kW	IP20	H2	yes	131B3554
	120B0002	NA	CD302 - 5.5 kW	IP20	H2	no	131B3555
	120B0002	NA	CD302 - 5.5 kW	IP55	H1	yes	131B3556
	120B0002	NA	CD302 - 5.5 kW	IP55	H1	no	131B3557
	120B0002	NA	CD302 - 5.5 kW	IP55	H2	yes	131B3558
	120B0002	NA	CD302 - 5.5 kW	IP55	H2	no	131B3559
	120B0003	120B0054	CD302 - 7.5 kW	IP20	H1	yes	131B3560
	120B0003	120B0054	CD302 - 7.5 kW	IP20	H1	no	131B3561
	120B0003	120B0054	CD302 - 7.5 kW	IP20	H2	yes	131B3562
	120B0003	120B0054	CD302 - 7.5 kW	IP20	H2	no	131B3563
	120B0003	120B0054	CD302 - 7.5 kW	IP55	H1	yes	131B3564
	120B0003	120B0054	CD302 - 7.5 kW	IP55	H1	no	131B3565
	120B0003	120B0054	CD302 - 7.5 kW	IP55	H2	yes	131B3566
	120B0003	120B0054	CD302 - 7.5 kW	IP55	H2	no	131B3567
	120B0004	120B0052	CD302 - 11.0 kW	IP20	H1	no	131X2198
	120B0004	120B0052	CD302 - 11.0 kW	IP21	H1	yes	131B3568
	120B0004	120B0052	CD302 - 11.0 kW	IP21	H1	no	131B3569
	120B0004	120B0052	CD302 - 11.0 kW	IP21	H2	yes	131B3570
	120B0004	120B0052	CD302 - 11.0 kW	IP21	H2	no	131B3571
	120B0004	120B0052	CD302 - 11.0 kW	IP55	H1	yes	131B3572
	120B0004	120B0052	CD302 - 11.0 kW	IP55	H1	no	131B3573
	120B0004	120B0052	CD302 - 11.0 kW	IP55	H2	yes	131B3574
	120B0004	120B0052	CD302 - 11.0 kW	IP55	H2	no	131B3575
VTZ171-G	120B0005	120B0055	CD302 - 15.0 kW	IP20	H1	no	131X2199
	120B0005	120B0055	CD302 - 15.0 kW	IP21	H1	yes	131B3576
	120B0005	120B0055	CD302 - 15.0 kW	IP21	H1	no	131B3577
	120B0005	120B0055	CD302 - 15.0 kW	IP21	H2	yes	131B3578
	120B0005	120B0055	CD302 - 15.0 kW	IP21	H2	no	–
	120B0005	120B0055	CD302 - 15.0 kW	IP55	H1	yes	131B3580
	120B0005	120B0055	CD302 - 15.0 kW	IP55	H1	no	–
	120B0005	120B0055	CD302 - 15.0 kW	IP55	H2	yes	131B3582
	120B0005	120B0055	CD302 - 15.0 kW	IP55	H2	no	131B3583
VTZ215-G	120B0006	120B0056	CD302 - 18.5 kW	IP20	H1	no	131X2200
	120B0006	120B0056	CD302 - 18.5 kW	IP21	H1	yes	131B3584
	120B0006	120B0056	CD302 - 18.5 kW	IP21	H1	no	131B3585
	120B0006	120B0056	CD302 - 18.5 kW	IP21	H2	yes	131B3586
	120B0006	120B0056	CD302 - 18.5 kW	IP21	H2	no	131B3587
	120B0006	120B0056	CD302 - 18.5 kW	IP55	H1	yes	131B3588
	120B0006	120B0056	CD302 - 18.5 kW	IP55	H1	no	131B3589
	120B0006	120B0056	CD302 - 18.5 kW	IP55	H2	yes	131B3590
	120B0006	120B0056	CD302 - 18.5 kW	IP55	H2	no	131B3591
VTZ242-G	120B0007	120B0053	CD302 - 22.0 kW	IP21	H1	yes	131B3592
	120B0007	120B0053	CD302 - 22.0 kW	IP21	H1	no	131B3593
	120B0007	120B0053	CD302 - 22.0 kW	IP21	H2	yes	131B3594
	120B0007	120B0053	CD302 - 22.0 kW	IP21	H2	no	131B3595
	120B0007	120B0053	CD302 - 22.0 kW	IP55	H1	yes	131B3596
	120B0007	120B0053	CD302 - 22.0 kW	IP55	H1	no	131B3597
	120B0007	120B0053	CD302 - 22.0 kW	IP55	H2	yes	131B3598
	120B0007	120B0053	CD302 - 22.0 kW	IP55	H2	no	131B3599

Technical data and ordering

VTZ - Inverter Reciprocating Compressors - Voltage code J 200 - 240 V and CD302

Ordering

Compressor			Frequency converter				
Type	Code no.		Model and power	IP class	RFI class	LCP	Code no.
	Single pack	Industrial pack					Single pack
VTZ038-J	120B0029	NA	CD302 - 4.0 kW	IP20	H1	yes	131B5347
	120B0029	NA	CD302 - 4.0 kW	IP20		no	131B5348
	120B0029	NA	CD302 - 4.0 kW	IP20	H2	yes	131B5349
	120B0029	NA	CD302 - 4.0 kW	IP20	H2	no	131B5350
	120B0029	NA	CD302 - 4.0 kW	IP55	H1	yes	–
	120B0029	NA	CD302 - 4.0 kW	IP55	–	no	–
	120B0029	NA	CD302 - 4.0 kW	IP55	H2	yes	–
	120B0029	NA	CD302 - 4.0 kW	IP55	H2	no	–
VTZ054-J	120B0030	NA	CD302 - 5.5 kW	IP21	H1	yes	131B5351
	120B0030	NA	CD302 - 5.5 kW	IP21	–	no	131B5352
	120B0030	NA	CD302 - 5.5 kW	IP21	H2	yes	131B5355
	120B0030	NA	CD302 - 5.5 kW	IP21	H2	no	131B5356
	120B0030	NA	CD302 - 5.5 kW	IP55	H1	yes	–
	120B0030	NA	CD302 - 5.5 kW	IP55	–	no	131B5354
	120B0030	NA	CD302 - 5.5 kW	IP55	H2	yes	131B5357
	120B0030	NA	CD302 - 5.5 kW	IP55	H2	no	131B5358
VTZ086-J	120B0031	NA	CD302 - 7.5 kW	IP21	H1	yes	131B5009
	120B0031	NA	CD302 - 7.5 kW	IP21	–	no	131B5359
	120B0031	NA	CD302 - 7.5 kW	IP21	H2	yes	–
	120B0031	NA	CD302 - 7.5 kW	IP21	H2	no	131B5360
	120B0031	NA	CD302 - 7.5 kW	IP55	H1	yes	131B5361
	120B0031	NA	CD302 - 7.5 kW	IP55	–	no	131B5362
	120B0031	NA	CD302 - 7.5 kW	IP55	H2	yes	131B5363
	120B0031	NA	CD302 - 7.5 kW	IP55	H2	no	131B5364
VTZ121-J	120B0032	tbd	CD302 - 11.0 kW	IP21	H1	yes	131B5365
	120B0032	tbd	CD302 - 11.0 kW	IP21	H1	no	–
	120B0032	tbd	CD302 - 11.0 kW	IP21	H2	yes	131B5367
	120B0032	tbd	CD302 - 11.0 kW	IP21	H2	no	131B5368
	120B0032	tbd	CD302 - 11.0 kW	IP55	H1	yes	131B5369
	120B0032	tbd	CD302 - 11.0 kW	IP55	H1	no	131B5370
	120B0032	tbd	CD302 - 11.0 kW	IP55	H2	yes	131B5371
	120B0032	tbd	CD302 - 11.0 kW	IP55	H2	no	131B5372

Technical data and ordering

VTZ - Inverter reciprocating compressors

Electrical specification

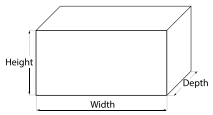
Supply voltage	Compressor Type	Nominal motor power [kW]	RW [Ohm]	RT [Ohm]	RLA [A]	MMT [A]	LRA [A]
200 – 240 V	VTZ038-J	3.59	0.31	0.65	13.5	17	69
	VTZ054-J	5	0.215	0.44	20	25	93
	VTZ086-J	7.8	0.158	0.317	32.5	40.6	88
	VTZ121-J	12.5	0.095	0.156	50	64.4	160
380 – 480 V	VTZ038-G	3.59	1.684	3.37	7.35	9.2	30.5
	VTZ054-G	4.95	1.039	2.08	12	15	47
	VTZ086-G	7.8	0.685	1.37	16	20	74
	VTZ121-G	11.66	0.294	0.59	23.2	29	139
	VTZ171-G	16	0.337	0.67	30.5	38.1	130
	VTZ215-G	21.3	0.236	0.47	40.8	51	197

RW: *Winding resistance per winding (in CD302 parameter list)*
RT: *Winding resistance as measured at motor terminals*
RLA: *Rated load current with R404A at 5 – 60 °C*
MMT: *Maximum must trip current*
LRA: *Locked rotor current*

Note that parameter 1-30 in the frequency converter settings reflects the winding resistance per winding
This is not the same value as measured at the motor terminals

VTZ - Inverter reciprocating compressors

Frequency converter single pack



Drive supply voltage	Drive supply voltage code	Drive power [kW]	IP20			IP21			IP55		
			Drive enclosure	Overall dimension (H x W x L) [mm]	Weight [kg]	Drive enclosure	Overall dimension (H x W x L) [mm]	Weight [kg]	Drive enclosure	Overall dimension (H x W x L) [mm]	Weight [kg]
200 – 240 / 3 / 50 – 60	T2	3.7	A3	290x390x200	6.6	–	–	–	–	–	–
	T2	5.5	–	–	–	B1	346x810x320	23	B1	346x810x320	23
	T2	7.5	–	–	–	B1	346x810x320	23	B1	346x810x320	23
	T2	11	–	–	–	B2	346x810x320	28	B2	346x810x320	28
380 – 480 / 3 / 50 – 60	T4	4	A2	290x390x160	5	–	–	–	A5	335x550x280	15
	T4	5.5	A3	290x390x200	6.6	–	–	–	A5	335x550x280	15
	T4	7.5	A3	290x390x200	6.6	–	–	–	A5	335x550x280	15
	T4	11	B3	349x500x330	13	B1	346x810x320	23	B1	346x810x320	23
	T4	15	B3	349x500x330	13	B1	346x810x320	23	B1	346x810x320	23
	T4	18.5	B4	346x810x320	24	B2	346x810x320	28	B2	346x810x320	28
	T4	22	–	–	–	B2	346x810x320	28	B2	346x810x320	28

Dimensions are given with drives in delivery position, without black plastic pallet

Technical data and ordering

VTZ - Inverter reciprocating compressors - R134a - 380 – 480 V

Performance table

Type	[rpm]	Te	-15		-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VTZ038-G	2100	40	800	0.52	1000	0.60	1300	0.67	1800	0.72	2300	0.77	2900	0.80	3700	0.82
	2100	50	600	0.52	800	0.61	1100	0.70	1500	0.77	1900	0.84	2500	0.90	3200	0.94
	2100	60	–	–	–	–	900	0.73	1200	0.82	1600	0.90	2100	0.98	2700	1.04
	3600	40	1400	0.95	1900	1.09	2500	1.20	3300	1.30	4200	1.39	5400	1.45	6800	1.49
	3600	50	1100	0.95	1500	1.12	2000	1.27	2700	1.40	3600	1.52	4600	1.62	5900	1.70
	3600	60	–	–	–	–	1600	1.31	2200	1.48	2900	1.63	3800	1.76	4900	1.88
	5400	40	2100	1.41	2800	1.60	3800	1.77	4900	1.92	6400	2.04	8100	2.13	10300	2.19
	5400	50	1600	1.40	2300	1.64	3100	1.87	4100	2.06	5400	2.24	7000	2.38	8900	2.50
	5400	60	–	–	–	–	2400	1.92	3300	2.17	4400	2.40	5800	2.60	7500	2.77
VTZ054-G	2100	40	1200	0.73	1600	0.81	2100	0.90	2700	0.98	3400	1.06	4200	1.13	5100	1.20
	2100	50	900	0.76	1300	0.86	1700	0.96	2300	1.07	2900	1.17	3600	1.27	4500	1.37
	2100	60	–	–	–	–	1400	1.02	1900	1.14	2400	1.27	3000	1.40	3800	1.52
	3600	40	2200	1.32	2900	1.47	3800	1.63	4900	1.78	6300	1.92	7800	2.05	9500	2.16
	3600	50	1700	1.37	2400	1.56	3200	1.75	4200	1.93	5300	2.12	6700	2.30	8300	2.47
	3600	60	–	–	–	–	2600	1.84	3500	2.07	4500	2.30	5600	2.53	7000	2.76
	5400	40	3300	1.93	4400	2.17	5800	2.39	7500	2.62	9500	2.83	11800	3.02	14400	3.19
	5400	50	2600	2.02	3700	2.29	4900	2.57	6400	2.85	8100	3.12	10200	3.39	12500	3.64
	5400	60	–	–	–	–	4000	2.71	5200	3.04	6800	3.38	8500	3.71	10600	4.04
VTZ086-G	1800	40	1500	0.99	2100	1.12	2800	1.23	3600	1.32	4600	1.39	5800	1.45	7200	1.50
	1800	50	1200	1.00	1700	1.16	2300	1.31	3000	1.44	3900	1.55	5000	1.65	6200	1.74
	1800	60	–	–	–	–	1800	1.36	2500	1.52	3200	1.67	4100	1.80	5200	1.93
	3600	40	3200	2.10	4500	2.37	6000	2.59	7900	2.77	10000	2.92	12600	3.07	15600	3.20
	3600	50	2500	2.11	3600	2.46	5000	2.77	6600	3.03	8500	3.25	10800	3.46	13400	3.66
	3600	60	–	–	–	–	3900	2.87	5300	3.21	6900	3.52	8900	3.81	11200	4.08
	5400	40	4900	3.04	6800	3.49	9100	3.85	11900	4.13	15200	4.35	19100	4.52	23700	4.65
	5400	50	3800	3.06	5500	3.61	7600	4.08	10000	4.48	12900	4.82	16300	5.11	20300	5.38
	5400	60	–	–	–	–	5900	4.26	8000	4.74	10500	5.18	13500	5.57	16900	5.95
VTZ121-G	1800	40	2400	1.39	3100	1.54	4000	1.69	5000	1.83	6300	1.96	7700	2.08	9400	2.19
	1800	50	2000	1.49	2700	1.68	3400	1.86	4300	2.04	5400	2.21	6700	2.37	8300	2.53
	1800	60	–	–	–	–	2800	1.99	3600	2.21	4500	2.43	5700	2.64	7000	2.84
	3600	40	5100	2.92	6600	3.23	8400	3.54	10500	3.83	13100	4.11	16200	4.36	19700	4.60
	3600	50	4300	3.13	5600	3.52	7200	3.90	9100	4.28	11400	4.64	14200	4.98	17400	5.30
	3600	60	–	–	–	–	5900	4.19	7500	4.65	9500	5.10	11900	5.54	14800	5.97
	5100	40	7300	4.05	9400	4.49	11900	4.92	15000	5.34	18700	5.72	23100	6.08	28200	6.38
	5100	50	6100	4.35	7900	4.88	10200	5.41	13000	5.93	16300	6.45	20200	6.94	24800	7.40
	5100	60	–	–	–	–	8300	5.82	10700	6.45	13600	7.08	17000	7.70	21100	8.31
VTZ171-G	1800	40	2900	2.09	4000	2.31	5500	2.49	7200	2.64	9200	2.76	11600	2.86	14400	2.96
	1800	50	2100	2.12	3200	2.44	4400	2.71	5900	2.94	7700	3.13	9800	3.29	12300	3.43
	1800	60	–	–	–	–	3400	2.84	4700	3.18	6200	3.46	8000	3.71	10200	3.92
	3600	40	6500	4.23	9000	4.76	12100	5.22	15700	5.62	20000	5.97	25000	6.28	30800	6.55
	3600	50	4900	4.22	7200	4.93	9900	5.55	13100	6.10	16900	6.60	21400	7.03	26600	7.43
	3600	60	–	–	–	–	7600	5.69	10400	6.43	13700	7.10	17600	7.71	22100	8.25
	5400	40	10000	6.22	13800	7.25	18300	8.19	23600	9.02	29900	9.73	37200	10.31	45700	10.74
	5400	50	7600	6.19	11000	7.32	15100	8.44	19900	9.51	25600	10.54	32300	11.50	40000	12.38
	5400	60	–	–	–	–	11800	8.62	16000	9.80	21000	11.00	26900	12.21	33800	13.41
VTZ215-G	1800	40	4300	2.77	5700	3.07	7500	3.33	9500	3.56	11900	3.79	14800	4.03	18000	4.29
	1800	50	3500	2.88	4800	3.28	6300	3.63	8200	3.94	10300	4.23	12900	4.50	15800	4.78
	1800	60	–	–	–	–	5100	3.82	6700	4.25	8600	4.63	10900	4.99	13500	5.33
	3600	40	9300	5.87	12400	6.51	16200	7.08	20600	7.60	25800	8.10	31800	8.61	38700	9.14
	3600	50	7500	6.07	10300	6.93	13700	7.68	17700	8.35	22400	8.96	27700	9.54	33900	10.11
	3600	60	–	–	–	–	11100	8.07	14600	8.97	18700	9.77	23500	10.49	29000	11.17
	5400	40	14000	8.66	18800	9.56	24500	10.38	31200	11.16	39100	11.92	48300	12.70	58900	13.54
	5400	50	11300	8.97	15600	10.16	20700	11.23	26800	12.22	33900	13.17	42200	14.09	51900	15.02
	5400	60	–	–	–	–	16800	11.83	22100	13.12	28300	14.32	35700	15.46	44300	16.58

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage code: *G: 380 – 480 V / 3 / 50 and 60 Hz*

Technical data and ordering

VTZ - Inverter Reciprocating Compressors - R404A - 380 – 480 V

Performance table

Type	[rpm]	Te	-30		-25		-20		-15		-10		-5		0		5	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VTZ038-G	2100	20	1100	0.61	1400	0.67	1800	0.71	2400	0.74	2900	0.76	3700	0.77	–	–	–	–
	2100	30	800	0.64	1100	0.72	1500	0.79	1900	0.85	2400	0.89	3000	0.93	3700	0.95	4600	0.96
	2100	40	600	0.64	900	0.75	1100	0.85	1500	0.94	1900	1.02	2400	1.09	3000	1.14	3700	1.18
	2100	50	400	0.62	600	0.76	800	0.90	1100	1.02	1500	1.14	1900	1.24	2400	1.33	2900	1.40
	2100	60	–	–	–	–	500	0.92	700	1.08	1000	1.23	1300	1.37	1700	1.50	2200	1.61
	3600	20	1700	1.08	2300	1.20	3000	1.29	3900	1.37	4900	1.43	6100	1.45	–	–	–	–
	3600	30	1400	1.10	1900	1.26	2600	1.40	3400	1.52	4300	1.62	5400	1.69	6700	1.74	8200	1.75
	3600	40	1000	1.10	1500	1.30	2100	1.49	2800	1.66	3600	1.81	4600	1.93	5700	2.03	7000	2.11
	3600	50	600	1.04	1000	1.29	1500	1.52	2100	1.75	2800	1.95	3600	2.14	4600	2.30	5800	2.44
	3600	60	–	–	–	–	1000	1.47	1400	1.75	2000	2.02	2600	2.27	3400	2.50	4400	2.70
	5400	20	2200	1.76	3100	2.01	4200	2.22	5500	2.39	7000	2.51	8800	2.57	–	–	–	–
	5400	30	1700	1.74	2500	2.08	3500	2.38	4600	2.64	6000	2.86	7700	3.03	9500	3.15	11700	3.22
	5400	40	1100	1.60	1900	2.03	2700	2.43	3700	2.78	5000	3.10	6400	3.37	8100	3.60	10000	3.78
	5400	50	600	1.34	1200	1.86	1900	2.34	2800	2.79	3800	3.21	5100	3.58	6500	3.92	8200	4.20
	5400	60	–	–	–	–	1200	2.11	1900	2.66	2700	3.17	3600	3.65	4800	4.09	6200	4.49
VTZ054-G	2100	20	1500	0.88	2000	0.97	2600	1.05	3400	1.11	4300	1.16	5400	1.19	–	–	–	–
	2100	30	1200	0.94	1600	1.06	2100	1.16	2800	1.26	3600	1.34	4500	1.40	5700	1.45	7100	1.48
	2100	40	900	0.96	1300	1.11	1700	1.25	2200	1.38	2900	1.50	3700	1.60	4700	1.69	5800	1.76
	2100	50	700	0.96	900	1.14	1300	1.32	1700	1.49	2200	1.64	2900	1.79	3700	1.92	4600	2.03
	2100	60	–	–	–	–	900	1.37	1200	1.57	1600	1.77	2100	1.96	2700	2.13	3500	2.29
	3600	20	2500	1.58	3300	1.76	4300	1.91	5400	2.05	6900	2.16	8600	2.26	–	–	–	–
	3600	30	2100	1.67	2800	1.89	3700	2.09	4800	2.28	6100	2.44	7600	2.59	9400	2.72	11400	2.82
	3600	40	1700	1.69	2300	1.96	3100	2.22	4000	2.46	5100	2.69	6500	2.90	8000	3.09	9900	3.25
	3600	50	1200	1.64	1700	1.97	2400	2.29	3100	2.60	4100	2.89	5200	3.17	6500	3.42	8100	3.66
	3600	60	–	–	–	–	1600	2.29	2200	2.66	2900	3.03	3800	3.37	4900	3.71	6200	4.02
	5400	20	3700	2.45	4900	2.76	6200	3.06	7900	3.34	9900	3.61	12200	3.84	–	–	–	–
	5400	30	3000	2.47	4000	2.84	5300	3.21	6800	3.57	8600	3.92	10700	4.26	13200	4.58	16100	4.87
	5400	40	2200	2.43	3100	2.85	4200	3.28	5500	3.72	7100	4.16	9000	4.59	11200	5.02	13800	5.43
	5400	50	1400	2.30	2200	2.77	3100	3.26	4200	3.77	5500	4.29	7100	4.82	9000	5.35	11300	5.87
	5400	60	–	–	–	–	1900	3.15	2800	3.73	3900	4.32	5100	4.94	6700	5.56	8600	6.19
VTZ086-G	1800	20	1800	1.18	2600	1.31	3500	1.42	4700	1.49	6000	1.54	7700	1.56	–	–	–	–
	1800	30	1300	1.21	2000	1.40	2700	1.56	3700	1.69	4800	1.80	6200	1.87	7800	1.92	9600	1.94
	1800	40	900	1.16	1400	1.43	2000	1.66	2800	1.85	3700	2.02	4800	2.16	6100	2.27	7700	2.35
	1800	50	600	1.04	1000	1.38	1500	1.69	2000	1.97	2800	2.21	3600	2.42	4700	2.60	5900	2.75
	1800	60	–	–	–	–	900	1.67	1400	2.03	1900	2.36	2600	2.65	3400	2.91	4300	3.14
	3600	20	4300	2.46	5800	2.74	7600	2.97	9800	3.16	12400	3.29	15500	3.38	–	–	–	–
	3600	30	3300	2.53	4600	2.91	6200	3.25	8100	3.54	10400	3.78	13100	3.96	16300	4.10	19900	4.18
	3600	40	2300	2.46	3400	2.97	4800	3.42	6500	3.82	8400	4.17	10800	4.47	13500	4.72	16700	4.91
	3600	50	1400	2.24	2300	2.87	3500	3.45	4800	3.98	6500	4.46	8400	4.88	10700	5.25	13400	5.56
	3600	60	–	–	–	–	2200	3.34	3200	4.00	4500	4.62	6000	5.18	7900	5.68	10100	6.13
	5400	20	6200	3.89	8300	4.34	11000	4.74	14100	5.10	17900	5.40	22300	5.66	–	–	–	–
	5400	30	5000	4.00	6900	4.59	9300	5.13	12100	5.61	15500	6.05	19400	6.44	23900	6.78	29100	7.07
	5400	40	3600	3.91	5400	4.66	7400	5.35	9900	5.99	12800	6.58	16200	7.11	20200	7.60	24700	8.03
	5400	50	2300	3.59	3700	4.51	5500	5.38	7500	6.19	10000	6.94	12800	7.64	16200	8.28	20000	8.87
	5400	60	–	–	–	–	3400	5.16	5100	6.15	7000	7.09	9300	7.96	12000	8.78	15100	9.55

Technical data and ordering

VTZ - Inverter Reciprocating Compressors - R404A - 380 – 480 V

Performance table

Type	[rpm]	Te	-30		-25		-20		-15		-10		-5		0		5	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VTZ121-G	1800	20	2700	1.89	3700	2.05	4800	2.19	6200	2.30	7900	2.39	10000	2.46	–	–	–	–
	1800	30	2300	2.03	3100	2.25	4100	2.44	5400	2.60	6900	2.74	8700	2.85	10800	2.95	13300	3.02
	1800	40	1800	2.10	2500	2.38	3400	2.64	4400	2.86	5700	3.06	7300	3.24	9100	3.39	11300	3.52
	1800	50	1200	2.08	1800	2.44	2500	2.77	3400	3.07	4400	3.35	5700	3.60	7300	3.82	9100	4.01
	1800	60	–	–	–	–	1700	2.82	2300	3.21	3100	3.57	4100	3.90	5300	4.20	6700	4.48
	3600	20	5500	3.69	7500	4.09	9900	4.47	12900	4.85	16400	5.21	20600	5.56	–	–	–	–
	3600	30	4500	3.88	6200	4.36	8400	4.82	11000	5.26	14100	5.70	17900	6.12	22300	6.54	27400	6.96
	3600	40	3500	3.99	5000	4.56	6800	5.11	9000	5.64	11800	6.17	15000	6.68	18900	7.18	23400	7.68
	3600	50	2600	4.00	3800	4.68	5200	5.33	7000	5.98	9300	6.60	12000	7.21	15200	7.81	19100	8.41
	3600	60	–	–	–	–	3700	5.49	5000	6.25	6700	6.99	8800	7.72	11400	8.43	14600	9.14
	5100	20	8100	5.47	10800	6.11	14200	6.73	18300	7.32	23400	7.85	29400	8.31	–	–	–	–
	5100	30	6400	5.63	8800	6.38	11700	7.14	15300	7.90	19800	8.64	25000	9.34	31300	9.99	[1])	–
	5100	40	4900	5.67	6900	6.50	9400	7.38	12400	8.29	16200	9.20	20700	10.10	26100	10.99	[1])	–
	5100	50	3400	5.64	5100	6.53	7100	7.49	9600	8.51	12600	9.57	16400	10.65	20900	11.74	[1])	–
	5100	60	–	–	–	–	4900	7.52	6800	8.62	9100	9.79	12100	11.02	15700	12.29	[1])	–
VTZ171-G	1800	20	3900	2.31	5400	2.59	7200	2.83	9400	3.04	12000	3.20	15200	3.31	–	–	–	–
	1800	30	2900	2.32	4200	2.65	5700	2.96	7600	3.24	9800	3.47	12400	3.67	15500	3.82	19100	3.91
	1800	40	2100	2.31	3100	2.72	4300	3.11	5900	3.48	7700	3.81	9900	4.10	12500	4.36	15500	4.57
	1800	50	1400	2.23	2200	2.74	3100	3.23	4300	3.70	5800	4.14	7500	4.56	9600	4.94	12100	5.28
	1800	60	–	–	–	–	2100	3.25	2900	3.84	4000	4.41	5300	4.97	6900	5.49	8800	5.98
	3600	20	7700	4.52	10400	5.12	13800	5.67	18100	6.16	23200	6.61	29200	7.03	–	–	–	–
	3600	30	6200	4.73	8700	5.49	11700	6.16	15400	6.77	19900	7.32	25200	7.82	31400	8.28	38600	8.71
	3600	40	4700	4.78	6800	5.75	9500	6.61	12600	7.39	16400	8.08	21000	8.71	26300	9.28	32500	9.81
	3600	50	3100	4.54	4900	5.76	7100	6.87	9700	7.87	12900	8.77	16600	9.58	21000	10.31	26200	10.98
	3600	60	–	–	–	–	4700	6.81	6700	8.08	9200	9.24	12100	10.29	15600	11.24	19700	12.10
	5400	20	11300	7.31	15900	8.36	21500	9.26	28000	10.05	35600	10.73	44300	11.32	–	–	–	–
	5400	30	8900	7.54	13000	8.95	17900	10.20	23700	11.32	30400	12.32	38000	13.21	46600	14.03	56100	14.77
	5400	40	6400	7.24	10000	9.03	14200	10.66	19300	12.14	25000	13.50	31600	14.73	39000	15.87	47200	16.93
	5400	50	3800	6.29	6800	8.51	10400	10.55	14700	12.44	19500	14.17	25000	15.78	31200	17.28	38100	18.69
	5400	60	–	–	–	–	6500	9.78	9900	12.09	13900	14.25	18300	16.27	23300	18.16	28900	19.95
VTZ215-G	1800	20	4800	3.00	6700	3.31	9000	3.58	11900	3.79	15400	3.95	19500	4.04	–	–	–	–
	1800	30	3700	3.18	5300	3.60	7400	3.97	9800	4.30	12800	4.57	16300	4.79	20400	4.94	25200	5.02
	1800	40	2700	3.24	4100	3.78	5800	4.28	7800	4.74	10300	5.15	13300	5.51	16800	5.80	20800	6.03
	1800	50	1800	3.15	2900	3.83	4200	4.48	5900	5.09	7900	5.65	10300	6.16	13200	6.62	16500	7.02
	1800	60	–	–	–	–	2800	4.52	4100	5.30	5600	6.03	7400	6.72	9700	7.36	12300	7.95
	3600	20	9200	5.45	12700	6.26	17200	7.01	22700	7.68	29400	8.27	37400	8.76	–	–	–	–
	3600	30	7600	5.86	10700	6.85	14600	7.79	19300	8.68	25100	9.49	32100	10.23	40300	10.86	49800	11.38
	3600	40	5900	6.12	8600	7.28	11900	8.41	15900	9.49	20800	10.53	26700	11.49	33700	12.38	41900	13.16
	3600	50	4100	6.24	6400	7.55	9200	8.85	12500	10.13	16500	11.37	21300	12.56	27100	13.68	33900	14.72
	3600	60	–	–	–	–	6300	9.13	8900	10.58	12000	12.02	15700	13.41	20300	14.76	25700	16.04
	5400	20	15200	9.71	20500	11.10	27000	12.40	34800	13.62	44100	14.73	55000	15.73	–	–	–	–
	5400	30	12200	9.94	17200	11.64	23200	13.30	30300	14.90	38800	16.44	48700	17.91	60200	19.30	73400	20.59
	5400	40	9000	9.79	13400	11.78	18700	13.76	25000	15.73	32500	17.67	41200	19.58	51400	21.44	63200	23.24
	5400	50	5800	9.21	9500	11.46	13900	13.73	19100	16.03	25400	18.35	32900	20.66	41600	22.97	51800	25.26
	5400	60	–	–	–	–	8900	13.17	13000	15.77	17900	18.43	23800	21.13	30900	23.85	39300	26.60

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage code: *G: 380 – 480 V / 3 / 50 and 60 Hz*
[1]) *Error 3: Evaporating temperature too high. Approximative result*

Technical data and ordering

VTZ - Inverter Reciprocating Compressors - R407C - 380 – 480 V

Performance table

Type	[rpm]	Te	-15		-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VTZ038-G	2100	20	2000	0.69	2600	0.71	3300	0.73	4100	0.72	–	–	–	–	–	–
	2100	30	1700	0.77	2200	0.84	2800	0.89	3600	0.91	4400	0.93	5400	0.93	–	–
	2100	40	1300	0.82	1800	0.93	2300	1.01	3000	1.08	3700	1.13	4600	1.17	5600	1.20
	2100	50	–	–	1400	0.98	1900	1.11	2400	1.22	3100	1.32	3800	1.40	4700	1.47
	2100	60	–	–	–	–	1400	1.18	1800	1.34	2400	1.48	3000	1.61	3800	1.73
	3600	20	3200	1.11	4200	1.19	5400	1.25	6900	1.30	–	–	–	–	–	–
	3600	30	2700	1.24	3600	1.35	4700	1.45	6000	1.53	7500	1.59	9400	1.63	–	–
	3600	40	2200	1.34	3000	1.49	3900	1.63	5100	1.75	6400	1.86	8000	1.94	9900	2.01
	3600	50	–	–	2400	1.60	3300	1.79	4200	1.96	5400	2.11	6700	2.25	8400	2.36
	3600	60	–	–	–	–	2600	1.92	3400	2.14	4300	2.35	5500	2.54	6900	2.71
	5400	20	4600	1.79	6000	2.00	7600	2.19	9700	2.35	–	–	–	–	–	–
	5400	30	4000	1.96	5200	2.22	6700	2.47	8600	2.70	10900	2.91	13600	3.08	–	–
	5400	40	3300	2.06	4400	2.38	5700	2.68	7400	2.98	9400	3.26	11800	3.51	14700	3.73
	5400	50	–	–	3500	2.49	4600	2.85	6100	3.21	7800	3.55	9900	3.88	12500	4.18
	5400	60	–	–	–	–	3600	2.98	4800	3.40	6200	3.81	8000	4.21	10200	4.59
VTZ054-G	2100	20	2700	0.90	3500	0.94	4400	0.97	5500	0.99	–	–	–	–	–	–
	2100	30	2300	1.03	3000	1.11	3800	1.17	4800	1.21	6000	1.24	7500	1.26	–	–
	2100	40	1900	1.13	2500	1.26	3200	1.36	4100	1.45	5100	1.51	6400	1.56	7900	1.60
	2100	50	–	–	1900	1.37	2500	1.53	3300	1.67	4200	1.79	5300	1.88	6600	1.96
	2100	60	–	–	–	–	1900	1.65	2500	1.86	3300	2.04	4200	2.20	5200	2.33
	3600	20	4700	1.66	6100	1.79	7800	1.90	9900	1.99	–	–	–	–	–	–
	3600	30	4000	1.82	5200	2.00	6800	2.16	8700	2.32	10900	2.46	13500	2.58	–	–
	3600	40	3300	1.96	4400	2.19	5700	2.41	7400	2.62	9400	2.83	11700	3.02	14400	3.20
	3600	50	–	–	3600	2.33	4700	2.62	6100	2.89	7800	3.17	9900	3.43	12300	3.69
	3600	60	–	–	–	–	3700	2.76	4900	3.10	6300	3.45	8100	3.79	10200	4.13
	5400	20	6600	2.70	8600	3.01	11200	3.28	14300	3.51	–	–	–	–	–	–
	5400	30	5700	2.92	7500	3.32	9700	3.70	12400	4.05	15800	4.37	19800	4.63	–	–
	5400	40	4700	3.05	6300	3.53	8200	4.01	10600	4.48	13500	4.93	17000	5.34	21200	5.69
	5400	50	–	–	5200	3.63	6800	4.20	8800	4.78	11300	5.35	14300	5.89	17900	6.41
	5400	60	–	–	–	–	5400	4.26	7100	4.93	9100	5.62	11700	6.29	14700	6.96
VTZ086-G	1800	20	3700	1.14	5000	1.19	6500	1.22	8400	1.24	–	–	–	–	–	–
	1800	30	2900	1.34	3900	1.45	5200	1.53	6700	1.58	8600	1.62	10700	1.65	–	–
	1800	40	2200	1.47	3100	1.67	4100	1.82	5400	1.93	6800	2.02	8600	2.09	10700	2.14
	1800	50	–	–	2300	1.78	3200	2.03	4200	2.23	5500	2.40	6900	2.53	8600	2.63
	1800	60	–	–	–	–	2400	2.13	3300	2.45	4300	2.71	5400	2.93	6800	3.12
	3600	20	6300	2.61	8600	2.76	11500	2.88	14900	2.96	–	–	–	–	–	–
	3600	30	5500	2.86	7600	3.10	10100	3.28	13000	3.42	16500	3.53	20500	3.62	–	–
	3600	40	4600	3.04	6400	3.40	8600	3.69	11200	3.92	14200	4.10	17700	4.25	21700	4.38
	3600	50	–	–	5200	3.61	7100	4.04	9400	4.40	11900	4.69	14800	4.94	18200	5.16
	3600	60	–	–	–	–	5500	4.27	7400	4.80	9500	5.24	11900	5.63	14700	5.97
	5400	20	10200	3.86	13400	4.11	17500	4.31	22600	4.44	–	–	–	–	–	–
	5400	30	8800	4.33	11500	4.69	14900	5.02	19200	5.30	24500	5.52	31100	5.65	–	–
	5400	40	7700	4.72	9900	5.19	12700	5.65	16200	6.07	20700	6.45	26100	6.76	32800	7.00
	5400	50	–	–	8400	5.62	10800	6.19	13700	6.75	17300	7.29	21800	7.77	27300	8.21
	5400	60	–	–	–	–	8900	6.66	11300	7.35	14300	8.04	17900	8.69	22400	9.31

Technical data and ordering

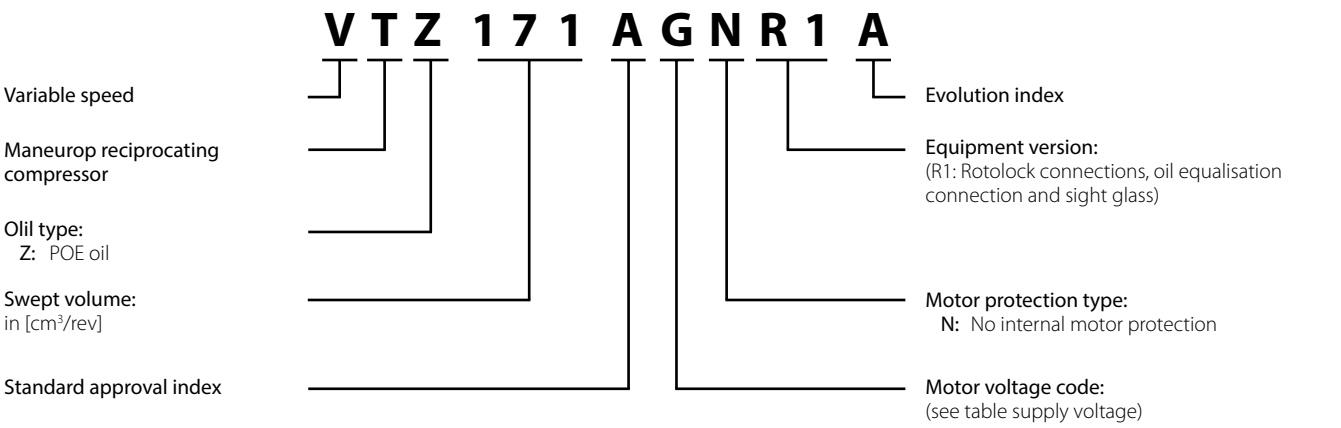
VTZ - Inverter Reciprocating Compressors - R407C - 380 – 480 V

Performance table

Type	[rpm]	Te	-15		-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VTZ121-G	1800	20	5200	1.66	6900	1.77	8900	1.84	11300	1.85	–	–	–	–	–	–
	1800	30	4400	1.91	5800	2.10	7600	2.25	9700	2.35	12200	2.40	15100	2.39	–	–
	1800	40	3500	2.11	4800	2.39	6400	2.62	8200	2.80	10400	2.94	12900	3.02	15800	3.04
	1800	50	–	–	3900	2.63	5200	2.95	6800	3.21	8600	3.43	10800	3.60	13300	3.71
	1800	60	–	–	–	–	4100	3.23	5400	3.58	6900	3.89	8700	4.15	10900	4.35
	3600	20	11100	3.94	14300	4.27	18200	4.60	22800	4.92	–	–	–	–	–	–
	3600	30	9400	4.21	12200	4.60	15700	4.98	19900	5.34	24800	5.69	30600	6.03	–	–
	3600	40	7800	4.52	10300	5.01	13300	5.47	17100	5.93	21500	6.36	26700	6.77	32700	7.16
	3600	50	–	–	8400	5.36	11100	5.97	14300	6.55	18200	7.11	22800	7.64	28200	8.15
	3600	60	–	–	–	–	8900	6.33	11600	7.09	14900	7.82	18900	8.51	23700	9.18
	5100	20	15400	5.71	19800	6.34	25000	6.98	31300	7.64	–	–	–	–	–	–
	5100	30	13100	6.11	17100	6.81	21900	7.52	27600	8.26	34300	9.02	42200	9.79	–	–
	5100	40	10900	6.48	14400	7.28	18700	8.09	23800	8.92	29900	9.77	37000	10.64	45200	11.52
	5100	50	–	–	11800	7.68	15500	8.62	19900	9.56	25300	10.53	31600	11.51	39000	12.51
	5100	60	–	–	–	–	12400	9.04	16100	10.13	20700	11.23	26100	12.35	32600	13.49
VTZ171-G	1800	20	6900	2.27	9000	2.38	11700	2.45	14800	2.47	–	–	–	–	–	–
	1800	30	6000	2.68	7900	2.88	10300	3.05	13200	3.17	16700	3.24	20800	3.27	–	–
	1800	40	4900	3.00	6600	3.31	8800	3.59	11400	3.84	14500	4.04	18100	4.19	22500	4.28
	1800	50	–	–	5200	3.64	7100	4.05	9300	4.44	12000	4.78	15200	5.08	19000	5.33
	1800	60	–	–	–	–	5300	4.38	7100	4.93	9300	5.44	12000	5.92	15300	6.34
	3600	20	15300	5.05	19600	5.33	24800	5.49	30900	5.50	–	–	–	–	–	–
	3600	30	12900	5.67	16900	6.18	21700	6.59	27400	6.88	34200	7.02	42100	7.00	–	–
	3600	40	10500	6.06	14100	6.82	18400	7.49	23700	8.06	29900	8.50	37200	8.80	45700	8.93
	3600	50	–	–	11300	7.25	15100	8.19	19700	9.04	25300	9.80	31900	10.43	39700	10.91
	3600	60	–	–	–	–	11800	8.69	15700	9.84	20600	10.91	26400	11.88	33300	12.72
	5400	20	21100	7.82	27300	8.46	34800	9.00	43600	9.43	–	–	–	–	–	–
	5400	30	18500	8.77	24500	9.71	31600	10.55	39900	11.31	49600	11.97	60700	12.54	–	–
	5400	40	15600	9.47	21100	10.71	27600	11.87	35300	12.96	44200	13.96	54600	14.89	66400	15.73
	5400	50	–	–	17300	11.40	23100	12.89	30000	14.31	38100	15.66	47400	16.95	58200	18.18
	5400	60	–	–	–	–	18300	13.52	24200	15.29	31300	17.01	39600	18.67	49100	20.29
VTZ215-G	1800	20	9200	2.96	11800	3.13	15100	3.26	18900	3.37	–	–	–	–	–	–
	1800	30	8100	3.48	10500	3.75	13400	3.98	17000	4.16	21200	4.31	26300	4.42	–	–
	1800	40	6800	3.93	8900	4.34	11600	4.70	14700	5.00	18500	5.26	23100	5.47	28400	5.64
	1800	50	–	–	7200	4.82	9500	5.35	12300	5.82	15600	6.23	19600	6.58	24300	6.88
	1800	60	–	–	–	–	7400	5.87	9700	6.54	12500	7.14	15900	7.68	19900	8.15
	3600	20	20700	6.67	26200	7.18	32800	7.63	40600	8.03	–	–	–	–	–	–
	3600	30	17800	7.45	22800	8.14	28900	8.79	36000	9.38	44400	9.92	54100	10.40	–	–
	3600	40	14800	8.04	19300	8.97	24800	9.85	31200	10.68	38800	11.45	47700	12.16	57900	12.81
	3600	50	–	–	15800	9.62	20600	10.78	26300	11.88	33100	12.93	41000	13.92	50300	14.85
	3600	60	–	–	–	–	16400	11.54	21300	12.96	27200	14.33	34200	15.64	42400	16.89
	5400	20	28400	10.93	36500	12.14	46200	13.25	57500	14.22	–	–	–	–	–	–
	5400	30	24600	11.71	32100	13.25	41100	14.75	51600	16.17	63800	17.48	77800	18.64	–	–
	5400	40	20600	12.27	27500	14.11	35700	15.97	45300	17.81	56400	19.60	69300	21.30	84000	22.87
	5400	50	–	–	22700	14.80	30000	16.98	38600	19.20	48600	21.43	60100	23.64	73500	25.78
	5400	60	–	–	–	–	24100	17.85	31600	20.42	40400	23.06	50600	25.73	62500	28.40

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage code*: G: 380 – 480 V / 3 / 50 and 60 Hz*

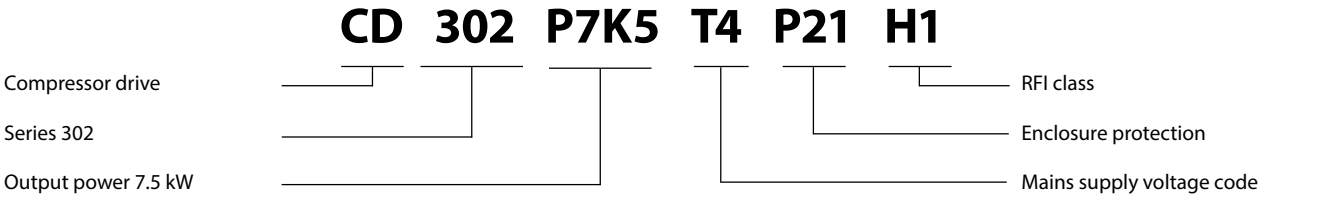
Nomenclature



Compressor specifications

Compressor Type	Swept volume [cm³/rev]	Displacement			Cyl. nbr	Oil charge [dm³]	Net Weight [kg]
		Min speed [m³/h]	50 Hz [m³/h]	Max speed [m³/h]			
VTZ038	38.12	4.57	6.63	12.12	1	0.95	21
VTZ054	53.86	6.46	9.37	17.13	1	0.95	24
VTZ086	85.64	8.74	14.90	27.23	2	1.80	35
VTZ121	120.94	12.34	21.04	36.28	2	1.80	40
VTZ171	171.26	17.47	29.80	54.46	4	3.90	60
VTZ215	215.44	21.97	37.49	68.51	4	3.90	64

Frequency converter nomenclature

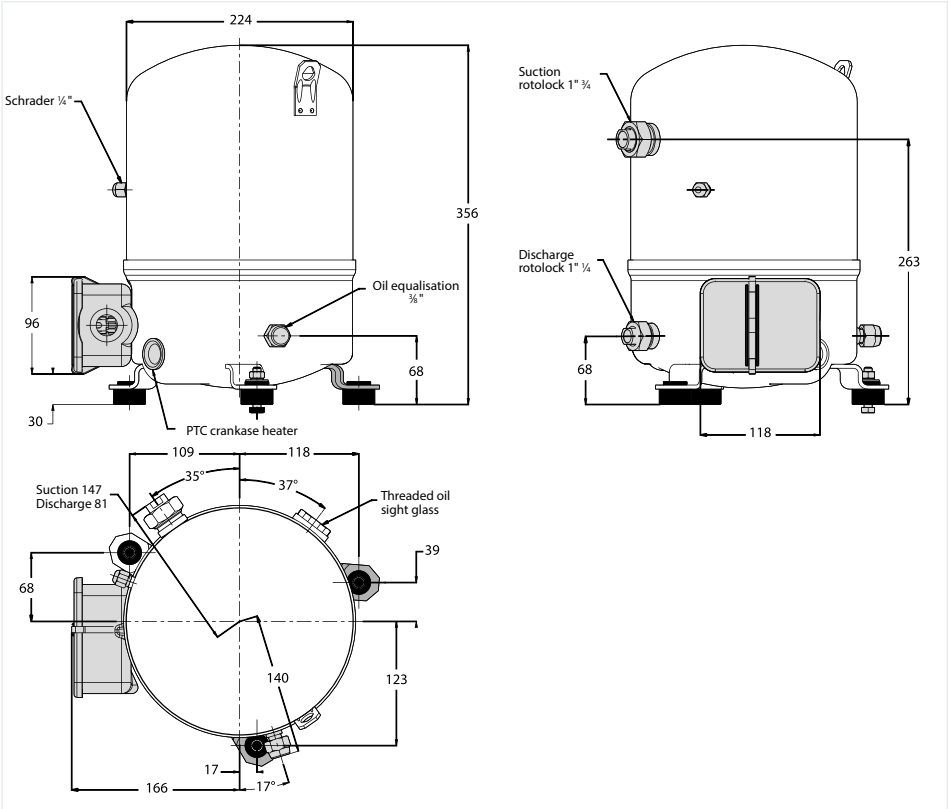


Frequency converter specifications

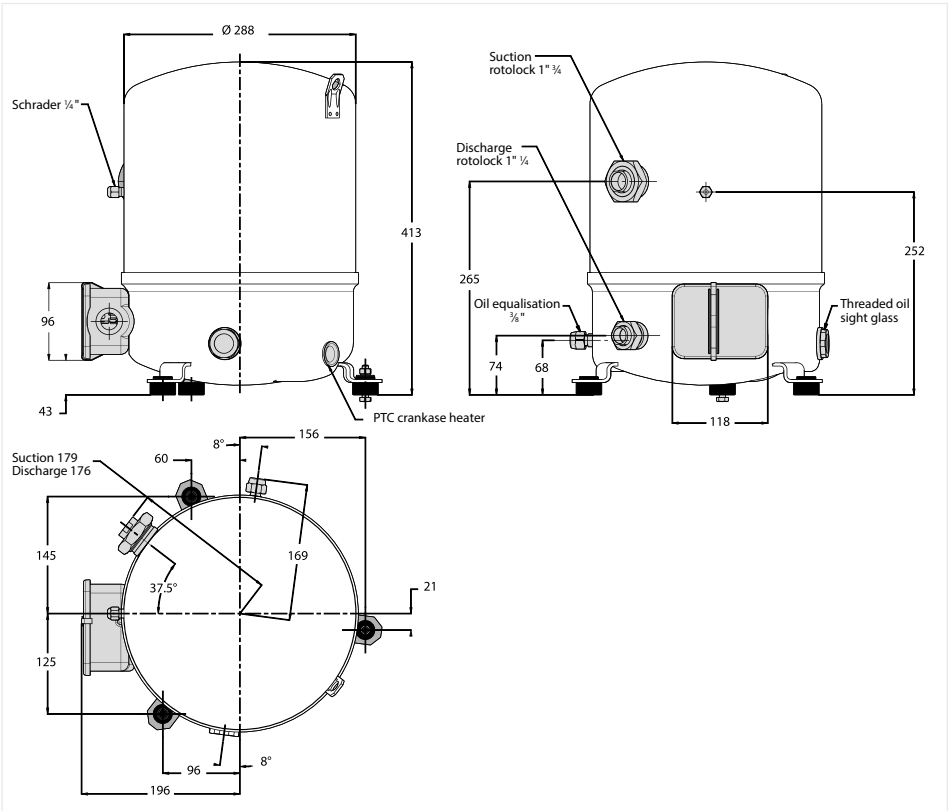
Mains supply voltage	T2: 200 – 240 V ± 10% (3-phase), T4: 380 – 480 V ± 10% (3-phase)
Supply frequency	50 / 60 Hz
Output voltage	0 – 100% of supply voltage
Inputs	6 digital (0 – 24 V), 2 analogue (-10 – 10 V or 0 / 4 V -20 mA, scalable)
Programmable outputs	2 digital (0 – 24 V), 1 analogue, 2 relay
Protection functions	Over-current protection, over-modulation handling, low / high current handling
Smart Logic Control functions	Pump-down function, Anti short-cycle function, Oil return management
Communication	Modbus

Dimensions

VTZ038 / VTZ054

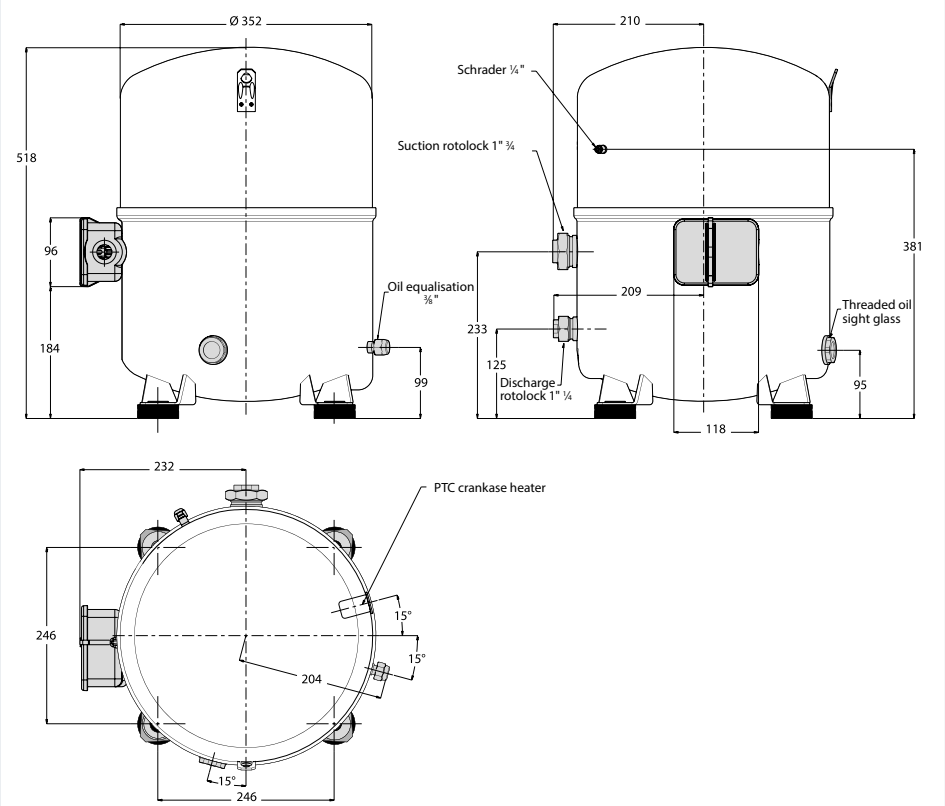


VTZ086 / VTZ121



Dimensions

VTZ171 / VTZ215



Technical data

Sight glass

VTZ compressors come equipped with a threaded oil sight glass with 1 1/8 – 18 inch UNEF connection.
It can be used for visual check of oil amount and conditions, or it may be replaced by an oil management device.

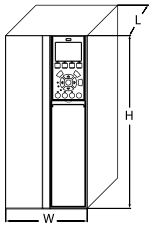
Schrader

The oil fill connection and gauge port is a 1/4 inch male flare connector incorporating a schrader valve.

Suction and discharge connections

VTZ compressors are all delivered with suction and discharge rotolock connections only.

Type	Rotolock connections size		Pipe sizing		Rotolock valve	
	Suction [in]	Discharge [in]	Suction [in]	Discharge [in]	Suction	Discharge
VTZ038 – 054	1 1/4	1	5/8	1/2	V09	V06
VTZ086 – 121	1 3/4	1 1/4	7/8	3/4	V07	V04
VTZ171 – 215	1 3/4	1 1/4	1 1/8	3/4	V02	V04



VTZ - Inverter reciprocating compressors

Frequency converter dimensions

Drive supply voltage	Drive power [kW]	Compressor voltage code	Compressor model	IP20			IP21			IP55		
				Drive enclosure	Overall dimension (H x W x L) [mm]	Weight [kg]	Drive enclosure	Overall dimension (H x W x L) [mm]	Weight [kg]	Drive enclosure	Overall dimension (H x W x L) [mm]	Weight [kg]
T2: 200 – 240 / 3 / 50 – 60	3.7	J	VTZ038	A3	268x130x205	6.6	–	–	–	–	–	–
	5.5	J	VTZ054	–	–	–	B1	494x242x260	23	B1	480x242x260	23
	7.5	J	VTZ086	–	–	–	B1	494x242x260	23	B1	480x242x260	23
	11	J	VTZ121	–	–	–	B2	664x242x260	27	B2	664x242x260	27
T4: 380 – 480 / 3 / 50 – 60	4	G	VTZ038	A2	268x90x205	4.9	–	–	–	A5	420x242x200	13.5
	5.5	G	VTZ054	A3	268x130x205	6.6	–	–	–	A5	420x242x200	13.5
	7.5	G	VTZ086	A3	268x130x205	6.6	–	–	–	A5	420x242x200	13.5
	11	G	VTZ121	B3	399x165x248	12	B1	494x242x260	23	B1	480x242x260	23
	15	G	VTZ171	B3	399x165x248	12	B1	494x242x260	23	B1	480x242x260	23
	18.5	G	VTZ215	B4	518x231x242	23	B2	664x242x260	27	B2	650x242x260	27

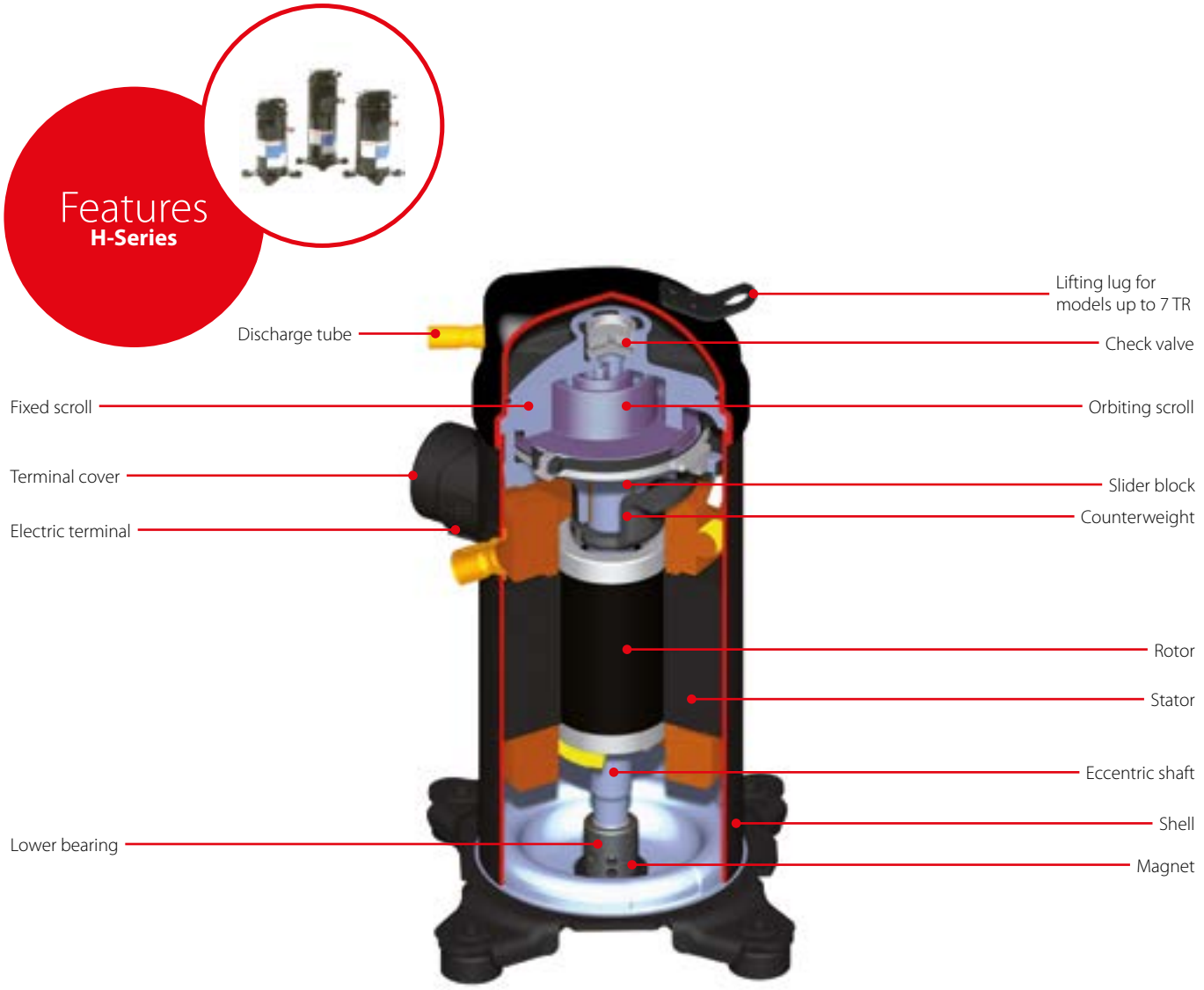
Frequency converter dimensions depend on supply voltage, IP rating and power
The below table gives an overview of the overall dimensions and different drive enclosures (B1 - C3)
Details for each drive enclosure are on the following pages

Quick Selection Notes:

H-Series, Scroll Compressors

Danfoss scrolls are designed for excellence in performance, silence and endurance. They feature compressors that are among the quietest, most efficient, reliable and available on the market. Ranging from 2.5 – 10 TR, the universal dimension, footprint and connections of the H series make it the natural choice for greater comfort in existing or new residences.

Available in a large variety of single and tandem models for refrigerants R407C, R134a, R410A and R22, the compressors combine high energy efficiency with low sound and minimal vibration.



Facts

- Discharge check valve: no reverse rotation hence no shutdown noise
- Radial scroll compliance: good resistance to liquid flood back
- Axial scroll compliance: low starting current
- Oil injection: good lubrication at fierce conditions
- Lead-free bearings: high reliability even with low lubrication
- Patented internal protection combined with HOOP (Hot Oil Over Protector) thermal valve: excellent reliability
- Standard dimensions and tubing: ideal for both new installations and replacement markets

Technical data and ordering

H series - Scroll compressors - R22 / R407C / R410A - 50 Hz

Technical data

Type		Nominal Cap 60 Hz	Nominal cooling capacity		Power input	A max.	Efficiency		Swept volume	Displacement	Oil charge	Net weight
		[TR]	[W]	[Btu/h]	[kW]	[A]	COP [W]/[W]	EER [Btu/h]/[W]	[cm³/rev]	[m³/h]	[dm³]	[kg]
R22	HRM025T4	2.1	5900	20300	1.86	7	3.20	10.93	33.77	5.88	1.06	31
	HRM032T4	2.7	7800	26800	2.35	9.5	3.34	11.40	43.43	7.56	1.06	31
	HRM032U4	2.7	7800	26800	2.55	9.5	3.08	10.52	43.59	7.58	1.06	31
	HRM034T4	2.8	8200	28000	2.50	9.5	3.28	11.20	46.24	8.05	1.06	31
	HRM034U4	2.8	8300	28500	2.66	9.5	3.14	10.72	46.21	8.04	1.06	31
	HRM038T4	3.2	9200	31500	2.78	10	3.31	11.30	51.67	8.99	1.06	31
	HRM038U4	3.2	9200	31500	2.95	10	3.14	10.72	51.62	8.98	1.06	31
	HRM040T4	3.3	9600	32900	2.88	10	3.34	11.40	54.39	9.46	1.06	31
	HRM040U4	3.3	9700	33100	2.98	10	3.25	11.10	54.4	9.47	1.06	31
	HRM042T4	3.5	10100	34500	3.08	11	3.28	11.20	57.11	9.94	1.06	31
	HRM042U4	3.5	10200	34800	3.13	11	3.25	11.10	57.19	9.95	1.06	31
	HRM045U4	3.8	10900	37300	3.45	12	3.17	10.82	61.45	10.69	1.33	31
	HRM047T4	3.9	11500	39300	3.46	12	3.33	11.37	64.07	11.15	1.33	31
	HRM047U4	3.9	11500	39300	3.57	12	3.22	10.99	64.07	11.15	1.33	31
	HRM048U4	4.0	11500	39300	3.57	12.5	3.22	10.99	64.4	11.21	1.57	37
	HRM051T4	4.3	12400	42300	3.67	13	3.37	11.51	68.83	11.98	1.57	37
	HRM051U4	4.3	12800	43700	3.83	13	3.34	11.40	68.83	11.98	1.57	37
	HRM054T4	4.5	13300	45400	3.84	12.5	3.46	11.81	72.84	12.67	1.57	37
	HRM054U4	4.5	13400	45700	3.97	13	3.37	11.51	72.92	12.69	1.57	37
	HRM058U4	4.8	14300	49000	4.25	15	3.37	11.51	78.17	13.60	1.57	37
	HRM060T4	5.0	14600	49700	4.29	15	3.40	11.61	80.95	14.09	1.57	37
	HRM060U4	5.0	14800	50600	4.40	15	3.37	11.51	80.95	14.09	1.57	37
	HLM068T4	5.7	16900	57600	5.01	15	3.37	11.51	93.08	16.20	1.57	37
	HLM072T4	6.0	17800	60900	5.29	15	3.37	11.51	98.57	17.15	1.57	37
	HLM075T4	6.3	18400	62900	5.37	16	3.43	11.71	102.75	17.88	1.57	37
	HLM078T4	6.5	19400	66400	5.81	16	3.34	11.40	107.48	18.70	1.57	37
	HLM081T4	6.8	20000	68400	5.94	17	3.37	11.51	110.94	19.30	1.57	37
	HCM094T4	7.8	23100	78700	6.80	21	3.39	11.57	126.02	21.93	2.66	44
	HCM109T4	9.1	26700	91100	7.77	24	3.43	11.71	148.79	25.89	2.66	45
	HCM120T4	10.0	29000	99100	8.85	25	3.28	11.20	162.4	28.26	2.66	45
R407C	HRP025T4	2.1	5700	19600	1.86	7	3.08	10.52	33.77	5.88	1.06	31
	HRP034T4	2.8	7900	27100	2.68	9.5	2.96	10.11	46.21	8.04	1.06	31
	HRP038T4	3.2	8800	30200	2.82	11	3.14	10.72	51.62	8.98	1.06	31
	HRP040T4	3.3	9100	31100	3.14	11.5	2.90	9.90	54.4	9.47	1.06	31
	HRP042T4	3.5	9600	32700	3.30	10	2.90	9.90	57.19	9.95	1.06	31
	HRP045T4	3.8	10800	36900	3.58	12	3.02	10.31	61.45	10.69	1.33	31
	HRP047T4	3.9	11100	38000	3.69	12	3.02	10.31	64.07	11.15	1.33	31
	HRP048T4	4.0	11100	37900	3.35	12	3.31	11.30	64.4	11.21	1.57	37
	HRP051T4	4.3	12100	41400	3.83	13	3.17	10.82	68.83	11.98	1.57	37
	HRP054T4	4.5	12600	42900	3.97	12.5	3.17	10.82	72.76	12.66	1.57	37
	HRP058T4	4.8	13500	46000	4.25	14	3.17	10.82	78.17	13.60	1.57	37
	HRP060T4	5.0	13900	47300	4.26	15	3.25	11.10	80.95	14.09	1.57	37
	HLP068T4	5.7	15700	53600	5.10	15	3.08	10.52	93.08	16.20	1.57	37
	HLP072T4	6.0	16600	56700	5.30	15	3.14	10.72	98.65	17.17	1.57	37
	HLP075T4	6.3	18000	61600	5.54	16	3.25	11.10	102.75	17.88	1.57	37
	HLP078T4	6.5	19200	65500	5.83	16	3.29	11.23	107.48	18.70	1.57	37
	HLP081T4	6.8	19500	66500	5.99	17	3.25	11.10	110.94	19.30	1.57	37
	HCP094T4	7.8	21600	73700	6.63	21	3.25	11.10	126.02	21.93	2.66	44
	HCP109T4	9.1	26000	88900	7.93	24	3.28	11.20	148.79	25.89	2.66	45
	HCP120T4	10.0	28100	96100	8.88	25	3.17	10.82	162.4	28.26	2.66	45
R410A	HRH029U4	2.4	7100	24300	2.43	10	2.93	10.00	27.79	4.84	1.06	31
	HRH031U4	2.6	7500	25700	2.68	10	2.81	9.59	29.69	5.17	1.06	31
	HRH032U4	2.7	7700	26200	2.76	10	2.78	9.49	30.64	5.33	1.06	31
	HRH034U4	2.8	8500	29000	2.90	10	2.93	10.00	33.04	5.75	1.06	31
	HRH036U4	3.0	8800	30100	3.13	10	2.81	9.59	34.74	6.04	1.06	31
	HRH038U4	3.2	9300	31600	3.36	12	2.75	9.39	36.54	6.36	1.06	32
	HRH040U4	3.3	10200	34800	3.58	12	2.84	9.70	39.64	6.90	1.33	32
	HRH041U4	3.4	10000	34300	3.43	13	2.93	10.00	39.33	6.84	1.57	37
	HRH044U4	3.7	10800	36900	3.92	13.5	2.75	9.39	42.61	7.41	1.57	37
	HRH047U4	3.9	11300	38700	3.87	13	2.93	10.00	44.43	7.73	1.33	31
	HRH048U4	4.0	11900	40600	4.02	14	2.96	10.11	46.41	8.08	1.33	31
	HRH049U4	4.1	12100	41300	4.05	13.5	2.99	10.21	47.36	8.24	1.57	37
	HRH050U4	4.2	12400	42500	4.20	14	2.96	10.11	48.92	8.51	1.33	31
	HRH051U4	4.3	12900	43900	4.22	13	3.05	10.41	49.32	8.58	1.57	37
	HRH054U4	4.5	13300	45500	4.41	15	3.02	10.31	52.11	9.07	1.57	37
	HRH056U4	4.7	13800	47200	4.58	15	3.02	10.31	54.11	9.42	1.57	37
	HLH061T4	5.1	14800	50700	4.78	15	3.11	10.62	57.78	10.05	1.57	37
	HLH068T4	5.7	16900	57600	5.26	19	3.21	10.96	64.4	11.21	1.57	37
	HLJ072T4	6.0	17800	60900	5.56	19	3.21	10.96	67.97	11.83	1.57	37
	HLJ075T4	6.3	18600	63500	5.77	18	3.22	10.99	70.79	12.32	1.57	37
	HLJ083T4	6.9	20400	69700	6.27	19	3.25	11.10	78.08	13.59	1.57	37
	HCJ090T4	7.5	22300	76200	7.18	19	3.11	10.62	86.85	15.11	2.66	45
	HCJ091T4	7.5	22380	76360	7.03	18.0	3.18	10.87	86.9	15.11	2.46	49
	HCJ105T4	8.8	26000	88700	8.21	25	3.17	10.82	101.6	17.68	2.66	45
	HCJ106T4	8.8	26050	88880	8.07	21.0	3.23	11.01	101.6	17.68	2.46	49
	HCJ120T4	10.0	29600	101100	9.52	27	3.11	10.62	113.07	19.67	2.66	45
	HCJ121T4	10.0	29720	101400	9.22	22.0	3.22	11.0	116.4	20.24	2.46	49

TR: *Ton of Refrigeration*
COP: *Coefficient Of Performance*
EER: *Energy Efficiency Ratio*

**) ARI standard rating conditions, 400 V / 3 ph / 50 Hz*

Evaporating temperature: 7.2 °C
Condensing temperature: 54.4 °C
Superheat: 11.1 K
Sub-cooling: 8.3 K

Technical data and ordering

H series - Scroll compressors - R22 / R407C / R410A - 60 Hz

Technical data

Type		Nominal Cap. 60 Hz	Nominal cooling capacity		Power input	A max.	Efficiency		Swept volume	Displacement	Oil charge	Net weight
		[TR]	[W]	[Btu/h]	[kW]	[A]	COP [W]/[W]	EER [Btu/h]/[W]	[cm³/rev]	[m³/h]	[dm³]	[kg]
R22	HRM025T4	2.1	7100	24200	2.22	7	3.20	10.93	33.77	7.09	1.06	31
	HRM032T4	2.7	9300	31700	2.78	9.5	3.34	11.40	43.43	9.12	1.06	31
	HRM032U4	2.7	9300	31800	2.94	9.5	3.17	10.82	43.59	9.15	1.06	31
	HRM034T4	2.8	10000	34000	2.98	9.5	3.34	11.40	46.24	9.71	1.06	31
	HRM034U4	2.8	9800	33500	3.07	9.5	3.20	10.93	46.21	9.70	1.06	31
	HRM038T4	3.2	11100	37800	3.25	10	3.40	11.61	51.67	10.85	1.06	31
	HRM038U4	3.2	11100	38000	3.39	10	3.28	11.20	51.62	10.84	1.06	31
	HRM040T4	3.3	11500	39300	3.41	10	3.37	11.51	54.39	11.42	1.06	31
	HRM040U4	3.3	11700	40000	3.57	10	3.28	11.20	54.4	11.42	1.06	31
	HRM042T4	3.5	12200	41500	3.64	11	3.34	11.40	57.11	11.99	1.06	31
	HRM042U4	3.5	12300	42000	3.75	11	3.28	11.20	57.19	12.01	1.06	31
	HRM045U4	3.8	13200	45000	4.01	12	3.28	11.20	61.45	12.90	1.33	31
	HRM047T4	3.9	13900	47500	4.13	12	3.37	11.51	64.07	13.45	1.33	31
	HRM047U4	3.9	13900	47500	4.22	12	3.30	11.27	64.07	13.45	1.33	31
	HRM048U4	4.0	13800	47200	4.25	12.5	3.25	11.10	64.4	13.52	1.57	37
	HRM051T4	4.3	15000	51300	4.46	13	3.37	11.51	68.83	14.45	1.57	37
	HRM051U4	4.3	15000	51300	4.46	13	3.37	11.51	68.83	14.45	1.57	37
	HRM054T4	4.5	15800	54000	4.53	12.5	3.49	11.92	72.84	15.30	1.57	37
	HRM054U4	4.5	15700	53700	4.63	13	3.40	11.61	72.92	15.31	1.57	37
	HRM058U4	4.8	16900	57800	5.02	15	3.37	11.51	78.17	16.42	1.57	37
	HRM060T4	5.0	17500	59700	5.14	15	3.40	11.61	80.95	17.00	1.57	37
	HRM060U4	5.0	17500	59700	5.19	15	3.37	11.51	80.95	17.00	1.57	37
	HLM068T4	5.7	20200	68900	5.94	15	3.40	11.61	93.08	19.55	1.57	37
	HLM072T4	6.0	21300	72800	6.27	15	3.40	11.61	98.57	20.70	1.57	37
	HLM075T4	6.3	22100	75500	6.45	16	3.43	11.71	102.75	21.58	1.57	37
	HLM078T4	6.5	23000	78500	6.70	16	3.43	11.71	107.48	22.57	1.57	37
	HLM081T4	6.8	23900	81500	6.96	17	3.43	11.71	110.94	23.30	1.57	37
	HCM094T4	7.8	27700	94500	8.07	21	3.43	11.71	126.02	26.46	2.66	44
	HCM109T4	9.1	32000	109300	9.33	24	3.43	11.71	148.79	31.25	2.66	45
	HCM120T4	10.0	34900	119300	10.22	25	3.42	11.68	162.4	34.10	2.66	45
R407C	HRP025T4	2.1	6900	23500	2.21	7	3.11	10.62	33.77	7.09	1.06	31
	HRP034T4	2.8	9500	32400	3.24	9.5	2.93	10.00	46.21	9.70	1.06	31
	HRP040T4	3.3	11000	37500	3.70	11.5	2.97	10.14	54.4	11.42	1.06	31
	HRP042T4	3.5	11500	39400	3.90	10	2.96	10.11	57.19	12.01	1.06	31
	HRP047T4	3.9	12700	43300	4.23	12	3.00	10.24	64.07	13.45	1.33	31
	HRP051T4	4.3	14400	49100	4.46	13	3.22	10.99	68.83	14.45	1.57	37
	HRP060T4	5.0	16600	56600	5.33	15	3.11	10.62	80.95	17.00	1.57	37
	HLP072T4	6.0	19900	68100	6.24	15	3.19	10.89	98.65	20.72	1.57	37
	HLP078T4	6.5	23000	78600	6.95	16	3.31	11.30	107.48	22.57	1.57	37
	HLP081T4	6.8	23400	79800	7.14	17	3.27	11.17	110.94	23.30	1.57	37
	HCP094T4	7.8	25900	88400	7.89	21	3.28	11.20	126.02	26.46	2.66	44
	HCP120T4	10.0	33800	115300	10.58	25	3.19	10.89	162.4	34.10	2.66	45
R410A	HRH029U4	2.4	8500	29000	2.84	10	2.99	10.21	27.79	5.84	1.06	31
	HRH031U4	2.6	9100	31000	3.04	10	2.99	10.21	29.69	6.23	1.06	31
	HRH032U4	2.7	9400	32000	3.10	10	3.02	10.31	30.64	6.43	1.06	31
	HRH034U4	2.8	10100	34500	3.38	10	2.99	10.21	33.04	6.94	1.06	31
	HRH036U4	3.0	10400	35400	3.47	10	2.99	10.21	34.74	7.30	1.06	31
	HRH038U4	3.2	11100	37900	3.79	12	2.93	10.00	36.54	7.67	1.06	32
	HRH040U4	3.3	12200	41500	4.03	12	3.02	10.31	39.64	8.32	1.33	32
	HRH041U4	3.4	12100	41300	4.05	13	2.99	10.21	39.33	8.26	1.57	37
	HRH044U4	3.7	13000	44400	4.31	13.5	3.02	10.31	42.61	8.95	1.57	37
	HRH047U4	3.9	13600	46500	4.55	13	2.99	10.21	44.43	9.33	1.33	31
	HRH048U4	4.0	14100	48200	4.68	14	3.02	10.31	46.41	9.75	1.33	31
	HRH049U4	4.1	14300	49000	4.66	13.5	3.08	10.52	47.36	9.95	1.57	37
	HRH050U4	4.2	14800	50500	4.90	14	3.02	10.31	48.92	10.27	1.33	31
	HRH051U4	4.3	15200	51800	4.84	13	3.14	10.72	49.32	10.36	1.57	37
	HRH054U4	4.5	16000	54500	5.14	15	3.11	10.62	52.11	10.94	1.57	37
	HRH056U4	4.7	16700	56900	5.36	15	3.11	10.62	54.11	11.36	1.57	37
	HLH061T4	5.1	18100	61900	5.73	15	3.17	10.82	57.78	12.13	1.57	37
	HLH068T4	5.7	20100	68700	6.30	19	3.20	10.93	64.4	13.52	1.57	37
	HLJ072T4	6.0	21200	72500	6.65	19	3.19	10.89	67.97	14.27	1.57	37
	HLJ075T4	6.3	22300	76200	6.86	18	3.25	11.10	70.79	14.87	1.57	37
	HLJ083T4	6.9	24300	83100	7.55	19	3.22	10.99	78.08	16.40	1.57	37
	HCJ090T4	7.5	26800	91500	8.46	19	3.17	10.82	86.85	18.24	2.66	45
	HCJ091T4	7.5	27140	92600	8.37	17.0	3.24	11.07	86.9	18.24	2.46	49
	HCJ105T4	8.8	31200	106400	9.74	25	3.20	10.93	101.6	21.34	2.66	45
	HCJ106T4	8.8	31670	108050	9.67	20.0	3.28	11.18	101.6	21.34	2.46	49
	HCJ120T4	10.0	35600	121600	11.14	27	3.20	10.93	113.07	23.74	2.66	45
	HCJ121T4	10.0	35940	122620	11.07	21.0	3.25	11.08	116.4	24.43	2.46	49

TR: *Ton of Refrigeration*
COP: *Coefficient Of Performance*
EER: *Energy Efficiency Ratio*

**) ARI standard rating conditions, 460 V / 3 ph / 60 Hz*

Evaporating temperature: 7.2 °C
Condensing temperature: 54.4 °C
Superheat: 11.1 K
Sub-cooling: 8.3 K

Technical data and ordering

R410A - Single pack

Ordering

Type	Model Variation	Connect.	Features	Code no.					
				1	2	4	5	7	9
HRH029	U	P	6	120U2277	120U2282	120U2287	–	–	–
HRH031	U	P	6	120U1136	120U1251	120U1191	120U1166	120U1216	–
HRH032	U	P	6	120U1141	120U1256	120U1196	120U1171	120U1221	–
HRH034	U	P	6	120U1146	120U1261	120U2446	120U2650	120U1226	120U2654
HRH036	U	P	6	120U1151	120U1266	120U1201	120U1176	120U1231	–
HRH038	U	P	6	120U1156	120U1271	120U1206	120U1181	120U1236	120U2658
HRH039	U	P	6	120U2466	–	–	–	–	–
HRH040	U	P	6	120U1161	120U1276	120U1211	120U1186	120U1241	–
HRH041	U	P	6	120U1281	120U1451	120U1356	–	120U1406	–
	U	C	6	–	120U2412	–	–	–	–
	U	C	8	–	120U2407	120U2397	–	120U2402	–
HRH044	U	P	6	120U1286	120U1456	120U1361	–	120U1411	–
HRH047	U	P	6	120U2362	–	–	–	–	–
HRH048	U	P	6	120U2582	–	–	–	–	–
HRH049	U	P	6	120U1291	120U1461	120U1366	–	120U1416	–
	U	C	8	–	120U2482	120U2474	–	120U2478	–
HRH050	U	P	6	120U2470	–	–	–	–	–
HRH051	U	P	6	120U1296	120U1466	120U1371	120U1326	120U1421	–
HRH054	U	P	6	120U1301	120U1471	120U1376	120U1331	120U1426	–
HRH056	U	C	6	–	–	120U1386	–	120U2237	–
	U	P	6	120U1306	120U1476	120U1381	120U1336	120U1431	–
HLH061	T	C	6	–	120U2062	120U2052	–	120U2057	120U2450
	T	P	6	120U2042	–	–	120U2047	–	–
	T	C	8	–	120U2494	120U2486	–	120U2490	–
HLH068	T	C	6	–	120U1481	120U1391	–	120U1436	–
	T	P	6	120U1311	–	–	120U1341	–	–
	T	C	8	–	120U2427	120U2417	–	120U2422	–
HLJ072	T	C	6	–	120U1486	120U1396	–	120U2037	–
	T	P	6	120U1316	–	–	120U1346	–	–
	T	C	8	–	120U2177	120U2167	–	120U2498	–
HLJ075	T	C	6	–	120U2272	120U2267	–	120U2262	–
	T	C	8	–	120U2442	120U2432	–	120U2437	–
HLJ083	T	C	6	–	120U1491	120U1401	–	120U1441	120U2387
	T	P	6	120U1321	–	–	120U1351	–	–
	T	C	8	–	120U2182	120U2172	–	120U2502	–
HCJ090	T	C	6	–	120U2307	120U2302	–	120U2312	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	–	120U2538	–	–	–
HCJ091	T	C	6	–	–	121L3113	–	–	–
	T	C	7	–	–	–	–	–	–
HCJ105	T	C	6	–	120U2327	120U2322	–	120U2332	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	–	120U2578	–	–	–
HCJ106	T	C	6	–	–	121L3115	–	–	–
	T	C	8	–	–	121L3121	–	–	–
HCJ120	T	C	6	–	120U2347	120U2342	–	120U2352	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	120U2570	120U2562	–	–	–
HCJ121	T	C	6	–	–	121L3117	–	–	–
	T	C	8	–	–	121L3121	–	–	–

Technical data and ordering

R410A - Industrial pack

Ordering

Type	Model Variation	Connect.	Features	Code no.					
				1	2	4	5	7	9
HRH029	U	P	6	120U2274	120U2279	120U2284	–	–	–
HRH031	U	P	6	120U1133	120U1248	120U1188	120U1163	120U1213	–
HRH032	U	P	6	120U1138	120U1253	120U1193	120U1168	120U1218	–
HRH034	U	P	6	120U1143	120U1258	120U2443	120U2647	120U1223	120U2651
HRH036	U	P	6	120U1148	120U1263	120U1198	120U1173	120U1228	–
HRH038	U	P	6	120U1153	120U1268	120U1203	120U1178	120U1233	–
HRH039	U	P	6	120U2463	–	–	–	–	–
HRH040	U	P	6	120U1158	120U1273	120U1208	120U1183	120U1238	–
HRH041	U	P	6	120U1278	120U1448	120U1353	–	120U1403	–
	U	C	6	–	120U2409	–	–	–	–
	U	C	8	–	120U2404	120U2394	–	120U2399	–
HRH044	U	P	6	120U1283	120U1453	120U1358	–	120U1408	–
HRH047	U	P	6	120U2359	–	–	–	–	–
HRH048	U	P	6	120U2579	–	–	–	–	–
HRH049	U	P	6	120U1288	120U1458	120U1363	–	120U1413	–
	U	C	8	–	120U2479	120U2471	–	120U2475	–
HRH050	U	P	6	120U2467	–	–	–	–	–
HRH051	U	P	6	120U1293	120U1463	120U1368	120U1323	120U1418	–
HRH054	U	P	6	120U1298	120U1468	120U1373	120U1328	120U1423	–
HRH056	U	C	6	–	–	120U1383	–	120U2234	–
HRH056	U	P	6	120U1303	120U1473	120U1378	120U1333	120U1428	–
HLH061	T	P	6	120U2039	–	–	120U2044	–	–
	T	C	6	–	120U2059	120U2049	–	120U2054	120U2447
	T	C	8	–	120U2491	120U2483	–	120U2487	–
HLH068	T	C	6	–	120U1478	120U1388	–	120U1433	–
	T	C	8	–	120U2424	120U2414	–	120U2419	–
	T	P	6	120U1308	–	–	120U1338	–	–
HLJ072	T	C	6	–	120U1483	120U1393	–	120U2034	–
	T	C	8	–	120U2174	120U2164	–	120U2495	–
	T	P	6	120U1313	–	–	120U1343	–	–
HLJ075	T	C	6	–	120U2269	120U2264	–	120U2259	120U1443
	T	C	8	–	120U2439	120U2429	–	120U2434	–
HLJ083	T	C	6	–	120U1488	120U1398	–	120U1438	120U2384
	T	C	8	–	120U2179	120U2169	–	120U2499	–
	T	P	6	120U1318	–	–	120U1348	–	–
HCJ090	T	C	6	–	120U2304	120U2299	–	–	–
	T	C	7	–	120U2539	120U2531	–	–	–
	T	C	8	–	–	–	–	–	–
HCJ091	T	C	6	–	–	121L3112	–	–	–
	T	C	8	–	–	121L3118	–	–	–
HCJ105	T	C	6	–	120U2324	120U2319	–	120U2329	–
	T	C	7	–	120U2547	120U2571	–	–	–
	T	C	8	–	–	120U2575	–	–	–
HCJ106	T	C	6	–	–	121L3114	–	–	–
	T	C	8	–	–	121L3120	–	–	–
HCJ120	T	C	6	–	120U2344	120U2339	–	120U2349	–
	T	C	7	–	–	120U2555	–	–	–
	T	C	8	–	–	120U2559	–	–	–
HCJ121	T	C	6	–	–	121L3116	–	–	–
	T	C	8	–	–	121L3122	–	–	–

Technical data and ordering

R407C - Single pack

Ordering

Type	Model Variation	Connect.	Features	Code no.					
				1	2	4	5	7	9
HRP034	T	P	6	–	–	120U2024	120U2019	–	–
HRP038	T	P	6	–	120U1086	120U1006	120U0961	–	–
HRP040	T	P	6	–	120U1096	120U1016	120U1929	–	–
HRP042	T	P	6	–	–	120U1026	–	–	–
HRP045	T	P	6	–	–	120U1036	120U0976	–	–
HRP047	T	P	6	–	120U1126	120U1046	120U0986	–	–
HRP048	T	C	8	–	–	120U1661	–	–	–
HRP048	T	P	6	–	–	120U1656	–	–	–
HRP051	T	P	6	120U1501	120U1861	120U1681	120U2192	120U1796	–
HRP054	T	P	6	–	–	120U1691	120U2197	120U1806	–
	T	C	8	–	–	120U2004	–	–	–
HRP058	T	C	8	–	–	120U1706	–	–	–
	T	P	6	–	–	120U1701	120U1596	120U1816	–
HRP060	T	C	8	–	–	120U1731	–	–	–
	T	P	6	–	120U2297	120U1726	120U1606	120U1826	–
HLP068	T	C	6	–	–	120U2014	–	–	–
	T	P	6	–	–	–	120U1621	–	–
HLP072	T	C	6	–	–	120U1756	–	–	–
	T	C	8	–	–	120U2072	–	–	–
	T	P	6	120U1571	–	–	120U1631	–	–
HLP075	T	C	6	–	–	120U1766	–	120U1841	–
	T	P	6	120U1581	–	–	120U1641	–	–
HLP078	T	C	6	–	120U2458	120U2454	–	–	–
HLP081	T	C	6	–	120U1916	120U1781	–	120U1851	–
	T	C	8	–	–	120U1786	–	–	–
	T	P	6	120U1591	–	–	120U1651	–	–
HCP094	T	C	6	–	120U0906	120U0601	–	–	–
	T	C	7	–	–	120U0606	–	–	–
	T	C	8	–	–	120U0611	–	–	–
HCP109	T	C	6	–	–	120U0376	–	–	–
	T	C	7	–	–	120U0381	–	–	–
	T	C	8	–	–	120U0386	–	–	–
HCP120	T	C	6	–	120U0766	120U0401	–	–	–
	T	C	7	–	–	120U0406	–	–	–
	T	C	8	–	–	120U0411	–	–	–

Technical data and ordering

R407C - Industrial pack

Ordering

Type	Model Variation	Connect.	Features	Code no.					
				1	2	4	5	7	9
HRP034	T	P	6	–	–	120U2021	120U2016	–	–
HRP038	T	P	6	–	120U1083	120U1003	120U0958	–	–
HRP040	T	P	6	–	120U1093	120U1013	120U1926	–	–
HRP042	T	P	6	–	120U1103	120U1023	–	–	–
HRP045	T	P	6	–	120U1113	120U1033	–	–	–
HRP047	T	P	6	–	–	120U1043	120U0983	–	–
HRP048	T	C	8	–	–	120U1658	–	–	–
HRP048	T	P	6	–	–	120U1653	–	–	–
HRP051	T	P	6	120U1498	120U1858	120U1678	120U2189	120U1793	–
HRP054	T	P	6	–	–	120U1688	120U2194	120U1803	–
	T	C	8	–	–	120U2001	–	–	–
HRP058	T	C	8	–	–	120U1703	–	–	–
	T	P	6	–	–	120U1698	120U1593	120U1813	–
HRP060	T	C	8	–	–	120U1728	–	–	–
	T	P	6	–	120U2297	120U1723	120U1603	120U1823	–
HLP068	T	C	6	–	–	120U2011	–	–	–
	T	P	6	120U1558	–	–	120U1618	–	–
HLP072	T	C	6	–	–	120U1753	–	–	–
	T	C	8	–	–	120U2074	–	–	–
	T	P	6	120U1568	–	–	120U1628	–	–
HLP075	T	C	6	–	–	120U1763	–	120U1838	–
	T	P	6	120U1578	–	–	120U1638	–	–
HLP078	T	C	6	–	120U2455	120U2451	–	–	–
HLP081	T	C	6	–	120U1913	120U1778	–	120U1848	–
	T	C	8	–	–	120U1783	–	–	–
	T	P	6	120U1588	–	–	120U1648	–	–
HCP094	T	C	6	–	–	120U0598	–	–	–
	T	C	7	–	–	120U0603	–	–	–
	T	C	8	–	–	120U0608	–	–	–
HCP109	T	C	6	–	–	120U0373	–	–	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	–	120U0383	–	–	–
HCP120	T	C	6	–	–	120U0398	–	–	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	–	120U0408	–	–	–

Technical data and ordering

R22 - Single pack

Ordering

Type	Model Variation	Connect.	Features	Code no.					
				1	2	4	5	7	9
HRM032	U	P	6	120U0921	120U2029	120U0996	–	–	–
	T	P	6	–	–	–	120U0956	–	–
HRM034	U	P	6	120U0926	120U1081	120U1001	–	120U2232	–
	T	P	6	–	–	120U2367	120U2122	–	120U2087
HRM038	U	P	6	120U0931	120U1091	120U1011	120U0966	120U1056	–
	T	P	6	–	–	120U2372	120U2137	–	120U2092
HRM040	U	P	6	120U0936	120U1101	120U1021	120U2147	120U1061	–
	T	P	6	–	–	120U2377	120U2142	–	120U2462
HRM042	U	P	6	120U0941	120U1111	120U1031	120U0971	120U1066	–
	T	P	6	–	–	120U2127	120U2152	–	120U2107
HRM045	U	P	6	120U0946	120U1121	120U1041	120U0981	120U1071	–
HRM047	U	P	6	120U0951	120U1131	120U1051	120U0991	120U1076	–
	T	P	6	–	–	120U2132	120U2162	–	120U2097
HRM048	U	C	8	–	–	120U1671	–	–	–
	U	P	6	120U1496	–	120U1666	–	120U1791	–
HRM051	T	P	6	–	–	120U1676	120U2187	–	120U2382
	U	P	6	120U1506	120U1866	120U1686	120U2252	120U1801	–
HRM054	U	C	6	120U1516	–	–	–	–	–
	U	P	6	120U1511	120U1871	120U1696	120U2257	120U1811	–
	T	P	6	–	–	–	–	–	120U2292
HRM058	T	P	6	120U1521	–	–	–	–	120U2112
	U	C	6	120U1536	–	–	–	–	–
	U	P	6	120U1531	120U1876	120U1711	–	120U1821	–
HRM060	T	P	6	120U1541	–	120U1721	–	–	120U2082
	T	C	6	120U2242	–	–	–	–	–
	U	C	6	120U1551	120U2077	–	–	–	–
	U	C	8	–	–	120U1741	–	–	–
	U	P	6	120U1546	120U1881	120U1736	120U1611	120U1831	–
HLM068	T	C	6	–	120U1891	120U1746	–	120U2598	120U2392
	T	P	6	120U1556	–	–	120U1616	–	–
HLM072	T	C	6	–	120U1896	120U1751	–	120U2602	120U1856
	T	C	8	–	120U2202	120U2067	–	–	–
	T	P	6	120U1566	–	–	120U1626	–	–
HLM075	T	C	6	–	120U1901	120U1761	–	120U1836	–
	T	P	6	120U1576	–	–	120U1636	–	–
HLM078	T	C	6	–	120U1906	120U1771	–	–	–
HLM081	T	C	6	–	120U1911	120U1776	–	120U1846	120U2102
	T	P	6	120U1586	–	–	120U1646	–	–
HCM094	T	C	6	–	120U0891	120U0581	–	120U0711	120U0746
	T	C	7	–	–	120U0586	–	–	–
	T	C	8	–	–	120U0596	–	–	–
HCM109	T	C	6	–	120U2506	120U0366	–	–	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	–	120U1924	–	–	–
HCM120	T	C	6	–	120U0761	120U0391	–	–	–
	T	C	7	–	–	120U0396	–	–	–
	T	C	8	–	–	120U2207	–	–	–

Technical data and ordering

R22 - Industrial pack

Ordering

Type	Model Variation	Connect.	Features	Code no.					
				1	2	4	5	7	9
HRM032	U	P	6	120U0918	120U2026	120U0993	–	–	–
	T	P	6	–	–	–	120U0953	–	–
HRM034	T	P	6	–	–	120U2364	120U2119	–	120U2084
	U	P	6	120U0923	120U1078	120U0998	–	120U2229	–
HRM038	T	P	6	–	–	120U2369	120U2134	–	120U2089
	U	P	6	120U0928	120U1088	120U1008	120U0963	120U1053	–
HRM040	T	P	6	–	–	120U2374	120U2139	–	120U2459
	U	P	6	120U0933	120U1098	120U1018	120U2144	120U1058	
HRM042	T	P	6	–	–	120U2124	120U2149	–	120U2104
	U	P	6	120U0938	120U1108	120U1028	120U0968	120U1063	–
HRM045	U	P	6	120U0943	120U1118	120U1038	120U0978	120U1068	–
HRM047	T	P	6	–	–	120U2129	120U2159	–	120U2094
	U	P	6	120U0948	120U1128	120U1048	120U0988	120U1073	
HRM048	U	C	8	–	–	120U1668	–	–	–
	U	P	6	120U1493	–	120U1663	–	120U1788	–
HRM051	T	P	6	–	–	120U1673	120U2184	–	120U2379
	U	P	6	120U1503	120U1863	120U1683	120U2249	120U1798	–
HRM054	T	P	6	–	–	–	–	–	120U2289
	U	C	6	120U1513	–	–	–	–	–
	U	P	6	120U1508	120U1868	120U1693	120U2254	120U1808	–
HRM058	T	C	6	120U1523	–	–	–	–	–
	T	P	6	120U1518	–	–	–	–	120U2109
	U	C	6	120U1533	–	–	–	–	–
	U	C	8	–	–	120U1716	–	–	–
	U	P	6	120U1528	120U1873	120U1708	120U1598	120U1818	–
HRM060	T	C	6	120U2239	–	–	–	–	–
	T	P	6	120U1538	–	120U1718	–	–	120U2079
	U	C	6	120U1548	120U2074	–	–	–	–
	U	C	8	–	–	120U1738	–	–	–
	U	P	6	120U1543	120U1878	120U1733	120U1608	120U1828	–
HLM068	T	C	6	–	120U1888	120U1743	–	120U2595	120U2389
	T	P	6	120U1553	–	–	120U1613	–	–
HLM072	T	C	6	–	120U1893	120U1748	–	120U2599	120U1853
	T	C	8	–	120U2199	120U2064	–	–	–
	T	P	6	120U1563	–	–	120U1623	–	–
HLM075	T	C	6	–	120U1898	120U1758	–	120U1833	–
	T	P	6	120U1573	–	–	120U1633	–	–
HLM078	T	C	6	–	120U1903	120U1768	–	–	–
HLM081	T	C	6	–	120U1908	120U1773	–	120U1843	120U2099
	T	C	8	–	–	120U2006	–	–	–
	T	P	6	120U1583	–	–	120U1643	–	–
HCM094	T	C	6	–	120U0888	120U0578	–	–	120U0743
	T	C	7	–	–	120U0583	–	–	–
	T	C	8	–	–	–	–	–	–
HCM109	T	C	6	–	–	120U0363	–	–	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	–	–	–	–	–
HCM120	T	C	6	–	120U0758	120U0388	–	–	–
	T	C	7	–	–	–	–	–	–
	T	C	8	–	–	–	–	–	–

Technical data and ordering

H-Series - Scroll compressors - R410A - 50 Hz

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
HRH029U4	35	–	–	2670	1.62	3480	1.60	4430	1.58	5550	1.56	6850	1.54	8330	1.52	10010	1.49
	55	–	–	–	–	–	–	–	–	4150	2.56	5230	2.52	6460	2.48	7860	2.44
HRH031U4	35	–	–	2870	1.74	3730	1.71	4750	1.69	5950	1.67	7340	1.65	8930	1.63	10730	1.60
	55	–	–	–	–	–	–	–	–	4380	2.82	5520	2.78	6830	2.74	8300	2.69
HRH032U4	35	–	–	2910	1.71	3780	1.68	4820	1.66	6040	1.65	7450	1.63	9060	1.60	10890	1.57
	55	–	–	–	–	–	–	–	–	4470	2.91	5630	2.87	6960	2.82	8470	2.78
HRH034U4	35	–	–	3220	1.88	4190	1.86	5340	1.83	6690	1.81	8250	1.79	10030	1.77	12060	1.74
	55	–	–	–	–	–	–	–	–	4950	3.06	6230	3.01	7700	2.97	9370	2.91
HRH036U4	35	–	–	3350	1.98	4350	1.95	5550	1.93	6950	1.91	8570	1.88	10420	1.86	12530	1.82
	55	–	–	–	–	–	–	–	–	5130	3.31	6470	3.26	8000	3.21	9730	3.15
HRH038U4	35	–	–	3550	2.16	4610	2.13	5880	2.10	7360	2.08	9080	2.05	11050	2.02	13280	1.99
	55	–	–	–	–	–	–	–	–	5390	3.55	6790	3.49	8390	3.44	10210	3.38
HRH040U4	35	–	–	3850	2.34	5010	2.31	6390	2.28	8000	2.25	9870	2.23	12000	2.20	14430	2.16
	55	–	–	–	–	–	–	–	–	5940	3.78	7480	3.73	9250	3.67	11250	3.60
HRH041U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH044U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH047U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH048U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH049U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH050U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH051U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH054U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HRH056U4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HLH061T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HLH068T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HLJ072T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HLJ075T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HLJ083T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HCJ090T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HCJ091T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HCJ105T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HCJ106T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HCJ120T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
HCJ121T4	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07
	35	–	–	4450	2.13	5560	2.15	6790	2.17	8210	2.17	9880	2.15	11840	2.12	14170	2.07

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
H. *Heating capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 50 Hz*

Technical data and ordering

H-Series - Scroll compressors - R410A - 60 Hz

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
HRH029U4	35	–	–	3210	1.91	4180	1.89	5320	1.87	6670	1.84	8220	1.82	10000	1.80	12020	1.77
	55	–	–	–	–	–	–	–	–	4950	2.99	6230	2.95	7710	2.90	9370	2.85
HRH031U4	35	–	–	3430	2.05	4470	2.02	5690	2.00	7130	1.97	8790	1.95	10700	1.92	12860	1.89
	55	–	–	–	–	–	–	–	–	5290	3.20	6660	3.15	8240	3.10	10020	3.05
HRH032U4	35	–	–	3520	2.10	4580	2.07	5840	2.05	7310	2.02	9010	2.00	10970	1.97	13180	1.94
	55	–	–	–	–	–	–	–	–	5460	3.27	6880	3.22	8500	3.17	10350	3.12
HRH034U4	35	–	–	3810	2.25	4950	2.22	6310	2.20	7900	2.17	9750	2.15	11860	2.12	14250	2.08
	55	–	–	–	–	–	–	–	–	5880	3.56	7420	3.51	9170	3.46	11150	3.40
HRH036U4	35	–	–	3940	2.33	5120	2.30	6520	2.27	8170	2.25	10080	2.22	12260	2.19	14740	2.15
	55	–	–	–	–	–	–	–	–	6040	3.66	7610	3.60	9400	3.54	11440	3.48
HRH038U4	35	–	–	4180	2.47	5440	2.44	6930	2.41	8680	2.38	10710	2.35	13030	2.32	15660	2.28
	55	–	–	–	–	–	–	–	–	6460	4.00	8150	3.94	10070	3.87	12250	3.81
HRH040U4	35	–	–	4560	2.69	5930	2.65	7560	2.62	9470	2.59	11680	2.56	14210	2.53	17080	2.48
	55	–	–	–	–	–	–	–	–	7080	4.24	8920	4.18	11030	4.12	13420	4.04
HRH041U4	35	–	–	5380	2.55	6720	2.58	8210	2.59	9930	2.60	11940	2.58	14310	2.54	17130	2.48
	55	–	–	–	–	–	–	–	–	7340	4.11	9150	4.12	11080	4.11	13200	4.09
HRH044U4	35	–	–	5830	2.70	7280	2.73	8890	2.75	10750	2.75	12930	2.73	15500	2.69	18550	2.63
	55	–	–	–	–	–	–	–	–	7890	4.38	9840	4.39	11910	4.38	14190	4.35
HRH047U4	35	–	–	5130	3.00	6670	2.96	8500	2.93	10640	2.89	13130	2.86	15970	2.82	19190	2.77
	55	–	–	–	–	–	–	–	–	7930	4.80	10000	4.73	12360	4.66	15030	4.58
HRH048U4	35	–	–	5350	3.14	6960	3.10	8880	3.06	11120	3.02	13710	2.99	16680	2.95	20050	2.90
	55	–	–	–	–	–	–	–	–	8220	4.93	10360	4.86	12810	4.78	15580	4.70
HRH049U4	35	–	–	6380	2.95	7970	2.98	9740	3.00	11770	3.00	14150	2.98	16970	2.94	20310	2.87
	55	–	–	–	–	–	–	–	–	8710	4.74	10860	4.75	13150	4.74	15670	4.71
HRH050U4	35	–	–	5620	3.29	7310	3.25	9320	3.21	11670	3.18	14400	3.14	17520	3.10	21060	3.04
	55	–	–	–	–	–	–	–	–	8610	5.16	10860	5.09	13420	5.01	16320	4.92
HRH051U4	35	–	–	6800	3.10	8490	3.13	10370	3.15	12540	3.15	15080	3.13	18080	3.08	21640	3.01
	55	–	–	–	–	–	–	–	–	9200	4.92	11470	4.92	13890	4.91	16560	4.88
HRH054U4	35	–	–	7160	3.31	8940	3.35	10920	3.37	13200	3.37	15870	3.35	19030	3.30	22780	3.22
	55	–	–	–	–	–	–	–	–	9680	5.22	12070	5.23	14620	5.22	17420	5.19
HRH056U4	35	–	–	6320	3.65	8220	3.60	10470	3.56	13120	3.52	16170	3.48	19680	3.43	23650	3.37
	55	–	–	–	–	–	–	–	–	9700	5.65	12230	5.57	15120	5.48	18390	5.38
HLH061T4	35	6160	3.82	8040	3.89	10050	3.93	12270	3.95	14840	3.95	17840	3.93	21390	3.87	25600	3.79
	55	–	–	–	–	–	–	8360	5.78	11000	5.81	13720	5.82	16610	5.81	19790	5.77
HLH068T4	35	6810	4.10	8880	4.16	11090	4.21	13550	4.23	16380	4.23	19700	4.20	23620	4.14	28260	4.05
	55	–	–	–	–	–	–	9280	6.37	12210	6.39	15220	6.40	18440	6.39	21970	6.35
HLJ072T4	35	7190	4.31	9380	4.38	11710	4.43	14310	4.45	17290	4.45	20790	4.42	24930	4.36	29840	4.26
	55	–	–	–	–	–	–	9800	6.72	12890	6.75	16070	6.76	19460	6.75	23190	6.70
HLJ075T4	35	7680	4.62	10040	4.70	12540	4.75	15320	4.78	18510	4.78	22260	4.75	26700	4.68	31950	4.58
	55	–	–	–	–	–	–	10280	6.92	13540	6.96	16880	6.97	20440	6.95	24350	6.91
HLJ083T4	35	8320	5.08	10860	5.17	13570	5.23	16570	5.26	20030	5.26	24090	5.22	28890	5.15	34570	5.03
	55	–	–	–	–	–	–	11220	7.62	14770	7.66	18410	7.67	22290	7.65	26560	7.60
HCJ090T4	35	9020	5.49	11770	5.57	14710	5.61	17990	5.61	21740	5.61	26110	5.62	31250	5.68	37300	5.79
	55	–	–	–	–	–	–	13710	8.55	16960	8.59	20540	8.59	24600	8.58	29280	8.58
HCJ091T4	35	9770	5.36	12280	5.38	15200	5.42	18590	5.46	22510	5.51	27020	5.57	32180	5.64	38040	5.71
	55	–	–	–	–	–	–	13910	8.43	17050	8.43	20680	8.44	24850	8.46	29640	8.50
HCJ105T4	35	10580	6,03	13810	6,13	17350	6,21	21310	6,29	25790	6,39	30920	6,51	36790	6,69	43510	6,93
	55	–	–	–	–	–	–	15690	9,53	19420	9,62	23650	9,71	28510	9,81	34100	9,94
HCJ106T4	35	11410	6.19	14330	6.25	17740	6.30	21700	6.35	26270	6.41	31530	6.48	37550	6.56	44390	6.66
	55	–	–	–	–	–	–	16230	9.75	19890	9.76	24130	9.77	29000	9.79	34580	9.81
HCJ120T4	35	12110	7,01	15810	7,13	19860	7,22	24390	7,30	29520	7,39	35390	7,53	42110	7,74	49810	8,04
	55	–	–	–	–	–	–	17950	10,94	22190	11,00	27030	11,08	32580	11,20	38980	11,38
HCJ121T4	35	12950	7.09	16270	7.12	20130	7.17	24620	7.22	29800	7.29	35770	7.36	42590	7.46	50340	7.56
	55	–	–	–	–	–	–	18430	11.14	22580	11.15	27390	11.17	32910	11.20	39240	11.25

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
H: *Heating capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 60 Hz*

Technical data and ordering

H-Series - Scroll compressors - R407C - 50 Hz

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
HRP025T4	35	1920	1.11	2440	1.15	3050	1.18	3750	1.21	4550	1.24	5460	1.26	6480	1.29	7630	1.32
	55	–	–	–	–	–	–	3020	1.76	3680	1.81	4440	1.85	5290	1.88	6240	1.89
HRP034T4	35	2480	1.73	3190	1.71	4050	1.70	5080	1.69	6290	1.68	7710	1.67	9340	1.64	11220	1.59
	55	–	–	–	–	–	–	3790	2.77	4760	2.76	5900	2.75	7220	2.73	8740	2.71
HRP038T4	35	2710	1.85	3480	1.83	4410	1.82	5530	1.82	6850	1.80	8390	1.79	10170	1.76	12210	1.71
	55	–	–	–	–	–	–	4230	2.91	5300	2.90	6570	2.89	8040	2.87	9740	2.84
HRP040T4	35	2850	2.03	3670	2.01	4660	2.00	5840	1.99	7230	1.97	8850	1.95	10730	1.92	12890	1.87
	55	–	–	–	–	–	–	4350	3.24	5460	3.23	6770	3.22	8280	3.20	10030	3.17
HRP042T4	35	3000	2.13	3860	2.11	4900	2.10	6140	2.09	7600	2.08	9310	2.06	11290	2.02	13560	1.97
	55	–	–	–	–	–	–	4570	3.41	5740	3.40	7120	3.38	8710	3.36	10550	3.33
HRP045T4	35	3270	2.19	4200	2.16	5320	2.15	6670	2.14	8260	2.13	10120	2.11	12270	2.07	14720	2.01
	55	–	–	–	–	–	–	5170	3.70	6490	3.69	8040	3.68	9840	3.66	11920	3.62
HRP047T4	35	3430	2.30	4410	2.28	5600	2.26	7020	2.25	8690	2.24	10650	2.22	12910	2.18	15500	2.12
	55	–	–	–	–	–	–	5320	3.81	6680	3.80	8270	3.78	10130	3.76	12270	3.73
HRP048T4	35	3460	2.39	4450	2.38	5640	2.37	7070	2.36	8760	2.35	10730	2.32	13010	2.28	15620	2.23
	55	–	–	–	–	–	–	5300	3.44	6660	3.44	8250	3.42	10100	3.40	12230	3.37
HRP051T4	35	3750	2.33	4790	2.36	6070	2.39	7610	2.42	9420	2.46	11540	2.50	14000	2.54	16810	2.60
	55	–	–	–	–	–	–	5830	4.00	7300	3.95	9030	3.91	11040	3.89	13350	3.87
HRP054T4	35	3920	2.44	5010	2.46	6350	2.50	7950	2.53	9850	2.57	12070	2.61	14630	2.66	17580	2.72
	55	–	–	–	–	–	–	6050	4.15	7570	4.10	9360	4.06	11440	4.03	13840	4.01
HRP058T4	35	4200	2.61	5380	2.64	6810	2.68	8530	2.71	10560	2.75	12940	2.80	15690	2.85	18840	2.91
	55	–	–	–	–	–	–	6490	4.45	8120	4.39	10030	4.35	12260	4.32	14840	4.30
HRP060T4	35	4340	2.71	5560	2.74	7040	2.78	8820	2.81	10920	2.85	13380	2.90	16230	2.95	19490	3.02
	55	–	–	–	–	–	–	6690	4.50	8350	4.42	10320	4.36	12610	4.32	15260	4.31
HLP068T4	35	5320	3.37	6830	3.42	8630	3.46	10790	3.50	13340	3.55	16330	3.60	19820	3.67	23850	3.77
	55	–	–	–	–	–	–	7760	5.43	9540	5.31	11680	5.22	14240	5.16	17260	5.15
HLP072T4	35	5580	3.57	7170	3.66	9060	3.71	11330	3.75	14010	3.78	17150	3.83	20810	3.89	25040	4.00
	55	–	–	–	–	–	–	8200	5.76	10090	5.56	12370	5.42	15080	5.35	18280	5.37
HLP075T4	35	5550	3.84	7130	3.81	9040	3.80	11330	3.78	14040	3.76	17200	3.72	20850	3.65	25020	3.56
	55	–	–	–	–	–	–	8620	5.70	10820	5.69	13410	5.67	16410	5.64	19880	5.58
HLP078T4	35	5940	3.42	7600	3.46	9620	3.50	12050	3.55	14930	3.61	18290	3.67	22180	3.74	26630	3.81
	55	–	–	–	–	–	–	9220	6.04	11550	6.00	14280	5.96	17460	5.93	21130	5.91
HLP081T4	35	5730	4.16	7330	4.15	9280	4.13	11640	4.11	14420	4.07	17660	4.02	21400	3.95	25670	3.85
	55	–	–	–	–	–	–	9340	6.26	11700	6.21	14490	6.16	17750	6.10	21510	6.02
HCP094T4	35	6600	4.61	8480	4.59	10750	4.57	13480	4.55	16690	4.52	20450	4.47	24790	4.40	29750	4.29
	55	–	–	–	–	–	–	10320	6.83	12960	6.81	16050	6.78	19650	6.74	23800	6.68
HCP109T4	35	8100	4.80	10230	4.93	12990	5.02	16360	5.09	20270	5.15	24670	5.21	29530	5.26	34780	5.32
	55	–	–	–	–	–	–	12560	7.84	15580	7.98	19310	8.05	23700	8.06	28700	8.01
HCP120T4	35	8980	5.49	11340	5.64	14380	5.75	18060	5.81	22330	5.86	27160	5.91	32520	5.98	38360	6.07
	55	–	–	–	–	–	–	13670	8.82	16830	8.94	20810	8.99	25560	9.01	31050	8.99

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
H: *Heating capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 50 Hz*

Technical data and ordering

H-Series, Scroll compressors - R407C - 60 Hz

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
HRP025T4	35	2310	1.31	2930	1.35	3650	1.40	4500	1.43	5460	1.47	6550	1.50	7780	1.53	9150	1.57
	55	–	–	–	–	–	–	3620	2.09	4420	2.15	5320	2.20	6340	2.23	7490	2.25
HRP034T4	35	2960	2.17	3810	2.15	4840	2.14	6060	2.13	7510	2.12	9190	2.09	11150	2.06	13390	2.01
	55	–	–	–	–	–	–	4530	3.34	5690	3.33	7050	3.31	8630	3.30	10450	3.26
HRP040T4	35	3490	2.07	4460	2.08	5650	2.11	7070	2.14	8760	2.18	10730	2.22	13010	2.26	15640	2.29
	55	–	–	–	–	–	–	5320	3.79	6630	3.78	8180	3.78	9990	3.77	12100	3.75
HRP042T4	35	3630	2.51	4670	2.49	5930	2.47	7430	2.46	9200	2.45	11270	2.42	13660	2.38	16410	2.32
	55	–	–	–	–	–	–	5510	4.02	6920	4.01	8570	4.00	10490	3.97	12710	3.94
HRP047T4	35	4110	2.38	5260	2.40	6660	2.43	8330	2.47	10310	2.51	12630	2.56	15320	2.60	18420	2.64
	55	–	–	–	–	–	–	6180	4.34	7670	4.33	9450	4.32	11530	4.31	13970	4.29
HRP051T4	35	4410	2.98	5660	2.96	7180	2.94	9000	2.93	11150	2.91	13660	2.88	16560	2.83	19870	2.76
	55	–	–	–	–	–	–	6880	4.60	8630	4.58	10690	4.57	13090	4.54	15850	4.50
HRP060T4	35	5100	3.53	6560	3.50	8320	3.48	10430	3.47	12910	3.44	15820	3.41	19170	3.35	23020	3.27
	55	–	–	–	–	–	–	7920	5.50	9950	5.48	12320	5.46	15080	5.43	18270	5.38
HLP072T4	35	6700	4.23	8600	4.30	10880	4.36	13590	4.40	16810	4.45	20580	4.52	24980	4.61	30050	4.74
	55	–	–	–	–	–	–	9830	6.70	12110	6.53	14840	6.40	18100	6.32	21940	6.30
HLP078T4	35	7120	4.32	9110	4.37	11540	4.43	14460	4.49	17910	4.55	21940	4.63	26610	4.72	31950	4.82
	55	–	–	–	–	–	–	11070	7.30	13860	7.19	17150	7.11	20960	7.05	25360	7.03
HLP081T4	35	6880	4.95	8790	4.92	11140	4.90	13960	4.88	17300	4.85	21200	4.80	25680	4.72	30800	4.60
	55	–	–	–	–	–	–	11210	7.34	14040	7.33	17390	7.31	21300	7.26	25810	7.19
HCP094T4	35	8220	4.91	10390	5.05	13170	5.14	16550	5.20	20470	5.24	24910	5.28	29820	5.34	35160	5.43
	55	–	–	–	–	–	–	12570	7.85	15490	7.94	19160	7.99	23530	8.00	28560	7.99
HCP120T4	35	10760	6.69	13600	6.90	17240	7.01	21650	7.07	26770	7.11	32570	7.16	38990	7.24	45990	7.40
	55	–	–	–	–	–	–	16410	10.56	20210	10.65	24980	10.69	30680	10.70	37260	10.74

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
H: *Heating capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 60 Hz*

Technical data and ordering

H-Series, Scroll compressors - R22 - 50 Hz

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
HRM025T4	35	–	–	2550	1.33	3100	1.32	3810	1.31	4670	1.30	5660	1.28	6780	1.26	8010	1.22
	55	–	–	–	–	–	–	–	–	3600	1.95	4490	1.91	5450	1.89	6480	1.88
HRM032T4	35	–	–	3280	1.45	4000	1.44	4930	1.45	6040	1.48	7330	1.53	8780	1.57	10350	1.59
	55	–	–	–	–	–	–	–	–	4750	2.27	5940	2.33	7210	2.37	8550	2.38
HRM032U4	35	–	–	3330	1.69	4050	1.67	4980	1.66	6110	1.65	7400	1.63	8870	1.60	10470	1.54
	55	–	–	–	–	–	–	–	–	4760	2.68	5930	2.63	7200	2.60	8560	2.58
HRM034T4	35	2950	1.83	3470	1.80	4220	1.79	5190	1.77	6350	1.76	7700	1.74	9220	1.70	10890	1.65
	55	–	–	–	–	–	–	3870	2.70	4970	2.62	6190	2.57	7530	2.53	8950	2.52
HRM034U4	35	–	–	3530	1.75	4300	1.73	5280	1.72	6470	1.71	7840	1.69	9390	1.65	11090	1.60
	55	–	–	–	–	–	–	–	–	5060	2.80	6300	2.74	7660	2.71	9110	2.69
HRM038T4	35	3340	1.98	3930	1.94	4780	1.92	5880	1.91	7200	1.89	8740	1.87	10460	1.83	12350	1.78
	55	–	–	–	–	–	–	4350	3.02	5590	2.93	6970	2.87	8460	2.83	10070	2.81
HRM038U4	35	–	–	3970	1.93	4830	1.90	5940	1.89	7270	1.88	8820	1.85	10560	1.82	12480	1.76
	55	–	–	–	–	–	–	–	–	5590	3.10	6970	3.04	8470	3.00	10070	2.98
HRM040T4	35	3480	2.12	4100	2.09	4990	2.06	6130	2.05	7510	2.03	9110	2.01	10900	1.97	12880	1.91
	55	–	–	–	–	–	–	4540	3.12	5840	3.02	7280	2.96	8840	2.93	10510	2.91
HRM040U4	35	–	–	4140	1.99	5030	1.97	6190	1.96	7580	1.94	9190	1.92	11000	1.88	13000	1.82
	55	–	–	–	–	–	–	–	–	5880	3.14	7330	3.07	8900	3.04	10590	3.02
HRM042T4	35	3660	2.23	4310	2.19	5240	2.17	6450	2.15	7900	2.13	9580	2.11	11460	2.07	13540	2.01
	55	–	–	–	–	–	–	4760	3.33	6120	3.23	7630	3.16	9270	3.13	11020	3.10
HRM042U4	35	–	–	4340	2.09	5280	2.07	6490	2.05	7950	2.04	9640	2.01	11550	1.97	13640	1.91
	55	–	–	–	–	–	–	–	–	6170	3.29	7690	3.23	9350	3.19	11120	3.17
HRM045U4	35	–	–	4690	2.22	5710	2.19	7020	2.17	8600	2.16	10420	2.13	12480	2.09	14740	2.02
	55	–	–	–	–	–	–	–	–	6620	3.64	8260	3.56	10030	3.52	11920	3.50
HRM047T4	35	4170	2.43	4910	2.38	5970	2.36	7340	2.34	8990	2.32	10900	2.30	13050	2.25	15420	2.18
	55	–	–	–	–	–	–	5430	3.75	6970	3.63	8690	3.56	10560	3.52	12560	3.49
HRM047U4	35	–	–	4910	2.32	5970	2.30	7340	2.28	8990	2.26	10900	2.24	13050	2.19	15420	2.12
	55	–	–	–	–	–	–	–	–	6970	3.75	8690	3.68	10550	3.63	12550	3.61
HRM048U4	35	–	–	4940	2.36	6010	2.36	7390	2.36	9060	2.35	10980	2.33	13150	2.29	15530	2.23
	55	–	–	–	–	–	–	–	–	6970	3.67	8690	3.64	10560	3.62	12550	3.61
HRM051T4	35	4430	2.43	5210	2.35	6340	2.32	7810	2.33	9580	2.38	11620	2.44	13910	2.51	16410	2.56
	55	–	–	–	–	–	–	5820	3.48	7500	3.56	9370	3.64	11380	3.70	13500	3.74
HRM051U4	35	–	–	5310	2.48	6460	2.47	7940	2.47	9730	2.46	11800	2.44	14120	2.40	16680	2.34
	55	–	–	–	–	–	–	–	–	7760	3.95	9670	3.91	11750	3.89	13980	3.88
HRM054T4	35	–	–	5610	2.39	6830	2.37	8410	2.39	10310	2.44	12510	2.51	14970	2.57	17670	2.62
	55	–	–	–	–	–	–	–	–	8060	3.72	10050	3.81	12210	3.87	14500	3.90
HRM054U4	35	–	–	5620	2.60	6840	2.60	8410	2.60	10300	2.59	12490	2.56	14950	2.52	17660	2.46
	55	–	–	–	–	–	–	–	–	8110	4.09	10110	4.05	12290	4.03	14610	4.02
HRM058U4	35	–	–	6030	2.79	7340	2.79	9020	2.79	11050	2.77	13400	2.75	16040	2.71	18940	2.64
	55	–	–	–	–	–	–	–	–	8690	4.38	10830	4.34	13160	4.32	15650	4.31
HRM060T4	35	5210	2.85	6120	2.75	7460	2.72	9190	2.73	11270	2.78	13670	2.85	16360	2.93	19310	3.00
	55	–	–	–	–	–	–	6840	4.07	8830	4.15	11020	4.24	13380	4.31	15880	4.36
HRM060U4	35	–	–	6230	2.88	7580	2.88	9320	2.88	11420	2.87	13850	2.84	16580	2.80	19580	2.73
	55	–	–	–	–	–	–	–	–	8980	4.53	11190	4.49	13600	4.47	16180	4.45
HLM068T4	35	6120	3.36	7200	3.25	8760	3.21	10770	3.22	13200	3.28	16000	3.36	19160	3.45	22630	3.54
	55	–	–	–	–	–	–	7950	4.76	10220	4.85	12740	4.94	15480	5.03	18410	5.09
HLM072T4	35	6420	3.53	7550	3.41	9190	3.36	11310	3.38	13860	3.44	16810	3.53	20130	3.63	23760	3.71
	55	–	–	–	–	–	–	8390	5.02	10810	5.13	13480	5.23	16370	5.32	19450	5.38
HLM075T4	35	6520	3.70	7650	3.70	9310	3.70	11440	3.70	14020	3.68	17000	3.65	20350	3.59	24030	3.51
	55	–	–	–	–	–	–	8700	5.59	11170	5.52	13920	5.48	16920	5.45	20120	5.43
HLM078T4	35	6760	3.61	7940	3.46	9700	3.43	11980	3.48	14720	3.57	17870	3.69	21380	3.78	25180	3.82
	55	–	–	–	–	–	–	9060	5.42	11780	5.62	14740	5.79	17890	5.88	21160	5.87
HLM081T4	35	7370	3.86	8670	3.72	10540	3.67	12940	3.70	15840	3.78	19200	3.89	22990	3.99	27190	4.07
	55	–	–	–	–	–	–	9480	5.60	12140	5.75	15110	5.89	18370	5.99	21880	6.03
HCM094T4	35	8240	4.77	9680	4.78	11780	4.79	14480	4.78	17740	4.76	21510	4.72	25760	4.64	30420	4.54
	55	–	–	–	–	–	–	10880	7.08	13970	6.99	17410	6.93	21160	6.89	25160	6.87
HCM109T4	35	9480	5.94	11140	5.86	13550	5.80	16660	5.76	20410	5.71	24750	5.64	29630	5.54	34990	5.38
	55	–	–	–	–	–	–	12600	8.39	16170	8.15	20160	7.98	24500	7.88	29140	7.83
HCM120T4	35	8980	5.61	11550	5.71	14710	5.78	18410	5.84	22610	5.88	27260	5.93	32320	6.01	37740	6.11
	55	–	–	–	–	–	–	14550	9.27	18150	9.00	22220	8.87	26730	8.90	31630	9.09

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
H: *Heating capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 50 Hz*

Technical data and ordering

H-Series, Scroll compressors - R22 - 60 Hz

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
HRM025T4	35	–	–	3030	1.59	3690	1.58	4530	1.56	5550	1.55	6730	1.53	8060	1.50	9530	1.46
	55	–	–	–	–	–	–	–	–	4290	2.33	5350	2.28	6500	2.25	7730	2.24
HRM032T4	35	–	–	3900	1.78	4750	1.76	5850	1.77	7180	1.80	8710	1.85	10420	1.90	12300	1.94
	55	–	–	–	–	–	–	–	–	5620	2.69	7020	2.75	8530	2.80	10120	2.83
HRM032U4	35	–	–	3930	1.96	4780	1.94	5870	1.93	7200	1.91	8730	1.89	10450	1.85	12340	1.79
	55	–	–	–	–	–	–	–	–	5640	3.09	7040	3.03	8550	2.99	10170	2.97
HRM034T4	35	3570	2.17	4200	2.14	5110	2.12	6280	2.10	7690	2.08	9330	2.06	11170	2.02	13190	1.96
	55	–	–	–	–	–	–	4700	3.22	6030	3.13	7520	3.06	9140	3.02	10870	3.00
HRM034U4	35	–	–	4190	2.05	5100	2.03	6280	2.01	7690	2.00	9320	1.98	11160	1.94	13180	1.87
	55	–	–	–	–	–	–	–	–	5940	3.23	7410	3.16	9000	3.13	10700	3.10
HRM038T4	35	3980	2.36	4680	2.32	5700	2.30	7000	2.28	8580	2.26	10400	2.23	12460	2.19	14710	2.13
	55	–	–	–	–	–	–	5220	3.52	6710	3.42	8360	3.35	10160	3.31	12080	3.28
HRM038U4	35	–	–	4760	2.30	5800	2.27	7120	2.25	8730	2.24	10580	2.21	12670	2.17	14970	2.10
	55	–	–	–	–	–	–	–	–	6740	3.56	8400	3.49	10210	3.45	12140	3.43
HRM040T4	35	4150	2.51	4880	2.47	5940	2.45	7300	2.43	8950	2.41	10850	2.38	12990	2.34	15340	2.27
	55	–	–	–	–	–	–	5430	3.69	6970	3.58	8690	3.51	10560	3.46	12560	3.44
HRM040U4	35	–	–	5010	2.42	6100	2.39	7500	2.37	9190	2.36	11140	2.33	13340	2.28	15760	2.21
	55	–	–	–	–	–	–	–	–	7100	3.75	8850	3.68	10750	3.63	12780	3.61
HRM042T4	35	4370	2.65	5140	2.60	6260	2.58	7690	2.56	9420	2.54	11430	2.51	13680	2.46	16160	2.39
	55	–	–	–	–	–	–	5730	3.93	7360	3.82	9180	3.74	11150	3.69	13270	3.67
HRM042U4	35	–	–	5210	2.54	6340	2.51	7790	2.49	9540	2.47	11570	2.45	13850	2.40	16360	2.32
	55	–	–	–	–	–	–	–	–	7450	3.94	9290	3.86	11290	3.81	13430	3.79
HRM045U4	35	–	–	5610	2.66	6820	2.63	8390	2.61	10280	2.59	12460	2.56	14920	2.51	17620	2.43
	55	–	–	–	–	–	–	–	–	7980	4.22	9950	4.14	12090	4.09	14380	4.06
HRM047T4	35	4970	2.86	5840	2.81	7110	2.78	8730	2.76	10700	2.74	12980	2.71	15540	2.65	18350	2.57
	55	–	–	–	–	–	–	6570	4.47	8430	4.34	10510	4.25	12770	4.20	15190	4.17
HRM047U4	35	–	–	5840	2.77	7110	2.74	8740	2.72	10700	2.70	12980	2.67	15540	2.62	18350	2.53
	55	–	–	–	–	–	–	–	–	8430	4.44	10510	4.35	12770	4.30	15190	4.27
HRM048U4	35	–	–	5870	2.78	7140	2.78	8780	2.78	10760	2.77	13040	2.74	15620	2.70	18450	2.63
	55	–	–	–	–	–	–	–	–	8380	4.38	10440	4.34	12690	4.32	15080	4.30
HRM051T4	35	5340	2.94	6280	2.83	7660	2.80	9430	2.82	11570	2.87	14040	2.95	16800	3.03	19820	3.10
	55	–	–	–	–	–	–	7040	4.22	9100	4.32	11370	4.41	13800	4.49	16370	4.53
HRM051U4	35	–	–	6310	2.93	7680	2.93	9440	2.92	11570	2.91	14030	2.89	16790	2.84	19830	2.77
	55	–	–	–	–	–	–	–	–	9110	4.59	11350	4.55	13790	4.53	16400	4.51
HRM054T4	35	–	–	6660	2.85	8110	2.82	9990	2.84	12250	2.90	14860	2.98	17780	3.06	20990	3.12
	55	–	–	–	–	–	–	–	–	9580	4.39	11960	4.49	14520	4.57	17240	4.60
HRM054U4	35	–	–	6650	3.09	8090	3.09	9950	3.09	12190	3.07	14780	3.04	17690	3.00	20900	2.92
	55	–	–	–	–	–	–	–	–	9530	4.76	11880	4.72	14430	4.70	17160	4.68
HRM058U4	35	–	–	7140	3.32	8690	3.31	10690	3.31	13090	3.30	15880	3.27	19000	3.21	22450	3.13
	55	–	–	–	–	–	–	–	–	10260	5.17	12790	5.13	15540	5.10	18480	5.09
HRM060T4	35	6250	3.42	7350	3.31	8960	3.26	11030	3.28	13530	3.34	16410	3.43	19640	3.52	23180	3.61
	55	–	–	–	–	–	–	8210	4.88	10590	4.98	13220	5.08	16060	5.17	19060	5.23
HRM060U4	35	–	–	7380	3.42	8980	3.42	11040	3.42	13520	3.41	16400	3.37	19630	3.32	23190	3.24
	55	–	–	–	–	–	–	–	–	10600	5.34	13210	5.29	16050	5.27	19080	5.25
HLM068T4	35	7330	3.98	8630	3.85	10500	3.80	12910	3.82	15810	3.88	19170	3.98	22950	4.09	27120	4.20
	55	–	–	–	–	–	–	9520	5.64	12230	5.75	15240	5.86	18520	5.97	22020	6.04
HLM072T4	35	7670	4.17	9020	4.03	10990	3.98	13520	4.00	16570	4.07	20100	4.17	24060	4.29	28400	4.39
	55	–	–	–	–	–	–	10030	5.95	12920	6.07	16110	6.20	19570	6.31	23250	6.38
HLM075T4	35	7820	4.43	9180	4.44	11160	4.44	13730	4.44	16820	4.42	20390	4.38	24410	4.31	28830	4.21
	55	–	–	–	–	–	–	10440	6.72	13410	6.63	16710	6.57	20310	6.54	24160	6.52
HLM078T4	35	8210	4.66	9650	4.66	11740	4.67	14430	4.66	17680	4.64	21440	4.60	25670	4.53	30310	4.42
	55	–	–	–	–	–	–	10850	6.98	13930	6.89	17370	6.83	21110	6.79	25100	6.77
HLM081T4	35	8520	4.83	10020	4.84	12190	4.85	14980	4.84	18350	4.82	22260	4.77	26640	4.70	31460	4.59
	55	–	–	–	–	–	–	11260	7.25	14470	7.15	18030	7.09	21910	7.05	26060	7.03
HCM094T4	35	9880	5.79	11620	5.81	14130	5.82	17380	5.82	21290	5.79	25820	5.73	30900	5.65	36500	5.52
	55	–	–	–	–	–	–	13060	8.39	16770	8.29	20910	8.21	25410	8.17	30220	8.14
HCM109T4	35	11380	6.82	13370	6.85	16260	6.86	19990	6.86	24500	6.82	29710	6.76	35560	6.66	41990	6.51
	55	–	–	–	–	–	–	15110	9.69	19400	9.58	24190	9.50	29390	9.44	34960	9.41
HCM120T4	35	12420	7.47	14600	7.50	17760	7.51	21830	7.51	26740	7.47	32430	7.40	38820	7.29	45850	7.13
	55	–	–	–	–	–	–	16490	10.61	21180	10.49	26400	10.40	32080	10.34	38160	10.30

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
H: *Heating capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 60 Hz*

Nomenclature and Dimensions

Type	Size	Motor	Features
HRH	036	U1L	P6

Application:
H: high temperature / air conditioning

Family:
C: light commercial scroll
R: residential scroll (new platform)
L: light commercial scroll (new platform)

Refrigerant & Lubricant:
M: LR22, alkylbenzene lubricant
P: R407C, PVE lubricant
H: R410A, PVE lubricant
J: R410A, PVE lubricant

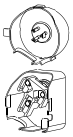
Nominal capacity:
in thousand Btu/h at 60 Hz, ARI conditions

Model variation:
T: design optimized for 7.2 / 54.4 °C
U: design optimized for 7.2 / 37.8 °C

Other features

	Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalis. port
6	None	None	None	None	None
7	Threaded	None	None	None	None
8	None	Brazed	None	None	Brazed

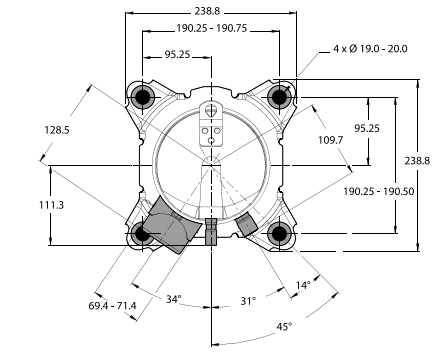
Tubing and electrical connections:
P: brazed connections, spade terminals
C: brazed connections, screw terminals

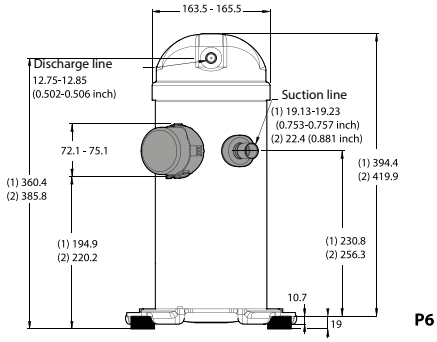


Motor protection:
L: internal motor protection

Motor voltage code:
1: 208 – 230 V / 1 ~ / 60 Hz
2: 200 – 220 V / 3 ~ / 50 Hz & 208 – 230 V / 3 ~ / 60 Hz
4: 380 – 400 V / 3 ~ / 50 Hz & 460 V / 3 ~ / 60 Hz
5: 220 – 240 V / 1 ~ / 50 Hz
7: 500 V / 3 ~ / 50 Hz & 575 V / 3 ~ / 60 Hz
9: 380 V / 3 ~ / 60 Hz

HRM032-034-038-040-042 / HRP034-038-040-042 / HRH029-031-032-034-036-038 / HRM-045-047 / HRP-045-047 / HRH039-040



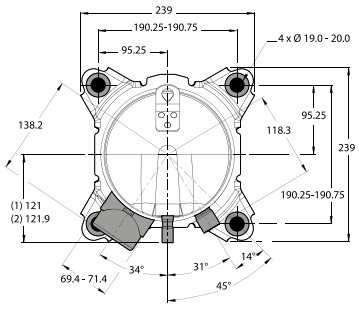


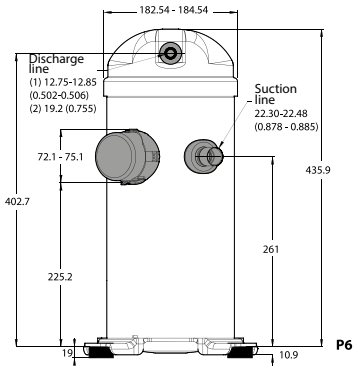
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(2) HRM-045-047 / HRP-045-047 / HRH039-040

All dimensiond in mm

Dimensions

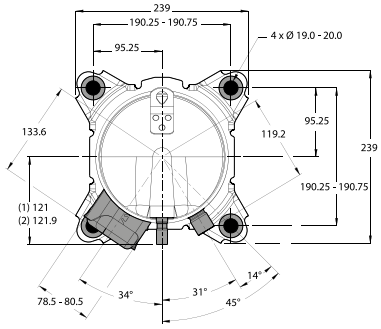
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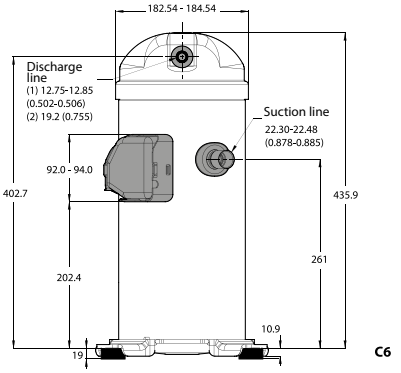




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(2) HLM078-081 / HLP078-081

All dimensiond in mm

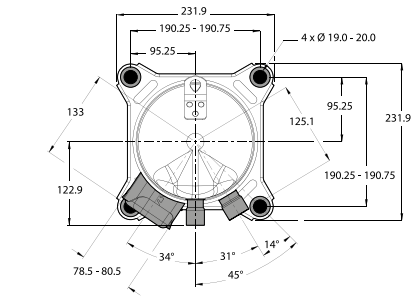


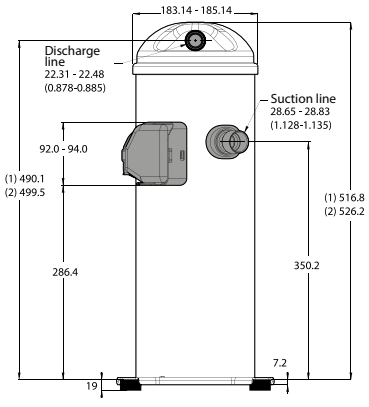


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(2) HLM078-081 / HLP078-081

All dimensiond in mm

HCM / HCP 094-109-120

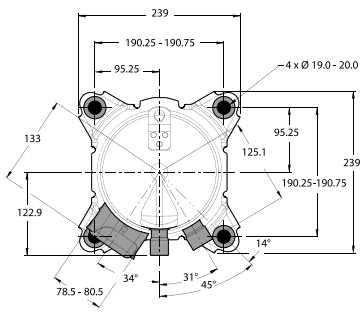


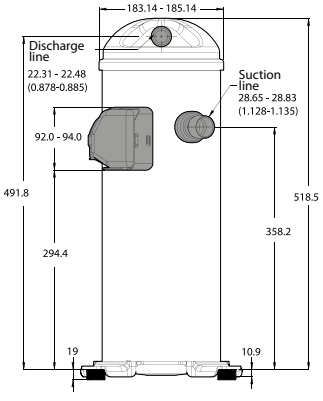


(1) HCM/HCP 094
(2) HCM/HCP 109-120

All dimensiond in mm

HCJ090-105-120

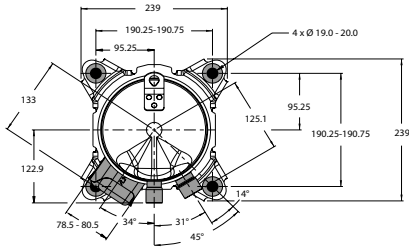


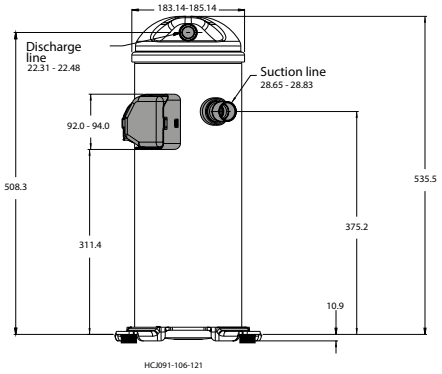


HCJ090-105-120

All dimensiond in mm

HCJ091-106-121





HCJ091-106-121

All dimensiond in mm

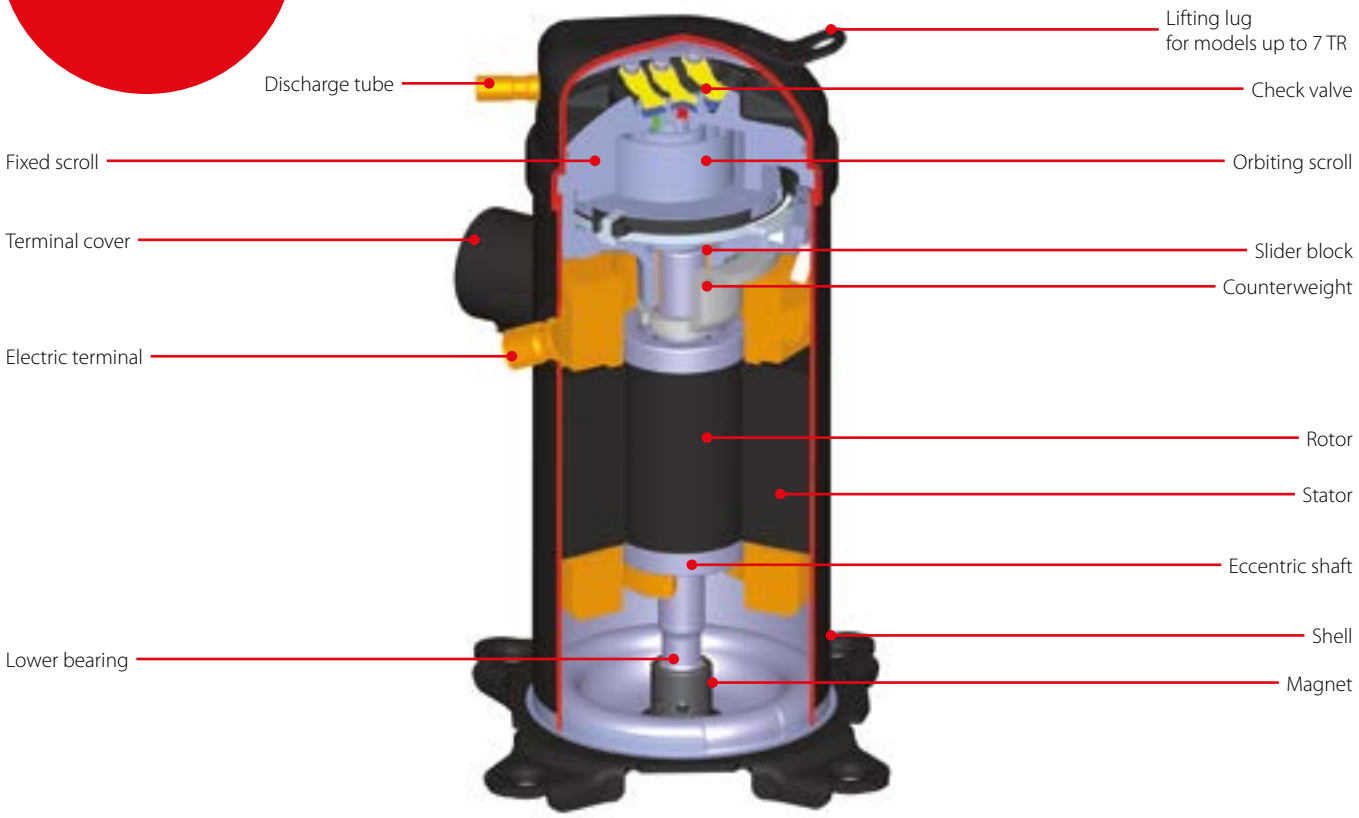
Quick Selection Notes:

HHP - Scrolls heating compressors optimized - R407C

The Heat Pump Scroll compressor has an extended operating envelope. This means that your heat pumps will still be highly efficient when the outdoor temperature is below -20 °C.

Your customers will be able to save energy by reducing the use of a supplementary heating source.





Facts

- Discharge check valve:
  no reverse rotation hence no shutdown noise
- Radial scroll compliance:
  good resistance to liquid fl ood back
- Axial scroll compliance:
  low starting current
- Oil injection:
  good lubrication at fierce conditions
- Lead-free bearings:
  high reliability even with low lubrication
- Patented internal protection combined with HOOP (Hot Oil Over Protector) thermal valve:
  excellent reliability
- Standard dimensions and tubing:
  ideal for both new installations and replacement markets

Technical data and ordering

HHP - Scroll compressors for heating - R407C - 50 Hz

Technical data

Type	Heating capacity	Power input	Max. A.	Heating efficiency	Swept volume	Displacement	Oil charge	Net weight
	[W]	[W]	[A]	COP [W/W]	[cm³/rev]	[m³/hr] at 2900 [rpm]	[l]	[kg]
HHP015T4LP6	4800	1540	5.1	3.13	34	5.9	1.06	31
HHP015T5LP6	4880	1660	14.2	2.93	34	5.9	1.06	30
HHP019T4LP6	5780	1910	5.8	3.02	41	7.1	1.06	31
HHP019T5LP6	5830	2040	17.7	2.86	41	7.1	1.06	31
HHP021T4LP6	6410	2030	5.8	3.16	46	8	1.06	31
HHP021T5LP6	6630	2110	18.2	3.15	46	8	1.06	31
HHP026T4LP6	8100	2520	7.1	3.22	57	10	1.06	31
HHP026T5LP6	8160	2680	22.7	3.04	57	10	1.06	31
HHP030T4LC6	9700	3070	8.6	3.17	67	11.7	1.57	37
HHP030T5LC6	9790	3190	27.7	3.07	67	11.7	1.57	41
HHP038T4LC6	12050	3730	10.8	3.23	82	14.2	1.57	39
HHP038T5LC6	12140	3850	35.2	3.16	82	14.2	1.57	41
HHP045T4LC6	13940	4300	12.6	3.25	99	17.2	1.57	40

Evaporating temperature: -7 °C *Condensing temperature: 50 °C* *Superheat: 10 K* *Subcooling: 5 K*
Subject to modification without prior notification *Conditions: 400 V / 3 ph / 50 Hz (motor T4), 230 V / 1 ph / 50 Hz (motor T5)*

HHP - Scroll compressors for heating - R407C - 50 Hz

Ordering

Type	Model Variation	Connections	Features	Single pack		Industrial pack	
				4	5	4	5
HHP015	T	P	6	121U9002	121U9004	121U9001	121U9003
HHP019	T	P	6	121U9006	121U9008	121U9005	121U9007
HHP021	T	P	6	121U9010	121U9012	121U9009	121U9011
HHP026	T	P	6	121U9014	121U9016	121U9013	121U9015
HHP030	T	C	6	121U9018	121U9020	121U9017	121U9019
HHP038	T	C	6	121U9022	121U9024	121U9021	121U9023
HHP045	T	C	6	121U9026	–	121U9025	–

HHP - Scroll compressors for heating - R407C - 50 Hz

Performance table

Type	To	-25		-20		-15		-10		-5		0		5		10		15	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
HHP015T4	40	2 550	1.1	3 070	1.1	3 720	1.2	4 510	1.3	5 450	1.3	6 520	1.4	7 730	1.4	9 080	1.4	10 570	1.4
	50	2 620	1.5	3 050	1.5	3 620	1.5	4 320	1.5	5 150	1.6	6 120	1.6	7 220	1.7	8 460	1.7	9 840	1.7
	60	–	–	–	–	3 860	2.2	4 410	2.1	5 090	2.1	5 890	2.1	6 830	2.1	7 900	2.1	9 100	2.1
HHP019T4	40	3 070	1.3	3 680	1.4	4 450	1.5	5 400	1.5	6 520	1.6	7 810	1.7	9 270	1.7	10 900	1.7	12 690	1.7
	50	3 180	1.7	3 680	1.7	4 340	1.8	5 180	1.9	6 180	1.9	7 340	2.0	8 670	2.1	10 160	2.2	11 830	2.2
	60	–	–	–	–	4 660	2.3	5 300	2.4	6 110	2.4	7 070	2.5	8 200	2.6	9 480	2.7	10 930	2.8
HHP021T4	40	3 530	1.4	4 250	1.5	5 090	1.6	6 080	1.7	7 230	1.7	8 570	1.8	10 100	1.8	11 840	1.7	13 820	1.7
	50	3 430	1.6	4 080	1.8	4 860	1.9	5 770	2.0	6 830	2.1	8 070	2.1	9 500	2.2	11 140	2.2	13 000	2.2
	60	–	–	–	–	4 710	2.2	5 530	2.3	6 510	2.5	7 650	2.6	8 970	2.7	10 490	2.8	12 240	2.8
HHP026T4	40	4 540	1.7	5 410	1.9	6 440	2.0	7 650	2.1	9 070	2.1	10 740	2.2	12 690	2.2	14 950	2.1	17 550	2.0
	50	4 590	2.0	5 350	2.1	6 260	2.3	7 330	2.4	8 610	2.6	10 120	2.6	11 900	2.7	13 970	2.7	16 370	2.7
	60	–	–	–	–	6 240	2.7	7 150	2.9	8 250	3.0	9 560	3.2	11 130	3.3	12 980	3.3	15 150	3.3
HHP030T4	40	4 910	2.1	6 100	2.3	7 480	2.4	9 050	2.6	10 830	2.6	12 830	2.7	15 060	2.7	17 520	2.8	20 240	2.9
	50	4 830	2.3	5 940	2.6	7 230	2.8	8 690	3.0	10 350	3.1	12 200	3.2	14 270	3.4	16 560	3.5	19 090	3.6
	60	–	–	–	–	7 000	3.1	8 330	3.4	9 850	3.6	11 550	3.8	13 440	4.0	15 540	4.2	17 870	4.4
HHP038T4	40	6 150	2.4	7 600	2.8	9 360	3.0	11 390	3.2	13 660	3.2	16 130	3.3	18 750	3.3	21 510	3.4	24 360	3.6
	50	5 730	2.2	7 120	2.8	8 800	3.3	10 740	3.6	12 890	3.8	15 220	4.0	17 700	4.1	20 280	4.2	22 940	4.4
	60	–	–	–	–	8 090	3.2	9 930	3.8	11 970	4.2	14 170	4.5	16 500	4.7	18 920	5.0	21 400	5.2
HHP045T4	40	7 110	3.0	8 800	3.1	10 830	3.3	13 180	3.5	15 800	3.7	18 660	3.8	21 700	3.9	24 890	3.8	28 180	3.7
	50	6 630	3.5	8 240	3.7	10 190	3.9	12 420	4.2	14 910	4.4	17 610	4.6	20 480	4.7	23 460	4.8	26 540	4.8
	60	–	–	–	–	9 360	4.5	11 490	4.8	13 850	5.1	16 400	5.5	19 100	5.7	21 890	6.0	24 760	6.1

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
H: *Heating capacity in [W]*
Pe. *Power input in [kW]*
Subcooling: *5 K*
Superheat: *5 K*

Nomenclature and Dimensions

Type	Size	Motor	Features
HHP	**030**	**T4L**	**P6**

Application:
H: high temperature

Family:
HP:heat pump R407C PVE

Nominal capacity

Model variation:
T: motor design

Other features

	Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalis. port
6	None	None	None	None	None

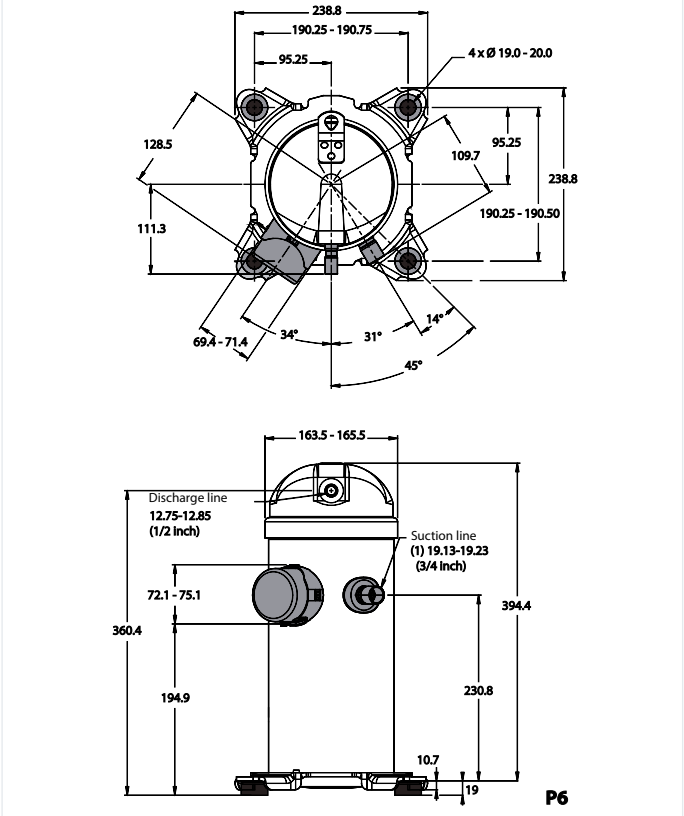
Tubing and electrical connections:
P: brazed connections, spade terminals
C: brazed connections, screw terminals



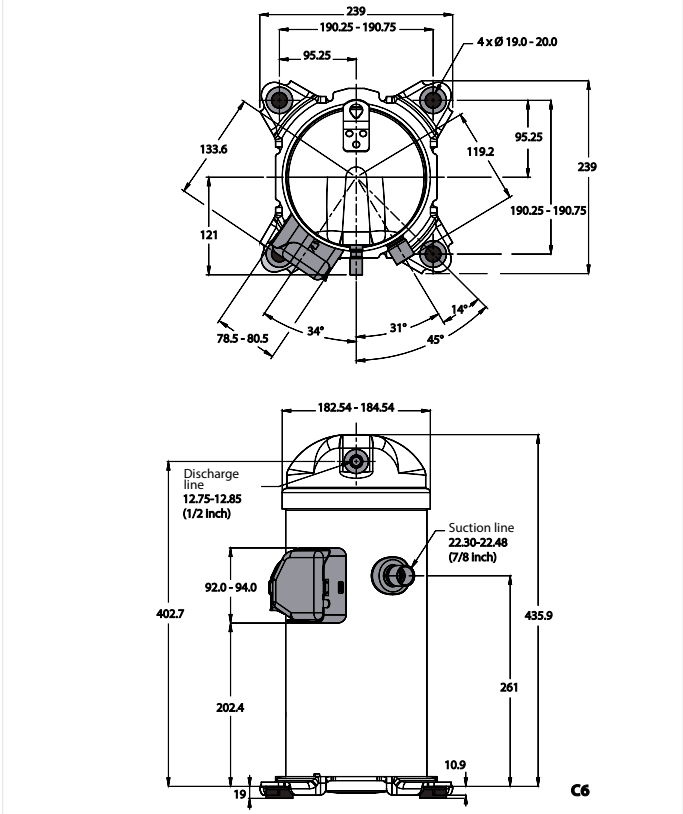
Motor protection:
L: internal motor protection

Motor voltage code:
4: 380 – 400 V / 3 ~ / 50 Hz
5: 220 – 240 V / 1 ~ / 50 Hz

HHP015-019-021-026



HHP030-038-045



Quick Selection Notes:

MLZ / MLM / LLZ - Scroll compressors for refrigeration

MLZ / MLM and LLZ scroll compressors are dedicated to commercial and light commercial refrigeration applications with refrigerants R134a, R404A / R507A, R22, R407A. Both brazed and rotolock connections are available for most of the compressors.

MLZ: medium-temperature scroll compressors
R404 / R507A, R407A / F, R134a, R22
MLM: medium-temperature scroll compressors (R22).
LLZ: low-temperature scroll available with economizer line (R404A, R507A).



Features
MLZ / MLM / LLZ

High efficiency motor

Optimised pressure ration for refrigeration applications

Optimized scroll design

HOOP overload protection
Rotalock or braze connections



MLZ / MLM



LLZ

Optional sound jacket attenuates sound levels

Multi-refrigerant scrolls save on inventory

Suitable for transport of refrigerated goods

Vapor injection available with optional economizer kit increases LLZ efficiency and cooling capacity

Facts

- Compact design esp. in large capacities
- Complete the existing scroll range for medium temperatures
- **Energy Savings**
  Optimize your system with the scroll compressors for refrigeration. The combination of an energy efficient motor and an optimized scroll wrap for refrigeration applications delivers high efficiency in fixed-speed compressors. Optional vapor injection boosts the cooling capacity and efficiency by more than 20% on LLZ
- **Reliability**
  Improve your system reliability to reduce your maintenance and warranty costs. Reliability is built into this compressor range, from the compliant scroll design and the engineered bearings to the simplified manufacturing process (30% fewer parts). The patented thermal fault protection also contributes to excellent reliability. A smart way to reduce your field service costs
- **Low sound**
  Improve the sound environment with the lowest sound level in the industry. Scroll technology is quiet by design: the scroll provides smooth continuous compression, the absence of suction and discharge valves, and the unique disc check valve design ensure quiet, vibration-free operations
- **Compactness**
  Footprint up to 30% smaller than alternative reduces the logistics costs and frees up space in the system

Technical data and ordering

MLZ / MLM - Scroll compressors - R404A / R407A / R407F / R134a / R22

Ordering - Rotolock version - Single pack

Type	Model	Connections	Features	Voltage code 1	Voltage code 2	Voltage code 4	Voltage code 5	Voltage code 7	Voltage code 9
MLZ015	T	T	9	121U8513	121U8553	121U8529	121U8521	–	121U8545
MLZ019	T	T	9	121U8515	121U8555	121U8531	121U8523	–	121U8547
MLZ021	T	T	9	121U8517	121U8557	121U8533	121U8525	121U8541	121U8549
MLZ026	T	T	9	121U8519	121U8559	121U8535	121U8527	121U8543	121U8551
MLZ030	T	Q	9	121U8561	121U8597	121U8573	121U8567	121U8581	121U8589
MLZ038	T	Q	9	121U8563	121U8599	121U8575	121U8569	121U8583	121U8591
MLZ042	T	Q	9	121U8565	–	–	121U8571	–	–
MLZ045	T	Q	9	–	121U8601	121U8577	–	121U8585	121U8593
MLZ048	T	Q	9	–	121U8603	121U8579	–	121U8587	121U8595
MLZ058	T	Q	9	–	121U8627	121U8609	–	121U8615	121U8621
MLZ066	T	Q	9	–	121U8623	121U8605	–	121U8611	121U8617
MLZ076	T	Q	9	–	121U8625	121U8607	–	121U8613	121U8619

MLZ / MLM - Scroll compressors - R404A / R407A / R407F / R134a / R22

Ordering - Rotolock version - Industrial pack

Type	Model	Connections	Features	Voltage code 1	Voltage code 2	Voltage code 4	Voltage code 5	Voltage code 7	Voltage code 9
MLZ015	T	T	9	121U8512	121U8552	121U8528	121U8520	–	121U8544
MLZ019	T	T	9	121U8514	121U8554	121U8530	121U8522	–	121U8546
MLZ021	T	T	9	121U8516	121U8556	121U8532	121U8524	121U8540	121U8548
MLZ026	T	T	9	121U8518	121U8558	121U8534	121U8526	121U8542	121U8550
MLZ030	T	Q	9	121U8560	121U8596	121U8572	121U8566	121U8580	121U8588
MLZ038	T	Q	9	121U8562	121U8598	121U8574	121U8568	121U8582	121U8590
MLZ042	T	Q	9	121U8564	–	–	121U8570	–	–
MLZ045	T	Q	9	–	121U8600	121U8576	–	121U8584	121U8592
MLZ048	T	Q	9	–	121U8602	121U8578	–	121U8586	121U8594
MLZ058	T	Q	9	–	121U8626	121U8608	–	121U8614	121U8620
MLZ066	T	Q	9	–	121U8622	121U8604	–	121U8610	121U8616
MLZ076	T	Q	9	–	121U8624	121U8606	–	121U8612	121U8618

LLZ - Scroll compressors - R404A / R507

Ordering - Rotolock version - Single pack

Type		Model variation	Connections	Features	Voltage code 2	Voltage code 4	Voltage code 9
Danfoss pallet	LLZ013	T	Q	9	121L9519	121L9517	121L9531
	LLZ015	T	Q	9	121L9515	121L9513	121L9529
	LLZ018	T	Q	9	121L9511	121L9509	121L9527
	LLZ024	T	Q	9	121L9507	121L9505	121L9525
	LLZ034	T	Q	9	NA	121L9521	121L9533

LLZ - Scroll compressors - R404A / R507

Ordering - Rotolock version - Industrial pack

Type		Model variation	Connections	Features	Voltage code 2	Voltage code 4	Voltage code 9
Danfoss pallet	LLZ013	T	Q	9	121L9518	121L9516	121L9530
	LLZ015	T	Q	9	121L9514	121L9512	121L9528
	LLZ018	T	Q	9	121L9510	121L9508	121L9526
	LLZ024	T	Q	9	121L9506	121L9504	121L9524
	LLZ034	T	Q	9	NA	121L9520	121L9532

Technical data and ordering

MLZ / MLM - Scroll compressors - R404A / R407A / R407F / R134a / R22

Ordering - Brazed version - Single pack

Type		Model	Connections	Features	Voltage code 1	Voltage code 2	Voltage code 4	Voltage code 5	Voltage code 7	Voltage code 9
Danfoss pallet	MLZ015	T	P	9	–	120U8036	121U8002	121U8024	–	–
	MLZ019	T	P	9	121U8060	121U8038	121U8004	121U8026	–	–
	MLZ021	T	P	9	121U8062	121U8040	121U8006	121U8028	–	–
	MLZ026	T	P	9	121U8064	121U8042	121U8008	121U8030	–	–
	MLZ030	T	C	9	121U8066	121U8044	121U8010	121U8032	–	–
	MLZ038	T	C	9	121U8068	121U8046	121U8012	121U8034	–	–
	MLZ042	T	C	9	–	–	–	121U8419	–	–
	MLZ045	T	C	9	–	121U8048	121U8014	–	–	–
	MLZ048	T	C	9	–	121U8050	121U8016	–	–	–
	MLZ058	T	C	9	–	121U8052	121U8018	–	–	–
	MLZ066	T	C	9	–	121U8054	121U8020	–	–	–
	MLZ076	T	C	9	–	121U8056	121U8022	–	–	–
US pallet	MLZ015	T	P	9	120U8058	120U8036	120U8002	120U8024	–	120U8413
	MLZ019	T	P	9	120U8060	120U8038	120U8004	120U8026	–	120U8266
	MLZ021	T	P	9	120U8062	120U8040	120U8006	120U8028	–	120U8272
	MLZ026	T	P	9	120U8064	120U8042	120U8008	120U8030	–	120U8278
	MLZ030	T	C	9	120U8066	120U8044	120U8010	120U8032	–	120U8284
	MLZ038	T	C	9	120U8068	120U8046	120U8012	120U8034	–	120U8296
	MLZ042	T	C	9	120U8399	–	–	–	–	–
	MLZ045	T	C	9	–	120U8048	120U8014	–	120U8332	120U8302
	MLZ048	T	C	9	–	120U8050	120U8016	–	120U8338	120U8308
	MLZ058	T	C	9	–	120U8052	120U8018	–	120U8344	120U8314
	MLZ066	T	C	9	–	120U8054	120U8020	–	120U8350	–
	MLZ076	T	C	9	–	120U8056	120U8022	–	120U8356	–

MLZ / MLM - Scroll compressors - R404A / R407A / R407F / R134a / R22

Ordering - Brazed version - Industrial pack

Type		Model	Connections	Features	Voltage code 1	Voltage code 2	Voltage code 4	Voltage code 5	Voltage code 7	Voltage code 9
Danfoss pallet	MLZ015	T	P	9	–	120U8035	121U8001	121U8023	–	–
	MLZ019	T	P	9	121U8059	121U8037	121U8003	121U8025	–	–
	MLZ021	T	P	9	121U8061	121U8039	121U8005	121U8027	–	–
	MLZ026	T	P	9	121U8063	121U8041	121U8007	121U8029	–	–
	MLZ030	T	C	9	121U8065	121U8043	121U8009	121U8031	–	–
	MLZ038	T	C	9	121U8067	121U8045	121U8011	121U8033	–	–
	MLZ042	T	C	9	–	–	–	121U8418	–	–
	MLZ045	T	C	9	–	121U8047	121U8013	–	–	–
	MLZ048	T	C	9	–	121U8049	121U8015	–	–	–
	MLZ058	T	C	9	–	121U8051	121U8017	–	–	–
	MLZ066	T	C	9	–	121U8053	121U8019	–	–	–
	MLZ076	T	C	9	–	121U8055	121U8021	–	–	–
US pallet	MLZ015	T	P	9	120U8057	120U8035	120U8001	120U8023	–	120U8412
	MLZ019	T	P	9	120U8059	120U8037	120U8003	120U8025	–	120U8265
	MLZ021	T	P	9	120U8061	120U8039	120U8005	120U8027	–	120U8271
	MLZ026	T	P	9	120U8063	120U8041	120U8007	120U8029	–	120U8277
	MLZ030	T	C	9	120U8065	120U8043	120U8009	120U8031	–	120U8283
	MLZ038	T	C	9	120U8067	120U8045	120U8011	120U8033	–	120U8295
	MLZ042	T	C	9	120U8398	–	–	–	–	–
	MLZ045	T	C	9	–	120U8047	120U8013	–	120U8331	120U8301
	MLZ048	T	C	9	–	120U8049	120U8015	–	120U8337	120U8307
	MLZ058	T	C	9	–	120U8051	120U8017	–	120U8343	120U8313
	MLZ066	T	C	9	–	120U8053	120U8019	–	120U8349	–
	MLZ076	T	C	9	–	120U8055	120U8021	–	120U8355	–

Technical data and ordering

MLZ / MLM - Scroll compressors - R404A / R134a / R22 / R407A / R407F - 50 Hz

Technical data

Type		HP	Nominal cooling capacity [1]		Power input [1]	Efficiency [1]		Swept volume	Displacement	Oil charge	Net weight (with oil)
						COP	EER				
			[W]	[Btu/h]	[kW]	[W]/[W]	[Btu/h]/[W]	[cm³/rev]	[m³/h]	[l]	[kg]
R404A [2]	MLZ015	2	3300	11262.79863	1.75	1.89	6.45	33.77	5.88	1.06	30.84
	MLZ019	2.5	4500	15358.36177	2.16	2.06	7.03	43.51	7.57	1.06	30.84
	MLZ021	3	4700	16040.95563	2.27	2.08	7.10	46.21	8.04	1.06	30.84
	MLZ026	3.5	5800	19795.22184	2.90	2	6.83	57.11	9.94	1.06	30.84
	MLZ030	4	7100	24232.08191	3.35	2.11	7.20	68.79	11.97	1.57	37.2
	MLZ038	5	8400	28668.94198	3.86	2.19	7.47	80.95	14.09	1.57	37.2
	MLZ042	5.5	9500	32423.20819	4.72	2.02	6.89	93.09	16.20	1.57	37.2
	MLZ045	6	10200	34812.28669	4.89	2.09	7.13	98.57	17.15	1.57	37.2
	MLZ048	7	11200	38225.25597	5.38	2.09	7.13	107.48	18.70	1.57	37.2
	MLZ058	7.5	13000	44368.60068	6.08	2.13	7.27	125.95	21.92	2.66	44
	MLZ066	9	15100	51535.83618	7.01	2.15	7.34	148.8	25.89	2.66	45.18
	MLZ076	10	17300	59044.3686	7.93	2.18	7.44	162.43	28.26	2.66	45.18
R134a [3]	MLZ015	2	2000	6825.938567	1.02	1.94	6.62	33.77	5.88	1.06	30.84
	MLZ019	2.5	2500	8532.423208	1.28	1.98	6.76	43.51	7.57	1.06	30.84
	MLZ021	3	2700	9215.017065	1.33	2.04	6.96	46.21	8.04	1.06	30.84
	MLZ026	3.5	3300	11262.79863	1.62	2.05	7.00	57.11	9.94	1.06	30.84
	MLZ030	4	4000	13651.87713	1.93	2.09	7.13	68.79	11.97	1.57	37.2
	MLZ038	5	4700	16040.95563	2.34	2.02	6.89	80.95	14.09	1.57	37.2
	MLZ042	5.5	5300	18088.7372	2.74	1.95	6.66	93.09	16.20	1.57	37.2
	MLZ045	6	5800	19795.22184	2.69	2.17	7.41	98.57	17.15	1.57	37.2
	MLZ048	7	6200	21160.40956	2.91	2.13	7.27	107.48	18.70	1.57	37.2
	MLZ058	7.5	7400	25255.9727	3.61	2.05	7.00	125.95	21.92	2.66	44
	MLZ066	9	8600	29351.53584	4.10	2.1	7.17	148.8	25.89	2.66	45.18
	MLZ076	10	9600	32764.50512	4.67	2.05	7.00	162.43	28.26	2.66	45.18
R22	MLZ / MLM015	2	3300	11262.79863	1.53	2.15	7.34	33.77	5.88	1.06	30.84
	MLZ / MLM019	2.5	4300	14675.76792	1.87	2.3	7.85	43.51	7.57	1.06	30.84
	MLZ / MLM021	3	4600	15699.6587	2.02	2.27	7.75	46.21	8.04	1.06	30.84
	MLZ / MLM026	3.5	5700	19453.92491	2.43	2.33	7.95	57.11	9.94	1.06	30.84
	MLZ / MLM030	4	6800	23208.19113	2.93	2.33	7.95	68.79	11.97	1.57	37.2
	MLZ / MLM038	5	8100	27645.05119	3.45	2.34	7.99	80.95	14.09	1.57	37.2
	MLZ / MLM042	5.5	9100	31058.02048	4.23	2.15	7.34	93.09	16.20	1.57	37.2
	MLZ / MLM045	6	9300	31740.61433	4.14	2.24	7.65	98.57	17.15	1.57	37.2
	MLZ / MLM048	7	10600	36177.4744	4.53	2.33	7.95	107.48	18.70	1.57	37.2
	MLZ / MLM058	7.5	12300	41979.52218	5.29	2.33	7.95	125.95	21.92	2.66	44
	MLZ / MLM066	9	14100	48122.86689	5.94	2.38	8.12	148.8	25.89	2.66	45.18
	MLZ / MLM076	10	16600	56655.2901	6.96	2.38	8.12	162.43	28.26	2.66	45.18

[1]) at EN12900 conditions: To: -10 °C; Tc: 45 °C; RGT: 20 °C; SC: 0 K
[2]) R507 performance data are nearly identical to R404A performance data
[3]) R134a at conditions: To: -10 °C; Tc: 45 °C; SH: 10 K; SC: 0 K
Motor voltage code 4: 400 V / 3 ~ / 50 Hz and 460 V / 3 ~ / 60 Hz
MLZ042: motor voltage code 5: 220 – 240 V / 1 ~ / 50 Hz

Technical data and ordering

MLZ / MLM - Scroll compressors - R407A / R407F - 50 Hz

Technical data

Type		HP	Nominal cooling capacity [1]		Power input [1]	Efficiency [1]		Swept volume	Displacement	Oil charge	Net weight (with oil)
						COP	EER				
			[W]	[Btu/h]	[kW]	[W]/[W]	[Btu/h]/[W]	[cm³/rev]	[m³/h]	[l]	[kg]
R407A [2]	MLZ015	2	3100	10580.20478	1.55	2	6.83	33.77	5.88	1.06	30.84
	MLZ019	2.5	4000	13651.87713	2.04	1.96	6.69	43.51	7.57	1.06	30.84
	MLZ021	3	4200	14334.47099	2.21	1.91	6.52	46.21	8.04	1.06	30.84
	MLZ026	3.5	5300	18088.7372	2.71	1.96	6.69	57.11	9.94	1.06	30.84
	MLZ030	4	6500	22184.30034	2.99	2.17	7.41	68.79	11.97	1.57	37.2
	MLZ038	5	7500	25597.26962	3.47	2.16	7.37	80.95	14.09	1.57	37.2
	MLZ042	5.5	8600	29351.53584	4.53	1.9	6.48	93.09	16.20	1.57	37.2
	MLZ045	6	9100	31058.02048	4.55	2.01	6.86	98.57	17.15	1.57	37.2
	MLZ048	7	10000	34129.69283	5.01	2	6.83	107.48	18.70	1.57	37.2
	MLZ058	7.5	11500	39249.14676	5.69	2.02	6.89	125.95	21.92	2.66	44
	MLZ066	9	13400	45733.7884	6.78	1.98	6.76	148.8	25.89	2.66	45.18
	MLZ076	10	14700	50170.64846	7.51	1.96	6.69	162.43	28.26	2.66	45.18
R407F [3]	MLZ015	2	3300	11262.79863	1.66	2	6.83	33.77	5.88	1.06	30.84
	MLZ019	2.5	4300	14675.76792	2.19	1.96	6.69	43.51	7.57	1.06	30.84
	MLZ021	3	4500	15358.36177	2.37	1.91	6.52	46.21	8.04	1.06	30.84
	MLZ026	3.5	5700	19453.92491	2.90	1.96	6.69	57.11	9.94	1.06	30.84
	MLZ030	4	6900	23549.48805	3.20	2.17	7.41	68.79	11.97	1.57	37.2
	MLZ038	5	8000	27303.75427	3.72	2.16	7.37	80.95	14.09	1.57	37.2
	MLZ042	5.5	9200	31399.31741	4.85	1.9	6.48	93.09	16.20	1.57	37.2
	MLZ045	6	9800	33447.09898	4.87	2.01	6.86	98.57	17.15	1.57	37.2
	MLZ048	7	10800	36860.06826	5.37	2.01	6.86	107.48	18.70	1.57	37.2
	MLZ058	7.5	12300	41979.52218	6.09	2.02	6.89	125.95	21.92	2.66	44
	MLZ066	9	14400	49146.75768	7.26	1.99	6.79	148.8	25.89	2.66	45.18
	MLZ076	10	15800	53924.91468	8.04	1.96	6.69	162.43	28.26	2.66	45.18

[1]) at EN12900 conditions: -10 °C, Tc 45 °C, RGT 20 °C, SC 0 K
[2]) R507 performance data are nearly identical to R404A performance data
[3]) R407A, R407F at conditions: -10 °C, Tc 45 °C, SH 10 K, SC 0 K
Motor voltage code 4: 400 V / 3 ~ / 50 Hz and 460 V / 3 ~ / 60 Hz
MLZ / MLM042: motor voltage code 5: 220 – 240 V / 1 ~ / 50 Hz

Technical data and ordering

MLZ / MLM - Scroll compressors - R404A / R134a / R22 - 60 Hz

Technical data

Type		HP	Nominal cooling capacity [1]		Power input [1]	Efficiency [1]		Swept volume	Displacement	Oil charge	Net weight (with oil)
						COP	EER				
			[W]	[Btu/h]	[kW]	[W]/[W]	[Btu/h]/[W]	[cm³/rev]	[m³/h]	[l]	[kg]
R404A [2]	MLZ015	2	4100	13993.17406	2.10	1.94	6.62	33.77	5.88	1.06	30.84
	MLZ019	2.5	5500	18771.33106	2.58	2.11	7.20	43.51	7.57	1.06	30.84
	MLZ021	3	5800	19795.22184	2.74	2.13	7.27	46.21	8.04	1.06	30.84
	MLZ026	3.5	7200	24573.37884	3.44	2.1	7.17	57.11	9.94	1.06	30.84
	MLZ030	4	8500	29010.23891	3.90	2.18	7.44	68.79	11.97	1.57	37.2
	MLZ038	5	10200	34812.28669	4.70	2.18	7.44	80.95	14.09	1.57	37.2
	MLZ042	5.5	11800	40273.03754	5.73	2.07	7.06	93.09	16.20	1.57	37.2
	MLZ045	6	12400	42320.81911	5.64	2.19	7.47	98.57	17.15	1.57	37.2
	MLZ048	7	13500	46075.08532	6.15	2.2	7.51	107.48	18.70	1.57	37.2
	MLZ058	7.5	15700	53583.61775	7.35	2.14	7.30	125.95	21.92	2.66	44
	MLZ066	9	18400	62798.63481	8.40	2.18	7.44	148.8	25.89	2.66	45.18
	MLZ076	10	20900	71331.05802	9.59	2.18	7.44	162.43	28.26	2.66	45.18
R134a [3]	MLZ015	2	2400	8191.12628	1.19	2.04	6.96	33.77	5.88	1.06	30.84
	MLZ019	2.5	3100	10580.20478	1.53	2.03	6.93	43.51	7.57	1.06	30.84
	MLZ021	3	3300	11262.79863	1.58	2.1	7.17	46.21	8.04	1.06	30.84
	MLZ026	3.5	4100	13993.17406	1.91	2.14	7.30	57.11	9.94	1.06	30.84
	MLZ030	4	4900	16723.54949	2.35	2.1	7.17	68.79	11.97	1.57	37.2
	MLZ038	5	5800	19795.22184	2.80	2.08	7.10	80.95	14.09	1.57	37.2
	MLZ042	5.5	6500	22184.30034	3.33	1.94	6.62	93.09	16.20	1.57	37.2
	MLZ045	6	7100	24232.08191	3.32	2.13	7.27	98.57	17.15	1.57	37.2
	MLZ048	7	7600	25938.56655	3.54	2.13	7.27	107.48	18.70	1.57	37.2
	MLZ058	7.5	9100	31058.02048	4.28	2.12	7.24	125.95	21.92	2.66	44
	MLZ066	9	10400	35494.88055	4.85	2.15	7.34	148.8	25.89	2.66	45.18
	MLZ076	10	11700	39931.74061	5.61	2.09	7.13	162.43	28.26	2.66	45.18
R22	MLZ / MLM015	2	3900	13310.5802	1.74	2.26	7.71	33.77	5.88	1.06	30.84
	MLZ / MLM019	2.5	5200	17747.44027	2.22	2.37	8.09	43.51	7.57	1.06	30.84
	MLZ / MLM021	3	5600	19112.62799	2.36	2.36	8.05	46.21	8.04	1.06	30.84
	MLZ / MLM026	3.5	7000	23890.78498	2.93	2.39	8.16	57.11	9.94	1.06	30.84
	MLZ / MLM030	4	8200	27986.34812	3.46	2.36	8.05	68.79	11.97	1.57	37.2
	MLZ / MLM038	5	9600	32764.50512	4.06	2.36	8.05	80.95	14.09	1.57	37.2
	MLZ / MLM042	5.5	10900	37201.36519	5.00	2.18	7.44	93.09	16.20	1.57	37.2
	MLZ / MLM045	6	11700	39931.74061	4.91	2.38	8.12	98.57	17.15	1.57	37.2
	MLZ / MLM048	7	12900	44027.30375	5.36	2.4	8.19	107.48	18.70	1.57	37.2
	MLZ / MLM058	7.5	14900	50853.24232	6.34	2.34	7.99	125.95	21.92	2.66	44
	MLZ / MLM066	9	17000	58020.47782	7.14	2.38	8.12	148.8	25.89	2.66	45.18
	MLZ / MLM076	10	20100	68600.68259	8.40	2.39	8.16	162.43	28.26	2.66	45.18

[1]) at EN12900 conditions: -10 °C, Tc 45 °C, RGT 20 °C, SC 0 K
[2]) R407 performance data are nearly identical to R404A performance data
[3]) R134a at conditions: -10 °C, Tc 45 °C, SH 10 K, SC 0 K
Motor voltage code 4: 400 V / 3 ~ / 50 Hz and 460 V / 3 ~ / 60 Hz
MLZ / MLM042: motor voltage code 1: 208 – 230 V / 1 ~ / 60 Hz

Technical data and ordering

MLZ / MLM - Scroll compressors - R407A / R407F - 60 Hz

Technical data

Type		HP	Nominal cooling capacity [1]		Power input [1]	Efficiency [1]		Swept volume	Displacement	Oil charge	Net weight (with oil)
						COP	EER				
			[W]	[Btu/h]	[kW]	[W]/[W]	[Btu/h]/[W]	[cm³/rev]	[m³/h]	[l]	[kg]
R407A [2]	MLZ015	2	3800	12969.28328	1.85	2.04	6.96	33.77	5.88	1.06	30.84
	MLZ016	2.5	4900	16723.54949	2.40	2.06	7.03	43.51	7.57	1.06	30.84
	MLZ017	3	5300	18088.7372	2.63	2.01	6.86	46.21	8.04	1.06	30.84
	MLZ018	3.5	6400	21843.00341	3.10	2.07	7.06	57.11	9.94	1.06	30.84
	MLZ019	4	7900	26962.45734	3.52	2.25	7.68	68.79	11.97	1.57	37.2
	MLZ020	5	9200	31399.31741	4.10	2.24	7.65	80.95	14.09	1.57	37.2
	MLZ021	6	11200	38225.25597	5.37	2.09	7.13	98.57	17.15	1.57	37.2
	MLZ022	7	12200	41638.22526	6.01	2.03	6.93	107.48	18.70	1.57	37.2
	MLZ023	7.5	14300	48805.46075	6.68	2.14	7.30	125.95	21.92	2.66	44
	MLZ024	9	16700	56996.58703	7.89	2.12	7.24	148.8	25.89	2.66	45.18
	MLZ025	10	18100	61774.74403	8.64	2.09	7.13	162.43	28.26	2.66	45.18
R407F [3]	MLZ015	2	4100	13993.17406	1.98	2.05	7.00	33.77	5.88	1.06	30.84
	MLZ019	2.5	5300	18088.7372	2.57	2.06	7.03	43.51	7.57	1.06	30.84
	MLZ021	3	5700	19453.92491	2.81	2.01	6.86	46.21	8.04	1.06	30.84
	MLZ026	3.5	6900	23549.48805	3.32	2.08	7.10	57.11	9.94	1.06	30.84
	MLZ030	4	8500	29010.23891	3.77	2.26	7.71	68.79	11.97	1.57	37.2
	MLZ038	5	9800	33447.09898	4.38	2.24	7.65	80.95	14.09	1.57	37.2
	MLZ045	6	12000	40955.6314	5.75	2.09	7.13	98.57	17.15	1.57	37.2
	MLZ048	7	13100	44709.89761	6.44	2.04	6.96	107.48	18.70	1.57	37.2
	MLZ058	7.5	15300	52218.43003	7.15	2.14	7.30	125.95	21.92	2.66	44
	MLZ066	9	18000	61433.4471	8.45	2.13	7.27	148.8	25.89	2.66	45.18
	MLZ076	10	19400	66211.6041	9.25	2.09	7.13	162.43	28.26	2.66	45.18

[1]) at EN12900 conditions: -10 °C, Tc 45 °C, RGT 20 °C, SC 0 K
[2]) R507 performance data are nearly identical to R404A performance data
[3]) R407A, R407F at conditions: -10 °C, Tc 45 °C, SH 10 K, SC 0 K
Motor voltage code 4: 400 V / 3 ~ / 50 Hz and 460 V / 3 ~ / 60 Hz
MLZ / MLM042: motor voltage code 5: 220 – 240 V / 1~/ 50 Hz

Technical data and ordering

MLZ / MLM - Scroll compressors - R134a - 50 / 60 Hz

Performance table

Type		To	-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50 Hz	MLZ / MLM015T4	30	2400	0.74	3000	0.75	3700	0.75	4500	0.76	5400	0.77	–	–
		40	–	–	2700	0.92	3300	0.93	4100	0.94	4900	0.95	5900	0.96
		50	–	–	2400	1.14	3000	1.15	3600	1.16	4400	1.17	5200	1.18
	MLZ / MLM019T4	30	3100	0.95	3800	0.96	4700	0.96	5800	0.97	7000	0.99	–	–
		40	–	–	3500	1.18	4300	1.19	5200	1.20	6300	1.21	7600	1.22
		50	–	–	3100	1.44	3800	1.46	4700	1.48	5600	1.49	6700	1.50
	MLZ / MLM021T4	30	3300	0.98	4100	0.99	5000	1.00	6100	1.01	7400	1.03	–	–
		40	–	–	3700	1.22	4600	1.23	5600	1.25	6700	1.26	8000	1.28
		50	–	–	3300	1.49	4000	1.51	4900	1.53	6000	1.54	7200	1.56
	MLZ / MLM026T4	30	4100	1.19	5100	1.20	6200	1.22	7600	1.23	9100	1.25	–	–
		40	–	–	4600	1.48	5600	1.50	6900	1.52	8300	1.54	9900	1.55
		50	–	–	4100	1.82	5000	1.85	6100	1.87	7400	1.89	8900	1.91
	MLZ / MLM030T4	30	4900	1.42	6100	1.43	7500	1.45	9100	1.46	11000	1.48	–	–
		40	–	–	5500	1.76	6800	1.78	8300	1.80	10000	1.82	12000	1.84
		50	–	–	4900	2.16	6000	2.19	7400	2.21	8900	2.23	10700	2.26
	MLZ / MLM038T4	30	5800	1.73	7200	1.75	8800	1.77	10700	1.79	12900	1.81	–	–
		40	–	–	6500	2.15	8000	2.18	9700	2.20	11700	2.22	14000	2.24
		50	–	–	5700	2.64	7100	2.68	8700	2.71	10500	2.73	12500	2.75
	MLZ / MLM042T5	30	6600	2.15	8200	2.20	10100	2.23	12100	2.28	14400	2.35	–	–
		40	–	–	7500	2.60	9200	2.64	11100	2.68	13200	2.72	15700	2.78
		50	–	–	6500	3.08	8100	3.15	9900	3.19	11800	3.22	14100	3.25
	MLZ / MLM045T4	30	7100	1.96	8900	1.99	11000	2.00	13300	2.01	16000	2.02	–	–
		40	–	–	8000	2.46	9900	2.49	12100	2.51	14600	2.53	17400	2.55
		50	–	–	7100	3.03	8800	3.07	10800	3.10	13000	3.13	15600	3.17
	MLZ / MLM048T4	30	7600	2.12	9500	2.15	11600	2.18	14100	2.20	16900	2.22	–	–
		40	–	–	8500	2.66	10500	2.70	12800	2.72	15400	2.74	18300	2.75
		50	–	–	7500	3.27	9300	3.32	11400	3.36	13800	3.38	16400	3.39
	MLZ / MLM058T4	30	9100	2.64	11300	2.69	13800	2.77	16600	2.83	20000	2.87	–	–
		40	–	–	10100	3.33	12400	3.40	15100	3.44	18100	3.45	21600	3.40
		50	–	–	9000	4.06	11100	4.15	13400	4.20	16100	4.20	19200	4.12
	MLZ / MLM066T4	30	10500	3.01	13000	3.07	16000	3.14	19300	3.20	23200	3.24	–	–
		40	–	–	11800	3.79	14500	3.85	17500	3.89	21100	3.90	25000	3.86
		50	–	–	10400	4.62	12800	4.70	15600	4.75	18800	4.75	22300	4.69
	MLZ / MLM076T4	30	11800	3.41	14600	3.49	17900	3.58	21600	3.65	25800	3.69	–	–
		40	–	–	13100	4.31	16100	4.39	19600	4.44	23500	4.45	28000	4.39
		50	–	–	11600	5.26	14300	5.36	17400	5.42	21000	5.42	25000	5.34
60 Hz	MLZ / MLM015T4	30	3000	0.89	3700	0.90	4600	0.92	5500	0.94	6600	0.96	–	–
		40	–	–	3400	1.10	4200	1.12	5100	1.14	6100	1.16	7200	1.18
		50	–	–	3000	1.33	3700	1.36	4600	1.38	5500	1.40	6500	1.43
	MLZ / MLM019T4	30	3800	1.15	4800	1.18	5900	1.20	7100	1.22	8500	1.25	–	–
		40	–	–	4300	1.43	5400	1.46	6500	1.48	7800	1.50	9300	1.54
		50	–	–	3900	1.73	4800	1.77	5900	1.79	7100	1.82	8400	1.84
	MLZ / MLM021T4	30	4100	1.19	5100	1.21	6200	1.23	7600	1.25	9100	1.28	–	–
		40	–	–	4600	1.48	5700	1.50	6900	1.52	8300	1.54	9900	1.57
		50	–	–	4100	1.79	5100	1.83	6200	1.85	7500	1.87	8900	1.90
	MLZ / MLM026T4	30	5000	1.44	6300	1.46	7700	1.49	9300	1.52	11200	1.57	–	–
		40	–	–	5700	1.78	7000	1.82	8600	1.85	10300	1.88	12200	1.91
		50	–	–	5100	2.16	6300	2.22	7700	2.26	9300	2.29	11000	2.30
	MLZ / MLM030T4	30	6000	1.75	7500	1.78	9300	1.81	11300	1.85	13500	1.90	–	–
		40	–	–	6800	2.18	8500	2.21	10300	2.24	12400	2.28	14700	2.33
		50	–	–	6100	2.64	7600	2.68	9300	2.72	11200	2.76	13300	2.81
	MLZ / MLM038T4	30	7100	2.06	8800	2.10	10900	2.15	13200	2.21	15900	2.26	–	–
		40	–	–	8000	2.57	9900	2.62	12100	2.67	14600	2.72	17300	2.77
		50	–	–	7200	3.14	8900	3.19	10900	3.24	13200	3.29	15700	3.34
	MLZ / MLM042T1	30	8800	2.45	11000	2.49	13500	2.53	16300	2.58	19500	2.65	–	–
		40	–	–	9900	3.05	12200	3.09	14800	3.13	17800	3.18	21100	3.26
		50	–	–	8600	3.74	10700	3.79	13100	3.83	15800	3.88	18900	3.94
	MLZ / MLM045T4	30	9300	2.61	11600	2.66	14200	2.72	17200	2.78	20600	2.86	–	–
		40	–	–	10400	3.26	12900	3.31	15600	3.37	18800	3.43	22200	3.49
		50	–	–	9200	3.99	11300	4.06	13900	4.11	16700	4.16	19900	4.21
	MLZ / MLM048T4	30	11100	3.14	13700	3.23	16800	3.35	20200	3.47	24000	3.57	–	–
		40	–	–	12400	3.96	15200	4.07	18300	4.17	21900	4.24	25900	4.27
		50	–	–	11000	4.84	13500	4.96	16300	5.06	19600	5.12	23300	5.13
	MLZ / MLM058T4	30	12700	3.60	15700	3.70	19200	3.83	23200	3.97	27600	4.10	–	–
		40	–	–	14200	4.53	17400	4.66	21100	4.77	25200	4.85	29800	4.90
		50	–	–	12600	5.52	15500	5.68	18800	5.79	22500	5.86	26700	5.85
	MLZ / MLM066T4	30	14300	4.12	17600	4.23	21500	4.38	26000	4.54	31000	4.70	–	–
		40	–	–	16000	5.19	19600	5.33	23600	5.46	28300	5.56	33400	5.61
		50	–	–	14200	6.35	17400	6.51	21100	6.64	25300	6.71	29800	6.71
	MLZ / MLM076T4	30	14 300	4.1	17 600	4.2	21 500	4.4	26 000	4.5	31 000	4.7	–	–
		40	–	–	16 000	5.2	19 600	5.3	23 600	5.5	28 300	5.6	33 400	5.6
		50	–	–	14 200	6.4	17 400	6.5	21 100	6.6	25 300	6.7	29 800	6.7

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
RGT: *20 °C*
Capacity data at other conditions are available in the datasheets at: www.danfoss.com / odsg

Technical data and ordering

MLZ / MLM - Scroll compressors - R404A / R507 - 50 / 60 Hz

Performance table

Type		To	-25		-20		-15		-10		-5		0		5		10	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50 Hz	MLZ015T4	30	2300	1.25	2900	1.24	3500	1.22	4300	1.20	5200	1.18	6200	1.16	7400	1.14	8700	1.14
		40	1900	1.63	2400	1.60	3000	1.57	3700	1.54	4400	1.51	5300	1.49	6300	1.47	7400	1.47
		50	–	–	1800	2.10	2400	2.05	2900	2.00	3600	1.95	4300	1.91	5100	1.88	6000	1.86
	MLZ019T4	30	3000	1.51	3800	1.53	4600	1.53	5600	1.53	6700	1.52	8000	1.52	9500	1.53	11200	1.57
		40	2600	1.88	3300	1.92	4000	1.93	4800	1.93	5800	1.91	6900	1.90	8200	1.89	9700	1.89
		50	–	–	2700	2.36	3300	2.40	4000	2.41	4800	2.40	5800	2.38	6800	2.36	8100	2.34
	MLZ021T4	30	3200	1.60	4000	1.60	4900	1.61	5900	1.62	7100	1.63	8500	1.64	10000	1.66	11800	1.68
		40	2800	1.99	3500	2.01	4300	2.02	5100	2.03	6200	2.03	7300	2.03	8700	2.01	10300	2.00
		50	–	–	2900	2.52	3500	2.54	4300	2.55	5100	2.55	6100	2.53	7300	2.49	8600	2.44
	MLZ026T4	30	3900	2.00	4900	2.02	6000	2.03	7300	2.05	8800	2.06	10500	2.06	12500	2.07	14800	2.07
		40	3400	2.55	4200	2.56	5200	2.57	6300	2.58	7600	2.58	9100	2.59	10800	2.58	12800	2.58
		50	–	–	3600	3.26	4400	3.27	5300	3.27	6400	3.26	7600	3.25	9100	3.24	10800	3.23
	MLZ030T4	30	4800	2.33	6000	2.36	7300	2.38	8800	2.39	10600	2.40	12700	2.42	15000	2.43	17700	2.44
		40	4100	2.95	5100	2.97	6300	2.98	7700	2.99	9300	3.00	11100	3.00	13100	3.00	15500	3.00
		50	–	–	4300	3.77	5300	3.77	6400	3.77	7800	3.76	9300	3.75	11100	3.73	13100	3.72
	MLZ038T4	30	5800	2.69	7200	2.69	8700	2.70	10500	2.72	12600	2.76	15000	2.81	17700	2.88	20800	2.97
		40	5000	3.45	6200	3.43	7600	3.42	9200	3.42	11000	3.43	13200	3.46	15600	3.50	18300	3.56
		50	–	–	5100	4.39	6300	4.37	7600	4.35	9200	4.34	11000	4.34	13100	4.35	15400	4.38
	MLZ042T5	30	6300	3.24	7900	3.33	9800	3.42	12000	3.50	14500	3.57	17500	3.60	20900	3.58	24800	3.51
		40	5500	4.12	6900	4.14	8500	4.19	10400	4.24	12500	4.28	15000	4.31	18000	4.32	21500	4.28
		50	–	–	5800	5.32	7100	5.30	8600	5.30	10400	5.31	12600	5.32	15100	5.33	18100	5.31
	MLZ045T4	30	7100	3.46	8700	3.45	10700	3.44	12900	3.44	15500	3.44	18500	3.46	21900	3.49	25700	3.54
		40	6000	4.34	7500	4.35	9200	4.34	11200	4.33	13500	4.33	16100	4.33	19100	4.34	22500	4.36
		50	–	–	6100	5.53	7500	5.54	9200	5.54	11200	5.53	13500	5.53	16000	5.53	19000	5.53
	MLZ048T4	30	7700	3.80	9600	3.78	11700	3.76	14100	3.74	16900	3.72	20100	3.71	23700	3.69	27700	3.67
		40	6500	4.78	8200	4.78	10100	4.79	12300	4.79	14800	4.79	17600	4.79	20800	4.79	24400	4.78
		50	–	–	6600	5.93	8200	5.97	10100	6.01	12300	6.04	14700	6.07	17500	6.10	20600	6.12
	MLZ058T4	30	8700	4.18	10900	4.25	13500	4.33	16400	4.40	19800	4.46	23500	4.53	27800	4.59	32500	4.64
		40	7200	5.29	9300	5.33	11600	5.38	14200	5.43	17200	5.49	20500	5.55	24200	5.60	28400	5.66
		50	–	–	7400	6.81	9400	6.81	11700	6.83	14300	6.85	17100	6.88	20400	6.92	24000	6.96
	MLZ066T4	30	10000	4.92	12600	4.93	15600	4.96	19100	5.02	23100	5.12	27700	5.25	32900	5.43	38900	5.66
		40	8500	6.18	10800	6.18	13400	6.19	16400	6.23	19900	6.30	23900	6.40	28500	6.55	33700	6.73
		50	–	–	8900	7.90	11100	7.90	13600	7.92	16600	7.97	19900	8.05	23800	8.16	28200	8.32
	MLZ076T4	30	12200	5.71	15200	5.71	18500	5.75	22400	5.83	26800	5.94	31900	6.07	37800	6.21	44600	6.34
		40	10600	7.04	13100	7.04	15900	7.08	19100	7.15	22900	7.23	27200	7.33	32300	7.43	38200	7.51
		50	–	–	11000	8.70	13000	8.74	15400	8.80	18300	8.87	21800	8.94	25900	9.00	30800	9.04
60 Hz	MLZ015T4	30	2800	1.50	3500	1.49	4300	1.49	5200	1.48	6200	1.46	7500	1.45	8900	1.42	10500	1.38
		40	2300	1.87	2900	1.87	3600	1.87	4500	1.87	5400	1.86	6400	1.84	7600	1.81	9000	1.78
		50	–	–	2300	2.34	3000	2.35	3700	2.35	4400	2.35	5300	2.33	6300	2.31	7500	2.27
	MLZ019T4	30	3800	1.80	4600	1.82	5700	1.82	6900	1.81	8200	1.81	9700	1.82	11500	1.86	13500	1.94
		40	3200	2.21	4000	2.28	4900	2.31	5900	2.31	7100	2.30	8400	2.29	10000	2.29	11700	2.31
		50	–	–	3300	2.76	4100	2.84	5000	2.87	6000	2.87	7100	2.85	8400	2.83	9900	2.81
	MLZ021T4	30	4000	1.84	4900	1.94	6000	1.97	7300	1.98	8700	1.97	10400	1.96	12200	1.99	14200	2.06
		40	3400	2.29	4300	2.40	5200	2.45	6300	2.46	7600	2.44	9000	2.43	10600	2.44	12400	2.50
		50	–	–	3600	3.01	4400	3.06	5300	3.07	6400	3.05	7600	3.02	9000	3.02	10500	3.04
	MLZ026T4	30	5000	2.30	6100	2.40	7500	2.45	9100	2.47	10900	2.47	12900	2.47	15200	2.47	17800	2.50
		40	4300	2.85	5300	2.98	6500	3.05	7900	3.08	9400	3.09	11200	3.08	13200	3.07	15400	3.08
		50	–	–	4400	3.71	5400	3.80	6600	3.84	7900	3.84	9400	3.82	11100	3.80	13000	3.78
	MLZ030T4	30	5800	2.75	7200	2.77	8800	2.81	10700	2.84	12800	2.86	15200	2.86	17800	2.84	20800	2.78
		40	5100	3.45	6300	3.46	7600	3.47	9300	3.50	11100	3.53	13200	3.54	15500	3.53	18200	3.50
		50	–	–	5200	4.35	6400	4.34	7700	4.35	9300	4.36	11100	4.37	13100	4.37	15400	4.36
	MLZ038T4	30	7000	3.37	8600	3.35	10500	3.36	12700	3.39	15300	3.42	18100	3.42	21400	3.39	25100	3.31
		40	6000	4.20	7500	4.18	9200	4.19	11100	4.22	13300	4.24	15800	4.25	18600	4.23	21800	4.15
		50	–	–	6200	5.19	7700	5.20	9300	5.23	11200	5.26	13300	5.27	15600	5.25	18300	5.18
	MLZ045T4	30	8500	3.95	10500	4.01	12800	4.04	15500	4.05	18600	4.06	22000	4.06	26000	4.08	30400	4.11
		40	7400	4.93	9100	5.00	11100	5.03	13400	5.05	16100	5.05	19100	5.05	22600	5.06	26400	5.08
		50	–	–	7600	6.27	9300	6.30	11300	6.32	13500	6.31	16100	6.31	19000	6.31	22300	6.32
	MLZ048T4	30	9300	4.31	11400	4.35	14000	4.40	16900	4.44	20300	4.48	24100	4.48	28400	4.43	33100	4.32
		40	8100	5.41	9900	5.43	12100	5.48	14700	5.53	17600	5.56	21000	5.58	24700	5.55	28800	5.46
		50	–	–	8300	6.77	10100	6.80	12300	6.84	14800	6.88	17600	6.89	20800	6.87	24300	6.80
	MLZ058T4	30	10800	5.22	13600	5.29	16800	5.39	20500	5.51	24800	5.63	29600	5.72	35000	5.78	40900	5.78
		40	9000	6.57	11400	6.54	14200	6.57	17400	6.64	21100	6.75	25300	6.86	29900	6.95	35100	7.01
		50	–	–	8900	8.27	11200	8.19	13900	8.17	17000	8.21	20400	8.29	24300	8.38	28500	8.46
	MLZ066T4	30	12600	5.95	15500	6.05	18900	6.19	22900	6.35	27600	6.52	32800	6.68	38800	6.82	45500	6.93
		40	10900	7.32	13500	7.39	16500	7.50	19900	7.64	23900	7.79	28500	7.94	33600	8.07	39300	8.17
		50	–	–	11200	9.07	13800	9.15	16700	9.25	20100	9.37	23800	9.50	28100	9.61	32900	9.69
	MLZ076T4	30	14600	6.72	17900	6.93	21800	7.09	26400	7.22	31700	7.37	37800	7.57	44800	7.86	52900	8.27
		40	12600	8.21	15500	8.43	18900	8.59	22800	8.70	27300	8.83	32500	8.99	38500	9.23	45300	9.59
		50	–	–	12900	10.35	15700	10.50	18900	10.60	22600	10.69	26800	10.82	31700	11.01	37300	11.30

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
RGT: *20 °C*
Capacity data at other conditions are available in the datasheets at: www.danfoss.com/odsg

Technical data and ordering

MLZ / MLM - Scroll compressors - R407A - 50 / 60 Hz

Performance table

Type		To	-25		-20		-15		-10		-5		0		5		10	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50 Hz	MLZ015T4	30	2400	1.09	3100	1.11	3800	1.13	4700	1.14	5800	1.14	7000	1.12	8400	1.10	8400	1.1
		40	–	–	2700	1.37	3400	1.39	4200	1.41	5100	1.42	6300	1.43	7600	1.42	7600	1.42
		50	–	–	–	–	2800	1.73	3500	1.76	4400	1.78	5400	1.80	6600	1.81	6600	1.81
	MLZ019T4	30	3200	1.44	4000	1.47	5000	1.49	6100	1.50	7500	1.50	9100	1.48	10900	1.44	10900	1.44
		40	–	–	3400	1.80	4300	1.83	5400	1.86	6600	1.88	8100	1.88	9800	1.87	9800	1.87
		50	–	–	–	–	3700	2.28	4600	2.32	5700	2.35	7000	2.37	8500	2.38	8500	2.38
	MLZ021T4	30	3200	1.52	4100	1.56	5100	1.59	6300	1.61	7700	1.63	9400	1.64	11200	1.65	11200	1.65
		40	–	–	3600	1.93	4500	1.96	5600	1.99	6900	2.02	8400	2.04	10100	2.05	10100	2.05
		50	–	–	–	–	3900	2.50	4900	2.53	6000	2.56	7300	2.58	8800	2.61	8800	2.61
	MLZ026T4	30	4100	1.87	5200	1.91	6500	1.94	8000	1.97	9700	2.00	11800	2.01	14100	2.02	14100	2.02
		40	–	–	4500	2.37	5700	2.41	7100	2.44	8700	2.47	10500	2.50	12700	2.51	12700	2.51
		50	–	–	–	–	4900	3.06	6100	3.10	7500	3.14	9200	3.17	11100	3.19	11100	3.19
	MLZ030T4	30	5000	2.07	6300	2.12	7800	2.15	9700	2.16	11800	2.18	14400	2.20	17300	2.24	17300	2.24
		40	–	–	5600	2.63	6900	2.68	8500	2.71	10400	2.72	12700	2.72	15300	2.73	15300	2.73
		50	–	–	–	–	6000	3.32	7400	3.37	9000	3.40	11000	3.40	13300	3.39	13300	3.39
	MLZ038T4	30	5800	2.41	7300	2.47	9100	2.50	11200	2.52	13700	2.54	16600	2.56	20000	2.61	20000	2.61
		40	–	–	6500	3.06	8000	3.12	9900	3.15	12100	3.16	14700	3.17	17700	3.17	17700	3.17
		50	–	–	–	–	7000	3.86	8600	3.92	10500	3.95	12700	3.96	15400	3.95	15400	3.95
	MLZ042T5	30	6700	3.19	8400	3.22	10500	3.24	13000	3.26	15900	3.29	19300	3.37	23200	3.49	23200	3.49
		40	–	–	7400	4.00	9200	4.03	11500	4.04	14100	4.05	17100	4.08	20700	4.13	20700	4.13
		50	–	–	–	–	7900	5.09	9900	5.12	12200	5.13	14900	5.13	18000	5.13	18000	5.13
	MLZ045T4	30	7200	3.19	9200	3.24	11500	3.28	14200	3.31	17400	3.31	21100	3.28	25300	3.21	25300	3.21
		40	–	–	7800	4.04	10000	4.06	12400	4.09	15300	4.12	18600	4.12	22500	4.11	22500	4.11
		50	–	–	–	–	8300	5.11	10500	5.11	13100	5.12	16000	5.13	19500	5.13	19500	5.13
	MLZ048T4	30	7900	3.52	10100	3.57	12600	3.61	15600	3.64	19100	3.65	23200	3.62	27800	3.54	27800	3.54
		40	–	–	8600	4.45	10900	4.48	13600	4.51	16800	4.54	20500	4.55	24700	4.53	24700	4.53
		50	–	–	–	–	9100	5.63	11500	5.63	14400	5.64	17600	5.65	21400	5.66	21400	5.66
	MLZ058T4	30	9000	3.90	11400	3.98	14200	4.07	17400	4.15	21300	4.19	25700	4.16	30800	4.04	30800	4.04
		40	–	–	9900	5.00	12400	5.05	15300	5.13	18800	5.21	22700	5.25	27300	5.24	27300	5.24
		50	–	–	–	–	10600	6.44	13100	6.46	16100	6.51	19600	6.57	23600	6.61	23600	6.61
	MLZ066T4	30	10500	4.65	13300	4.75	16600	4.85	20400	4.95	24900	4.99	30000	4.96	36000	4.81	36000	4.81
		40	–	–	11600	5.96	14500	6.03	17900	6.12	21900	6.21	26600	6.26	31900	6.25	31900	6.25
		50	–	–	–	–	12300	7.68	15400	7.70	18900	7.77	22900	7.84	27600	7.88	27600	7.88
	MLZ076T4	30	11500	5.30	14800	5.32	18600	5.37	23000	5.44	28200	5.54	34200	5.66	41100	5.82	41100	5.82
		40	–	–	12600	6.67	16000	6.68	20100	6.72	24800	6.78	30200	6.87	36400	6.99	36400	6.99
		50	–	–	–	–	13400	8.48	16900	8.47	21100	8.49	25900	8.54	31500	8.62	31500	8.62
60 Hz	MLZ015T4	30	2900	1.31	3700	1.32	4700	1.33	5800	1.33	7100	1.34	8600	1.35	10300	1.38	8400	1.38
		40	–	–	3200	1.64	4100	1.66	5100	1.67	6300	1.67	7600	1.68	9200	1.69	7600	1.69
		50	–	–	–	–	3500	2.07	4400	2.09	5400	2.11	6600	2.12	8000	2.12	6600	2.12
	MLZ019T4	30	3700	1.70	4800	1.71	6100	1.72	7500	1.72	9200	1.73	11200	1.75	13400	1.78	10900	1.78
		40	–	–	4200	2.12	5300	2.15	6600	2.16	8200	2.16	9900	2.17	12000	2.18	9800	2.18
		50	–	–	–	–	4500	2.67	5700	2.71	7100	2.73	8600	2.74	10400	2.75	8500	2.75
	MLZ021T4	30	4100	1.83	5200	1.85	6400	1.89	7900	1.92	9700	1.95	11700	1.97	14000	1.99	11200	1.99
		40	–	–	4500	2.31	5700	2.33	7000	2.37	8600	2.40	10400	2.44	12500	2.47	10100	2.47
		50	–	–	–	–	4900	2.98	6100	3.01	7500	3.04	9100	3.08	10900	3.12	8800	3.12
	MLZ026T4	30	5000	2.15	6300	2.19	7800	2.22	9600	2.26	11800	2.30	14200	2.33	17000	2.35	14100	2.35
		40	–	–	5500	2.72	6900	2.75	8500	2.79	10500	2.83	12700	2.87	15200	2.91	12700	2.91
		50	–	–	–	–	5900	3.52	7400	3.55	9100	3.59	11000	3.64	13300	3.68	11100	3.68
	MLZ030T4	30	6200	2.46	7700	2.51	9600	2.53	11800	2.56	14500	2.60	17700	2.68	21300	2.81	17300	2.81
		40	–	–	6900	3.10	8500	3.16	10500	3.19	12800	3.22	15600	3.26	18900	3.32	15300	3.32
		50	–	–	–	–	7400	3.90	9100	3.98	11100	4.02	13600	4.05	16500	4.08	13300	4.08
	MLZ038T4	30	7200	2.86	8900	2.92	11100	2.95	13700	2.98	16800	3.02	20400	3.12	24700	3.28	20000	3.28
		40	–	–	7900	3.61	9800	3.68	12100	3.72	14800	3.75	18100	3.79	21900	3.87	17700	3.87
		50	–	–	–	–	8600	4.54	10500	4.63	12900	4.68	15700	4.71	19100	4.75	15400	4.75
	MLZ045T1	30	8800	3.77	11200	3.84	14000	3.88	17300	3.90	21200	3.88	25700	3.80	30900	3.66	25300	3.66
		40	–	–	9600	4.76	12100	4.80	15100	4.83	18600	4.82	22600	4.78	27200	4.69	22500	4.69
		50	–	–	–	–	10200	6.01	12900	6.01	15900	6.00	19500	5.96	23500	5.89	19500	5.89
	MLZ048T4	30	9600	4.22	12200	4.30	15300	4.35	18900	4.37	23100	4.34	28000	4.26	33700	4.10	27800	4.1
		40	–	–	10500	5.34	13200	5.38	16500	5.41	20300	5.40	24700	5.36	29700	5.25	24700	5.25
		50	–	–	–	–	11200	6.73	14000	6.73	17400	6.72	21200	6.68	25700	6.60	21400	6.6
	MLZ058T4	30	11200	4.64	14100	4.68	17600	4.76	21600	4.85	26300	4.97	–	5.09	38100	5.22	30800	5.22
		40	–	–	12300	5.90	15400	5.94	19000	6.01	23300	6.11	28100	6.23	33800	6.36	27300	6.36
		50	–	–	–	–	13100	7.54	16300	7.57	20000	7.64	24300	7.74	29300	7.86	23600	7.86
	MLZ066T4	30	13100	5.48	16500	5.53	20600	5.62	25300	5.73	30900	5.87	37300	6.01	44600	6.16	36000	6.16
		40	–	–	14400	6.97	18100	7.02	22300	7.10	27300	7.22	33000	7.36	39600	7.52	31900	7.52
		50	–	–	–	–	15400	8.91	19100	8.95	23500	9.03	28500	9.14	34300	9.29	27600	9.29
	MLZ076T4	30	14100	6.09	17900	6.16	22400	6.25	27700	6.33	33800	6.36	40900	6.32	49100	6.15	41100	6.15
		40	–	–	15500	7.68	19500	7.72	24200	7.81	29700	7.89	36000	7.95	43300	7.94	36400	7.94
		50	–	–	–	–	16600	9.71	20700	9.72	25500	9.78	31000	9.86	37400	9.93	31500	9.93

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
RGT: *20 °C*
Capacity data at other conditions are available in the datasheets at: www.danfoss.com/odsg

Technical data and ordering

MLZ / MLM - Scroll compressors - R407F - 50 / 60 Hz

Performance table

Type		To	-25		-20		-15		-10		-5		0		5		10	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50 Hz	MLZ015T4	30	2600	1.17	3300	1.19	4100	1.19	5000	1.20	6200	1.21	7500	1.21	9000	1.21	9000	1.21
		40	–	–	–	–	3600	1.48	4500	1.50	5500	1.51	6700	1.51	8100	1.52	8100	1.52
		50	–	–	–	–	–	–	3800	1.88	4700	1.90	5800	1.91	7100	1.92	7100	1.92
	MLZ019T4	30	3400	1.54	4200	1.56	5300	1.58	6500	1.58	8000	1.59	9600	1.60	11600	1.60	11600	1.6
		40	–	–	–	–	4600	1.96	5800	1.98	7100	1.99	8700	2.00	10500	2.00	10500	2
		50	–	–	–	–	–	–	4900	2.48	6100	2.50	7500	2.52	9200	2.53	9200	2.53
	MLZ021T4	30	3500	1.63	4400	1.66	5500	1.67	6700	1.69	8200	1.72	9900	1.77	11900	1.83	11900	1.83
		40	–	–	–	–	4900	2.09	6000	2.11	7400	2.13	8900	2.16	10700	2.20	10700	2.2
		50	–	–	–	–	–	–	5200	2.71	6400	2.72	7800	2.74	9500	2.77	9500	2.77
	MLZ026T4	30	4300	2.00	5500	2.03	6900	2.05	8500	2.07	10300	2.11	12500	2.16	15000	2.25	15000	2.25
		40	–	–	–	–	6100	2.57	7600	2.59	9300	2.61	11200	2.65	13500	2.70	13500	2.7
		50	–	–	–	–	–	–	6600	3.31	8100	3.34	9900	3.36	11900	3.39	11900	3.39
	MLZ030T4	30	5300	2.21	6700	2.26	8300	2.28	10200	2.29	12500	2.31	15200	2.34	18300	2.40	18300	2.4
		40	–	–	–	–	7400	2.86	9100	2.88	11100	2.89	13500	2.90	16300	2.91	16300	2.91
		50	–	–	–	–	–	–	8000	3.61	9700	3.63	11800	3.63	14300	3.63	14300	3.63
	MLZ038T4	30	6200	2.57	7700	2.62	9600	2.65	11900	2.67	14500	2.68	17600	2.72	21100	2.79	21100	2.79
		40	–	–	–	–	8600	3.33	10500	3.35	12900	3.36	15600	3.37	18900	3.39	18900	3.39
		50	–	–	–	–	–	–	9200	4.20	11300	4.23	13700	4.23	16500	4.22	16500	4.22
	MLZ042T5	30	7100	3.40	8900	3.43	11200	3.45	13800	3.46	16800	3.49	20400	3.55	24500	3.64	24500	3.64
		40	–	–	–	–	9900	4.31	12200	4.32	15000	4.33	18200	4.34	22000	4.38	22000	4.38
		50	–	–	–	–	–	–	10600	5.49	13100	5.50	16000	5.49	19300	5.49	19300	5.49
	MLZ045T4	30	7700	3.39	9700	3.44	12200	3.49	15100	3.52	18400	3.51	22300	3.45	26700	3.30	26700	3.3
		40	–	–	–	–	10600	4.34	13200	4.38	16300	4.40	19800	4.39	23900	4.34	23900	4.34
		50	–	–	–	–	–	–	11300	5.48	14000	5.49	17200	5.50	20900	5.49	20900	5.49
	MLZ048T4	30	8400	3.74	10700	3.80	13400	3.85	16600	3.88	20200	3.87	24500	3.80	29400	3.64	29400	3.64
		40	–	–	–	–	11700	4.79	14600	4.83	17900	4.85	21800	4.85	26300	4.79	26300	4.79
		50	–	–	–	–	–	–	12400	6.04	15400	6.05	18900	6.07	23000	6.05	23000	6.05
	MLZ058T4	30	9500	4.15	12100	4.23	15000	4.32	18400	4.39	22500	4.43	27100	4.40	32400	4.27	32400	4.27
		40	–	–	–	–	13200	5.40	16400	5.47	20000	5.54	24200	5.59	29000	5.57	29000	5.57
		50	–	–	–	–	–	–	14100	6.93	17300	6.98	21000	7.03	25300	7.06	25300	7.06
	MLZ066T4	30	11200	4.94	14100	5.04	17500	5.15	21600	5.24	26300	5.28	31700	5.24	38000	5.09	38000	5.09
		40	–	–	–	–	15500	6.43	19100	6.52	23400	6.61	28300	6.66	33900	6.64	33900	6.64
		50	–	–	–	–	–	–	16500	8.26	20300	8.31	24600	8.38	29600	8.42	29600	8.42
	MLZ076T4	30	12300	5.70	15700	5.74	19700	5.77	24400	5.83	29800	5.92	36100	6.06	43300	6.27	43300	6.27
		40	–	–	–	–	17100	7.15	21400	7.17	26400	7.22	32100	7.32	38700	7.49	38700	7.49
		50	–	–	–	–	–	–	18200	9.07	22700	9.07	27800	9.11	33800	9.21	33800	9.21
60 Hz	MLZ015T4	30	3100	1.40	3900	1.41	4900	1.41	6100	1.41	7500	1.42	9100	1.44	10900	1.50	9000	1.5
		40	–	–	–	–	4400	1.77	5400	1.78	6700	1.77	8100	1.78	9800	1.80	8100	1.8
		50	–	–	–	–	–	–	4700	2.24	5800	2.25	7100	2.25	8600	2.26	7100	2.26
	MLZ019T4	30	4000	1.82	5100	1.83	6400	1.82	8000	1.82	9800	1.83	11900	1.87	14300	1.94	11600	1.94
		40	–	–	–	–	5700	2.29	7100	2.30	8700	2.30	10600	2.30	12800	2.33	10500	2.33
		50	–	–	–	–	–	–	6100	2.90	7600	2.91	9300	2.91	11200	2.92	9200	2.92
	MLZ021T4	30	4300	1.96	5500	1.97	6800	2.00	8400	2.02	10200	2.06	12400	2.11	14800	2.16	11900	2.16
		40	–	–	–	–	6100	2.49	7500	2.51	9200	2.54	11100	2.58	13300	2.63	10700	2.63
		50	–	–	–	–	–	–	6500	3.22	8000	3.25	9800	3.28	11800	3.32	9500	3.32
	MLZ026T4	30	5300	2.31	6700	2.33	8300	2.35	10200	2.39	12500	2.43	15100	2.48	18000	2.55	15000	2.55
		40	–	–	–	–	7400	2.94	9100	2.96	11200	3.00	13500	3.05	16200	3.10	13500	3.1
		50	–	–	–	–	–	–	7900	3.80	9800	3.83	11900	3.87	14300	3.91	11900	3.91
	MLZ030T4	30	6600	2.62	8200	2.67	10200	2.69	12500	2.71	15300	2.76	18600	2.84	22400	2.98	18300	2.98
		40	–	–	–	–	9000	3.38	11200	3.41	13700	3.43	16600	3.47	20100	3.54	16300	3.54
		50	–	–	–	–	–	–	9800	4.27	12000	4.31	14600	4.34	17700	4.37	14300	4.37
	MLZ038T4	30	7600	3.05	9500	3.11	11800	3.13	14500	3.16	17800	3.21	21600	3.30	26000	3.47	21100	3.47
		40	–	–	–	–	10500	3.93	12900	3.97	15800	3.99	19200	4.04	23300	4.12	18900	4.12
		50	–	–	–	–	–	–	11300	4.96	13800	5.01	16900	5.04	20400	5.09	16500	5.09
	MLZ045T1	30	9300	4.01	11900	4.08	14900	4.12	18400	4.13	22400	4.11	27100	4.04	32600	3.93	26700	3.93
		40	–	–	–	–	13000	5.13	16100	5.14	19800	5.13	24000	5.09	28900	5.00	23900	5
		50	–	–	–	–	–	–	13900	6.44	17100	6.42	20900	6.37	25200	6.29	20900	6.29
	MLZ048T4	30	10200	4.50	12900	4.57	16200	4.61	20000	4.63	24500	4.60	29600	4.53	35500	4.41	29400	4.41
		40	–	–	–	–	14100	5.74	17600	5.76	21600	5.75	26200	5.70	31600	5.60	26300	5.6
		50	–	–	–	–	–	–	15100	7.22	18700	7.19	22800	7.13	27500	7.05	23000	7.05
	MLZ058T4	30	11900	4.94	15000	4.98	18600	5.05	22900	5.14	27800	5.26	33500	5.41	40100	5.58	32400	5.58
		40	–	–	–	–	16400	6.34	20300	6.41	24800	6.50	29900	6.63	35900	6.78	29000	6.78
		50	–	–	–	–	–	–	17600	8.12	21500	8.18	26100	8.27	31400	8.40	25300	8.4
	MLZ066T4	30	13900	5.84	17500	5.88	21800	5.96	26800	6.07	32600	6.22	39300	6.39	47100	6.60	38000	6.6
		40	–	–	–	–	19300	7.49	23800	7.57	29000	7.68	35100	7.83	42100	8.01	33900	8.01
		50	–	–	–	–	–	–	20600	9.59	25200	9.66	30600	9.77	36800	9.92	29600	9.92
	MLZ076T4	30	15000	6.49	19000	6.54	23700	6.62	29300	6.69	35700	6.72	43100	6.71	51700	6.62	43300	6.62
		40	–	–	–	–	20800	8.24	25800	8.31	31600	8.38	38200	8.44	45900	8.46	38700	8.46
		50	–	–	–	–	–	–	22300	10.41	27400	10.45	33300	10.52	40100	10.59	33800	10.59

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
RGT: *20 °C*
Capacity data at other conditions are available in the datasheets at: www.danfoss.com/odsg

Technical data and ordering

MLZ / MLM - Scroll compressors - R22 - 50 / 60 Hz

Performance table

Type		To	-20		-15		-10		-5		0		5		10	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50 Hz	MLZ/MLM015T4	30	2600	1.08	3200	1.10	3800	1.11	4600	1.13	5500	1.15	6600	1.17	7800	1.19
		40	–	–	2800	1.36	3500	1.38	4200	1.40	5100	1.41	6000	1.42	7100	1.44
		50	–	–	–	–	–	–	3800	1.71	4500	1.73	5400	1.75	6400	1.76
	MLZ/MLM019T4	30	3400	1.32	4200	1.34	5000	1.36	6000	1.38	7100	1.40	8500	1.43	10000	1.46
		40	–	–	3800	1.67	4600	1.69	5500	1.71	6500	1.72	7800	1.74	9200	1.76
		50	–	–	–	–	–	–	4900	2.09	5800	2.11	6900	2.13	8300	2.14
	MLZ/MLM021T4	30	3600	1.43	4400	1.47	5300	1.50	6400	1.52	7600	1.55	9000	1.57	10600	1.60
		40	–	–	4000	1.79	4800	1.83	5800	1.85	6900	1.88	8200	1.89	9800	1.90
		50	–	–	–	–	–	–	5200	2.27	6200	2.30	7400	2.31	8800	2.32
	MLZ/MLM026T4	30	4400	1.76	5400	1.77	6600	1.77	7900	1.76	9600	1.75	11500	1.74	13800	1.75
		40	–	–	4900	2.17	6000	2.19	7200	2.19	8800	2.18	10600	2.16	12700	2.15
		50	–	–	–	–	–	–	6500	2.71	7900	2.71	9500	2.69	11400	2.66
	MLZ/MLM030T4	30	5100	2.08	6400	2.14	7900	2.19	9700	2.25	11600	2.32	13800	2.38	16200	2.46
		40	–	–	5800	2.60	7200	2.67	8800	2.72	10700	2.78	12700	2.83	14900	2.89
		50	–	–	–	–	–	–	7900	3.30	9600	3.36	11500	3.40	13600	3.44
	MLZ/MLM038T4	30	5800	2.40	7400	2.48	9200	2.57	11300	2.66	13700	2.76	16300	2.84	19100	2.91
		40	–	–	6800	3.04	8500	3.13	10400	3.22	12600	3.29	14900	3.36	17500	3.40
		50	–	–	–	–	–	–	9400	3.90	11400	3.98	13600	4.03	15900	4.06
	MLZ/MLM042T5	30	9000	3.18	9500	3.05	10800	3.01	12700	3.03	15400	3.11	18500	3.23	22000	3.36
		40	–	–	8400	3.81	9700	3.75	11600	3.75	14000	3.79	16600	3.86	19600	3.93
		50	–	–	–	–	–	–	10300	4.78	12600	4.79	15000	4.81	17600	4.82
	MLZ/MLM045T4	30	7000	3.05	8800	3.08	11000	3.08	13600	3.08	16500	3.08	19700	3.11	23200	3.17
		40	–	–	7900	3.72	9900	3.76	12300	3.77	15000	3.77	18000	3.79	21200	3.84
		50	–	–	–	–	–	–	10800	4.62	13300	4.64	16100	4.65	19100	4.68
	MLZ/MLM048T4	30	8100	3.32	10000	3.36	12200	3.37	14800	3.36	17800	3.37	21300	3.40	25300	3.47
		40	–	–	9000	4.07	11100	4.11	13500	4.12	16300	4.12	19500	4.13	23200	4.17
		50	–	–	–	–	–	–	12200	5.05	14700	5.06	17600	5.07	20900	5.10
	MLZ/MLM058T4	30	9200	3.93	11500	3.97	14300	3.96	17400	3.95	21100	3.94	25300	3.98	30200	4.09
		40	–	–	10500	4.76	13000	4.80	15900	4.80	19300	4.81	23200	4.84	27800	4.92
		50	–	–	–	–	–	–	14100	5.89	17300	5.90	20900	5.92	25100	5.97
	MLZ/MLM066T4	30	10200	4.34	12900	4.40	16200	4.43	20000	4.45	24300	4.49	29100	4.57	34400	4.71
		40	–	–	11900	5.34	14900	5.39	18300	5.43	22300	5.48	26800	5.54	31600	5.66
		50	–	–	–	–	–	–	16500	6.62	20200	6.66	24200	6.72	28700	6.80
	MLZ/MLM076T4	30	12400	5.26	15400	5.27	19000	5.20	23200	5.11	27900	5.06	33300	5.12	39300	5.34
		40	–	–	14100	6.36	17400	6.33	21300	6.27	25600	6.22	30500	6.25	36100	6.42
		50	–	–	–	–	–	–	19100	7.68	23100	7.64	27600	7.65	32600	7.78
60 Hz	MLZ/MLM015T4	30	3000	1.22	3800	1.25	4600	1.29	5600	1.32	6700	1.36	7900	1.40	9300	1.45
		40	–	–	3400	1.54	4200	1.58	5100	1.62	6100	1.65	7200	1.68	8500	1.70
		50	–	–	–	–	–	–	4500	1.96	5500	2.00	6500	2.03	7700	2.04
	MLZ/MLM019T4	30	3900	1.56	4900	1.60	6000	1.65	7300	1.70	8800	1.74	10400	1.76	12200	1.76
		40	–	–	4500	1.97	5500	2.02	6700	2.07	8100	2.11	9600	2.13	11300	2.12
		50	–	–	–	–	–	–	6000	2.49	7300	2.53	8700	2.54	10200	2.53
	MLZ/MLM021T4	30	4100	1.69	5200	1.73	6400	1.77	7800	1.80	9400	1.84	11200	1.90	13200	1.97
		40	–	–	4800	2.12	5900	2.15	7200	2.18	8700	2.20	10300	2.24	12100	2.29
		50	–	–	–	–	–	–	6400	2.63	7800	2.66	9300	2.69	11000	2.73
	MLZ/MLM026T4	30	5100	2.02	6300	2.07	7800	2.11	9500	2.16	11500	2.20	13700	2.23	16300	2.24
		40	–	–	5900	2.57	7300	2.64	8900	2.69	10600	2.73	12600	2.75	14900	2.74
		50	–	–	–	–	–	–	8100	3.32	9700	3.37	11500	3.39	13500	3.37
	MLZ/MLM030T4	30	6000	2.44	7500	2.51	9400	2.57	11500	2.65	13800	2.72	16400	2.81	19300	2.89
		40	–	–	6900	3.07	8600	3.14	10500	3.21	12700	3.27	15100	3.34	17800	3.40
		50	–	–	–	–	–	–	9500	3.89	11500	3.96	13800	4.01	16200	4.06
	MLZ/MLM038T4	30	6900	2.83	8800	2.92	11000	3.03	13500	3.14	16300	3.25	19400	3.35	22800	3.42
		40	–	–	8100	3.58	10100	3.68	12400	3.79	15000	3.88	17900	3.96	20900	4.00
		50	–	–	–	–	–	–	11200	4.59	13600	4.68	16200	4.75	19000	4.79
	MLZ/MLM042T1	30	8600	3.50	10800	3.57	13500	3.64	16500	3.71	20000	3.79	23800	3.89	28000	4.01
		40	–	–	9800	4.38	12300	4.45	15100	4.51	18400	4.57	21900	4.63	25800	4.70
		50	–	–	–	–	–	–	13600	5.50	16500	5.56	19800	5.61	23400	5.66
	MLZ/MLM045T4	30	9700	3.76	12200	3.82	15000	3.89	18300	3.98	21900	4.08	26000	4.21	30500	4.36
		40	–	–	10900	4.74	13600	4.82	16700	4.90	20100	4.97	23900	5.05	28200	5.14
		50	–	–	–	–	–	–	14900	6.04	18100	6.11	21600	6.17	25600	6.22
	MLZ/MLM048T4	30	10900	4.50	13800	4.62	17200	4.74	21100	4.87	25600	5.00	30600	5.13	36200	5.27
		40	–	–	12600	5.61	15700	5.75	19300	5.88	23500	5.99	28200	6.08	33400	6.16
		50	–	–	–	–	–	–	17300	7.16	21100	7.26	25500	7.33	30400	7.37
	MLZ/MLM058T4	30	12200	5.03	15500	5.18	19400	5.35	24000	5.51	29200	5.68	35000	5.83	41300	5.97
		40	–	–	14200	6.30	17800	6.48	22100	6.65	26900	6.82	32300	6.96	38200	7.08
		50	–	–	–	–	–	–	20000	8.06	24500	8.22	29400	8.36	34700	8.46
	MLZ/MLM066T4		14500	6.07	18300	6.20	22800	6.31	28000	6.42	33900	6.54	40400	6.69	47400	6.87
		40	–	–	16900	7.48	21000	7.62	25800	7.74	31200	7.86	37100	7.98	43500	8.13
		50	–	–	–	–	–	–	23400	9.43	28300	9.55	33700	9.66	39600	9.78
	MLZ/MLM076T4	30	14 500	6.1	18 300	6.2	22 800	6.3	28 000	6.4	33 900	6.5	40 400	6.7	47 400	6.9
		40	–	–	16 900	7.5	21 000	7.6	25 800	7.7	31 200	7.9	37 100	8.0	43 500	8.1
		50	–	–	–	–	–	–	23 400	9.4	28 300	9.6	33 700	9.7	39 600	9.8

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo:*Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
RGT: *20 °C*
Capacity data at other conditions are available in the datasheets at: www.danfoss.com/odsg

Technical data and ordering

LLZ - Scroll compressors - R404A - 50 / 60 Hz

Performance table - Without economizer

Type		To	-40		-35		-30		-25		-20		-15		-10	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50 Hz	LLZ013T4	30	2200	1.94	2900	2.10	3700	2.25	4600	2.40	5700	2.53	6900	2.62	8400	2.66
		40	1800	2.19	2400	2.37	3100	2.55	3900	2.74	4800	2.91	6000	3.06	7300	3.17
		50	–	–	1900	2.72	2500	2.92	3200	3.14	3900	3.35	4900	3.55	6000	3.73
	LLZ015T4	30	2700	2.28	3500	2.48	4400	2.69	5600	2.89	7000	3.08	8600	3.25	10600	3.38
		40	2300	2.57	2900	2.78	3800	3.01	4700	3.26	5900	3.50	7400	3.74	9000	3.96
		50	–	–	2300	3.16	3000	3.41	3800	3.69	4800	3.98	6000	4.28	7400	4.58
	LLZ018T4	30	3200	2.59	4100	2.81	5200	3.05	6600	3.28	8200	3.50	10200	3.69	12400	3.83
		40	2700	2.91	3500	3.15	4400	3.42	5600	3.69	7000	3.98	8600	4.24	10600	4.49
		50	–	–	2800	3.58	3500	3.87	4500	4.18	5600	4.52	7000	4.86	8700	5.19
	LLZ024T4	30	4100	3.25	5200	3.54	6700	3.83	8400	4.12	10500	4.40	13000	4.63	15900	4.81
		40	3400	3.66	4400	3.96	5600	4.29	7100	4.64	8900	5.00	11000	5.33	13600	5.64
		50	–	–	3500	4.50	4500	4.86	5700	5.25	7200	5.68	9000	6.10	11100	6.52
60 Hz	LLZ013T4	30	2600	2.27	3400	2.46	4400	2.65	5500	2.81	6800	2.94	8300	3.03	10100	3.06
		40	2200	2.57	2900	2.77	3700	2.99	4700	3.20	5800	3.39	7100	3.56	8600	3.69
		50	–	–	2300	3.15	3000	3.39	3800	3.63	4700	3.88	5800	4.11	7100	4.32
	LLZ015T4	30	3300	2.74	4200	2.98	5300	3.22	6700	3.46	8400	3.68	10400	3.85	12800	3.96
		40	2700	3.07	3600	3.31	4500	3.58	5700	3.86	7200	4.15	8900	4.41	10900	4.63
		50	–	–	2900	3.76	3700	4.03	4700	4.34	5900	4.67	7300	5.00	9000	5.31
	LLZ018T4	30	3900	3.15	5000	3.42	6400	3.70	8000	3.98	10000	4.23	12400	4.42	15200	4.55
		40	3300	3.53	4200	3.80	5400	4.11	6800	4.44	8600	4.77	10600	5.07	13000	5.32
		50	–	–	3400	4.32	4400	4.63	5600	4.99	7000	5.36	8700	5.74	10700	6.10
	LLZ024T4	30	4800	3.82	6200	4.15	7900	4.49	10000	4.83	12500	5.13	15500	5.37	19000	5.53
		40	4100	4.28	5300	4.61	6800	4.99	8500	5.39	10700	5.78	13200	6.15	16300	6.46
		50	–	–	4200	5.24	5500	5.62	6900	6.05	8700	6.51	10900	6.97	13400	7.41

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10*

Technical data and ordering

LLZ - Scroll compressors - R404A - 50 / 60 Hz

Performance table - With economizer

Type		To	-40		-35		-30		-25		-20		-15		-10	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50 Hz	LLZ013T4	30	3300	2.44	4200	2.59	5100	2.74	6100	2.88	7300	3.01	8500	3.13	9800	3.24
		40	3200	2.96	4000	3.13	4800	3.28	5800	3.42	6900	3.55	8000	3.68	9200	3.80
		50	–	–	3700	3.80	4600	3.99	5500	4.18	6500	4.35	7500	4.51	8600	4.66
	LLZ015T4	30	4000	2.90	5000	3.05	6000	3.20	7200	3.35	8600	3.49	10200	3.58	12000	3.63
		40	3900	3.48	4700	3.66	5700	3.85	6900	4.04	8200	4.22	9700	4.36	11300	4.46
		50	–	–	4500	4.46	5400	4.71	6500	4.95	7700	5.19	9000	5.40	10500	5.56
	LLZ018T4	30	4800	3.34	5900	3.50	7200	3.68	8600	3.86	10300	4.01	12200	4.13	14300	4.18
		40	4600	4.01	5600	4.21	6800	4.43	8200	4.65	9800	4.86	11500	5.02	13500	5.14
		50	–	–	5400	5.14	6500	5.42	7700	5.70	9200	5.97	10800	6.21	12500	6.40
	LLZ024T4	30	6000	4.13	7400	4.33	9000	4.55	10800	4.77	12900	4.96	15300	5.10	17900	5.16
		40	5800	4.95	7100	5.20	8600	5.48	10300	5.75	12300	6.00	14500	6.21	16900	6.35
		50	–	–	6700	6.35	8100	6.69	9700	7.04	11500	7.38	13500	7.67	15700	7.91
60 Hz	LLZ013T4	30	3900	2.80	5000	2.99	6100	3.16	7300	3.31	8600	3.45	10100	3.57	11800	3.67
		40	3800	3.42	4800	3.62	5800	3.80	6900	3.97	8100	4.12	9500	4.25	11000	4.36
		50	–	–	4500	4.40	5500	4.65	6500	4.88	7600	5.10	8800	5.29	10200	5.47
	LLZ015T4	30	4900	3.42	5900	3.64	7200	3.83	8700	3.99	10400	4.14	12300	4.28	14500	4.41
		40	4700	4.08	5700	4.33	6900	4.57	8300	4.79	9900	5.00	11700	5.22	13600	5.44
		50	–	–	5400	5.26	6600	5.56	7800	5.85	9300	6.14	10900	6.44	12600	6.76
	LLZ018T4	30	5900	3.89	7100	4.15	8600	4.36	10400	4.55	12400	4.72	14700	4.88	17300	5.03
		40	5600	4.65	6800	4.94	8200	5.21	9900	5.46	11800	5.70	13900	5.95	16300	6.20
		50	–	–	6500	6.00	7800	6.33	9400	6.66	11100	6.99	13000	7.34	15100	7.70
	LLZ024T4	30	7300	4.75	8800	5.06	10600	5.32	12800	5.55	15400	5.76	18200	5.95	21400	6.14
		40	6900	5.67	8400	6.03	10200	6.36	12300	6.66	14600	6.96	17300	7.26	20200	7.57
		50	–	–	8000	7.32	9700	7.73	11600	8.13	13800	8.54	16100	8.96	18700	9.40

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW]*
Subcooling: *0 K*
Superheat: *10 K*

Nomenclature and Dimensions

Type	Size	Motor	Features
M LZ	021	T 4 L	P 9

Application:
M: medium temperature refrigeration

Family, refrigerant and lubricant:
LZ: R404A - R507 - R134a - R22, PVE lubricant
LM: R22, alkylbenzene lubricant

Nominal capacity:
in thousand Btu/h at 60 Hz, ARI / MBP conditions

Model variation:
T: design optimized for refrigeration

Other features

	Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalis. port
9	Threaded	None	Schrader	None	None

Tubing and electrical connections:
P: brazed connections, spade terminals
C: brazed connections, screw terminals
T: rotolock connections, spade terminals
Q: rotolock connections, screw terminals

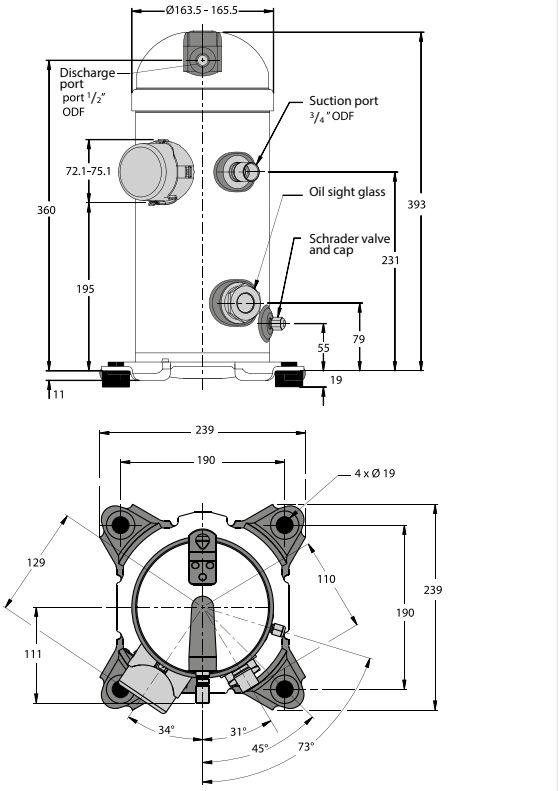


Motor protection:
L: internal motor protection

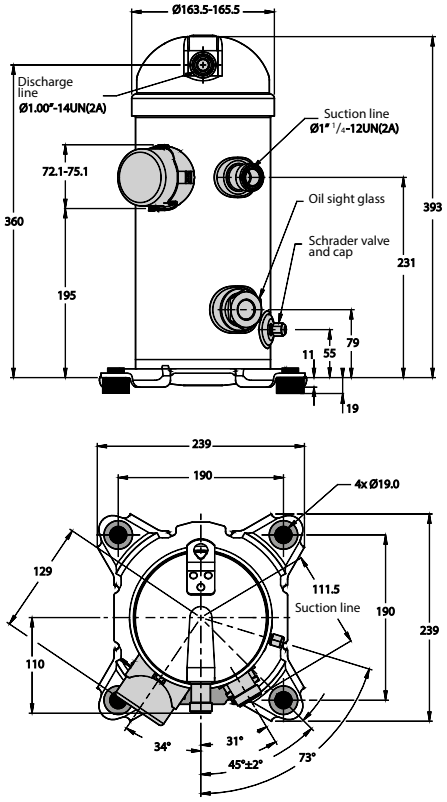
Motor voltage code
1: 208 – 230 V / 1 ~ / 60 Hz
2: 200 – 220 V / 3 ~ / 50 Hz & 208 – 230 V / 3 ~ / 60 Hz
4: 380 – 400 V / 3 ~ / 50 Hz & 460 V / 3 / 60 Hz
5: 220 – 240 V / 1 ~ / 50 Hz
7: 500 V / 3 ~ / 50 Hz & 575 V / 3 ~ / 60 Hz
9: 380 V / 3 ~ / 60 Hz

MLZ015-019-021-026

Brazed



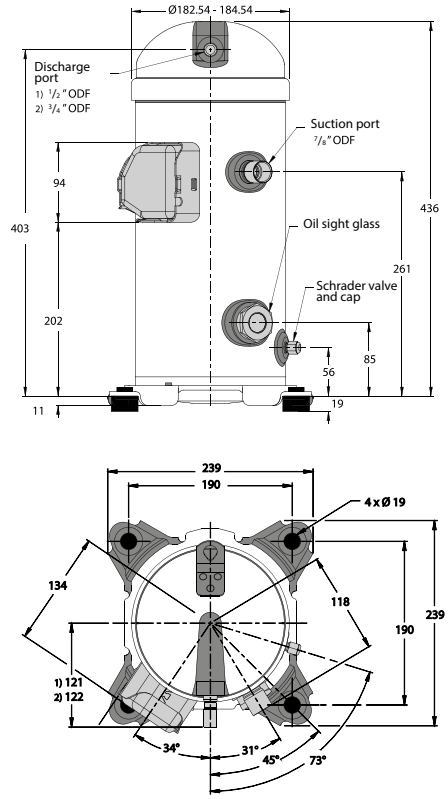
Rotolock



Dimensions

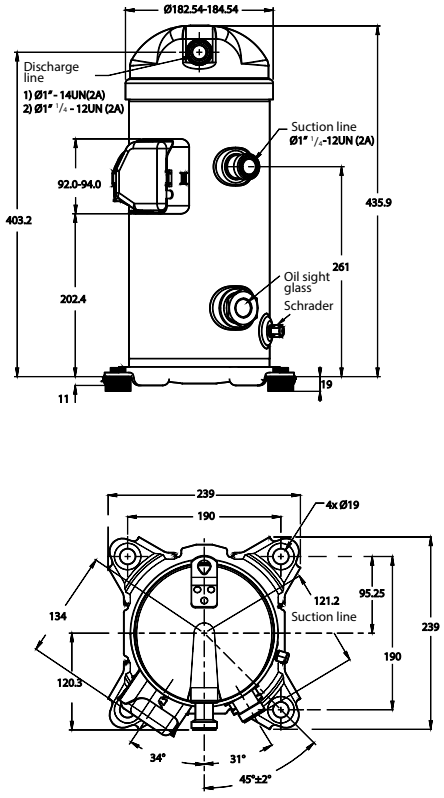
MLZ030-038-042-045-048

Brazed



1) MLZ030-038-042-045
2) MLZ048

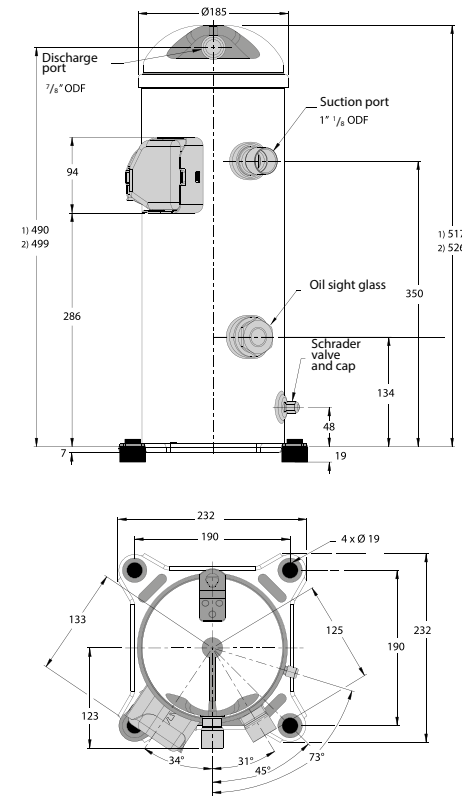
Rotolock



1) MLZ030-038-042-045
2) MLZ048

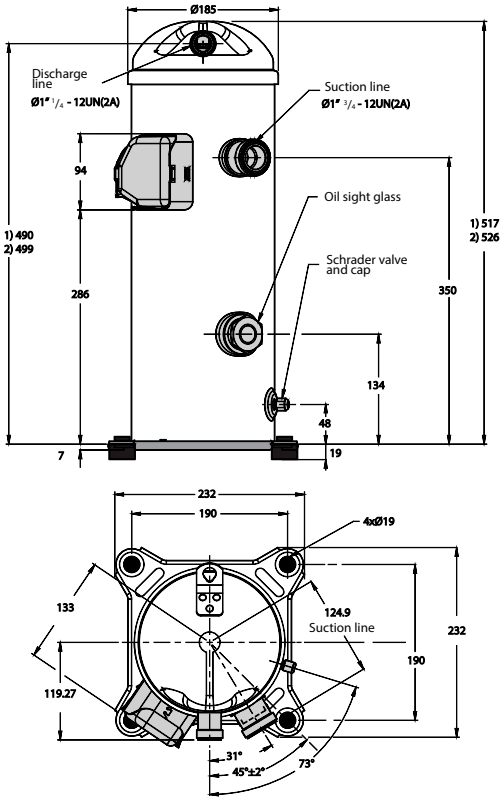
MLZ058-066-076

Brazed



1) MLZ030-038-042-045
2) MLZ048

Rotolock



1) MLZ085
2) MLZ066-076

Nomenclature and Dimensions

Type	Size	Motor	Features
L LZ	013	T 4 L	Q 9

Application:
L: low temperature refrigeration

Family, refrigerant and lubrificant:
LZ: R404A - R507, PVE lubrificant

Nominal capacity:
in thousand Btu/h at 60 Hz, ARI / LBP conditions

Model variation:
T: design optimized for refrigeration

Other features

	Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalis. port
9	Threaded	None	Schrader	None	None

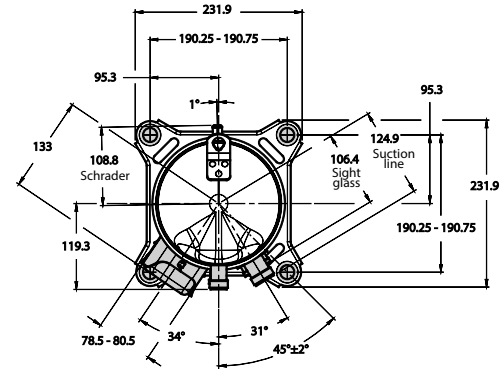
Tubing and electrical connections:
Q: rotolock connections, screw terminals

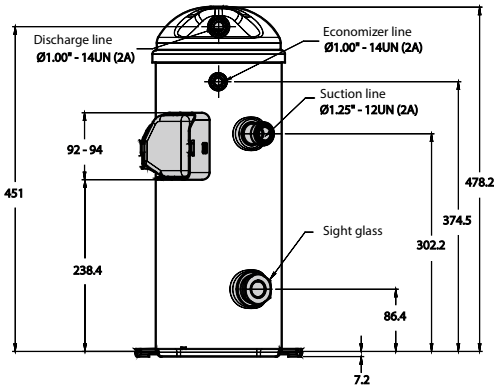


Motor protection:
L: internal motor protection

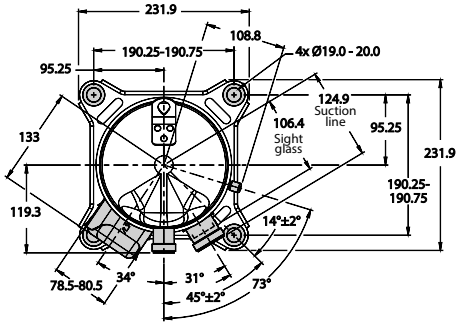
Motor voltage code:
2: 200 – 220 V / 3 ~ / 50 Hz & 208 – 230 V / 3 ~ / 60 Hz
4: 380 – 415 V / 3 ~ / 50 Hz & 460 V / 3 / 60 Hz
7: 500 V / 3 ~ / 50 Hz & 575 V / 3 ~ / 60 Hz
9: 380 V / 3 ~ / 60 Hz

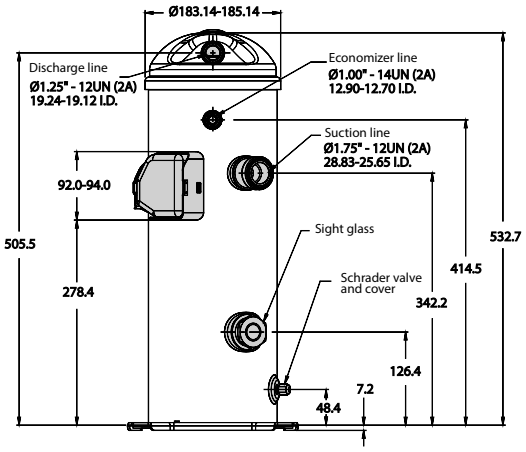
LLZ013-015-018





LLZ024



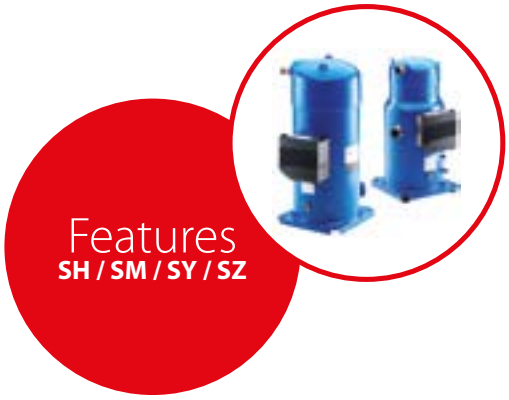


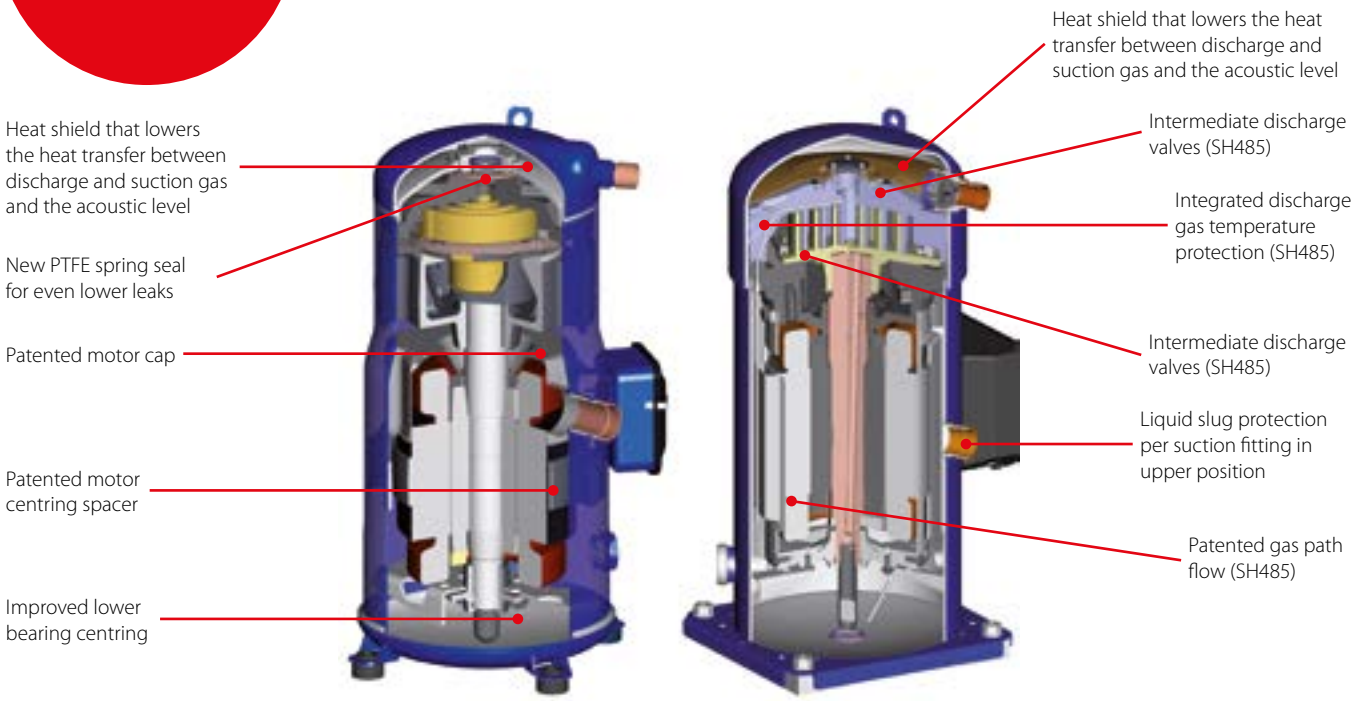
Quick Selection Notes:

SH / SM / SY / SZ - S-Series, Scroll compressors

By combining an in-depth understanding of customer needs with continuous investment in product technology Danfoss is able to offer you the S series, which comprise a 7.5 – 40 TR industry-leading range of high efficiency scroll compressors optimized for rooftop and chiller applications.

Available in a large variety of single and manifold models for R410A, R407C, R134a and R22. The compressors combine high energy efficency with low sound and minimal vibration.





Facts

S-Series compressor design

- Improved energy efficiency and reduced sound levels with the intermediate cap design feature
- Greater reliability with the internal non-return valve, which avoids refrigerant migration from the high pressure side
- Quieter and more efficient operation with "*no contact – no wear*" scroll design for reduced friction
- Environmentally-friendly lead-free bearings
- Highly efficient and reliable protection against overheating, overloading, phase loss and phase order with specific electronic module protection
- Prepared for manifolding with oil sight glass and oil equalizer
- Easy maintenance with oil drain tube
- The Surface Sump Heater provides thermal insulation, higher efficiency and greater noise reduction 2 – 4 dB [A]

Technical data and ordering

SH - Scroll compressors - R410A - 50 / 60 Hz

Technical data

Type		Nominal tons 60 Hz	Nominal cooling capacity		Power input	COP	E.E.R.	Swept volume	Displacement [1]	Oil charge	Net weight [2]
		[TR]	[W]	[Btu/h]	[kW]	[W]/[W]	[Btu/h]/[W]	[cm³/rev]	[m³/h]	[dm³]	[kg]
50 Hz	SH090	7.5	22300	76100	7.19	3.10	10.58	88.40	15.4	3.0	58.0
	SH105	9	26800	91500	8.47	3.17	10.82	103.50	18.0	3.3	64.0
	SH120	10	30000	102400	9.46	3.17	10.82	116.90	20.3	3.3	64.0
	SH140	12	34700	118400	10.58	3.28	11.19	133.00	23.1	3.3	67.0
	SH161	13	38800	132400	12.15	3.19	10.89	151.70	26.4	3.3	69.0
	SH184	15	44700	152600	13.73	3.25	11.09	170.30	29.6	3.6	71.5
	SH180	15	44500	151900	13.87	3.21	10.96	170.20	29.6	6.7	108.0
	SH240	20	59700	203800	18.50	3.23	11.02	227.60	39.6	6.7	108.0
	SH295 [3]	25	73200	249800	22.51	3.25	11.09	276.20	48.1	6.7	111.0
	SH380	30	90500	308900	28.18	3.21	10.96	345.00	60.0	6.7	159.0
	SH485	40	116400	397300	35.65	3.26	11.13	442.60	77.0	6.7	175.0
60 Hz	SH090	7.5	27100	92500	8.57	3.16	10.78	88.40	18.6	3.0	58.0
	SH105	9	32100	109600	9.96	3.22	10.99	103.50	21.8	3.3	64.0
	SH120	10	36800	125600	11.25	3.27	11.16	116.90	24.6	3.3	64.0
	SH140	12	42300	144400	12.77	3.31	11.30	133.00	27.9	3.3	67.0
	SH161	13	47200	161100	14.43	3.27	11.16	151.70	31.9	3.3	69.0
	SH184	15	54000	184300	16.45	3.28	11.19	170.30	35.8	3.6	71.5
	SH180	15	54300	185300	16.58	3.27	11.16	170.20	35.7	6.7	108.0
	SH240	20	72200	246400	22.10	3.27	11.16	227.60	47.8	6.7	108.0
	SH295 [3]	25	88500	302000	27.21	3.25	11.09	276.20	58.0	6.7	111.0
	SH380	30	109600	374100	33.99	3.22	10.99	345.00	72.3	6.7	159.0
	SH485	40	140600	479900	43.28	3.25	11.09	442.60	92.9	6.7	175.0

[1]) Displacement at nominal speed: 2900 rpm at 50 Hz, 3500 rpm at 60 Hz
[2]) Net weight with oil charge

TR) *Ton of Refrigeration*
EER) *Energy Efficiency Ratio*
COP) *Coefficient Of Performance*

Standard rating conditions ARI standard
Refrigerant: R410A

Evaporating temperature: 7.2 °C
Condensing temperature: 54.4 °C

Superheat: 11.1 K
Subcooling: 8.3 K

Subject to modification without prior notification
Data given for motor code 4 compressor

[3]) SH295 replaces SH300. SH300 model remains available for after-market

SH - Scroll compressors - R410A - 50 / 60 Hz

Ordering single pack

Type	Connections	Mounting feet	Motor protection	Code no.				
				3	4	6	7	9
				200 – 230 / 3 / 60	460 / 3 / 60 380 – 400 / 3 / 50	230 / 3 / 50	575 / 3 / 60 500 / 3 / 50	380 / 3 / 60
SH090	Brazed	Flexible	Internal	120H0001	120H0003	120H0005	120H0007	120H0009
SH105	Brazed	Flexible	Internal	120H0209	120H0211	120H0213	120H0215	120H0217
SH120	Brazed	Flexible	Internal	120H0011	120H0013	120H0015	120H0017	120H0019
SH140	Brazed	Flexible	Internal	120H0199	120H0201	120H0203	120H0205	120H0207
SH161	Brazed	Flexible	Internal	120H0021	120H0023	120H0025	120H0027	120H0029
SH184	Brazed	Flexible	Internal	120H0359	120H0361	120H0363	120H0365	120H0367
SH180	Brazed	Rigid	Module 24 V AC [1])	120H0265	120H0267	–	120H0269	120H0271
	Brazed	Rigid	Module 230 V [1])	120H0273	120H0275	–	120H0277	120H0279
SH240	Brazed	Rigid	Module 24 V AC [1])	120H0289	120H0291	–	120H0293	120H0295
	Brazed	Rigid	Module 115 – 230 V [1])	120H0297	120H0299	–	120H0301	120H0303
SH295	Brazed	Rigid	Module 24 V AC [1])	120H0851	120H0825	–	120H0833	120H0841
	Brazed	Rigid	Module 115 – 230 V [1])	120H0853	120H0827	–	120H0835	120H0843
SH380	Brazed	Rigid	Module 24 V AC [1])	120H0151	120H0253	–	120H0257	120H0261
	Brazed	Rigid	Module 115 – 230 V [1])	120H0152	120H0255	–	120H0259	120H0263
SH485	Brazed	Rigid	Module 24 V AC [1])	120H1105	120H1062	–	120H1099	120H1072
	Brazed	Rigid	Module 115 – 230 V [1])	120H1107	120H1064	–	120H1098	120H1074

[1]) Electronic motor protection, module located in terminal box

Technical data and ordering

SH - Scroll compressors - R410A - 50 / 60 Hz

Ordering industrial pack

Type	Connections	Mounting feet	Motor protection	Code no.		
				3	4	9
				200 – 230 / 3 / 60	400 / 3 / 50 460 / 3 / 60	380 / 3 / 60
SH090	Brazed	Flexible	Internal	120H0002	120H0004	120H0010
SH105	Brazed	Flexible	Internal	120H0210	120H0212	120H0218
SH120	Brazed	Flexible	Internal	120H0012	120H0014	120H0020
SH140	Brazed	Flexible	Internal	120H0200	120H0202	120H0208
SH161	Brazed	Flexible	Internal	120H0022	120H0024	120H0030
SH184	Brazed	Flexible	Internal	120H0360	120H0362	120H0368
SH180	Brazed	Rigid	Module 24 V AC [1]	–	120H0268	120H0272
	Brazed	Rigid	Module 230 V [1]	120H0274	120H0276	120H0280
SH240	Brazed	Rigid	Module 24 V AC [1]	120H0290	120H0292	120H0296
	Brazed	Rigid	Module 115 – 230 V [1]	120H0298	120H0300	120H0304
SH295	Brazed	Rigid	Module 24 V AC [1]	120H0852	120H0826	120H0842
	Brazed	Rigid	Module 115 – 230 V [1]	120H0854	120H0828	120H0844
SH380	Brazed	Rigid	Module 24 V AC [1]	120H0250	120H0254	120H0262
	Brazed	Rigid	Module 115 – 230 V [1]	120H0252	120H0256	120H0264
SH485	Brazed	Rigid	Module 24 V AC [1]	–	120H1063	120H1073
	Brazed	Rigid	Module 115 – 230 V [1]	–	120H1065	120H1075

[1]) *Electronic motor protection, module located in terminal box*

SH - Scroll compressors - R410A - 50 Hz

Performance table

Type	To	-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SH090-4	35	9700	4.5	12100	4.6	15000	4.7	18200	4.8	22000	4.8	26300	4.9	31200	4.9	36800	4.9
	45	8500	5.6	10700	5.7	13200	5.7	16200	5.8	19600	5.9	23500	5.9	28000	6.0	33000	6.0
	55	–	–	–	–	11300	7.1	13900	7.1	16900	7.2	20400	7.3	24400	7.3	28900	7.4
SH105-4	35	11200	5.4	14100	5.5	17400	5.6	21400	5.7	25900	5.7	31200	5.9	37200	6.0	44000	6.1
	45	10200	6.7	12800	6.7	15900	6.8	19400	6.8	23500	6.9	28100	7.0	33400	7.2	39500	7.3
	55	–	–	–	–	13900	8.4	17000	8.4	20600	8.5	24600	8.5	29200	8.6	34500	8.8
SH120-4	35	13100	5.9	16300	6.0	20100	6.1	24500	6.2	29500	6.3	35300	6.4	41900	6.5	49400	6.5
	45	11400	7.4	14300	7.4	17800	7.5	21800	7.6	26300	7.7	31600	7.8	37600	7.9	44400	7.9
	55	–	–	–	–	15200	9.3	18700	9.4	22800	9.5	27400	9.6	32700	9.6	38800	9.7
SH140-4	35	15700	6.8	19300	6.9	23500	7.0	28400	7.0	34000	7.1	40400	7.2	47700	7.2	56000	7.2
	45	13700	8.3	17000	8.4	20900	8.5	25400	8.6	30500	8.6	36400	8.7	43200	8.8	50800	8.8
	55	–	–	–	–	18000	10.5	22000	10.5	26500	10.6	31800	10.7	37900	10.7	44800	10.8
SH161-4	35	17300	7.8	21500	7.9	26300	7.9	31900	8.0	38300	8.0	45700	8.1	54100	8.2	63600	8.4
	45	15100	9.8	18900	9.8	23300	9.8	28400	9.8	34300	9.9	41000	9.9	48700	10.0	57400	10.1
	55	–	–	–	–	19900	12.4	24300	12.3	29500	12.3	35500	12.3	42400	12.3	50200	12.3
SH180-4	35	19200	9.1	24000	9.1	29600	9.1	36000	9.2	43500	9.2	52100	9.2	61800	9.3	72700	9.4
	45	16600	11.3	21000	11.3	26200	11.3	32100	11.3	39000	11.3	46800	11.3	55700	11.3	65800	11.4
	55	–	–	–	–	22300	14.1	27600	14.1	33700	14.1	40700	14.1	48700	14.0	57800	14.0
SH184-4	35	20200	8.7	24900	8.8	30300	9.0	36700	9.2	44000	9.4	52400	9.5	61900	9.7	72700	9.8
	45	17800	10.6	22100	10.8	27100	10.9	32800	11.1	39400	11.2	47000	11.4	55700	11.6	65500	11.8
	55	–	–	–	–	23400	13.4	28400	13.5	34300	13.6	41000	13.8	48700	14.0	57500	14.2
SH240-4	35	26700	12.0	33200	12.0	40700	12.1	49200	12.1	59000	12.2	70200	12.3	82800	12.4	97100	12.6
	45	23300	14.8	29300	14.9	36100	15.0	43900	15.0	52800	15.1	63000	15.1	74500	15.2	87400	15.3
	55	–	–	–	–	30900	18.6	37800	18.6	45800	18.7	54800	18.7	65100	18.8	76800	18.8
SH295-4	35	32700	14.5	40600	14.6	49800	14.7	60300	14.8	72400	14.9	86100	15.1	101700	15.5	119200	15.9
	45	28700	17.9	35800	18.1	44100	18.2	53600	18.3	64600	18.3	77100	18.5	91200	18.7	107200	18.9
	55	–	–	–	–	37800	22.4	46200	22.6	56000	22.7	67100	22.7	79900	22.9	94300	23.0
SH380-4	35	40400	18.4	50000	18.6	61100	18.7	74000	18.8	88900	19.0	105900	19.2	125300	19.6	147200	20.2
	45	35500	22.3	44200	22.7	54300	22.9	66000	23.0	79600	23.1	95100	23.3	112900	23.5	133000	23.8
	55	–	–	–	–	46600	28.0	57000	28.2	69000	28.3	82900	28.5	98900	28.6	117100	28.8
SH485-4	35	52600	23.0	64800	23.5	78900	23.8	95400	24.1	114400	24.1	136200	23.9	161100	23.4	189400	22.6
	45	46700	28.0	57700	28.4	70600	28.8	85400	29.2	102500	29.4	122200	29.5	144700	29.4	170300	29.0
	55	–	–	–	–	61200	35.0	74300	35.4	89400	35.8	106900	36.0	126900	36.1	149800	36.0

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 50 Hz*

Technical data and ordering

SH - Scroll compressors - R410A - 60 Hz

Performance table

Type	To	-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SH090	35	11500	5.53	14400	5.56	17800	5.61	21800	5.66	26400	5.72	31600	5.79	37600	5.87	44400	5.96
	45	10000	6.84	12700	6.87	15800	6.90	19500	6.94	23600	6.98	28500	7.04	33900	7.11	40200	7.20
	55	–	–	–	–	13500	8.58	16800	8.60	20500	8.62	24800	8.66	29700	8.71	35300	8.77
SH105	35	14200	6.51	17500	6.59	21400	6.68	25900	6.78	31000	6.88	37000	6.96	43700	7.03	51300	7.06
	45	12500	7.91	15600	7.94	19200	8.01	23300	8.10	28000	8.21	33500	8.33	39700	8.44	46800	8.55
	55	–	–	–	–	16600	9.76	20300	9.81	24500	9.90	29400	10.01	35100	10.15	41500	10.29
SH120	35	16000	7.15	19900	7.26	24500	7.38	29800	7.51	35800	7.67	42800	7.85	50700	8.06	59700	8.31
	45	14000	8.80	17600	8.88	21800	8.98	26600	9.08	32200	9.21	38500	9.36	45700	9.55	53900	9.77
	55	–	–	–	–	18700	11.08	23000	11.14	28000	11.22	33700	11.32	40100	11.46	47500	11.63
SH140	35	19100	8.18	23400	8.31	28500	8.44	34400	8.59	41200	8.73	49000	8.88	57900	9.02	67900	9.16
	45	16900	9.97	20900	10.07	25500	10.19	30900	10.32	37100	10.47	44300	10.63	52400	10.80	61700	10.96
	55	–	–	–	–	22100	12.47	26900	12.57	32400	12.70	38800	12.85	46100	13.01	54500	13.18
SH161	35	21400	9.22	26300	9.34	32100	9.47	38700	9.60	46400	9.75	55200	9.91	65200	10.09	76600	10.28
	45	18700	11.37	23300	11.47	28500	11.56	34600	11.67	41600	11.79	49600	11.92	58800	12.07	69200	12.24
	55	–	–	–	–	24500	14.34	29900	14.40	36100	14.48	43200	14.56	51500	14.67	60800	14.79
SH180	35	23400	10.85	29300	10.89	36100	10.93	44000	10.96	53200	11.00	63600	11.03	75500	11.07	88900	11.11
	45	20300	13.46	25700	13.48	31900	13.51	39200	13.54	47600	13.56	57200	13.59	68100	13.62	80400	13.65
	55	–	–	–	–	27200	16.86	33600	16.84	41100	16.82	49600	16.81	59400	16.79	70600	16.78
SH184	35	24500	10.44	30100	10.66	36600	10.89	44100	11.11	52700	11.32	62600	11.51	73800	11.66	86500	11.76
	45	21600	12.68	26700	12.87	32700	13.08	39500	13.31	47500	13.55	56500	13.77	66800	13.98	78500	14.16
	55	–	–	–	–	28300	15.90	34400	16.09	41500	16.31	49600	16.53	58900	16.76	69500	16.98
SH240	35	32800	14.32	40400	14.41	49200	14.48	59400	14.56	71200	14.69	84600	14.89	100000	15.20	117300	15.65
	45	28800	17.53	35700	17.71	43800	17.83	53000	17.92	63700	18.01	75900	18.14	89900	18.33	105800	18.62
	55	–	–	–	–	37800	21.90	46000	22.07	55400	22.20	66300	22.32	78700	22.46	93000	22.66
SH295	35	40300	17.44	49600	17.66	60300	17.86	72800	18.07	87200	18.37	103700	18.79	122400	19.39	143600	20.23
	45	35500	21.18	43900	21.55	53700	21.82	65000	22.04	78000	22.26	93000	22.54	110100	22.93	129400	23.48
	55	–	–	–	–	46400	26.60	56400	26.92	68000	27.18	81300	27.42	96500	27.69	113800	28.06
SH380	35	48700	22.23	60200	22.44	73600	22.71	89200	23.02	107100	23.37	127600	23.77	151000	24.19	177500	24.65
	45	42800	27.08	53300	27.23	65400	27.44	79600	27.69	96000	28.00	114800	28.35	136300	28.73	160800	29.15
	55	–	–	–	–	56400	33.48	68900	33.68	83500	33.94	100400	34.24	119900	34.58	142100	34.97
SH485	35	63100	28.00	77700	28.38	94700	28.81	114500	29.22	137400	29.50	163800	29.56	193900	29.33	228200	28.71
	45	55800	34.23	69100	34.42	84500	34.79	102400	35.24	123100	35.69	147100	36.05	174500	36.23	205800	36.14
	55	–	–	–	–	73300	42.35	89200	42.68	107600	43.12	129000	43.58	153500	43.99	181700	44.24

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 60 Hz*

Technical data and ordering

SM / SY / SZ - Scroll compressors - R22 / R407C - 50 Hz

Technical data

Type		Nominal Cap. 60 Hz	Nominal cooling capacity		Power input	COP	E.E.R.	Swept volume	Displacement [1]	Oil charge	Net weight [2]
		[TR]	[W]	[Btu/h]	[kW]	[W]/[W]	[Btu/h]/[W]	[cm³/rev]	[m³/h]	[dm³]	[kg]
R22 SINGLE	SM084	7	20400	69600	6.12	3.33	11.4	114.5	19.9	3.25	64
	SM090	7.5	21800	74400	6.54	3.33	11.4	120.5	21.0	3.25	65
	SM100	8	23100	78800	6.96	3.33	11.4	127.2	22.1	3.25	65
	SM110	9	25900	88400	7.82	3.32	11.3	144.2	25.1	3.25	73
	SM112	9.5	27600	94200	7.92	3.49	11.9	151.5	26.4	3.3	64
	SM120	10	30100	102700	8.96	3.36	11.5	166.6	29.0	3.25	73
	SM124	10	31200	106500	8.75	3.56	12.2	169.5	29.5	3.3	64.2
	SM147	12	36000	122900	10.08	3.57	12.2	193.5	33.7	3.3	67
	SM148	12	36100	123200	10.8	3.34	11.4	199	34.6	3.6	88
	SM161	13	39000	133100	11.59	3.37	11.5	216.6	37.7	3.6	88
	SM175	14	42000	143300	12.47	3.37	11.5	233	40.5	6.2	100
	SM/SY185	15	45500	155300	13.62	3.34	11.4	249.9	43.5	6.2	100
	SY240	20	61200	208900	18.2	3.36	11.5	347.8	60.5	8	150
	SY300	25	78200	266900	22.83	3.43	11.7	437.5	76.1	8	157
	SY380	30	94500	322500	27.33	3.46	11.8	531.2	92.4	8.4	158
R407C SINGLE	SZ084	7	19300	65900	6.13	3.15	10.8	114.5	19.9	3.25	64
	SZ090	7.5	20400	69600	6.45	3.16	10.8	120.5	21.0	3.25	65
	SZ100	8	21600	73700	6.84	3.15	10.8	127.2	22.1	3.25	65
	SZ110	9	24600	84000	7.76	3.17	10.8	144.2	25.1	3.25	73
	SZ120	10	28600	97600	8.99	3.17	10.8	166.6	29.0	3.25	73
	SZ147	12	34900	119079	9.92	3.52	12.0	193.5	33.7	3.30	67
	SZ148	12	35100	119800	10.99	3.19	10.9	199	34.6	3.6	88
	SZ161	13	38000	129700	11.84	3.21	11.0	216.6	37.7	3.6	88
	SZ175	14	40100	136900	12.67	3.17	10.8	233	40.5	6.2	100
	SZ185	15	43100	147100	13.62	3.16	10.8	249.9	43.5	6.2	100
	SZ240	20	59100	201700	18.55	3.19	10.9	347.8	60.5	8	150
	SZ300	25	72700	248100	22.73	3.2	10.9	437.5	76.1	8	157
	SZ380	30	89600	305800	27.59	3.25	11.1	531.2	92.4	8.4	158

TR: *Ton of Refrigeration*
COP: *Coefficient Of Performance*
EER: *Energy Efficiency Ratio*
Subcooling: *8.3 K*
Superheat: *11.1 K*
[1]) Displacement at nominal speed: 2900 rpm at 50 Hz, 3500 rpm at 60 Hz
[2]) Net weight with oil charge

Technical data and ordering

SM / SY / SZ - Scroll compressors - R22 / R407C - 60 Hz

Technical data

Type		Nominal Cap. 60 Hz	Nominal cooling capacity		Power input	COP	E.E.R.	Swept volume	Displacement [1]	Oil charge	Net weight [2]
		[TR]	[W]	[Btu/h]	[kW]	[W]/[W]	[Btu/h]/[W]	[cm³/rev]	[m³/h]	[dm³]	[kg]
R22 SINGLE	SM084	7	24600	84000	7.40	3.34	11.4	114.5	24.1	3.25	64
	SM090	7.5	26400	90100	7.80	3.37	11.5	120.5	25.3	3.25	65
	SM100	8	27500	93900	8.10	3.38	11.5	127.2	26.7	3.25	65
	SM110	9	31600	107800	9.30	3.38	11.5	144.2	30.3	3.25	73
	SM112	9.5	34000	116000	9.60	3.53	12.1	151.5	31.8	3.30	64
	SM120	10	36700	125300	10.80	3.40	11.6	166.6	35.0	3.25	73
	SM124	10.5	37700	128700	10.60	3.56	12.2	169.5	35.6	3.30	64
	SM147	12	43600	148800	12.20	3.58	12.2	193.5	40.6	3.30	67
	SM148	12	43800	149500	13.00	3.37	11.5	199.0	41.8	3.60	88
	SM161	13	47600	162500	14.10	3.39	11.6	216.6	45.5	3.60	88
	SM175	14	51100	174400	15.30	3.34	11.4	233.0	48.9	6.20	100
	SM/SY185	15	55300	188700	16.30	3.39	11.6	249.9	52.5	6.20	100
	SY240	20	74100	252900	22.10	3.35	11.4	347.8	73.0	8.00	150
	SY300	25	94500	322500	27.50	3.43	11.7	437.5	91.9	8.00	157
	SY380	30	115300	393500	33.40	3.46	11.8	531.2	111.6	8.40	158
R407C SINGLE	SZ084	7	22500	76800	7.10	3.19	10.9	114.5	24.1	3.25	64
	SZ090	7.5	24400	83300	7.60	3.20	10.9	120.5	25.3	3.25	65
	SZ100	8	26500	90400	8.20	3.24	11.1	127.2	26.7	3.25	65
	SZ110	9	30100	102700	9.30	3.24	11.1	144.2	30.3	3.25	73
	SZ120	10	34800	118800	10.70	3.24	11.1	166.6	35.0	3.25	73
	SZ147	12	42300	144328	12.03	3.52	12.0	193.5	40.6	3.30	67
	SZ148	12	42600	145400	13.30	3.19	10.9	199.0	41.8	3.60	88
	SZ161	13	46000	157000	14.30	3.21	11.0	216.6	45.5	3.60	88
	SZ175	14	48700	166200	15.30	3.19	10.9	233.0	48.9	6.20	100
	SZ185	15	51800	176800	16.40	3.15	10.8	249.9	52.5	6.20	100
	SZ240	20	71100	242700	22.70	3.14	10.7	347.8	73.0	8.00	150
	SZ300	25	87900	300000	27.50	3.20	10.9	437.5	91.9	8.00	157
	SZ380	30	107300	366200	33.50	3.20	10.9	531.2	111.6	8.40	158

TR: *Ton of Refrigeration*
COP: *Coefficient Of Performance*
EER: *Energy Efficiency Ratio*
Subcooling: *8.3 K*
Superheat: *11.1 K*
[1]) Displacement at nominal speed: 2900 rpm at 50 Hz, 3500 rpm at 60 Hz
[2]) Net weight with oil charge

SM112-124-147 - Scroll compressors - R22

Ordering single pack

Type	Connections	Motor protection	Code no.				
			3	4	6	7	9
			200 – 230 / 3 / 60	460 / 3 / 60 380 – 400 / 3 / 50	230 / 3 / 50	575 / 3 / 60 500 / 3 / 50	380 / 3 / 60
SM112	Brazed	Internal	–	120H0611	–	–	120H0613
SM124	Brazed	Internal	120H0183	120H0185	–	–	120H0187
SM147	Brazed	Internal	120H0189	120H0191	–	–	120H0197
SZ147	Brazed	Internal	–	120H1096	–	–	–

SM112-124-147 - Scroll compressors - R22

Ordering industrial pack

Type	Connections	Motor protection	Code no.				
			3	4	6	7	9
			200 – 230 / 3 / 60	460 / 3 / 60 380 – 400 / 3 / 50	230 / 3 / 50	575 / 3 / 60 500 / 3 / 50	380 / 3 / 60
SM112	Brazed	Internal	120H0610	120H0612	–	–	120H0614
SM124	Brazed	Internal	120H0184	120H0186	–	–	120H0188
SM147	Brazed	Internal	120H0190	120H0311	–	–	120H0198
SZ147	Brazed	Internal	–	120H1097	–	–	–

Technical data and ordering

SM / SY - Scroll compressors - R22

Ordering single pack

Type	Connections	Motor protection	Code no.				
			3	4	6	7	9
			200 – 230 / 3 / 60	460 / 3 / 60 380 – 400 / 3 / 50	230 / 3 / 50	575 / 3 / 60 500 / 3 / 50	380 / 3 / 60
SM084	Brazed	Internal	–	SM084-4VI	–	SM084-7VI	SM084-9VI
SM090	Brazed	Internal	SM090-3VI	SM090-4VI	SM090-6VI	SM090-7VI	SM090-9VI
SM100	Brazed	Internal	SM100-3VI	SM100-4VI	–	SM100-7VI	SM100-9VI
SM110	Brazed	Internal	SM110-3VI	SM110-4VI	SM110-6VI	SM110-7VI	SM110-9VI
SM120	Brazed	Internal	SM120-3VI	SM120-4VI	SM120-6VI	SM120-7VI	SM120-9VI
SM148	Brazed	Internal	SM148-3VAI	SM148-4VAI	SM148-6VAI	–	SM148-9VAI
SM161	Brazed	Internal	SM161-3VAI	SM161-4VAI	–	SM161-7VAI	SM161-9VAI
SM175	Brazed	Thermostat	SM175-3CAI	SM175-4CAI	SM175-6CAI	SM175-7CAI	–
	Brazed	Module 24 V AC	–	SM175-4PCI	–	–	–
	Rotolock	Thermostat	–	SM175-4RI	–	–	–
	Rotolock	Module 24 V AC	SM175-3SCI	SM175-4SCI	–	SM175-7SCI	–
SM185	Brazed	Thermostat	SM185-3CAI	SM185-4CAI	–	SM185-7CAI	SM185-9CAI
	Brazed	Module 24 V AC	–	SM185-4PCI	–	–	–
	Brazed	Module 230 V AC	–	–	–	–	SM185-9XCI
	Rotolock	Thermostat	SM185-3RI	SM185-4RI	SM185-6RI	–	SM185-9RI
	Rotolock	Module 24 V AC	SM185-3SCI	–	–	SM185-7SCI	–
	Rotolock	Module 230 V AC	–	SM185-4YCI	–	–	SM185-9YCI
SY185 [1)]	Brazed	Thermostat	–	SY185-4CAI	–	–	–
	Rotolock	Thermostat	–	SY185-4RI	–	–	–
SY240	Brazed	Module 24 V AC	–	SY240A4CAI	–	–	–
	Brazed	Module 115 / 230 V AC	SY240A3CBI	SY240A4CBI	SY240A6CBI	SY240A7CBI	SY240A9CBI
	Rotolock	Module 24 V AC	–	SY240A4PAI	–	–	–
	Rotolock	Module 115 /230 V AC	SY240A3PBI	SY240A4PBI	SY240A6PBI	SY240A7PBI	SY240A9PBI
SY300	Brazed	Module 24 V AC	–	SY300A4CAI	–	–	–
	Brazed	Module 115 / 230 V AC	SY300A3CBI	SY300A4CBI	SY300A6CBI	SY300A7CBI	SY300A9CBI
	Rotolock	Module 24 V AC	–	SY300A4PAI	–	–	–
	Rotolock	Module 115 / 230 V AC	SY300A3PBI	SY300A4PBI	SY300A6PBI	SY300A7PBI	SY300A9PBI
SY380	Brazed	Module 24 V AC	–	SY380A4CAI	–	–	–
	Brazed	Module 115 /230 V AC	–	SY380A4CBI	–	–	–

[1)] No module version available

SM / SY compressors in industrial pack: use numbers from above table and replace the last digit by "M". Example: SY240A3CAM, except for voltage codes 6 and 7 available in single pack only

Technical data and ordering

SZ - Scroll compressors - R407C / R134a

Ordering single pack

Type	Connections	Motor protection	Code no.				
			3	4	6	7	9
			200 – 230 / 3 / 60	460 / 3 / 60 380 – 400 / 3 / 50	230 / 3 / 50	575 / 3 / 60 500 / 3 / 50	380 / 3 / 60
SZ084	Brazed	Internal	SZ084-3VI	SZ084-4VI	SZ084-6VI	–	SZ084-9VI
SZ090	Brazed	Internal	SZ090-3VI	SZ090-4VI	SZ090-6VI	–	SZ090-9VI
SZ100	Brazed	Internal	SZ100-3VI	SZ100-4VI	SZ100-6VI	SZ100-7VI	SZ100-9VI
SZ110	Brazed	Internal	SZ110-3VI	SZ110-4VI	SZ110-6VI	SZ110-7VI	SZ110-9VI
SZ120	Brazed	Internal	SZ120-3VI	SZ120-4VI	SZ120-6VI	SZ120-7VI	SZ120-9VI
SZ147	Brazed	Internal	–	–	–	–	–
SZ148	Brazed	Internal	SZ148-3VAI	SZ148-4VAI	SZ148-6VAI	–	SZ148-9VAI
SZ161	Brazed	Internal	SZ161-3VAI	SZ161-4VAI	SZ161-6VAI	–	SZ161-9VAI
SZ175	Brazed	Thermostat	SZ175-3CAI	SZ175-4CAI	SZ175-6CAI	SZ175-7CAI	SZ175-9CAI
	Brazed	Module 24 V AC	–	SZ175-4PCI	–	–	–
	Rotolock	Thermostat	–	SZ175-4RI	–	–	SZ175-9RI
	Rotolock	Module 24 V AC	SZ175-3SCI	SZ175-4SCI	–	SZ175-7SCI	–
SZ185	Brazed	Thermostat	SZ185-3CAI	SZ185-4CAI	SZ185-6CAI	SZ185-7CAI	SZ185-9CAI
	Brazed	Module 24 V AC	–	SZ185-4PCI	–	–	–
	Brazed	Module 230 V	–	SZ185-4XCI	–	–	SZ185-9XCI
	Rotolock	Thermostat	SZ185-3RI	SZ185-4RI	SZ185-6RI	SZ185-7RI	SZ185-9RI
	Rotolock	Module 24 V AC	–	SZ185-4SCI	–	SZ185-7SCI	–
	Rotolock	Module 230 V	–	–	–	–	SZ185-9YCI
SZ240	Brazed	Module 24 V AC	–	SZ240A4CAI	–	–	–
	Brazed	Module 115 / 230 V	–	SZ240A4CBI	SZ240A6CBI	–	SZ240A9CBI
	Rotolock	Module 24 V AC	–	SZ240A4PAI	–	–	–
	Rotolock	Module 115 / 230 V	SZ240A3PBI	SZ240A4PBI	SZ240A6PBI	SZ240A7PBI	SZ240A9PBI
SZ300	Brazed	Module 24 V AC	–	SZ300A4CAI	–	–	–
	Brazed	Module 115 / 230 V	SZ300A3CBI	SZ300A4CBI	SZ300A6CBI	SZ300A7CBI	SZ300A9CBI
	Rotolock	Module 24 V AC	–	SZ300A4PAI	–	–	–
	Rotolock	Module 115 / 230 V	SZ300A3PBI	SZ300A4PBI	–	SZ300A7PBI	SZ300A9PBI
SZ380	Brazed	Module 24 V AC	–	SZ380A4CAI	–	–	–
	Brazed	Module 115 / 230 V	–	SZ380A4CBI	–	–	–

SZ compressors in industrial pack: use numbers from above table and replace the last digit by "M". Example: SZ240A4CAM, except for voltage codes 6 and 7 available in single pack only

Technical data and ordering

SZ - Scroll compressors - R134a - 50 Hz

Performance table

Type	To	-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SZ084	35	6200	2.8	8000	2.8	10100	2.8	12600	2.8	15400	2.7	18700	2.7	22400	2.6
	55	–	–	6100	4.3	7900	4.3	9900	4.3	12400	4.3	15100	4.3	18300	4.2
SZ090	35	6700	2.9	8600	2.9	10900	3.0	13400	2.9	16400	2.9	19800	2.9	23600	2.8
	55	–	–	6600	4.5	8500	4.6	10700	4.6	13200	4.6	16000	4.5	19300	4.5
SZ100	35	7300	3.1	9400	3.1	11700	3.1	14400	3.1	17500	3.1	21000	3.1	25000	3.1
	55	–	–	7300	4.8	9300	4.8	11500	4.9	14100	4.9	17100	4.9	20400	4.8
SZ110	35	8200	3.5	10500	3.5	13200	3.5	16200	3.5	19800	3.5	23800	3.5	28400	3.5
	55	–	–	8100	5.4	10400	5.4	13000	5.5	16000	5.5	19400	5.5	23300	5.4
SZ120	35	9400	4.0	12000	4.0	15100	4.1	18700	4.1	22800	4.1	27500	4.1	32900	4.0
	55	–	–	9300	6.2	11900	6.3	14900	6.3	18400	6.3	22400	6.3	27000	6.2
SZ148	35	11200	5.0	14400	5.0	18100	5.0	22600	5.0	27900	5.0	34000	5.0	41100	5.0
	55	–	–	11200	7.7	14200	7.7	17800	7.7	22100	7.7	27100	7.8	32800	7.8
SZ161	35	12000	5.2	15300	5.2	19200	5.3	23800	5.3	29200	5.4	35500	5.4	42700	5.4
	55	–	–	12100	8.0	15300	8.0	19200	8.1	23700	8.1	28900	8.1	35000	8.1
SZ175	35	13200	5.7	16900	5.8	21200	5.8	26200	5.9	32100	5.9	38700	5.9	46200	5.8
	55	–	–	13100	8.6	16700	8.6	21000	8.7	26000	8.7	31700	8.8	38100	8.8
SZ185	35	14000	6.1	18000	6.1	22600	6.2	27900	6.2	34100	6.3	41200	6.3	49200	6.2
	55	–	–	13900	9.1	17800	9.2	22400	9.3	27700	9.3	33700	9.3	40600	9.3
SZ240	35	18900	8.4	23900	8.5	29900	8.6	37100	8.7	45700	8.7	56000	8.8	68200	8.9
	55	–	–	18800	12.3	23800	12.5	29700	12.6	36700	12.7	45000	12.9	54700	13.0
SZ300	35	23700	10.2	30000	10.4	37500	10.5	46300	10.6	56700	10.7	68900	10.8	82800	11.0
	55	–	–	23600	15.2	29700	15.4	37100	15.6	45800	15.9	55900	16.1	67800	16.4
SZ380	35	30200	12.3	38000	12.5	47300	12.7	58200	12.9	71000	13.1	85800	13.4	102900	13.6
	55	–	–	30100	18.1	37800	18.4	46900	18.7	57600	19.0	70000	19.2	84400	19.4
SZ170	35	12200	5.5	15700	5.6	19900	5.6	24800	5.5	30400	5.5	36800	5.4	44000	5.3
	55	–	–	11900	8.6	15500	8.6	19600	8.6	24300	8.6	29800	8.5	36000	8.4
SZ180	35	13300	5.9	17000	5.9	21400	5.9	26500	5.9	32300	5.8	39000	5.8	46500	5.7
	55	–	–	13100	9.1	16800	9.1	21100	9.1	26000	9.1	31600	9.1	38000	9.0
SZ200	35	14500	6.2	18400	6.2	23000	6.3	28400	6.3	34500	6.2	41400	6.2	49200	6.1
	55	–	–	14400	9.6	18200	9.7	22700	9.7	27800	9.7	33600	9.7	40200	9.7
SZ220	35	16300	7.0	20700	7.0	25900	7.1	32000	7.1	39000	7.1	46900	7.0	56000	6.9
	55	–	–	16100	10.8	20500	10.9	25600	10.9	31400	10.9	38200	10.9	45900	10.9
SZ230	35	17800	7.6	22800	7.6	28600	7.6	35300	7.6	43000	7.6	51700	7.5	61600	7.4
	55	–	–	17500	11.7	22500	11.8	28200	11.8	34800	11.8	42200	11.8	50700	11.7
SZ242	35	18600	8.0	23700	8.1	29700	8.1	36800	8.1	44900	8.1	54200	8.1	64900	8.0
	55	–	–	18300	12.5	23400	12.5	29300	12.5	36200	12.5	44200	12.5	53300	12.4
SZ250	35	19000	8.1	24300	8.1	30500	8.1	37600	8.1	45800	8.1	55100	8.0	65600	7.9
	55	–	–	18600	12.5	23900	12.5	30000	12.6	37000	12.6	45000	12.5	54000	12.5
SZ268	35	20600	9.0	26400	9.1	33200	9.1	41200	9.1	50600	9.1	61400	9.1	73900	9.0
	55	–	–	20100	13.9	25700	14.0	32300	14.0	39900	14.0	48800	14.0	59100	14.0
SZ271	35	20200	8.7	25800	8.7	32300	8.8	40000	8.9	48900	8.9	59200	8.9	71000	8.9
	55	–	–	19900	13.4	25300	13.5	31600	13.5	39000	13.6	47600	13.6	57400	13.6
SZ281	35	21400	9.2	27300	9.3	34300	9.3	42400	9.4	51900	9.4	62900	9.4	75500	9.4
	55	–	–	21000	14.2	26800	14.3	33500	14.3	41500	14.4	50600	14.4	61200	14.3
SZ285	35	21700	9.3	27800	9.4	34900	9.4	43100	9.5	52600	9.5	63400	9.4	75600	9.3
	55	–	–	21400	14.2	27500	14.2	34500	14.3	42600	14.4	51900	14.4	62400	14.3
SZ290	35	21900	9.5	28000	9.6	35200	9.6	43500	9.7	53100	9.7	64000	9.6	76300	9.5
	55	–	–	21600	14.4	27700	14.5	34800	14.6	43000	14.6	52300	14.7	62900	14.6
SZ296	35	22100	10.0	28300	10.0	35700	10.0	44500	10.0	54900	10.0	67000	10.0	80900	10.0
	55	–	–	22000	15.4	28000	15.4	35200	15.4	43500	15.5	53300	15.5	64700	15.6
SZ310	35	23300	10.1	29800	10.2	37500	10.3	46300	10.3	56500	10.3	68100	10.2	81200	10.1
	55	–	–	23000	15.4	29500	15.5	37100	15.5	45800	15.6	55700	15.6	67000	15.6
SZ320	35	24400	10.5	31300	10.6	39300	10.7	48700	10.8	59400	10.8	71700	10.8	85700	10.8
	55	–	–	24200	15.8	31000	15.9	39000	16.0	48200	16.1	58700	16.2	70700	16.2
SZ322	35	23600	10.4	30100	10.5	37800	10.5	46900	10.6	57600	10.7	69900	10.8	84100	10.8
	55	–	–	23800	15.9	30200	16.0	37800	16.1	46600	16.2	56900	16.2	68900	16.2
SZ350	35	26000	11.4	33200	11.5	41800	11.6	51700	11.7	63100	11.8	76200	11.7	91100	11.7
	55	–	–	25700	17.1	33000	17.3	41400	17.4	51200	17.5	62400	17.5	75100	17.5
SZ370	35	27600	12.1	35400	12.3	44500	12.4	55000	12.5	67200	12.5	81100	12.5	96900	12.4
	55	–	–	27400	18.2	35100	18.4	44100	18.5	54500	18.6	66400	18.7	79900	18.6

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 50 Hz*

Technical data and ordering

SZ - Scroll compressors - R134a - 60 Hz

Performance table

Type	To	-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SZ084	35	7800	3.28	9800	3.30	12300	3.31	15300	3.32	18700	3.31	22700	3.28	27200	3.25
	55	–	–	7800	5.02	9900	5.05	12300	5.09	15200	5.11	18500	5.13	22400	5.13
SZ090	35	8200	3.45	10400	3.48	13100	3.50	16100	3.51	19700	3.50	23900	3.48	28600	3.45
	55	–	–	8300	5.28	10500	5.33	13000	5.36	16000	5.39	19500	5.41	23600	5.41
SZ100	35	8800	3.65	11100	3.68	13900	3.70	17100	3.72	20900	3.72	25300	3.71	30200	3.68
	55	–	–	8800	5.58	11100	5.63	13800	5.67	17000	5.70	20700	5.72	24900	5.72
SZ110	35	10100	4.14	12800	4.18	15900	4.23	19600	4.26	23800	4.27	28700	4.28	34300	4.26
	55	–	–	10000	6.35	12700	6.40	15800	6.45	19400	6.48	23600	6.50	28300	6.51
SZ120	35	11900	4.78	15000	4.85	18600	4.91	22800	4.97	27700	5.00	33300	5.02	39600	5.02
	55	–	–	11700	7.35	14800	7.41	18400	7.47	22600	7.51	27400	7.54	32800	7.54
SZ148	35	13400	6.00	17100	6.14	21400	6.23	26500	6.27	32500	6.26	39500	6.17	47500	6.01
	55	–	–	13400	9.24	17000	9.39	21300	9.48	26300	9.50	32200	9.45	39000	9.31
SZ161	35	14600	6.23	18600	6.34	23300	6.42	28800	6.48	35300	6.52	42800	6.54	51400	6.53
	55	–	–	14700	9.44	18700	9.59	23300	9.70	28600	9.78	34900	9.82	42000	9.84
SZ175	35	16300	6.76	20500	6.85	25600	6.94	31500	7.02	38400	7.08	46300	7.11	55300	7.13
	55	–	–	16100	10.13	20300	10.25	25400	10.37	31200	10.47	38000	10.56	45800	10.63
SZ185	35	17300	7.22	21900	7.32	27200	7.42	33500	7.50	40900	7.56	49300	7.60	58900	7.61
	55	–	–	17100	10.82	21700	10.95	27000	11.08	33300	11.19	40500	11.29	48800	11.36
	35	17300	7.22	21900	7.32	27200	7.42	33500	7.50	40900	7.56	49300	7.60	58900	7.61
	55	–	–	17100	10.82	21700	10.95	27000	11.08	33300	11.19	40500	11.29	48800	11.36
SZ240	35	23200	10.14	29400	10.24	36700	10.37	45400	10.51	55500	10.68	67300	10.86	80800	11.06
	55	–	–	23000	14.86	29100	15.04	36400	15.23	44900	15.44	54800	15.67	66200	15.91
SZ300	35	29100	12.32	36500	12.69	45400	12.98	55900	13.21	68300	13.40	82700	13.58	99500	13.75
	55	–	–	28800	18.40	36100	18.91	44700	19.34	55100	19.69	67200	20.00	81400	20.28
SZ380	35	36200	15.20	45500	15.65	56500	16.00	69500	16.29	84800	16.54	102600	16.78	123200	17.05
	55	–	–	36000	22.19	45200	22.72	56100	23.11	68900	23.38	84000	23.56	101500	23.68
SZ170	35	15300	6.56	19400	6.60	24300	6.62	30100	6.63	36800	6.61	44700	6.56	53600	6.49
	55	–	–	15400	10.02	19500	10.10	24300	10.17	29900	10.22	36500	10.25	44100	10.26
SZ180	35	16200	6.90	20500	6.95	25700	6.99	31800	7.01	38900	7.00	47100	6.96	56400	6.89
	55	–	–	16300	10.56	20600	10.65	25700	10.72	31600	10.77	38500	10.81	46500	10.82
SZ200	35	17200	7.29	21800	7.35	27300	7.40	33700	7.43	41200	7.44	49800	7.41	59600	7.35
	55	–	–	17300	11.16	21800	11.25	27200	11.33	33500	11.39	40800	11.43	49100	11.43
SZ220	35	19900	8.27	25100	8.36	31300	8.45	38600	8.51	47000	8.54	56600	8.54	67500	8.51
	55	–	–	19800	12.68	25000	12.79	31200	12.88	38300	12.95	46400	12.99	55800	13.00
SZ242	35	23300	9.56	29500	9.70	36700	9.82	45000	9.93	54600	10.00	65500	10.04	77900	10.04
	55	–	–	23100	14.69	29200	14.82	36300	14.93	44500	15.01	53900	15.06	64600	15.07
SZ268	35	24900	10.78	31600	10.99	39400	11.15	48600	11.24	59300	11.26	71600	11.19	85700	11.03
	55	–	–	24700	16.58	31400	16.80	39200	16.95	48200	17.01	58700	16.98	70700	16.85
SZ271	35	24300	10.36	30900	10.52	38600	10.65	47700	10.74	58200	10.79	70400	10.81	84400	10.79
	55	–	–	24400	15.78	30900	15.99	38500	16.14	47300	16.26	57600	16.32	69300	16.34
SZ281	35	26100	11.01	33000	11.19	41300	11.34	50900	11.45	62100	11.52	74900	11.56	89600	11.55
	55	–	–	26000	16.79	33000	17.00	41100	17.17	50500	17.29	61300	17.36	73700	17.38
SZ296	35	26500	11.99	33700	12.27	42200	12.46	52300	12.54	64000	12.50	77700	12.33	93500	12.01
	55	–	–	26400	18.46	33500	18.77	42000	18.95	51900	19.00	63500	18.88	76900	18.61
SZ322	35	28800	12.44	36600	12.67	45900	12.84	56800	12.96	69500	13.03	84300	13.06	101300	13.05
	55	–	–	29000	18.87	36700	19.16	45800	19.38	56400	19.54	68700	19.63	82800	19.66
SZ350	35	32100	13.50	40500	13.70	50400	13.88	62100	14.03	75600	14.14	91200	14.22	109000	14.24
	55	–	–	31600	20.25	40100	20.49	50000	20.73	61500	20.94	74900	21.11	90200	21.25
SZ370	35	34100	14.42	43100	14.63	53700	14.82	66100	14.98	80500	15.11	97100	15.19	116000	15.21
	55	–	–	33700	21.63	42700	21.89	53200	22.14	65500	22.37	79700	22.56	96100	22.70

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 60 Hz*

Technical data and ordering

SZ - Scroll compressors - R407C - 50 Hz

Performance table

Type	To	-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SZ084	35	7200	3.9	9300	3.9	11800	4.0	14800	4.0	18300	4.0	22300	4.0	27000	4.0	32300	3.9
	55	–	–	–	–	–	–	11300	6.2	14200	6.2	17500	6.2	21400	6.2	25800	6.2
SZ090	35	7600	4.1	9800	4.1	12500	4.2	15600	4.2	19300	4.2	23600	4.2	28500	4.2	34100	4.1
	55	–	–	–	–	–	–	12000	6.5	15000	6.5	18500	6.5	22500	6.5	27200	6.5
SZ100	35	8100	4.3	10500	4.4	13300	4.4	16600	4.4	20500	4.5	25000	4.4	30100	4.4	36000	4.4
	55	–	–	–	–	–	–	12700	6.9	15900	6.9	19600	6.9	23800	6.9	28700	6.9
SZ110	35	9300	4.9	12000	5.0	15200	5.0	19000	5.0	23400	5.0	28500	5.0	34300	5.0	40900	4.9
	55	–	–	–	–	–	–	14500	7.9	18100	7.9	22300	7.9	27200	7.8	32700	7.8
SZ120	35	11000	5.7	14200	5.7	17900	5.8	22200	5.8	27300	5.8	33200	5.8	39900	5.7	47600	5.6
	55	–	–	–	–	–	–	17000	9.2	21200	9.2	26100	9.2	31600	9.1	38000	9.0
SZ148	35	13500	6.9	17300	7.0	21700	7.0	27000	7.0	33100	7.1	40300	7.1	48500	7.1	57800	7.2
	55	–	–	–	–	–	–	21200	11.1	26200	11.1	32100	11.1	38900	11.1	46700	11.1
SZ161	35	14600	7.4	18700	7.5	23500	7.5	29200	7.6	35800	7.6	43500	7.6	52400	7.7	62600	7.8
	55	–	–	–	–	–	–	22900	12.0	28400	12.0	34700	12.0	42100	12.0	50600	12.0
SZ175	35	15500	8.0	19800	8.0	25000	8.1	31100	8.2	38100	8.2	46300	8.2	55600	8.2	66200	8.2
	55	–	–	–	–	–	–	24000	12.7	29800	12.8	36500	12.8	44200	12.8	53000	12.8
SZ185	35	16600	8.6	21300	8.6	26900	8.7	33400	8.8	41000	8.8	49700	8.8	59700	8.8	71100	8.8
	55	–	–	–	–	–	–	25700	13.7	32000	13.7	39200	13.8	47500	13.8	56900	13.8
SZ240	35	22400	11.7	28900	11.8	36500	11.9	45400	12.1	55900	12.2	68000	12.4	82000	12.5	98000	12.6
	55	–	–	21900	17.9	28100	18.0	35500	18.2	44000	18.4	54000	18.7	65500	18.9	78800	19.2
SZ300	35	28700	13.7	36200	13.9	45100	14.1	55500	14.3	67600	14.5	81700	14.7	98000	14.9	116600	15.2
	55	–	–	28500	21.2	35900	21.6	44600	22.1	54800	22.5	66600	22.9	80400	23.2	96300	23.6
SZ380	35	36000	16.9	45300	17.3	56400	17.6	69400	18.0	84600	18.3	102200	18.6	122400	18.9	145400	19.4
	55	–	–	35000	26.1	44200	26.6	55000	27.0	67500	27.4	82100	27.8	98900	28.1	118200	28.5
SZ170	35	14200	7.8	18300	7.9	23200	8.0	29100	8.0	36000	8.0	44000	8.0	53200	8.0	63700	7.9
	55	–	–	–	–	–	–	22300	12.3	27900	12.4	34500	12.4	42100	12.4	50900	12.4
SZ180	35	15000	8.2	19400	8.3	24600	8.3	30800	8.4	38000	8.4	46400	8.4	56100	8.3	67100	8.2
	55	–	–	–	–	–	–	23600	13.0	29500	13.0	36400	13.1	44400	13.0	53600	13.0
SZ200	35	16000	8.7	20600	8.8	26100	8.8	32700	8.9	40300	8.9	49200	8.9	59300	8.8	70900	8.7
	55	–	–	–	–	–	–	25000	13.8	31300	13.9	38600	13.9	47000	13.8	56600	13.8
SZ220	35	18400	9.9	23700	9.9	30000	10.0	37400	10.1	46100	10.1	56100	10.0	67500	10.0	80600	9.8
	55	–	–	–	–	–	–	28600	15.8	35800	15.8	44000	15.8	53500	15.7	64400	15.5
SZ230	35	20000	10.8	25800	10.8	32800	10.9	40900	10.9	50400	10.9	61200	10.9	73700	10.8	87700	10.7
	55	–	–	–	–	–	–	31100	17.4	38900	17.3	48000	17.3	58400	17.2	70200	17.0
SZ242	35	21600	11.4	27900	11.5	35200	11.6	43800	11.6	53800	11.6	65400	11.5	78600	11.4	93700	11.2
	55	–	–	–	–	–	–	33600	18.3	41800	18.4	51300	18.3	62300	18.1	74800	17.9
SZ250	35	21200	11.4	27500	11.4	34900	11.5	43500	11.5	53600	11.5	65200	11.4	78300	11.4	93300	11.3
	55	–	–	–	–	–	–	33100	18.3	41400	18.3	51100	18.2	62100	18.1	74700	17.9
SZ268	35	24100	12.6	31000	12.7	39000	12.8	48500	12.9	59500	12.9	72300	12.9	87000	12.9	103800	12.8
	55	–	–	–	–	–	–	37600	20.3	46700	20.3	57300	20.3	69400	20.2	83400	20.1
SZ271	35	23900	12.4	30600	12.5	38700	12.6	48100	12.6	59100	12.6	71900	12.7	86600	12.7	103400	12.7
	55	–	–	–	–	–	–	36700	19.9	45700	19.9	56000	19.9	68000	19.9	81800	19.8
SZ281	35	25200	13.1	32300	13.2	40800	13.3	50700	13.4	62200	13.4	75600	13.4	90900	13.4	108500	13.4
	55	–	–	–	–	–	–	39300	21.2	48800	21.2	59900	21.2	72600	21.1	87200	21.0
SZ285	35	25500	13.0	32900	13.2	41500	13.3	51700	13.3	63500	13.3	77200	13.3	92900	13.3	110800	13.2
	55	–	–	–	–	–	–	39300	21.0	48900	21.0	60100	21.0	73100	21.0	87900	20.9
SZ290	35	25200	13.4	32500	13.5	41000	13.5	51100	13.6	62800	13.7	76200	13.7	91600	13.6	109000	13.5
	55	–	–	–	–	–	–	39100	21.4	48800	21.5	59900	21.5	72700	21.4	87300	21.3
SZ296	35	26600	13.8	34000	13.9	42800	14.0	53200	14.1	65300	14.2	79300	14.2	95500	14.3	114000	14.4
	55	–	–	–	–	–	–	41700	22.2	51700	22.3	63200	22.3	76600	22.3	92000	22.3
SZ310	35	27000	14.2	34700	14.4	43900	14.5	54700	14.5	67200	14.6	81600	14.6	98000	14.5	116700	14.4
	55	–	–	–	–	–	–	41900	22.9	52200	22.9	64100	22.9	77800	22.9	93400	22.8
SZ320	35	29200	14.7	37300	14.9	47000	15.0	58400	15.1	71800	15.2	87200	15.2	105000	15.2	125400	15.2
	55	–	–	–	–	–	–	45700	23.6	56700	23.7	69400	23.8	84200	23.8	101300	23.9
SZ322	35	28700	14.9	36800	15.0	46300	15.1	57500	15.1	70600	15.2	85800	15.3	103300	15.4	123300	15.5
	55	–	–	–	–	–	–	45100	23.9	55900	24.0	68400	24.0	82900	24.0	99600	24.0
SZ350	35	30500	15.9	39100	16.1	49300	16.2	61200	16.3	75200	16.4	91200	16.4	109500	16.4	130300	16.4
	55	–	–	–	–	–	–	47200	25.4	58600	25.6	71900	25.6	87100	25.7	104400	25.7
SZ370	35	32700	17.1	42000	17.3	52900	17.4	65800	17.5	80700	17.6	98000	17.7	117700	17.7	140000	17.6
	55	–	–	–	–	–	–	50700	27.4	63000	27.5	77200	27.6	93500	27.6	112100	27.6

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 50 Hz*

Technical data and ordering

SZ - Scroll compressors - R407C - 60 Hz

Performance table

Type	To	-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SZ084	35	8400	4.45	11100	4.49	14300	4.52	17900	4.53	22000	4.52	26700	4.49	32000	4.42	37900	4.33
	55	–	–	–	–	–	–	12600	7.16	16200	7.17	20300	7.17	25000	7.14	30100	7.08
SZ090	35	9200	4.82	12000	4.87	15300	4.92	19100	4.95	23500	4.96	28500	4.95	34200	4.91	40700	4.84
	55	–	–	–	–	–	–	14100	7.69	17800	7.72	22100	7.74	27000	7.73	32500	7.69
SZ100	35	10000	5.16	12900	5.23	16400	5.30	20400	5.35	25100	5.39	30600	5.41	36800	5.40	43800	5.36
	55	–	–	–	–	–	–	15800	8.19	19700	8.24	24100	8.28	29200	8.29	35000	8.28
SZ110	35	11500	5.85	14800	5.93	18700	6.01	23300	6.06	28600	6.10	34700	6.10	41700	6.08	49600	6.02
	55	–	–	–	–	–	–	18000	9.35	22400	9.40	27400	9.41	33200	9.40	39700	9.35
SZ112	35	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	55	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SZ120	35	13500	6.76	17300	6.85	21800	6.94	27000	7.00	33100	7.03	40100	7.02	48100	6.98	57100	6.88
	55	–	–	–	–	–	–	20900	10.88	25900	10.91	31700	10.91	38300	10.86	45900	10.76
SZ124	35	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	55	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SZ147	35	17200	7.51	21500	7.59	26600	7.71	32500	7.85	39500	8.03	47600	8.25	56900	8.52	67600	8.82
	55	–	–	–	–	–	–	26100	11.94	31900	12.01	38700	12.12	46500	12.27	55600	12.47
SZ148	35	16500	8.31	21100	8.40	26400	8.52	32700	8.66	40000	8.78	48500	8.88	58300	8.92	69500	8.89
	55	–	–	–	–	–	–	25800	13.28	31800	13.36	38800	13.47	46900	13.59	56200	13.70
SZ161	35	17800	8.90	22700	9.03	28500	9.14	35300	9.24	43200	9.34	52300	9.44	62900	9.56	75000	9.69
	55	–	–	–	–	–	–	27900	14.27	34400	14.38	41900	14.47	50600	14.55	60700	14.63
SZ175	35	19300	9.48	24600	9.63	30800	9.77	38000	9.89	46500	9.99	56300	10.07	67500	10.12	80200	10.14
	55	–	–	–	–	–	–	29400	15.14	36300	15.29	44300	15.43	53600	15.54	64100	15.62
SZ185	35	20600	10.19	26100	10.35	32700	10.50	40500	10.63	49500	10.75	59900	10.83	71800	10.89	85400	10.90
	55	–	–	–	–	–	–	31300	16.28	38600	16.44	47200	16.59	57000	16.71	68200	16.79
SZ185	35	20600	10.19	26100	10.35	32700	10.50	40500	10.63	49500	10.75	59900	10.83	71800	10.89	85400	10.90
	55	–	–	–	–	–	–	31300	16.28	38600	16.44	47200	16.59	57000	16.71	68200	16.79
SZ240	35	26900	13.97	34700	14.33	43900	14.68	54700	15.00	67300	15.31	81900	15.62	98700	15.92	117900	16.22
	55	–	–	26600	21.18	34200	21.63	42900	22.05	53100	22.43	64800	22.78	78400	23.11	94000	23.40
SZ300	35	35800	16.75	44900	17.09	55700	17.43	68400	17.76	83500	18.09	101300	18.42	122000	18.75	146100	19.08
	55	–	–	34300	25.62	43000	26.11	53300	26.61	65500	27.10	80000	27.61	97100	28.11	117100	28.62
SZ380	35	42900	20.29	54100	20.75	67300	21.23	82900	21.73	101000	22.24	122100	22.76	146400	23.28	174100	23.81
	55	–	–	41900	31.38	52800	31.88	65500	32.42	80500	33.00	97900	33.62	118100	34.26	141300	34.93
SZ170	35	16600	8.90	21900	8.98	28100	9.04	35300	9.06	43400	9.04	52600	8.97	63000	8.84	74600	8.65
	55	–	–	–	–	–	–	24800	14.31	31900	14.34	40000	14.33	49200	14.26	59400	14.14
SZ180	35	18100	9.63	23600	9.74	30100	9.83	37600	9.89	46300	9.92	56200	9.89	67500	9.82	80100	9.68
	55	–	–	–	–	–	–	27800	15.37	35100	15.44	43600	15.47	53100	15.45	63900	15.37
SZ200	35	19800	10.31	25500	10.46	32300	10.59	40200	10.70	49500	10.77	60200	10.80	72400	10.78	86300	10.71
	55	–	–	–	–	–	–	31200	16.37	38700	16.48	47500	16.55	57600	16.57	69000	16.54
SZ220	35	22700	11.69	29200	11.86	36800	12.00	45800	12.12	56300	12.19	68300	12.20	82100	12.15	97600	12.02
	55	–	–	–	–	–	–	35500	18.69	44100	18.78	54000	18.81	65300	18.79	78200	18.69
SZ242	35	26600	13.50	34000	13.70	42900	13.86	53200	13.98	65200	14.05	79000	14.04	94800	13.95	112600	13.76
	55	–	–	–	–	–	–	41200	21.75	51100	21.81	62500	21.80	75500	21.71	90400	21.51
SZ268	35	29600	15.07	37800	15.25	47400	15.46	58800	15.65	72000	15.81	87300	15.90	104800	15.90	124700	15.77
	55	–	–	–	–	–	–	46100	24.16	56900	24.27	69500	24.37	84000	24.45	100600	24.46
SZ271	35	28900	14.75	37000	14.96	46500	15.14	57700	15.30	70700	15.43	85700	15.54	103000	15.63	122700	15.71
	55	–	–	–	–	–	–	45200	23.63	55900	23.78	68300	23.89	82500	23.95	98900	23.98
SZ281	35	30900	15.65	39400	15.88	49500	16.07	61300	16.24	75100	16.37	91100	16.46	109300	16.53	130100	16.57
	55	–	–	–	–	–	–	48100	25.16	59400	25.30	72500	25.38	87600	25.41	105000	25.39
SZ294	35	34100	15.02	42600	15.18	52700	15.41	64500	15.70	78300	16.07	94400	16.51	112800	17.03	133900	17.64
	55	–	–	–	–	–	–	51800	23.88	63300	24.02	76700	24.24	92300	24.54	110200	24.94
SZ296	35	32600	16.62	41500	16.79	52000	17.03	64400	17.30	78800	17.55	95500	17.74	114800	17.83	136900	17.76
	55	–	–	–	–	–	–	50900	26.55	62700	26.70	76500	26.92	92500	27.16	110800	27.38
SZ322	35	35100	17.78	44800	18.04	56100	18.27	69500	18.47	85000	18.66	103100	18.87	123900	19.10	147700	19.37
	55	–	–	–	–	–	–	54900	28.53	67700	28.75	82600	28.93	99800	29.09	119600	29.24
SZ350	35	38100	18.95	48400	19.24	60600	19.52	74900	19.77	91700	19.98	110900	20.14	133000	20.23	158100	20.26
	55	–	–	–	–	–	–	57900	30.26	71600	30.56	87300	30.83	105500	31.05	126200	31.22
SZ370	35	40500	20.38	51500	20.69	64400	20.99	79700	21.26	97500	21.48	118000	21.65	141500	21.76	168200	21.79
	55	–	–	–	–	–	–	61600	32.53	76100	32.86	92900	33.15	112300	33.39	134300	33.57

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 60 Hz*

Technical data and ordering

SM / SY - Scroll compressors - R22 - 50 Hz

Performance table

Type	To	-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SM084	35	7700	4.0	9900	4.0	12500	4.0	15500	4.0	18900	4.0	22800	4.0	27200	3.9	32100	3.9
	55	–	–	–	–	–	–	12000	6.4	15000	6.3	18500	6.2	22500	6.2	26900	6.1
SM090	35	8600	4.3	10900	4.4	13600	4.4	16700	4.4	20200	4.4	24300	4.4	28900	4.4	34100	4.4
	55	–	–	–	–	–	–	13300	6.7	16400	6.7	19900	6.6	23900	6.6	28400	6.5
SM100	35	9000	4.6	11500	4.6	14400	4.7	17700	4.7	21500	4.7	25800	4.7	30700	4.7	36200	4.7
	55	–	–	–	–	–	–	14200	7.1	17400	7.1	21200	7.1	25400	7.0	30200	7.0
SM110	35	10200	5.2	13000	5.2	16200	5.2	20000	5.2	24200	5.2	29000	5.2	34400	5.2	40400	5.2
	55	–	–	–	–	–	–	15900	8.0	19600	8.0	23800	7.9	28400	7.9	33700	7.8
SM112	35	11300	5.1	14100	5.1	17400	5.2	21200	5.3	25500	5.4	30500	5.5	36100	5.6	42500	5.7
	55	–	–	–	–	–	–	17500	7.8	21200	7.9	25400	8.0	30200	8.1	35700	8.2
SM120	35	11800	6.0	15200	6.0	19000	6.0	23300	5.9	28200	5.9	33700	5.9	39900	5.9	46700	5.9
	55	–	–	–	–	–	–	18600	9.2	22800	9.2	27600	9.1	33000	9.0	38900	9.0
SM124	35	13100	5.4	16200	5.5	19800	5.7	23900	5.8	28700	6.0	34100	6.1	40300	6.2	47200	6.4
	55	–	–	–	–	–	–	19800	8.4	24000	8.6	28700	8.8	34100	9.0	40200	9.2
SM147	35	14900	6.3	18600	6.4	22900	6.5	27800	6.7	33500	6.9	40000	7.1	47300	7.2	55600	7.4
	55	–	–	–	–	–	–	22700	9.8	27500	9.9	33100	10.1	39400	10.3	46600	10.5
SM148	35	14800	7.0	18500	7.0	22900	7.1	27800	7.1	33600	7.2	40100	7.2	47500	7.3	55900	7.3
	55	–	–	–	–	–	–	22600	10.9	27500	10.9	33100	10.9	39500	11.0	46800	11.0
SM161	35	16000	7.5	20100	7.6	24700	7.6	30100	7.6	36300	7.7	43400	7.7	51400	7.8	60500	7.8
	55	–	–	–	–	–	–	24400	11.7	29700	11.7	35800	11.7	42800	11.8	50600	11.8
SM175	35	17000	8.1	21300	8.1	26400	8.2	32300	8.3	39000	8.4	46600	8.4	55200	8.5	64800	8.5
	55	–	–	–	–	–	–	26200	12.4	32000	12.5	38500	12.6	46000	12.6	54400	12.7
SM185	35	18400	8.8	23100	8.9	28600	9.0	35000	9.1	42200	9.1	50500	9.2	59800	9.3	70200	9.3
	55	–	–	–	–	–	13.5	28400	13.6	34600	13.7	41800	13.8	49800	13.8	58900	13.9
SY185	35	17600	8.7	22500	8.7	28100	8.7	34500	8.8	42000	8.9	50400	9.0	60000	9.1	70900	9.2
	55	–	–	–	–	–	13.3	28600	13.3	34800	13.3	41900	13.4	49800	13.5	58600	13.7
SY240	35	25100	11.7	31400	11.8	38800	12.0	47300	12.1	57100	12.4	68300	12.6	81000	13.0	95300	13.3
	55	–	–	–	–	–	–	38400	17.8	46600	18.0	56100	18.3	67000	18.6	79300	18.9
SY300	35	31900	14.2	39900	14.5	49300	14.8	60300	15.1	73100	15.6	87900	16.1	104800	16.7	124100	17.4
	55	–	–	–	–	–	–	48600	22.0	59200	22.4	71600	22.8	85900	23.4	102300	24.1
SY380	35	40100	17.3	49500	17.6	60500	18.0	73300	18.4	88100	18.8	104900	19.2	124100	19.8	145800	20.4
	55	–	–	–	–	–	–	59700	26.8	72300	27.1	86800	27.5	103400	27.9	122300	28.4
SM170	35	15200	8.0	19500	8.0	24600	8.0	30500	8.0	37200	8.0	44900	7.9	53500	7.9	63200	7.8
	55	–	–	–	–	–	–	23600	12.7	29600	12.6	36500	12.5	44300	12.3	53100	12.1
SM180	35	16900	8.6	21400	8.7	26700	8.8	32800	8.8	39900	8.8	47900	8.8	56900	8.8	67100	8.7
	55	–	–	–	–	–	–	26200	13.4	32300	13.3	39300	13.3	47100	13.2	56000	13.1
SM200	35	17700	9.2	22600	9.3	28300	9.3	34800	9.3	42300	9.4	50900	9.4	60500	9.4	71300	9.4
	55	–	–	–	–	–	–	27900	14.3	34400	14.2	41700	14.1	50000	14.0	59400	13.9
SM220	35	20000	10.4	25500	10.4	32000	10.4	39300	10.4	47700	10.5	57100	10.5	67700	10.4	79500	10.4
	55	–	–	–	–	–	–	31400	16.0	38600	16.0	46800	15.9	56000	15.8	66300	15.6
SM230	35	22000	10.8	27400	10.9	33700	10.9	41000	10.9	49500	10.9	59100	10.9	70100	10.9	82400	10.8
	55	–	–	–	–	–	–	32500	17.2	40800	17.1	50200	16.9	61000	16.7	73100	16.5
SM242	35	23300	12.0	29900	11.9	37400	11.9	45900	11.9	55600	11.9	66400	11.9	78500	11.8	92000	11.8
	55	–	–	–	–	–	–	36600	18.4	45000	18.3	54400	18.2	64900	18.1	76600	17.9
SM248	35	26300	10.9	32500	11.1	39600	11.3	47900	11.6	57400	11.9	68200	12.2	80500	12.5	94400	12.7
	55	–	–	–	–	–	–	39700	16.9	47900	17.2	57400	17.5	68100	17.9	80300	18.4
SM250	35	23700	11.6	29500	11.7	36200	11.7	44100	11.7	53200	11.7	63500	11.7	75300	11.7	88600	11.6
	55	–	–	–	–	–	–	35000	18.5	43800	18.4	54000	18.2	65600	18.0	78600	17.7
SM268	35	26600	13.0	33700	13.0	41800	13.0	51100	13.1	61700	13.1	73700	13.2	87300	13.2	102400	13.2
	55	–	–	–	–	–	–	40700	20.1	49800	20.1	60100	20.0	71700	20.0	84800	20.0
SM271	35	25800	12.7	32500	12.8	40300	12.8	49300	12.9	59600	12.9	71300	13.0	84500	13.0	99300	13.0
	55	–	–	–	–	–	–	39700	19.7	48600	19.7	58700	19.7	70100	19.6	83000	19.6
SM272	35	28000	11.7	34800	11.9	42600	12.2	51700	12.5	62100	12.8	73900	13.2	87400	13.5	102600	13.8
	55	–	–	–	–	–	–	41700	18.3	50500	18.5	60600	18.9	72100	19.3	85200	19.7
SM281	35	27500	13.5	34700	13.5	43000	13.6	52600	13.6	63600	13.6	75900	13.7	89900	13.7	105500	13.7
	55	–	–	–	–	–	–	42300	20.9	51800	20.9	62500	20.8	74600	20.8	88200	20.8
SM285	35	27100	13.4	34000	13.5	42100	13.6	51400	13.7	62000	13.8	74100	13.9	87800	14.0	103200	14.1
	55	–	–	–	–	–	–	41200	20.8	51100	20.8	62300	20.8	75000	20.8	89300	20.7
SM290	35	27700	13.5	34700	13.6	42900	13.7	52300	13.8	63100	13.8	75400	13.9	89400	13.9	105100	13.9
	55	–	–	–	–	–	–	42000	21.0	51900	21.1	63100	21.1	75800	21.0	90100	20.9
SM294	35	29900	12.5	37200	12.7	45800	13.0	55600	13.4	67000	13.7	79900	14.1	94600	14.5	111200	14.8
	55	–	–	–	–	–	–	45400	19.7	55100	19.9	66200	20.2	78900	20.6	93300	21.1
SM296	35	29200	14.0	36500	14.1	45000	14.2	54800	14.2	66100	14.3	79000	14.4	93600	14.5	110100	14.6
	55	–	–	–	–	–	–	44500	21.8	54100	21.8	65200	21.8	77900	21.9	92200	21.9
SM310	35	30000	14.6	37500	14.7	46300	14.8	56500	14.9	68200	15.0	81500	15.1	96500	15.1	113500	15.1
	55	–	–	–	–	–	–	45400	22.8	56000	22.9	68100	22.9	81900	22.8	97300	22.7
SM320	35	30600	15.2	38600	15.4	47900	15.6	58600	15.7	70800	15.9	84700	16.1	100300	16.3	117900	16.5
	55	–	–	–	–	–	–	47400	23.1	58300	23.3	70600	23.4	84500	23.5	100100	23.7
SM322	35	31600	15.0	39500	15.1	48700	15.2	59300	15.3	71500	15.4	85500	15.5	101300	15.6	119100	15.6
	55	–	–	–	–	–	–	48100	23.4	58600	23.4	70600	23.4	84200	23.5	99700	23.5
SM350	35	33500	16.1	42000	16.3	52000	16.4	63600	16.6	76800	16.7	91800	16.8	108700	16.9	127700	17.0
	55	–	–	–	–	–	–	51600	24.9	63000	25.0	75900	25.2	90600	25.3	107100	25.4
SM370	35	36200	17.6	45500	17.8	56400	18.0	68900	18.1	83200	18.3	99400	18.4	117700	18.5	138300	18.6
	55	–	–	–	–	–	–	55900	27.2	68200	27.3	82300	27.5	98200	27.6	116000	27.7

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 50 Hz*

Technical data and ordering

SM / SY - Scroll compressors - R22 - 60 Hz

Performance table

Type	To	-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
SM084	35	9600	4.78	12200	4.81	15200	4.83	18700	4.86	22600	4.89	27100	4.91	32100	4.92	37800	4.93
	55	–	–	–	–	–	–	15000	7.53	18500	7.51	22500	7.49	27000	7.45	32100	7.40
SM090	35	10600	5.20	13300	5.25	16500	5.29	20200	5.33	24500	5.36	29400	5.38	34900	5.39	41100	5.39
	55	–	–	–	–	–	–	16400	7.93	20000	7.93	24200	7.92	28900	7.90	34300	7.86
SM100	35	11200	5.41	14100	5.46	17400	5.50	21300	5.54	25700	5.58	30700	5.61	36400	5.62	42700	5.63
	55	–	–	–	–	–	–	17200	8.26	21000	8.26	25300	8.25	30100	8.23	35600	8.19
SM110	35	12800	6.17	16100	6.22	20000	6.26	24400	6.30	29500	6.34	35200	6.37	41600	6.40	48800	6.43
	55	–	–	–	–	–	–	19800	9.46	24100	9.47	29000	9.47	34500	9.46	40700	9.44
SM112	35	14100	6.07	17600	6.19	21600	6.33	26200	6.48	31500	6.64	37600	6.83	44400	7.02	52200	7.23
	55	–	–	–	–	–	–	21700	9.40	26200	9.51	31300	9.66	37100	9.82	43700	10.02
SM120	35	15000	7.10	18800	7.13	23300	7.17	28400	7.20	34200	7.25	40800	7.29	48300	7.34	56600	7.39
	55	–	–	–	–	–	–	23000	10.92	28000	10.93	33700	10.94	40100	10.94	47300	10.95
SM124	35	16000	6.50	19800	6.64	24300	6.82	29500	7.05	35400	7.32	42200	7.63	49900	7.97	58600	8.36
	55	–	–	–	–	–	–	24100	10.20	29100	10.37	34700	10.60	41200	10.87	48600	11.18
SM147	35	18600	7.58	22800	7.75	27800	7.93	33500	8.10	40000	8.29	47500	8.47	55900	8.66	65500	8.84
	55	–	–	–	–	–	–	28000	11.75	33600	11.97	40100	12.20	47600	12.46	56000	12.73
SM148	35	18100	8.32	22600	8.44	27800	8.54	33800	8.62	40600	8.71	48500	8.79	57400	8.89	67500	9.00
	55	–	–	–	–	–	–	27600	12.91	33500	13.03	40300	13.13	48000	13.22	56700	13.31
SM161	35	19700	8.99	24600	9.12	30200	9.23	36700	9.32	44200	9.41	52700	9.51	62400	9.61	73300	9.72
	55	–	–	–	–	–	–	30000	13.96	36400	14.08	43800	14.19	52100	14.29	61600	14.39
SM175	35	21100	9.81	26400	9.98	32500	10.15	39500	10.31	47500	10.46	56500	10.59	66600	10.70	77800	10.80
	55	–	–	–	–	–	–	32200	15.06	39200	15.23	47000	15.39	55800	15.53	65600	15.65
SM185	35	22500	10.42	28100	10.60	34600	10.78	42000	10.95	50500	11.10	60100	11.25	70800	11.37	82800	11.47
	55	–	–	–	–	–	–	34300	15.99	41700	16.17	50000	16.34	59300	16.49	69800	16.62
SY185	35	22500	10.37	28000	10.49	34500	10.60	42000	10.71	50800	10.83	60800	10.94	72200	11.05	85100	11.16
	55	–	–	–	–	–	–	34600	15.85	42100	16.13	50800	16.39	60700	16.63	71900	16.86
SY240	35	30600	13.98	38200	14.17	47100	14.43	57300	14.75	69100	15.15	82500	15.63	97600	16.19	114800	16.84
	55	–	–	–	–	–	–	46700	21.37	56700	21.74	68100	22.16	81000	22.64	95700	23.19
SY300	35	39800	16.39	49400	16.85	60600	17.38	73600	17.97	88500	18.59	105600	19.25	125000	19.91	146900	20.58
	55	–	–	–	–	–	–	59600	25.95	72300	26.65	86800	27.43	103400	28.30	122300	29.22
SY380	35	49000	20.86	60600	21.18	74200	21.63	89900	22.16	108000	22.77	128600	23.41	152100	24.06	178600	24.68
	55	–	–	–	–	–	–	72800	32.58	88300	32.94	106000	33.45	126200	34.09	149000	34.81
SM170	35	18900	9.54	24000	9.60	29900	9.66	36800	9.72	44500	9.77	53300	9.80	63300	9.83	74400	9.85
	55	–	–	–	–	–	–	29500	15.04	36400	15.01	44300	14.96	53300	14.89	63300	14.80
SM180	35	20900	10.40	26200	10.49	32600	10.57	39900	10.65	48300	10.71	57900	10.76	68700	10.78	80900	10.78
	55	–	–	–	–	–	–	32300	15.85	39400	15.85	47600	15.83	57000	15.79	67500	15.71
SM200	35	22000	10.81	27700	10.91	34300	11.00	41900	11.08	50600	11.15	60500	11.21	71700	11.24	84200	11.25
	55	–	–	–	–	–	–	34000	16.50	41400	16.51	49800	16.49	59400	16.45	70100	16.37
SM220	35	25300	12.34	31800	12.42	39400	12.51	48100	12.59	58000	12.66	69300	12.74	82000	12.80	96200	12.85
	55	–	–	–	–	–	–	39000	18.91	47500	18.92	57100	18.92	68000	18.90	80300	18.86
SM242	35	29500	14.19	37100	14.25	45800	14.32	55900	14.40	67400	14.48	80400	14.58	95100	14.67	111400	14.78
	55	–	–	–	–	–	–	45300	21.83	55200	21.84	66400	21.86	79100	21.87	93200	21.88
SM248	35	32000	13.01	39600	13.27	48600	13.64	58900	14.09	70700	14.63	84300	15.25	99700	15.95	117200	16.71
	55	–	–	–	–	–	–	48100	20.40	58100	20.75	69400	21.19	82400	21.73	97100	22.36
SM268	35	32600	15.41	40800	15.56	50300	15.70	61200	15.83	73700	15.95	88000	16.08	104100	16.23	122200	16.39
	55	–	–	–	–	–	–	49900	23.83	60600	23.95	72900	24.06	86800	24.16	102500	24.25
SM271	35	32100	15.16	40100	15.33	49400	15.48	60200	15.62	72500	15.75	86600	15.88	102500	16.01	120300	16.15
	55	–	–	–	–	–	–	49100	23.42	59600	23.55	71700	23.66	85400	23.75	100800	23.83
SM272	35	34500	14.08	42600	14.39	52000	14.74	62900	15.15	75300	15.60	89600	16.09	105700	16.63	124000	17.20
	55	–	–	–	–	–	–	52000	21.95	62600	22.34	74800	22.80	88700	23.32	104500	23.91
SM281	35	34200	16.09	42700	16.25	52700	16.39	64100	16.53	77200	16.66	92100	16.80	109000	16.95	128000	17.11
	55	–	–	–	–	–	–	52200	24.87	63500	25.01	76300	25.13	90900	25.24	107300	25.34
SM294	35	37100	15.15	45600	15.50	55500	15.85	66900	16.21	79900	16.57	94800	16.94	111700	17.31	130900	17.69
	55	–	–	–	–	–	–	55900	23.50	67200	23.94	80200	24.40	95000	24.91	111800	25.46
SM296	35	35800	16.62	44500	16.86	54700	17.06	66500	17.24	80000	17.40	95500	17.57	113100	17.76	132900	17.98
	55	–	–	–	–	–	–	54400	25.80	66000	26.04	79300	26.24	94500	26.42	111700	26.60
SM322	35	38900	17.97	48400	18.22	59500	18.44	72300	18.63	87000	18.81	103800	19.00	122900	19.20	144500	19.43
	55	–	–	–	–	–	–	59100	27.89	71700	28.15	86200	28.37	102700	28.57	121400	28.76
SM350	35	41600	19.61	52000	19.95	64000	20.28	77800	20.60	93500	20.90	111200	21.16	131100	21.40	153300	21.58
	55	–	–	–	–	–	–	63500	30.10	77100	30.44	92600	30.75	109900	31.04	129200	31.28
SM370	35	44300	20.83	55300	21.19	68100	21.54	82800	21.88	99500	22.19	118300	22.48	139500	22.72	163100	22.92
	55	–	–	–	–	–	–	67600	31.96	82100	32.32	98500	32.66	116900	32.96	137500	33.22

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage: *400 V / 3 / 60 Hz*

Nomenclature

Family, lubrificant & refrigerant	Normal capacity	Approval	Voltage	Version	Evolution index
SH	**485**	**A**	**4**	**AB**	**A**

Family, refrigerant & lubrificant:
SH: scroll, POE lubrificant for R410A

Nominal capacity:
in thousand [Btu/h] at 60 Hz, R410A, ARI condition

UL index

Motor voltage code:
- **3:** 200 – 230 V / 3 ~ / 60 Hz
- **4:** 380 – 400 V / 3 ~ / 50 Hz & 460 V / 3 / 60 Hz
- **6:** 230 V / 3 ~ / 50 Hz
- **7:** 500 V / 3 ~ / 50 Hz & 575 V / 3 ~ / 60 Hz
- **9:** 380 V / 3 ~ / 60 Hz

Evolution index:
A~Z

Motor protection:
- **L:** internal overload protector
- **A:** electronic, 24 V AC
- **B:** electronic, SH180: 230V
  SH240-295-380-485: 115 / 230 V
- **C:** customized electrical box

Suction and discharge connections:
- **A:** brazed connections

*)for SH485 only
for further information refer to application guidelines FRCC.PC.027

Family,lubrificant & refrigerant	Normal capacity	Approval	Voltage	Version	Evolution index	
SZ	**185**	**-**	**4**	**R**	**C**	Single compressor
SY	**300**	**A**	**7**	**CA**	**A**	Single compressor

Family, refrigerant & lubrificant:
- **SM:** scroll, Mineral oil, R22/R417A *)
- **SY:** scroll, POE lubrificant, R22 / R414A (R407 for SY185-240-300)
- **SZ:** scroll, POE lubrificant, R407C, R134a (R404A, R507A for SZ084 – SZ185)

Nominal capacity:
in thousand Btu / h at 60 Hz, R22, ARI condition

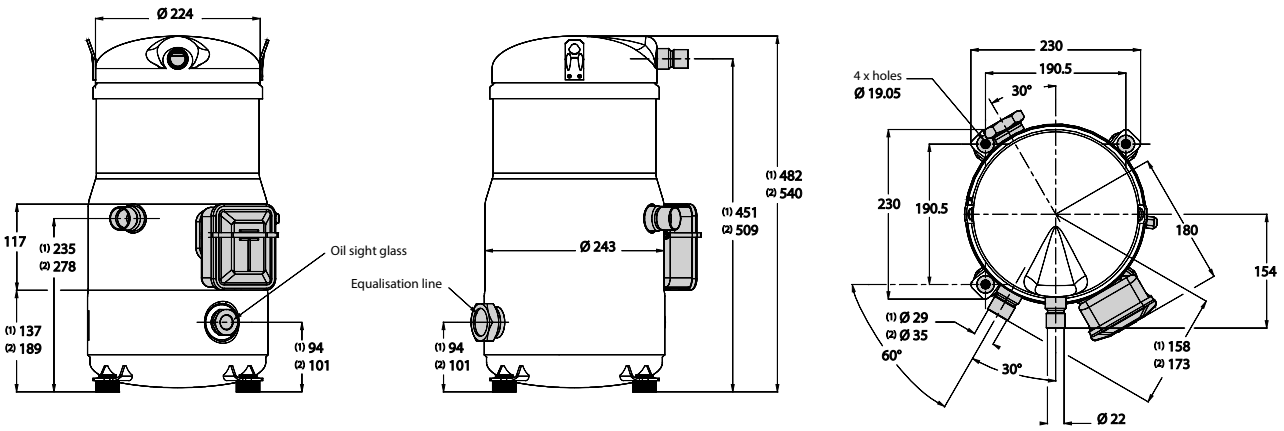
Motor voltage code:
- **3:** 200 – 230 V / 3 ~ / 60 Hz
- **4:** 380 – 400 V / 3 ~ / 50 Hz & 460 V / 3 / 60 Hz
- **6:** 230 V / 3 ~ / 50 Hz
- **7:** 500 V / 3 ~ / 50 Hz & 575 V / 3 ~ / 60 Hz
- **9:** 380 V / 3 ~ / 60 Hz

Motor protection type		Connection	Module voltage	Applies to
Internal overload protector	**V**	: brazed		S 084-090-100-110-120-148-161
	A	: brazed		S 112-124-147
Internal thermostat	**C**	: brazed		S 175-185
	R	: rotolock		
Electronic protection module	**P**	: brazed	24 V AC	
	X	: brazed	230 V	
	S	: rotolock	24 V AC	
	Y	: rotolock	230 V	
	CA	C: brazed	**A**: 24 V AC	S 240-300
	CB		**B**: 115 / 230 V	
	PA	P: rotolock	**A**: 24 V AC	
	PB		**B**: 115 / 230 V	
	CA	C: brazed	**A**: 24 V AC	S 380
	CB		**B**: 115 / 230 V	

*) When SM compressors are used with R417A, the factory charged mineral oil 160P must be replaced by polyolester oil 160SZ

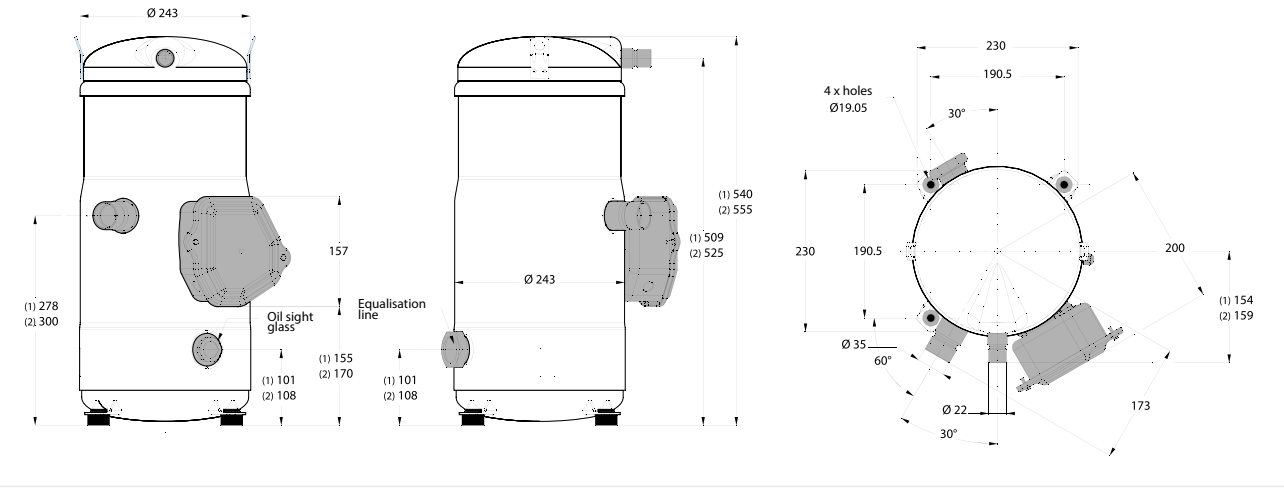
Dimensions

SH090 / 105 / 120 / 140 [3]) / 161 [3])



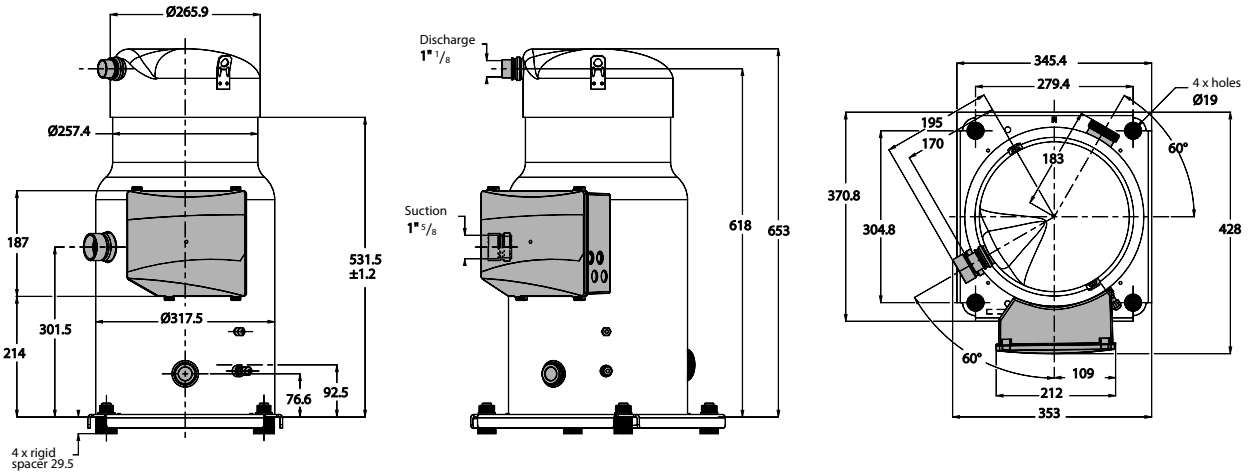
[1]) SH090
[2]) SH105 / 120 / 140 / 161
[3]) except code 3

SH 140 / 161 code 3 and SH184



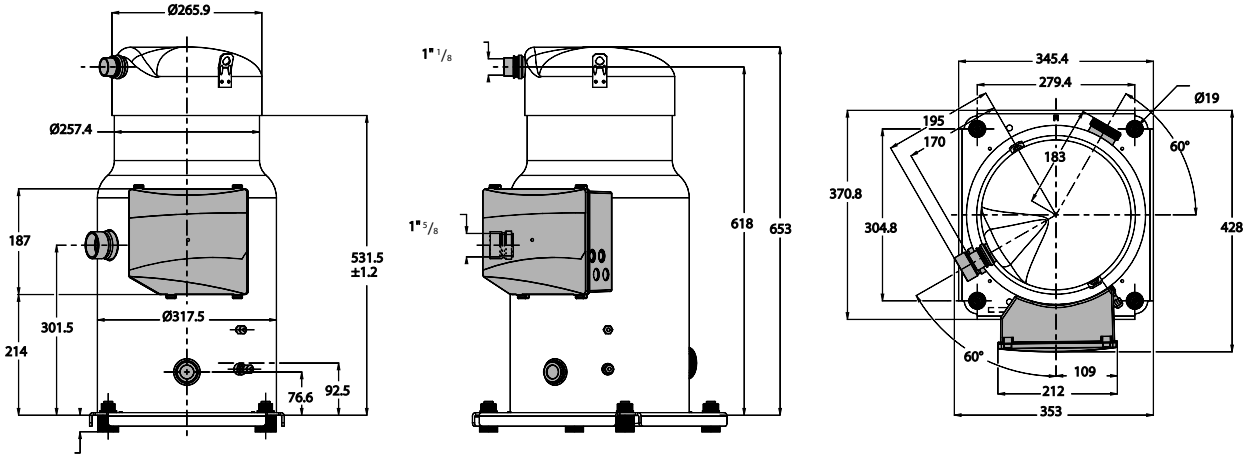
[1]) SH140 / 161 code 3
[2]) SH184

SH180-240-295

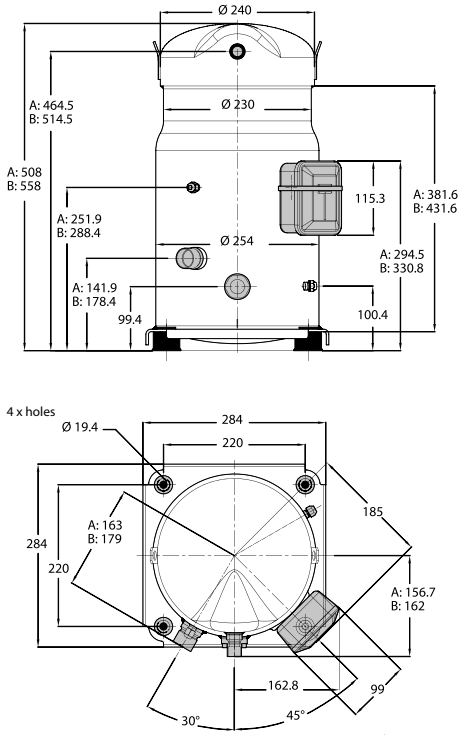


Dimensions

SH380-485



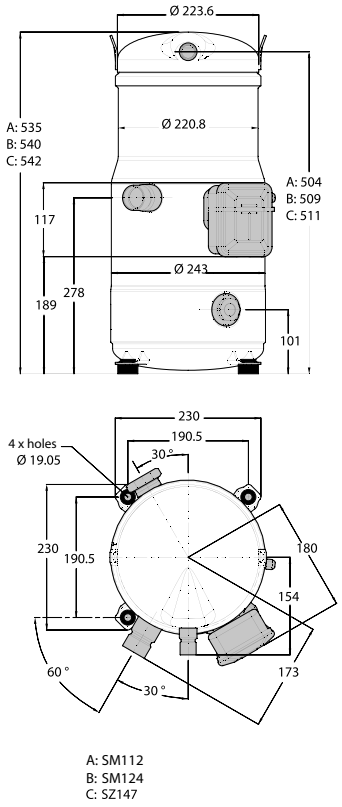
SM / SZ 084-090-100-110-120



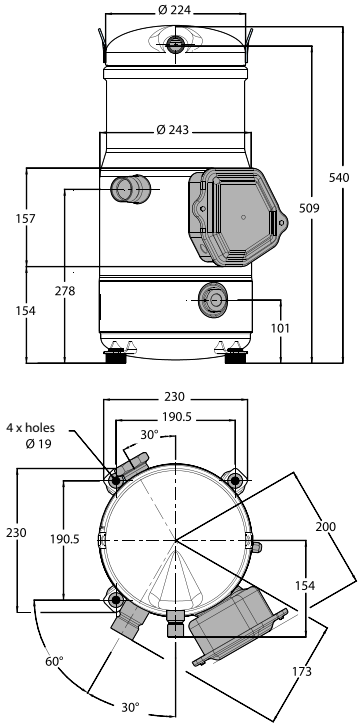
A: SM / SZ 084-090-100
B: SM / SZ 110-120

Dimensions

SM 112-124-SM / SZ147 [3])

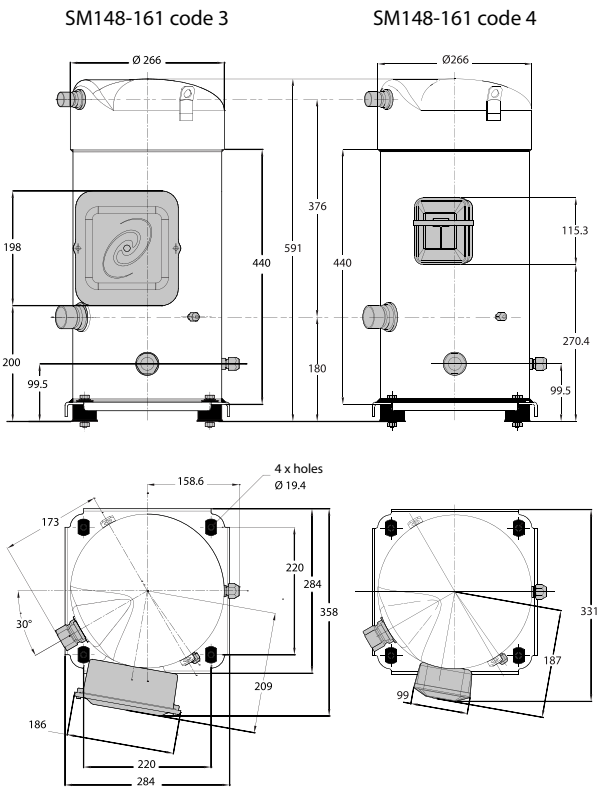


SM / SZ 147 code 3

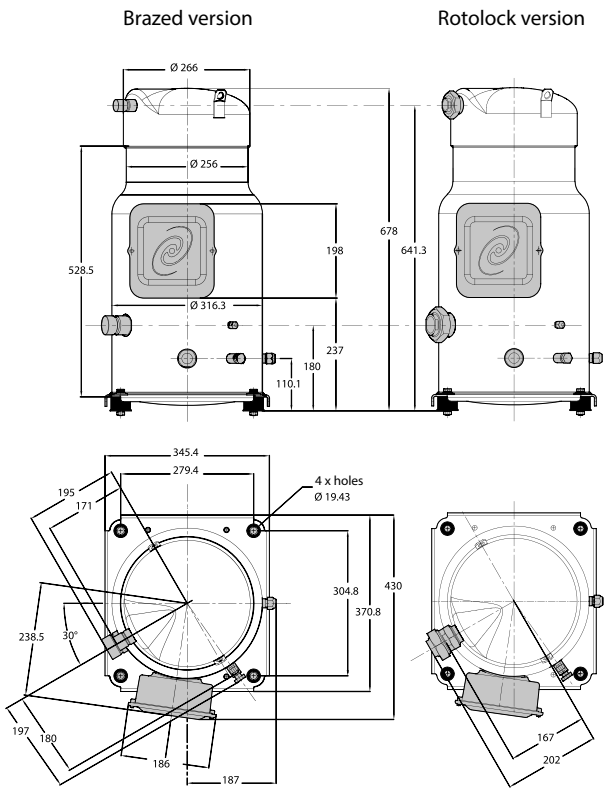


[3]) except code 3

SM / SZ148-161



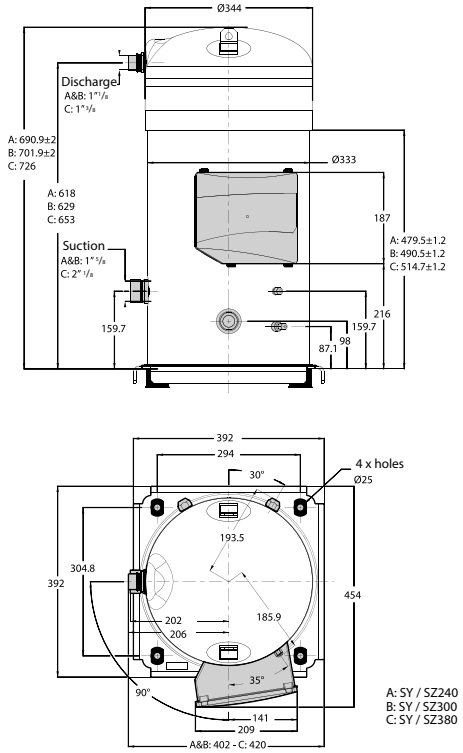
SM / SZ 175-185 and SY185



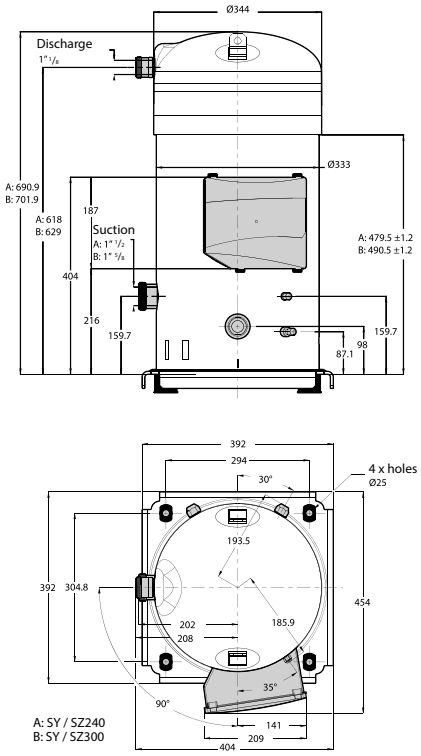
Dimensions

SY / SZ 240-300-380

Brazed version



Rotolockversion



Technical data

Tandem models

Ordering

CP1		CP2		Tandem model	Suction from	Kit code no. to order	Washer reference	Washer Ø [mm]	Washer in suction of
SH090	+	SH090	=	SH182	Left	7777044	Not needed		
					Right				
SH090	+	SH105	=	SH195	Left	7777043	5312497P03	23	CP2
					Right		5312497P03	23	CP2
SH090	+	SH120	=	SH210	Left	7777043	5312497P01	25	CP2
					Right		5312497P02	24	CP1
SH105	+	SH105	=	SH212	Left	7777044	Not needed		
					Right				
SH090	+	SH140	=	SH230	Left	7777043	Not needed		
					Right				
SH120	+	SH120	=	SH242	Left	7777044	Not needed		
					Right				
SH120	+	SH140	=	SH260	Left	7777042	Not needed		
					Right		5312497P01	25	CP1
SH120	+	SH161	=	SH281	Left	7777042	5312497P01	25	CP1
					Right		5312497P03	23	CP1
SH140	+	SH140	=	SH282	Left	7777044	Not needed		
					Right				
SH140	+	SH161	=	SH301	Left	7777042	5312497P05	26	CP1
					Right				
SH120	+	SH184	=	SH304	Left	7777052	5312497P03	23	CP1
					Right				
SH161	+	SH161	=	SH322	Left	7777044	Not needed		
					Right				
SH140	+	SH184	=	SH324	Left	7777052	5312479P06	35	CP1
					Right				
SH161	+	SH184	=	SH345	Left	7777052	5312479P05	26	CP1
					Right				
SH180	+	SH180	=	SH360	Left	7777041	Not needed		
					Right				
SH184	+	SH184	=	SH368	Left	7777053	Not needed		
					Right				
SH180	+	SH240	=	SH420	Left	7777037	5311579P01	31	CP1
					Right		5311579P01	31	CP1
SH180	+	SH295	=	SH475	Left	7777038	5311579P04	26	CP1
					Right		5311579P04	26	CP1
SH240	+	SH240	=	SH482	Left	7777041	Not needed		
					Right				
SH240	+	SH295	=	SH535	Left	7777037	5311579P01	31	CP1
					Right		5311579P01	31	CP1
SH180	+	SH380	=	SH560	Left	7777038	5311579P04	26	CP1
					Right		5311579P04	26	CP1
SH295	+	SH295	=	SH590	Left	7777041	Not needed		
					Right				
SH240	+	SH380	=	SH620	Left	7777048	5311579P05	29	CP1
					Right		5311579P05	29	CP1
SH295	+	SH380	=	SH675	Left	7777037	5311579P01	31	CP1
					Right		5311579P01	31	CP1
SH240	+	SH485	=	SH725	Left	120Z0569	5311579P09	24	CP1
					Right				
SH380	+	SH380	=	SH760	Left	7777041	Not needed		
					Right				
SH295	+	SH485	=	SH780	Left	120Z0551	5311579P07	27	CP1
					Right				
SH380	+	SH485	=	SH865	Left	120Z0550	5311579P08	30	CP1
					Right				
SH485	+	SH485	=	SH970	Left	120Z0578	Not needed		
					Right				

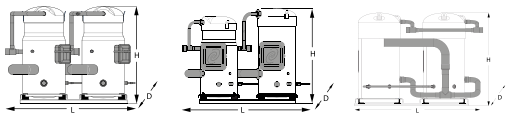
Technical data

Trio models

Ordering

CP1		CP2		CP3		Trio model	Suction from	Kit code no. to order	Washer reference	Washer Ø [mm]	Washer in suction of
SH180	+	SH180	+	SH180	=	SH550	Left	7777040	5311579P02	33	CP3
							Right	7777039	5311579P03	34.5	CP1 and CP3
SH240	+	SH240	+	SH240	=	SH720	Left	7777040	5311579P02	33	CP3
							Right	7777039	5311579P03	34.5	CP1 and CP3
SH295	+	SH295	+	SH295	=	SH885	Left	7777040	5311579P02	33	CP3
							Right	7777039	5311579P03	34.5	CP1 and CP3
SH380	+	SH380	+	SH380	=	SH1140	Left	7777040	5311579P02	33	CP3
							Right	7777049		Not needed	
SH485	+	SH485	+	SH485	=	SH1455	Left	7777040	5311579P02	33	CP2 and CP3
							Right				

Technical data



SM / SY / SZ - Scroll compressors - Tandem / Trio

Features

Type		Composition	R22	R404A / R507A	R407C	R134a	Oil management
Tandem	SM / SZ170	SM / SZ084 + SM / SZ084	•	•	•	•	Dynamic
	SM / SZ180	SM / SZ090 + SM / SZ090	•	•	•	•	Dynamic
	SM / SZ200	SM / SZ100 + SM / SZ100	•	•	•	•	Dynamic
	SM / SZ220	SM / SZ110 + SM / SZ110	•	•	•	•	Dynamic
	SM / SZ242	SM / SZ120 + SM / SZ120	•	•	•	•	Dynamic
	SM248	SM124 + SM124	•	–	–	–	Static
	SM / SZ268	SM / SZ120 + SM / SZ148	•	•	•	•	Dynamic
	SM / SZ271	SM / SZ110 + SM / SZ161	o	o	o	o	Dynamic
	SM272	SM124 + SM147	•	–	–	–	Static
	SM / SZ281	SM / SZ120 + SM / SZ161	•	•	•	•	Dynamic
	SM / SZ294	SM / SZ147 + SM / SZ147	•	–	o	–	Static
	SM / SZ296	SM / SZ148 + SM / SZ148	•	•	•	•	Dynamic
	SM / SZ322	SM / SZ161 + SM / SZ161	•	•	•	•	Dynamic
	SM / SZ350	SM / SZ175 + SM / SZ175	•	•	•	•	Dynamic
	SY / SZ370	SY / SZ185 + SY / SZ185	•	•	•	•	Dynamic
	SY / SZ425	SY / SZ240 + SY / SZ185	o	–	o	o	Dynamic
	SY / SZ482	SY / SZ240 + SY / SZ240	o	–	o	o	Static
	SY / SZ485	SY / SZ300 + SY / SZ185	o	–	o	o	Dynamic
	SY / SZ540	SY / SZ300 + SY / SZ240	o	–	o	o	Static
	SY / SZ600	SY / SZ300 + SY / SZ300	o	–	o	o	Static
	SY / SZ620	SY / SZ240 + SY / SZ380	o	–	o	o	Static
	SY / SZ680	SY / SZ300 + SY / SZ380	o	–	o	o	Static
	SY / SZ760	SY / SZ380 + SY / SZ380	o	–	o	o	Static
Trio	SM / SZ444	3 x SM / SZ148	o	o	o	o	Static
	SM / SZ483	3 x SM / SZ161	o	o	o	o	Static
	SY / SZ550	3 x SY / SZ185	o	o	o	o	Dynamic
	SY / SZ720	3 x SY / SZ240	o	–	o	o	Static
	SY / SZ900	3 x SY / SZ300	o	–	o	o	Static
	SY / SZ1140	3 x SY / SZ380	o	–	o	o	Static
Quadro	SM / SZ740	4 x SY / SZ185	o	o	o	o	Dynamic

• *Factory built or field assembly*
o *Field assembly*
– *Not available*

SM / SY / SZ - Scroll compressors

Field assembly

Tandem Type	Connection	Configuration example	Tandem assembly kit code no		Oil equalisation fittings
			Kit ①	Kit ②	
SM / SZ170	Brazed	SZ084-4VI + SZ084-4VI	7703251	7765012	2 x 023U8014
SM / SZ180	Brazed	SZ090-4VI + SZ090-4VI	7703251	7765012	2 x 023U8014
SM / SZ200	Brazed	SZ100-4VI + SZ100-4VI	7703251	7765012	2 x 023U8014
SM / SZ220	Brazed	SZ110-4VI + SZ110-4VI	7703384	7765025	2 x 023U8014
SM / SZ242	Brazed	SZ120-4VI + SZ120-4VI	7703384	7765025	2 x 023U8014
SM / SZ268	Brazed	SZ148-4VAI + SZ120-4VI	7703390	7765025	2 x 023U8014
SM / SZ271	Brazed	SZ161-4VAI + SZ110-4VI	7703390	7765025	2 x 023U8014
SM / SZ281	Brazed	SZ161-4VAI + SZ120-4VI	7703390	7765025	2 x 023U8014
SM / SZ296	Brazed	SZ148-4VAI + SZ148-4VAI	7703390	7765025	2 x 023U8014
SM / SZ322	Brazed	SZ161-4VAI + SZ161-4VAI	7703390	7765025	2 x 023U8014
SM / SZ350	Rotolock	SZ175-4SCI + SZ175-4SCI	7703371	7765013	2 x 023U8014
SM / SZ350	Brazed	SZ175-4PCI + SZ175-4PCI	–	7765017	2 x 023U8014
SM / SZ370	Rotolock	SZ185-4SCI + SZ185-4SCI	7703371	7765013	2 x 023U8014
SM / SZ370	Brazed	SZ185-4PCI + SZ185-4PCI	–	7765017	2 x 023U8014
SY / SZ425	Brazed	SZ240A4AAI + SZ185-4PCI	–	7765027	023U8016 + 023U8014
SY / SZ485	Rotolock	SZ300A4AAI + SZ185-4PCI	–	7765027	023U8016 + 023U8014

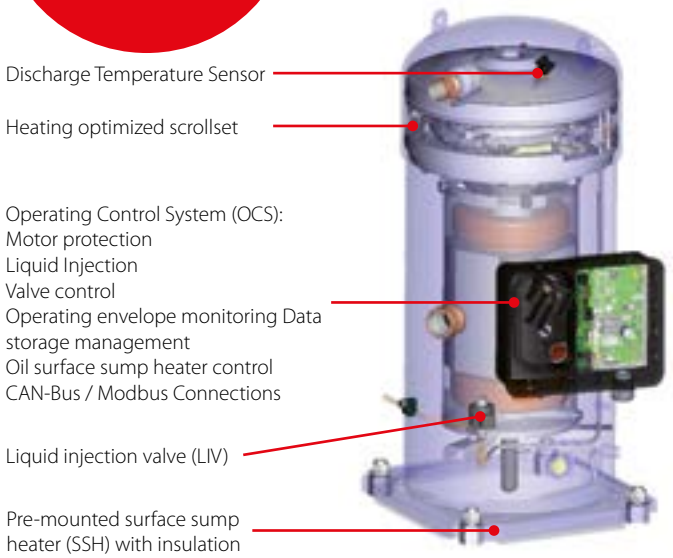
Different tandem assembly kits are available:
Kit ① containing the suction and discharge Tees sleeves and the suction oil separator / gas restrictor
Kit ② containing the suction oil separator / gas restrictor only

PSH - Scroll compressors heating optimized - R410A

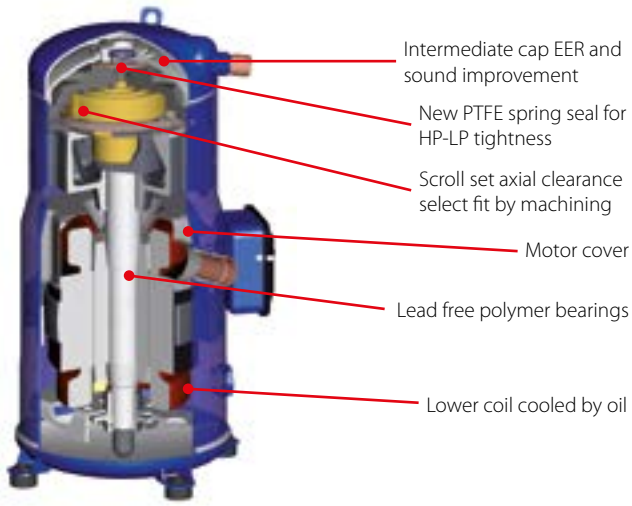
R410A, single, Danfoss scroll compressors dedicated to heating applications. PSH compressors have an extended operating envelope thanks to a liquid injection system and an integrated electronic module. The product reliability is improved via map monitoring, data storage and bus communication.

PSH compressors are suitable with a patented Surface Sump Heater (SSH) with integrated insulation, which largely contributes to the reduction in sound level.
PSH 51-64-77 are fitted as standard with a SSH.





PSH 077



PSH 019 - 039

Facts

- Water heated to 60 °C at -15 °C ambient temperature
- Equipment manufacturers will benefit from the liquid injection system, which offers a wider operating temperature envelope. In comparison with gas or oil furnaces for space heating and Hot Sanitary Water (HSW) production, a heat pump system offers very large energy savings – up to 50%. But until now, most heat pumps have been limited with regard to operating temperatures
- An energy efficient solution that qualifies for the European Ecolabel. The PSH019-039 obtain a compressor COP better than that required for the Ecolabel (3.4W / W). All displacements offer a minimum COP of 3.77, and figures of up 4.11 can be achieved for Air-to-Water heat pumps, depending on the model
- Heat pumps for heating in factories, offices, shopping malls, etc
- A simpler and more efficient solution for OEMs 25% cost reduction. A light PSH compressor requires fewer components in the system. It saves installing an brazed plate heat exchanger, electronic expansion valves and extra piping, thus reducing costs. The new integrated liquid injection valve and controller make it simpler to design and manufacture heat pumps

Technical data and ordering

PSH - Scroll compressors heating optimized

Ordering - Single pack

Compressor	Connections	Code no.		
		Motor code 3	Motor code 4	Motor code 9
PSH019	Full package	120H0963	120H0931	120H0987
PSH023	Full package	120H0965	120H0933	120H0989
PSH026	Full package	120H0967	120H0935	120H0991
PSH030	Full package	120H0969	120H0937	120H0993
PSH034	Full package	120H0971	120H0939	120H0995
PSH039	Full package	120H0973	120H0941	120H0997
PSH019	Bare compressor	–	120H0951	–
PSH023	Bare compressor	–	120H0953	–
PSH026	Bare compressor	–	120H0955	–
PSH030	Bare compressor	–	120H0957	–
PSH034	Bare compressor	–	120H0959	–
PSH039	Bare compressor	–	120H0961	–

PSH - Scroll compressors heating optimized

Ordering - Single pack

Compressor	OCS supply voltage	Code no.	
		Motor code 4	Motor code 9
PSH051	230 V AC	120H0864	120H0904
PSH064	230 V AC	120H0866	120H0906
PSH077	230 V AC	120H0868	120H0908

PSH - Scroll compressors heating optimized

Ordering - Industrial pack

Compressor	Connections	Code no.		
		Motor code 3	Motor code 4	Motor code 9
PSH019	Full package	120H0964	120H0932	120H0988
PSH023	Full package	120H0966	120H0934	120H0990
PSH026	Full package	120H0968	120H0936	120H0992
PSH030	Full package	120H0970	120H0938	120H0994
PSH034	Full package	120H0972	120H0940	120H0996
PSH039	Full package	120H0974	120H0942	120H0998
PSH019	Bare compressor	–	120H0952	–
PSH023	Bare compressor	–	120H0954	–
PSH026	Bare compressor	–	120H0956	–
PSH030	Bare compressor	–	120H0958	–
PSH034	Bare compressor	–	120H0960	–
PSH039	Bare compressor	–	120H0962	–

PSH - Scroll compressors heating optimized

Ordering - Industrial pack

Compressor	OCS supply voltage	Code no.	
		Motor code 4	Motor code 9
PSH051	230 V AC	120H0863	120H0903
PSH064	230 V AC	120H0865	120H0905
PSH077	230 V AC	120H0867	120H0907

Technical data and ordering

PSH - Scroll compressors heating optimized

Compressor specifications

Type		Nominal Heating capacity	Power Input	Heating COP	Swept volume	Displacement [1]	Oil charge	Net weight [2]
		[W]	[W]	[W]/[W]	[cm³/rev]	[m³/h]	[dm³]	[kg]
50 Hz	PSH019	19600	6.62	2.96	88.40	15.40	3.0	58.5
	PSH023	23000	7.47	3.07	103.50	18.00	3.3	64.5
	PSH026	26000	8.65	3.00	116.90	20.30	3.3	64.5
	PSH030	30000	9.60	3.13	133.00	23.12	3.3	67.5
	PSH034	34200	10.95	3.12	151.17	26.40	3.3	69.5
	PSH039	38900	12.19	3.19	170.30	29.60	3.6	72.0
60 Hz	PSH019	23600	7.97	2.96	88.40	18.60	3.0	58.5
	PSH023	28000	8.84	3.17	103.50	21.80	3.3	64.5
	PSH026	31400	10.19	3.08	116.90	24.60	3.3	64.5
	PSH030	35700	11.35	3.15	133.00	27.90	3.3	67.5
	PSH034	40500	12.72	3.18	151.17	31.90	3.3	69.5
	PSH039	46500	14.49	3.21	170.30	35.80	3.6	72.0

Evaporating temperature: -7 °C Condensing temperature: 50 °C Superheat: 5 K Subcooling: 4 K Refrigerant: R410A

[1]) Displacement at nominal speed: 2900 rpm at 50 Hz. 3500 rpm at 60 Hz
[2]) Net weight with oil charge

PSH - Scroll compressors heating optimized

Compressor specifications

Type		Nominal Heating capacity	Nominal Cooling capacity	Power Input	Heating COP	Cooling COP	Swept volume	Displacement [1]	Oil charge	Net weight [2]
		[W]	[W]	[W]	[W]/[W]	[W]/[W]	[cm³/ev]	[m³/h]	[dm³]	[kg]
50 Hz	PSH051	53337	36167	17170	3.11	2.11	227.6	39.6	6.7	108
	PSH064	65481	44683	21575	3.04	2.07	286.2	49.8	6.7	153
	PSH077	80303	55051	25979	3.09	2.12	344.6	60	7.2	161
60 Hz	PSH051	64057	43436	20621	3.11	2.11	227.6	47.8	6.7	108
	PSH064	78643	53665	25911	3.04	2.07	286.2	60.1	6.7	153
	PSH077	96114	66061	31175	3.08	2.12	344.6	72.4	7.2	161

Evaporating temperature: -7 °C Condensing temperature: 50 °C Superheat: 5 K Subcooling: 5 K Refrigerant: R410A

[1]) Displacement at nominal speed: 2900 rpm at 50 Hz. 3500 rpm at 60 Hz
[2]) Net weight with oil charge

Technical data and ordering

PSH - Scroll compressors heating optimized - R410A - 50 Hz

Cooling performance table - Heating optimized

Type	Te	-30		-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
PSH019-4	20	7040	3.48	11140	3.59	13810	3.66	16930	3.75	20570	3.87	24740	4.03	29510	4.23	–	–	–	–
	30	6170	4.26	10070	4.36	12560	4.41	15470	4.48	18840	4.57	22710	4.68	27130	4.83	32130	5.02	37760	5.27
	40	5230	5.25	8820	5.36	11100	5.40	13750	5.44	16810	5.50	20330	5.58	24340	5.68	28900	5.81	34040	5.99
	50	4230	6.52	7430	6.65	9430	6.68	11770	6.72	14470	6.75	17590	6.79	21160	6.86	25220	6.94	29820	7.06
	60	–	–	5890	8.31	7580	8.35	9550	8.37	11840	8.39	14510	8.41	17580	8.44	21100	8.48	25110	8.55
	68	–	–	–	–	–	–	7600	10.03	9530	10.04	11800	10.04	14440	10.04	17490	10.06	20990	10.09
PSH023-4	20	8570	4.08	13310	4.38	16360	4.52	19940	4.61	24100	4.64	28880	4.58	34340	4.42	–	–	–	–
	30	7470	4.91	11980	5.13	14860	5.29	18220	5.44	22100	5.57	26560	5.66	31650	5.67	37420	5.60	43920	5.41
	40	6310	6.15	10500	6.14	13140	6.25	16220	6.39	19780	6.55	23870	6.70	28540	6.83	33840	6.90	39830	6.90
	50	5080	8.01	8830	7.63	11190	7.61	13940	7.67	17120	7.78	20780	7.93	24990	8.09	29770	8.24	35200	8.36
	60	–	–	6990	9.82	9010	9.60	11370	9.50	14120	9.50	17310	9.57	20980	9.69	25200	9.84	30010	10.00
	68	–	–	–	–	–	–	9100	11.50	11460	11.35	14230	11.31	17450	11.35	21180	11.45	25450	11.59
PSH026-4	20	9490	4.47	15160	4.64	18860	4.76	23220	4.93	28290	5.14	34130	5.41	40800	5.74	–	–	–	
	30	8350	5.49	13720	5.61	17160	5.69	21200	5.81	25880	5.97	31260	6.17	37410	6.44	44370	6.77	52210	7.18
	40	7140	6.82	12060	6.90	15190	6.95	18840	7.02	23070	7.13	27930	7.28	33490	7.47	39800	7.73	46910	8.05
	50	5840	8.55	10210	8.60	12950	8.63	16160	8.67	19870	8.73	24150	8.82	29050	8.95	34640	9.14	40980	9.38
	60	–	–	8150	10.82	10450	10.82	13140	10.83	16270	10.85	19910	10.90	24100	10.97	28910	11.09	34390	11.26
	68	–	–	–	–	–	–	10490	13.01	13120	13.00	16190	13.01	19770	13.05	23910	13.12	28670	13.23
PSH030-4	20	11280	5.02	17620	5.23	21730	5.34	26560	5.49	32160	5.67	38600	5.90	45950	6.19	–	–	–	–
	30	9960	6.05	15940	6.28	19760	6.38	24220	6.50	29380	6.64	35320	6.81	42080	7.03	49750	7.32	58370	7.69
	40	8580	7.35	14070	7.63	17530	7.74	21570	7.85	26240	7.96	31600	8.10	37720	8.27	44670	8.49	52500	8.77
	50	7130	8.98	12000	9.36	15050	9.50	18590	9.61	22690	9.72	27420	9.84	32840	9.98	39000	10.15	45990	10.37
	60	–	–	9710	11.56	12280	11.74	15270	11.88	18740	12.00	22770	12.12	27420	12.24	32740	12.38	38810	12.56
	68	–	–	–	–	–	–	12350	14.11	15280	14.26	18710	14.39	22690	14.51	27290	14.64	32580	14.80
PSH034-4	20	12690	5.57	20070	5.82	24860	5.97	30460	6.14	36960	6.33	44430	6.52	52940	6.72	–	–	–	–
	30	11140	6.83	18060	6.99	22470	7.12	27620	7.28	33580	7.45	40410	7.65	48200	7.86	57020	8.08	66940	8.30
	40	9560	8.55	15910	8.59	19900	8.67	24530	8.78	29880	8.93	36020	9.10	43030	9.30	50970	9.52	59930	9.76
	50	7930	10.91	13580	10.77	17080	10.78	21140	10.83	25830	10.92	31220	11.05	37380	11.22	44400	11.42	52330	11.64
	60	–	–	11030	13.70	14000	13.61	17430	13.58	21390	13.60	25970	13.66	31230	13.77	37250	13.92	44110	14.11
	68	–	–	–	–	–	–	14190	16.39	17540	16.34	21420	16.33	25920	16.38	31110	16.48	37060	16.62
PSH039-4	20	14480	6.13	22290	6.48	27420	6.70	33450	6.95	40450	7.26	48500	7.63	57660	8.07	–	–	–	–
	30	12950	7.46	20350	7.81	25110	8.01	30690	8.24	37140	8.51	44530	8.83	52930	9.21	62420	9.66	73050	10.20
	40	11290	9.13	18110	9.48	22440	9.67	27480	9.87	33300	10.10	39960	10.38	47530	10.70	56090	11.08	65690	11.54
	50	9450	11.31	15540	11.69	19350	11.86	23780	12.04	28880	12.24	34730	12.47	41400	12.73	48940	13.05	57440	13.43
	60	–	–	12560	14.60	15790	14.77	19520	14.93	23830	15.10	28790	15.28	34470	15.50	40920	15.75	48230	16.05
	68	–	–	–	–	–	–	15680	17.89	19300	18.03	23490	18.19	28320	18.36	33850	18.56	40150	18.80

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *4 K*
Superheat: *5 K*
Frequency: *50 Hz*
Subject to modification without prior notification

Technical data and ordering

PSH - Scroll compressors heating optimized - R410A - 50 Hz

Heating performance table - Heating optimized

Type	Te	-30		-20		-15		-10		-5		0		5		10		15	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
PSH019-4	20	10370	3.48	14580	3.59	17310	3.66	20520	3.75	24270	3.87	28600	4.03	33560	4.23	–	–	–	–
	30	10240	4.26	14240	4.36	16790	4.41	19760	4.48	23210	4.57	27190	4.68	31750	4.83	36940	5.02	42800	5.27
	40	10250	5.25	13950	5.36	16270	5.40	18960	5.44	22070	5.50	25660	5.58	29780	5.68	34470	5.81	39780	5.99
	50	10470	6.52	13790	6.65	15830	6.68	18200	6.72	20930	6.75	24090	6.79	27720	6.86	31870	6.94	36580	7.06
	60	–	–	13840	8.31	15570	8.35	17560	8.37	19880	8.39	22560	8.41	25650	8.44	29220	8.48	33290	8.55
	68	–	–	–	–	–	–	17200	10.03	19140	10.04	21410	10.04	24050	10.04	27120	10.06	30650	10.09
PSH023-4	20	12500	4.08	17520	4.38	20710	4.52	24380	4.61	28570	4.64	33300	4.58	38590	4.42	–	–	–	–
	30	12200	4.91	16920	5.13	19950	5.29	23450	5.44	27460	5.57	32010	5.66	37120	5.67	42810	5.60	49130	5.41
	40	12230	6.15	16410	6.14	19150	6.25	22370	6.39	26080	6.55	30320	6.70	35110	6.83	40490	6.90	46470	6.90
	50	12790	8.01	16180	7.63	18520	7.61	21320	7.67	24610	7.78	28420	7.93	32780	8.09	37710	8.24	43250	8.36
	60	–	–	16440	9.82	18250	9.60	20510	9.50	23260	9.50	26520	9.57	30310	9.69	34680	9.84	39640	10.00
	68	–	–	–	–	–	–	20170	11.50	22390	11.35	25120	11.31	28380	11.35	32210	11.45	36620	11.59
PSH026-4	20	13880	4.47	19720	4.64	23540	4.76	28060	4.93	33340	5.14	39450	5.41	46450	5.74	–	–	–	–
	30	13750	5.49	19230	5.61	22760	5.69	26910	5.81	31740	5.97	37330	6.17	43730	6.44	51020	6.77	59260	7.18
	40	13840	6.82	18840	6.90	22020	6.95	25750	7.02	30080	7.13	35080	7.28	40830	7.47	47390	7.73	54830	8.05
	50	14250	8.55	18660	8.60	21430	8.63	24670	8.67	28440	8.73	32810	8.82	37850	8.95	43620	9.14	50190	9.38
	60	–	–	18780	10.82	21090	10.82	23790	10.83	26940	10.85	30620	10.90	34880	10.97	39810	11.09	45460	11.26
	68	–	–	–	–	–	–	23280	13.01	25900	13.00	28980	13.01	32590	13.05	36800	13.12	41670	13.23
PSH030-4	20	16270	5.02	22820	5.23	27050	5.34	32010	5.49	37790	5.67	44460	5.90	52110	6.19	–	–	–	–
	30	15980	6.05	22190	6.28	26110	6.38	30680	6.50	35980	6.64	42090	6.81	49080	7.03	57030	7.32	66020	7.69
	40	15890	7.35	21660	7.63	25230	7.74	29370	7.85	34150	7.96	39650	8.10	45940	8.27	53110	8.49	61230	8.77
	50	16060	8.98	21310	9.36	24490	9.50	28150	9.61	32360	9.72	37210	9.84	42760	9.98	49100	10.15	56300	10.37
	60	–	–	21200	11.56	23950	11.74	27080	11.88	30680	12.00	34830	12.12	39600	12.24	45060	12.38	51300	12.56
	68	–	–	–	–	–	–	26380	14.11	29460	14.26	33020	14.39	37120	14.51	41860	14.64	47300	14.80
PSH034-4	20	17960	5.57	25580	5.82	30500	5.97	36270	6.14	42950	6.33	50600	6.52	59300	6.72	–	–	–	–
	30	17600	6.83	24670	6.99	29210	7.12	34510	7.28	40630	7.45	47650	7.65	55630	7.86	64660	8.08	74790	8.30
	40	17660	8.55	24030	8.59	28090	8.67	32840	8.78	38330	8.93	44630	9.10	51830	9.30	59980	9.52	69160	9.76
	50	18250	10.91	23760	10.77	27280	10.78	31390	10.83	36160	10.92	41680	11.05	48000	11.22	55200	11.42	63340	11.64
	60	–	–	23990	13.70	26870	13.61	30270	13.58	34250	13.60	38900	13.66	44260	13.77	50430	13.92	57460	14.11
	68	–	–	–	–	–	–	29700	16.39	32990	16.34	36880	16.33	41420	16.38	46700	16.48	52780	16.62
PSH039-4	20	20570	6.13	28720	6.48	34060	6.70	40340	6.95	47650	7.26	56060	7.63	65660	8.07	–	–	–	–
	30	20350	7.46	28090	7.81	33060	8.01	38860	8.24	45570	8.51	53280	8.83	62070	9.21	72000	9.66	83170	10.20
	40	20340	9.13	27520	9.48	32030	9.67	37280	9.87	43320	10.10	50250	10.38	58150	10.70	67080	11.08	77140	11.54
	50	20670	11.31	27130	11.69	31120	11.86	35720	12.04	41020	12.24	47100	12.47	54030	12.73	61880	13.05	70750	13.43
	60	–	–	27040	14.60	30440	14.77	34330	14.93	38810	15.10	43950	15.28	49840	15.50	56540	15.75	64150	16.05
	68	–	–	–	–	–	–	33420	17.89	37190	18.03	41530	18.19	46520	18.36	52250	18.56	58790	18.80

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
H: *Heating capacity in [W]*
Subcooling: *4 K*
Superheat: *5 K*
Frequency: *50 Hz*
Subject to modification without prior notification

Technical data and ordering

PSH - Scroll compressors heating optimized - R410A - 50 Hz

Cooling performance table - Heating optimized

Type	Tc	-30		-20		-10		-5		0		5		10		15		20	
	Te	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
PSH051-4	20	19440	8.76	30420	9.74	45380	11.13	54580	12.02	65060	13.07	76910	14.28	–	–	–	–	–	–
	30	17380	10.34	27520	11.24	41210	12.48	49620	13.26	59200	14.19	70060	15.27	82270	16.52	95950	17.96	–	–
	40	15160	12.37	24440	13.22	36850	14.34	44470	15.05	53150	15.87	63000	16.83	74100	17.94	86560	19.23	100470	20.70
	50	12680	14.92	21080	15.76	32190	16.80	39000	17.44	46780	18.18	55610	19.03	65600	20.03	76830	21.17	89410	22.50
	60	–	–	17310	18.93	27110	19.92	33110	20.51	39970	21.19	47780	21.96	56640	22.85	66640	23.88	77880	25.10
	68	–	–	–	–	22660	22.95	28010	23.52	34120	24.15	41110	24.87	49060	25.69	58070	26.64	–	–
PSH064-4	20	24450	11.18	38160	12.35	57180	13.98	69030	15.06	82630	16.34	98110	17.88	–	–	–	–	–	–
	30	21960	13.06	34460	14.24	51610	15.70	62280	16.63	74530	17.72	88500	19.02	104340	20.56	122190	22.36	–	–
	40	19170	15.36	30520	16.66	45870	18.07	55390	18.89	66330	19.85	78830	20.97	93020	22.28	109060	23.83	127090	25.60
	50	15900	18.13	26180	19.65	39780	21.11	48190	21.90	57850	22.77	68910	23.77	81500	24.91	95770	26.24	111850	27.80
	60	–	–	21260	23.25	33190	24.87	40520	25.68	48930	26.53	58580	27.45	69600	28.48	82130	29.66	96310	31.00
	68	–	–	–	–	27440	28.43	33920	29.29	41370	30.16	49910	31.06	59690	32.04	70860	33.13	–	–
PSH077-4	20	30220	13.72	46750	15.15	69640	17.37	83940	18.81	100370	20.46	119130	22.34	–	–	–	–	–	–
	30	27030	15.93	42390	17.20	63380	19.21	76450	20.51	91480	22.02	108660	23.74	128180	25.68	150210	27.85	–	–
	40	23650	18.81	37630	19.97	56520	21.81	68280	23.00	81810	24.38	97310	25.97	114970	27.76	134960	29.76	157480	32.00
	50	20030	22.53	32430	23.63	49030	25.34	59370	26.44	71310	27.73	85040	29.19	100740	30.85	118590	32.71	138790	34.80
	60	–	–	26740	28.33	40860	29.96	49680	31.00	59920	32.21	71780	33.59	85420	35.14	101050	36.88	118830	38.80
	68	–	–	–	–	33790	34.56	41330	35.57	50150	36.73	60430	38.05	72370	39.53	86130	41.19	–	–

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *5 K*
Superheat: *5 K*
Frequency: *50 Hz*

PSH - Scroll compressors heating optimized - R410A - 50 Hz

Heating performance - Heating optimized

Type	Te	-30		-20		-10		-5		0		5		10		15		20	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
PSH051-4	20	28200	8.76	40160	9.74	56500	11.13	66600	12.02	78120	13.07	91190	14.28	–	–	–	–	–	–
	30	27720	10.34	38750	11.24	53680	12.48	62880	13.26	73400	14.19	85330	15.27	98790	16.52	113910	17.96	–	–
	40	27530	12.37	37660	13.22	51190	14.34	59510	15.05	69020	15.87	79830	16.83	92050	17.94	105790	19.23	121160	20.70
	50	27600	14.92	36840	15.76	48990	16.80	56440	17.44	64950	18.18	74640	19.03	85620	20.03	98000	21.17	111900	22.50
	60	–	–	36240	18.93	47030	19.92	53620	20.51	61150	21.19	69730	21.96	79490	22.85	90520	23.88	102930	25.10
	68	–	–	–	–	45620	22.95	51520	23.52	58270	24.15	65980	24.87	74750	25.69	84710	26.64	–	–
PSH064-4	20	35230	11.18	50070	12.35	70660	13.98	83550	15.06	98380	16.34	115340	17.88	–	–	–	–	–	–
	30	34550	13.06	48190	14.24	66750	15.70	78300	16.63	91610	17.72	106840	19.02	124160	20.56	143750	22.36	–	–
	40	33970	15.36	46580	16.66	63280	18.07	73600	18.89	85460	19.85	99040	20.97	114510	22.28	132030	23.83	151790	25.60
	50	33380	18.13	45120	19.65	60130	21.11	69300	21.90	79800	22.77	91820	23.77	105510	24.91	121070	26.24	138640	27.80
	60	–	–	43670	23.25	57170	24.87	65270	25.68	74510	26.53	85040	27.45	97050	28.48	110720	29.66	126200	31.00
	68	–	–	–	–	54850	28.43	62160	29.29	70440	30.16	79850	31.06	90580	32.04	102790	33.13	–	–
PSH077-4	20	43550	13.72	61470	15.15	86530	17.37	102210	18.81	120260	20.46	140850	22.34	–	–	–	–	–	–
	30	42520	15.93	59110	17.20	82050	19.21	96380	20.51	112880	22.02	131740	23.74	153140	25.68	177280	27.85	–	–
	40	41940	18.81	57040	19.97	77720	21.81	90630	23.00	105510	24.38	122550	25.97	141950	27.76	163890	29.76	188570	32.00
	50	41930	22.53	55400	23.63	73660	25.34	85070	26.44	98260	27.73	113410	29.19	130730	30.85	150390	32.71	172600	34.80
	60	–	–	54280	28.33	69980	29.96	79810	31.00	91230	32.21	104420	33.59	119580	35.14	136890	36.88	156550	38.80
	68	–	–	–	–	67380	34.56	75900	35.57	85850	36.73	97420	38.05	110790	39.53	126170	41.19	–	–

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
H: *Heating capacity in [W]*
Subcooling: *5 K*
Superheat: *5 K*
Frequency: *50 Hz*

Technical data and ordering

PSH - Scroll compressors heating optimized - R410A - 60 Hz

Cooling performance table - Heating optimized

Tipo	Te	-30		-20		-15		-10		-5		0		5		10		15	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
PSH019-4	20	8700	4.00	13620	4.35	16810	4.49	20550	4.62	24900	4.74	29910	4.85	35620	4.98	–	–	–	–
	30	7720	4.89	12350	5.29	15320	5.46	18780	5.61	22790	5.74	27400	5.88	32650	6.02	38610	6.17	45310	6.34
	40	6700	5.82	10950	6.26	13640	6.44	16770	6.61	20390	6.76	24550	6.91	29310	7.06	34700	7.22	40780	7.39
	50	5620	7.00	9400	7.46	11760	7.65	14510	7.83	17700	7.99	21360	8.14	25560	8.30	30350	8.46	35760	8.63
	60	–	–	7670	9.09	9660	9.29	11980	9.47	14680	9.63	17800	9.78	21410	9.94	25530	10.10	30230	10.27
	68	–	–	–	–	–	–	9750	11.22	12020	11.38	14680	11.53	17770	11.68	21330	11.83	25430	11.99
PSH023-4	20	10290	4.81	16020	5.02	19740	5.16	24110	5.33	29180	5.54	35020	5.79	41670	6.10	–	–	–	–
	30	9210	5.80	14640	6.00	18110	6.12	22160	6.27	26850	6.45	32230	6.67	38370	6.92	45330	7.23	53160	7.59
	40	8080	7.02	13090	7.23	16250	7.35	19930	7.48	24170	7.64	29050	7.82	34620	8.04	40930	8.31	48060	8.62
	50	6860	8.54	11340	8.78	14130	8.90	17370	9.03	21120	9.18	25430	9.34	30370	9.54	35990	9.76	42350	10.03
	60	–	–	9350	10.72	11720	10.86	14470	11.00	17660	11.14	21350	11.30	25600	11.48	30460	11.68	36000	11.91
	68	–	–	–	–	–	–	11880	12.92	14580	13.07	17730	13.23	21390	13.40	25600	13.59	30450	13.81
PSH026-4	20	11670	5.40	18260	5.67	22560	5.83	27620	6.03	33510	6.27	40300	6.57	48050	6.94	–	–	–	–
	30	10400	6.52	16610	6.75	20610	6.88	25290	7.04	30730	7.23	36980	7.47	44120	7.76	52210	8.13	61330	8.57
	40	9050	7.95	14750	8.17	18370	8.28	22610	8.40	27510	8.55	33160	8.73	39620	8.95	46960	9.24	55240	9.59
	50	7600	9.80	12650	10.02	15830	10.11	19540	10.20	23850	10.31	28830	10.44	34540	10.61	41050	10.82	48420	11.09
	60	–	–	10290	12.38	12960	12.46	16090	12.54	19730	12.61	23960	12.70	28850	12.81	34460	12.96	40860	13.16
	68	–	–	–	–	–	–	13030	14.84	16090	14.90	19670	14.96	23860	15.03	28700	15.14	34270	15.28
PSH030-4	20	13780	5.98	21300	6.25	26190	6.44	31920	6.71	38570	7.06	46210	7.51	54930	8.08	–	–	–	–
	30	12240	7.26	19280	7.48	23780	7.63	29040	7.83	35130	8.09	42120	8.44	50090	8.89	59120	9.45	69270	10.15
	40	10670	8.85	17110	9.06	21170	9.18	25910	9.34	31380	9.54	37670	9.81	44840	10.16	52980	10.61	62160	11.17
	50	8990	10.84	14720	11.09	18300	11.21	22460	11.34	27260	11.50	32790	11.71	39120	11.99	46320	12.35	54460	12.80
	60	–	–	12070	13.65	15110	13.79	18630	13.92	22710	14.07	27430	14.24	32850	14.47	39050	14.75	46120	15.12
	68	–	–	–	–	–	–	15250	16.46	18710	16.61	22740	16.78	27400	16.97	32770	17.22	38930	17.53
PSH034-4	20	15400	6.67	23950	6.99	29530	7.24	36080	7.57	43680	7.99	52430	8.53	62400	9.20	–	–	–	–
	30	13590	8.16	21680	8.39	26860	8.57	32900	8.81	39900	9.14	47920	9.56	57060	10.09	67400	10.76	79020	11.57
	40	11800	10.03	19260	10.21	23960	10.34	29420	10.51	35720	10.75	42950	11.07	51180	11.49	60500	12.02	70990	12.68
	50	9910	12.43	16590	12.60	20730	12.69	25530	12.81	31060	12.98	37410	13.22	44650	13.54	52870	13.95	62160	14.48
	60	–	–	13580	15.70	17090	15.77	21140	15.86	25820	15.98	31210	16.15	37380	16.38	44430	16.69	52440	17.10
	68	–	–	–	–	–	–	17220	18.94	21160	19.03	25720	19.15	30980	19.33	37030	19.57	43950	19.90
PSH039-4	20	17880	7.41	27450	7.90	33630	8.20	40880	8.54	49280	8.94	58930	9.41	69930	9.97	–	–	–	–
	30	15910	8.92	24920	9.39	30660	9.66	37350	9.96	45080	10.31	53950	10.71	64060	11.19	75500	11.75	88360	12.41
	40	13830	10.84	22120	11.31	27330	11.56	33370	11.84	40350	12.14	48360	12.49	57490	12.90	67840	13.39	79510	13.95
	50	11600	13.27	18990	13.78	23580	14.02	28900	14.28	35040	14.56	42100	14.87	50160	15.23	59340	15.64	69720	16.12
	60	–	–	15480	16.89	19370	17.15	23880	17.40	29100	17.67	35120	17.95	42040	18.27	49960	18.63	58970	19.04
	68	–	–	–	–	–	–	19440	20.47	23850	20.73	28980	21.00	34930	21.29	41780	21.62	49630	21.99

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *4 K*
Superheat: *5 K*
Frequency: *60 Hz*
Subject to modification without prior notification

Technical data and ordering

PSH - Scroll compressors heating optimized - R410A - 60 Hz

Heating performance table - Heating optimized

Type	Te	-30		-20		-15		-10		-5		0		5		10		15	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
PSH019-4	20	12490	4.00	17740	4.35	21070	4.49	24930	4.62	29400	4.74	34520	4.85	40340	4.98	–	–	–	–
	30	12360	4.89	17370	5.29	20490	5.46	24100	5.61	28240	5.74	32980	5.88	38360	6.02	44460	6.17	51320	6.34
	40	12230	5.82	16890	6.26	19760	6.44	23040	6.61	26810	6.76	31110	6.91	36000	7.06	41550	7.22	47790	7.39
	50	12260	7.00	16480	7.46	19020	7.65	21940	7.83	25270	7.99	29090	8.14	33430	8.30	38370	8.46	43950	8.63
	60	–	–	16290	9.09	18470	9.29	20960	9.47	23820	9.63	27090	9.78	30830	9.94	35110	10.10	39980	10.27
	68	–	–	–	–	–	–	20390	11.22	22820	11.38	25620	11.53	28850	11.68	32560	11.83	36810	11.99
PSH023-4	20	14880	4.81	20810	5.02	24660	5.16	29190	5.33	34460	5.54	40540	5.79	47480	6.10	–	–	–	–
	30	14740	5.80	20360	6.00	23950	6.12	28140	6.27	33000	6.45	38590	6.67	44970	6.92	52220	7.23	60400	7.59
	40	14770	7.02	19980	7.23	23260	7.35	27060	7.48	31450	7.64	36510	7.82	42290	8.04	48850	8.31	56270	8.62
	50	15000	8.54	19710	8.78	22620	8.90	25980	9.03	29870	9.18	34340	9.34	39460	9.54	45300	9.76	51910	10.03
	60	–	–	19580	10.72	22070	10.86	24960	11.00	28280	11.14	32120	11.30	36540	11.48	41600	11.68	47360	11.91
	68	–	–	–	–	–	–	24190	12.92	27040	13.07	30340	13.23	34160	13.40	38560	13.59	43610	13.81
PSH026-4	20	16920	5.40	23770	5.67	28230	5.83	33480	6.03	39610	6.27	46690	6.57	54810	6.94	–	–	–	–
	30	16730	6.52	23180	6.75	27310	6.88	32140	7.04	37760	7.23	44240	7.47	51670	7.76	60120	8.13	69670	8.57
	40	16780	7.95	22700	8.17	26430	8.28	30780	8.40	35830	8.55	41650	8.73	48330	8.95	55940	9.24	64570	9.59
	50	17130	9.80	22400	10.02	25670	10.11	29470	10.20	33880	10.31	38980	10.44	44850	10.61	51570	10.82	59210	11.09
	60	–	–	22340	12.38	25090	12.46	28280	12.54	32000	12.61	36320	12.70	41310	12.81	47070	12.96	53660	13.16
	68	–	–	–	–	–	–	27460	14.84	30580	14.90	34220	14.96	38480	15.03	43420	15.14	49130	15.28
PSH030-4	20	19410	5.98	27180	6.25	32250	6.44	38240	6.71	45220	7.06	53290	7.51	62540	8.08	–	–	–	–
	30	19080	7.26	26320	7.48	30960	7.63	36410	7.83	42750	8.09	50070	8.44	58460	8.89	68020	9.45	78830	10.15
	40	19000	8.85	25640	9.06	29820	9.18	34700	9.34	40370	9.54	46910	9.81	54410	10.16	62970	10.61	72680	11.17
	50	19190	10.84	25170	11.09	28860	11.21	33140	11.34	38100	11.50	43820	11.71	50410	11.99	57940	12.35	66520	12.80
	60	–	–	24920	13.65	28090	13.79	31740	13.92	35960	14.07	40840	14.24	46470	14.47	52950	14.75	60350	15.12
	68	–	–	–	–	–	–	30750	16.46	34360	16.61	38540	16.78	43390	16.97	48990	17.22	55440	17.53
PSH034-4	20	21570	6.67	30420	6.99	36220	7.24	43070	7.57	51070	7.99	60320	8.53	70910	9.20	–	–	–	–
	30	21140	8.16	29440	8.39	34780	8.57	41050	8.81	48350	9.14	56760	9.56	66400	10.09	77350	10.76	89720	11.57
	40	21070	10.03	28700	10.21	33520	10.34	39140	10.51	45660	10.75	53180	11.07	61800	11.49	71610	12.02	82720	12.68
	50	21410	12.43	28230	12.60	32470	12.69	37380	12.81	43070	12.98	49630	13.22	57170	13.54	65770	13.95	75550	14.48
	60	–	–	28090	15.70	31680	15.77	35810	15.86	40600	15.98	46140	16.15	52530	16.38	59870	16.69	68250	17.10
	68	–	–	–	–	–	–	34730	18.94	38760	19.03	43430	19.15	48860	19.33	55130	19.57	62350	19.90
PSH039-4	20	25070	7.41	35120	7.90	41590	8.20	49160	8.54	57950	8.94	68060	9.41	79600	9.97	–	–	–	–
	30	24560	8.92	34040	9.39	40030	9.66	47010	9.96	55080	10.31	64350	10.71	74920	11.19	86900	11.75	100400	12.41
	40	24340	10.84	33100	11.31	38550	11.56	44850	11.84	52130	12.14	60480	12.49	70010	12.90	80830	13.39	93040	13.95
	50	24470	13.27	32360	13.78	37190	14.02	42750	14.28	49160	14.56	56520	14.87	64940	15.23	74520	15.64	85370	16.12
	60	–	–	31870	16.89	36010	17.15	40770	17.40	46240	17.67	52530	17.95	59760	18.27	68030	18.63	77450	19.04
	68	–	–	–	–	–	–	39290	20.47	43960	20.73	49360	21.00	55580	21.29	62750	21.62	70970	21.99

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
H: *Heating capacity in [W]*
Subcooling: *4 K*
Superheat: *5 K*
Frequency: *60 Hz*
Subject to modification without prior notification

Technical data and ordering

PSH - Scroll compressors heating optimized - R410A - 60 Hz

Cooling performance table - Heating optimized

Type	Te	-30		-20		-10		-5		0		5		10		15		20	
	Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
PSH051-4	20	23350	10.52	36540	11.69	54500	13.36	65550	14.43	78130	15.69	92360	17.15	–	–	–	–	–	–
	30	20870	12.42	33050	13.50	49490	14.98	59590	15.93	71100	17.04	84140	18.34	98810	19.84	115230	21.57	–	–
	40	18210	14.86	29350	15.88	44260	17.22	53400	18.07	63830	19.06	75660	20.21	89000	21.55	103960	23.09	120660	24.90
	50	15230	17.92	25310	18.93	38660	20.18	46840	20.94	56180	21.83	66790	22.86	78780	24.05	92270	25.43	107380	27.00
	60	–	–	20790	22.73	32560	23.93	39760	24.64	48000	25.44	57380	26.37	68020	27.44	80030	28.68	93530	30.10
	68	–	–	–	–	27220	27.57	33630	28.24	40980	29.00	49370	29.87	58920	30.86	69740	31.99	–	–
PSH064-4	20	29360	13.43	45840	14.84	68680	16.80	82910	18.08	99240	19.63	117830	21.47	–	–	–	–	–	–
	30	26370	15.68	41390	17.10	61980	18.86	74800	19.97	89510	21.28	106290	22.84	125320	24.69	146750	26.86	–	–
	40	23020	18.45	36650	20.01	55080	21.70	66520	22.69	79660	23.84	94670	25.18	111720	26.76	130990	28.61	152630	30.80
	50	19100	21.77	31440	23.60	47780	25.35	57870	26.30	69480	27.35	82760	28.55	97880	29.92	115020	31.52	134340	33.40
	60	–	–	25530	27.92	39860	29.87	48660	30.84	58770	31.86	70350	32.97	83590	34.21	98640	35.62	115670	37.20
	68	–	–	–	–	32960	34.15	40740	35.18	49680	36.22	59940	37.31	71690	38.49	85100	39.79	–	–
PSH077-4	20	36260	16.46	56100	18.18	83570	20.85	100720	22.57	120440	24.55	142960	26.81	–	–	–	–	–	–
	30	32440	19.12	50860	20.64	76050	23.05	91740	24.61	109780	26.42	130400	28.48	153810	30.82	180250	33.42	–	–
	40	28390	22.58	45160	23.97	67830	26.17	81930	27.60	98170	29.26	116780	31.16	137960	33.31	161960	35.71	188970	38.40
	50	24040	27.04	38920	28.35	58840	30.40	71240	31.73	85570	33.27	102040	35.03	120880	37.02	142310	39.26	166550	41.70
	60	–	–	32090	33.99	49030	35.95	59610	37.20	71910	38.65	86130	40.30	102510	42.17	121260	44.25	142600	46.60
	68	–	–	–	–	40540	41.47	49590	42.68	60180	44.08	72520	45.66	86840	47.44	103360	49.43	–	–

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *5 K*
Superheat: *5 K*
Frequency: *60 Hz*

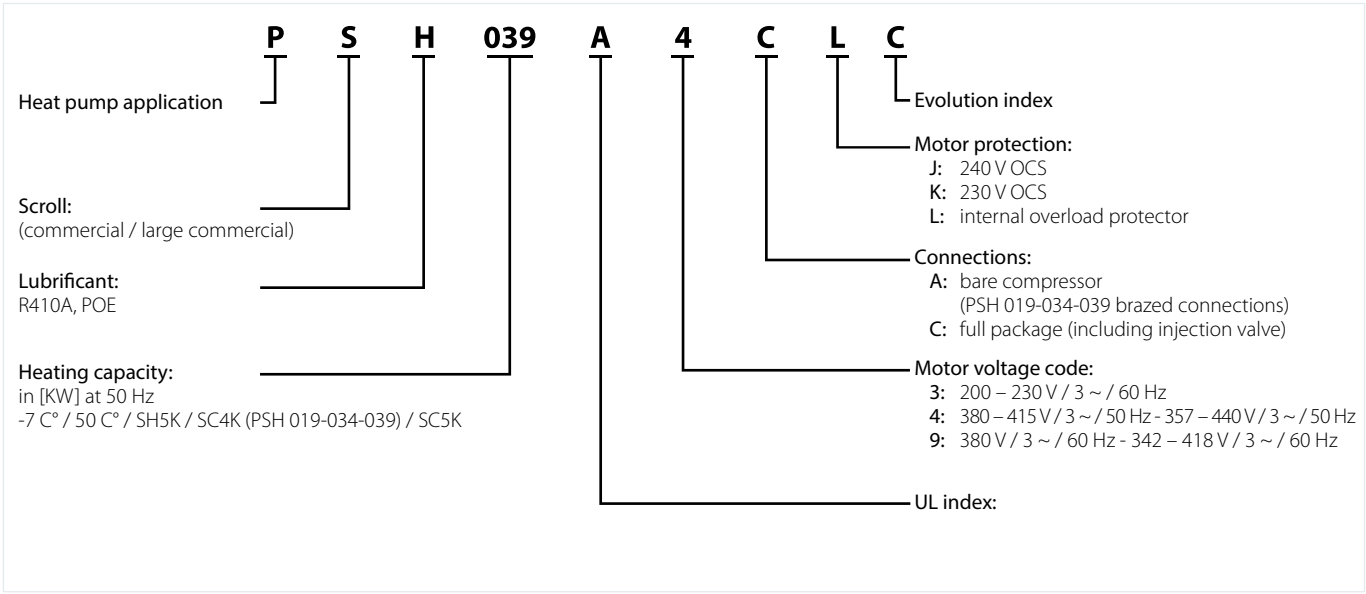
PSH - Scroll compressors heating optimized - R410A - 60 Hz

Heating performance - Heating optimized

Type	Te	-30		-20		-10		-5		0		5		10		15		20	
	Tc	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe	H	Pe
PSH051-4	20	33870	10.52	48230	11.69	67860	13.36	79980	14.43	93820	15.69	109520	17.15	–	–	–	–	–	–
	30	33290	12.42	46540	13.50	64470	14.98	75520	15.93	88150	17.04	102480	18.34	118650	19.84	136800	21.57	–	–
	40	33070	14.86	45230	15.88	61480	17.22	71470	18.07	82890	19.06	95870	20.21	110550	21.55	127050	23.09	145520	24.90
	50	33140	17.92	44240	18.93	58840	20.18	67780	20.94	78010	21.83	89650	22.86	102830	24.05	117700	25.43	134390	27.00
	60	–	–	43520	22.73	56490	23.93	64400	24.64	73440	25.44	83750	26.37	95460	27.44	108710	28.68	123620	30.10
	68	–	–	–	–	54790	27.57	61880	28.24	69980	29.00	79240	29.87	89780	30.86	101730	31.99	–	–
PSH064-4	20	42310	13.43	60140	14.84	84870	16.80	100340	18.08	118160	19.63	138530	21.47	–	–	–	–	–	–
	30	41490	15.68	57870	17.10	80160	18.86	94040	19.97	110020	21.28	128310	22.84	149110	24.69	172640	26.86	–	–
	40	40800	18.45	55940	20.01	76000	21.70	88390	22.69	102640	23.84	118950	25.18	137520	26.76	158570	28.61	182300	30.80
	50	40080	21.77	54180	23.60	72220	25.35	83230	26.30	95840	27.35	110270	28.55	126720	29.92	145400	31.52	166510	33.40
	60	–	–	52450	27.92	68660	29.87	78390	30.84	89480	31.86	102140	32.97	116560	34.21	132970	35.62	151570	37.20
	68	–	–	–	–	65880	34.15	74660	35.18	84600	36.22	95900	37.31	108790	38.49	123460	39.79	–	–
PSH077-4	20	52130	16.46	73620	18.18	103670	20.85	122480	22.57	144110	24.55	168800	26.81	–	–	–	–	–	–
	30	50870	19.12	70760	20.64	98270	23.05	115460	24.61	135250	26.42	157850	28.48	183520	30.82	212470	33.42	–	–
	40	50150	22.58	68260	23.97	93060	26.17	108540	27.60	126380	29.26	146810	31.16	170070	33.31	196380	35.71	225970	38.40
	50	50100	27.04	66250	28.35	88150	30.40	101830	31.73	117640	33.27	135810	35.03	156570	37.02	180150	39.26	206780	41.70
	60	–	–	64860	33.99	83680	35.95	95480	37.20	109170	38.65	124990	40.30	143160	42.17	163920	44.25	187490	46.60
	68	–	–	–	–	80520	41.47	90740	42.68	102670	44.08	116540	45.66	132570	47.44	151010	49.43	–	–

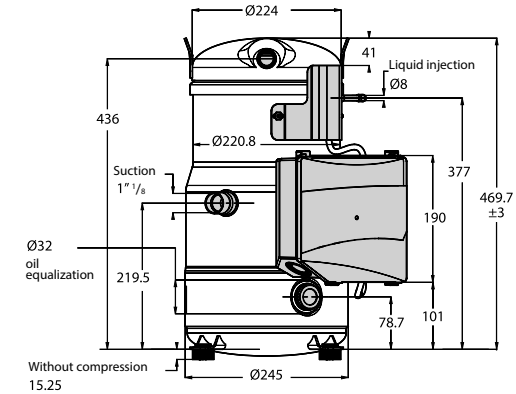
To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
H: *Heating capacity in [W]*
Subcooling: *5 K*
Superheat: *5 K*
Frequency: *60 Hz*

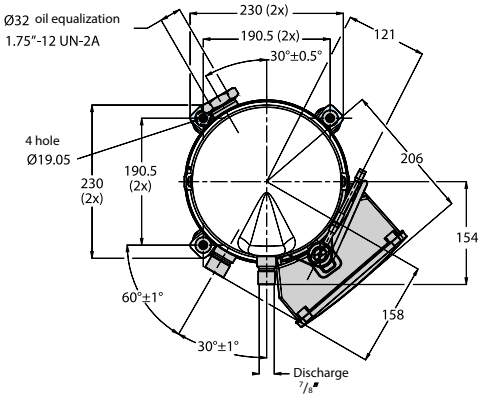
Nomenclature



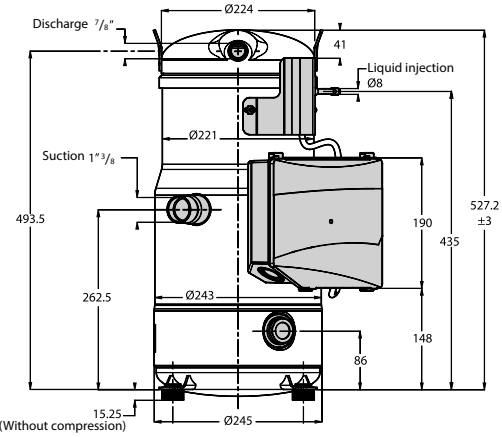
Dimensions

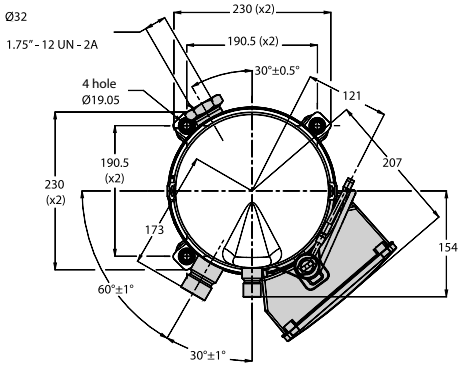
PSH019



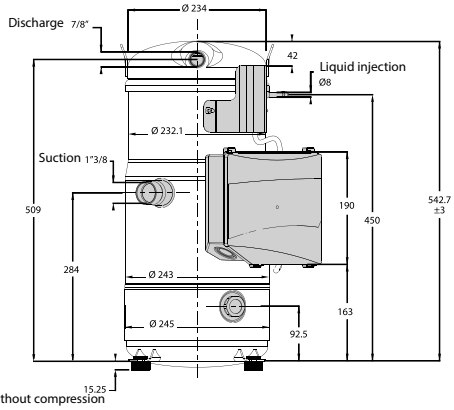


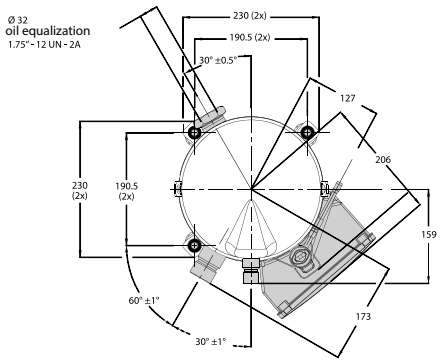
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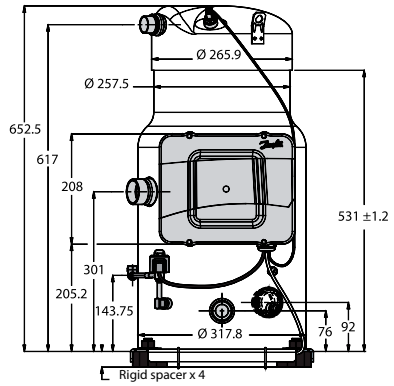
PSH039

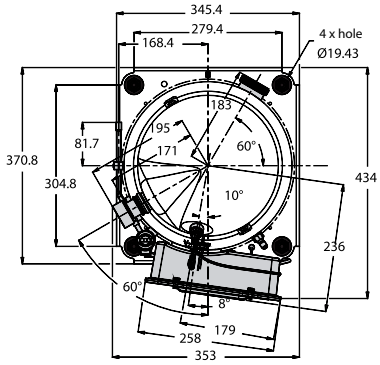




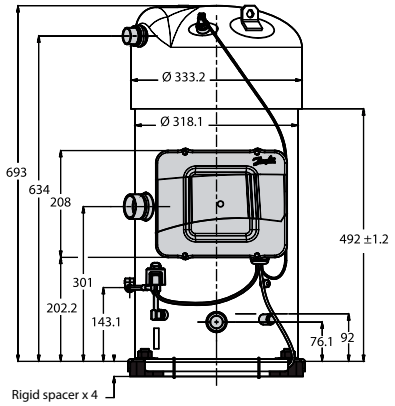
Dimensions

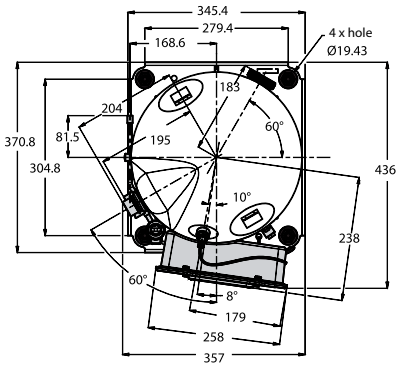
PSH051



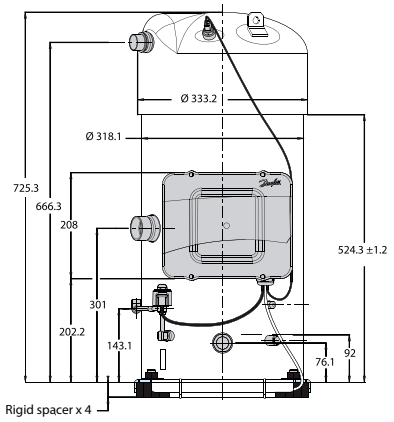


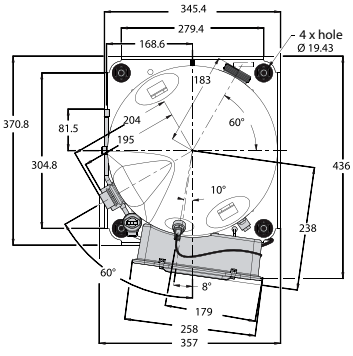
PSH064





PSH077





Technical data and ordering

PSH019 – PSH039 - Scroll compressors heating optimized

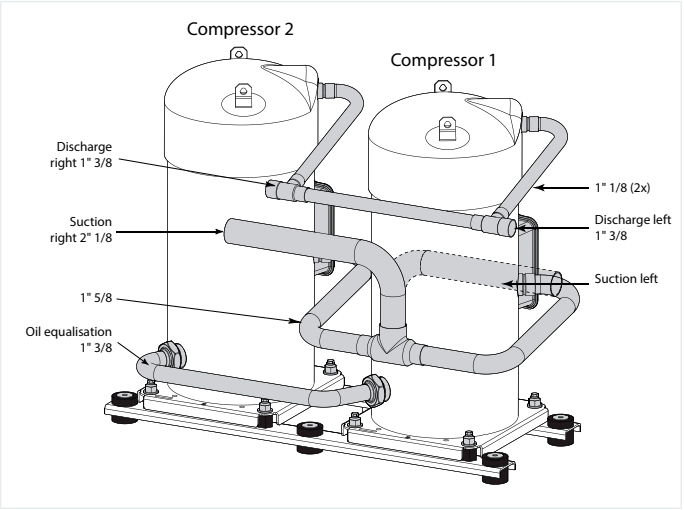
Tandem kit - Code numbers

Compressor 1	Compressor 2	Tandem type	Suction from	Kit code no. to order	Washer reference	Washer Ø [mm]	Washer in suction of
PSH019	PSH019	PSH038	Left Right	7777044		Not needed	
PSH023	PSH023	PSH046	Left Right	7777044		Not needed	
PSH026	PSH026	PSH052	Left Right	7777044		Not needed	
PSH030	PSH030	PSH060	Left Right	7777044		Not needed	
PSH034	PSH034	PSH068	Left Right	7777044		Not needed	
PSH039	PSH039	PSH078	Left Right	7777053		Not needed	

PSH051 – PSH077 - Scroll compressors heating optimized

Tandem kit - Code numbers

Compressor 1	Compressor 2	Suction washer (restrictor) kit		
		Code no for ordering	Reference	Diameter [mm]
PSH051	PSH051	7777041	Not needed	Not needed
PSH051	PSH064	7777037	5311570P01	31
PSH064	PSH064	7777041	Not needed	Not needed
PSH051	PSH077	7777048	5311579P05	29
PSH064	PSH077	7777037	5311579P01	31
PSH077	PSH077	7777041	Not needed	Not needed

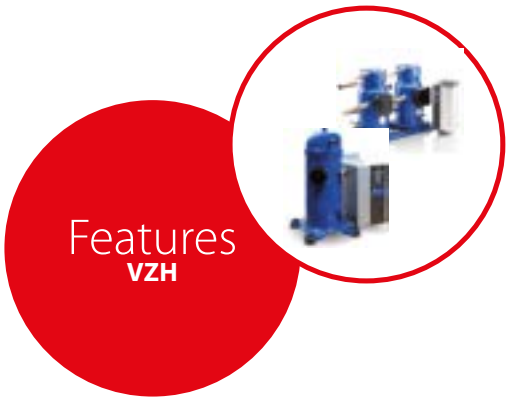


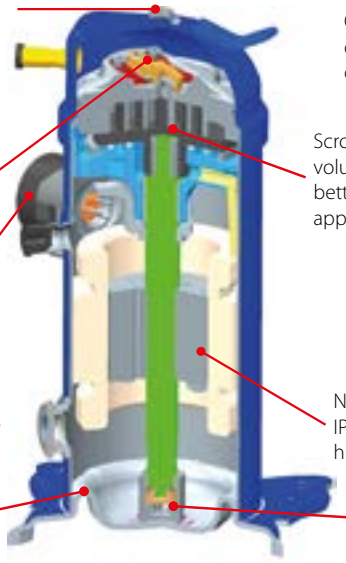
Quick Selection Notes:

VZH - Inverter Scroll Compressors - R410A

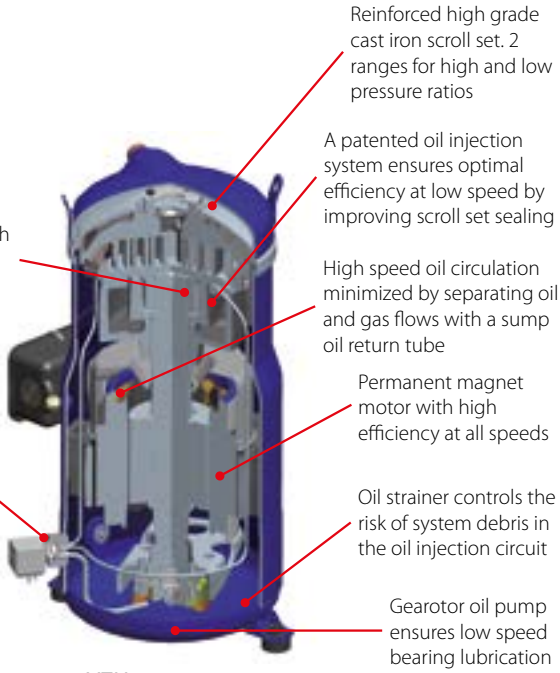
Danfoss inverter scroll compressor VZH is the second generation of scroll compressors offering variable speed technology for commercial applications in air conditioning. It allows OEMs to stand out in the commercial HVAC and process cooling marketplaces from 4 – 52 TR (15 – 184 kW) and to exceed the upgraded energy level requirements.

It provides a stepless modulation from 15 / 25 – 100 rps depending on the model.
The compressors comes with a pre-qualified drive for a shorter time to market and increased reliability.





VZH 028-044



VZH 088-170

Facts

Applications:
- Packaged air conditioning
- Rooftops
- Chillers
- Close controls
- Heat pumps
- Data centers

- Capacity modulation: adapts motor speed to varying load continuously, quickly and smoothly for great comfort and reliability
  VZH 028-044: 15 – 100 rps /
  VZH 088 – 170: 25 – 100 rps
- Tight temperature control ± 0.3 °C
- Pre-qualified compressor and drive package
- Motor's protection is managed by the driver
- Low in rush current

- Advanced energy efficiency cuts the electric bill and easily meets the energy standards
- Improves comfort and process reliability, greater humidity control
- Lowers noise level during part-load operations
- Faster time to market, saves time on development and enhances overall system reliability
- Reduces the size of power back up systems needed
- Reduces installation costs with elimination of components

Technical data and ordering

VZH028-044 - Inverter scrolls compressors

Compressors specifications

Type	Swept volume [cm³/rev]	Displacement				Oil charge [l]	Net weight [kg]
		15 rps [m³/ h]	50 rps [m³/h]	60 rps [m³/h]	100 rps [m³/h]		
VZH028	27.8	1.5	5.0	6.0	10.0	1.1	26
VZH035	34.9	1.9	6.3	7.5	12.6	1.3	27
VZH044	44.5	2.4	8.0	9.6	16.0	1.3	27

Frequency converter specifications

Mains supply voltage	T2: 200 – 240 V ± 10% (3-phase), T4: 380 – 480 V ± 10% (3-phase), T6: 525 – 600 V ± 10 % (3-phase)
Supply frequency	50 / 60 Hz
Output voltage	0 – 100% of supply voltage
Inputs	4 digital (0 – 24 V), 2 analog (0 / ± 10 V or 4 – 20 mA, scalable)
Programmable outputs	2 digital (0 – 24 V), 2 analog (0 – 24 V), 2 relay
Protection functions	Over-current protection, low / high current handling
Compressor functions	Pressostat / thermostat function, short cycle protection, oil return management

VZH 028-044 - Voltage code G - 380 – 480 V / 3 ph / 50 / 60 Hz

Ordering

Type	Equipment version	G 380 – 480 V / 3 ph / 50 / 60 Hz	
		Compressor Name	Code no.
VZH028	Single	VZH028CGANA	120G0061
VZH035	Single	VZH035CGANA	120G0060
	Manifold	VZH035CGBNA	120G0073
VZH044	Single	VZH044CGANA	120G0059
	Manifold	VZH044CGBNA	120G0072

VZH 028-044 - Voltage code J - 200 – 240 V / 3 ph / 50 / 60 Hz

Ordering

Type	Equipment version	J 200 – 240 V / 3 ph / 50 / 60 Hz	
		Compressor Name	Code no.
VZH028	Single	VZH028CJANA	120G0064
VZH035	Single	VZH035CJANA	120G0063
	Manifold	VZH035CJBNA	120G0076
VZH044	Single	VZH044CJANA	120G0062
	Manifold	VZH044CJBNA	120G0075

VZH 028-044 - Frequency converter - Voltage code T4 - 380 – 480 V / 3 ph / 50 / 60 Hz

Ordering

Type	Frequency converter				
	Model & power	IP class	RFI class	Coating	Code no.
VZH028-T4	CDS803 - P6K0	E20	H4	–	134N4262
VZH035-T4	CDS803 - P7K5	E20	H4	–	134N4263
VZH044-T4	CDS803 - P10K	E20	H4	–	134L9473

LCP: *user interface 120Z0581 (accessory)*

VZH 028-044 - Frequency converter - Voltage code T2 - 200 – 240 V / 3ph / 50 / 60 Hz

Ordering

Type	Frequency converter				
	Model & power	IP class	RFI class	Coating	Code no.
VZH028-T2	CDS803 - P6K0	E20	H4	–	134N4260
VZH035-T2	CDS803 - P7K5	E20	H4	–	134N4261
VZH044-T2	CDS803 - P10K	E20	H4	–	134L9470

LCP: *user interface 120Z0581 (accessory)*

Technical data and ordering

VZH 088-170 - Inverter scrolls compressors

Compressor specifications

Type	Swept volume [cm³/rev]	Displacement				Oil charge [dm³]	Net weight [kg]
		25 rps [m³/ h]	50 rps [m³/h]	60 rps [m³/h]	100 rps [m³ /h]		
VZH088	88.4	7.7	15.4	18.6	30.8	3.3	55
VZH117	116.9	10.1	20.3	24.6	40.6	3.6	61
VZH170	170.2	14.8	29.6	35.7	54.2	6.7	112

Frequency converter specifications

Mains supply voltage	T2: 200 – 240 V ± 10% (3-phase), T4: 380 – 480 V ± 10% (3-phase), T6: 525 – 600 V ± 10% (3-phase)
Supply frequency	50 / 60 Hz
Output voltage	0 – 100% of supply voltage
Inputs	6 digital (0 – 24 V), 2 analogue (0 ± 10 V or 4 – 20 mA, scalable)
Programmable outputs	2 digital (0 – 24 V), 1 analogue (0 – 24 V), 2 relay
Protection functions	Over-current protection, low / high current handling
Compressor functions	Discharge gas temperature protection, pressostat/thermostat function, short cycle protection, oil return management

VZH 088-170 - Inverter scrolls compressors - Voltage code G - 380 – 480 V

Ordering

Type	Frequency converter				
	Model & power [kW}	IP class	RFI class	Coating	Code no.
VZH088-G	CDS303 - 15.0	IP20	H3	No	134G3576
	CDS303 - 15.0	IP20	H3	Yes	134G3577
	CDS303 - 15.0	IP20	H2	No	134F9366
	CDS303 - 15.0	IP20	H2	Yes	134G3578
	CDS303 - 15.0	IP55	H3	No	134G4008
	CDS303 - 15.0	IP55	H3	Yes	134G4010
	CDS303 - 15.0	IP55	H2	No	134G4012
	CDS303 - 15.0	IP55	H2	Yes	134G4013
VZH117-G	CDS303 - 18.5	IP20	H3	No	134G3579
	CDS303 - 18.5	IP20	H3	Yes	134G3580
	CDS303 - 18.5	IP20	H2	No	134F9368
	CDS303 - 18.5	IP20	H2	Yes	134G3581
	CDS303 - 18.5	IP55	H3	No	134G4015
	CDS303 - 18.5	IP55	H3	Yes	134G4016
	CDS303 - 18.5	IP55	H2	No	134G4018
	CDS303 - 18.5	IP55	H2	Yes	134G4019
VZH170-G	CDS303 - 22.0	IP20	H3	No	134G3582
	CDS303 - 22.0	IP20	H3	Yes	134G3583
	CDS303 - 22.0	IP20	H2	No	134F9371
	CDS303 - 22.0	IP20	H2	Yes	134G3584
	CDS303 - 22.0	IP55	H3	No	134G4020
	CDS303 - 22.0	IP55	H3	Yes	134G4021
	CDS303 - 22.0	IP55	H2	No	134G4022
	CDS303 - 22.0	IP55	H2	Yes	134G4023

LCP: *user interface 120Z0326 (accessory)*

VZH 088-170 - Inverter scrolls compressors - Voltage code J - 200 – 240 V

Ordering

Type	Frequency converter			
	Model & power [kW]	IP class	RFI class	Code no.
VZH088-J	CDS303 - 15.0	IP20	H3	134G3474
	CDS303 - 15.0	IP20	H2	134F9361
	CDS303 - 15.0	IP55	H3	134G4001
	CDS303 - 15.0	IP55	H2	134G4002
VZH117-J	CDS303 - 18.5	IP20	H3	134G3585
	CDS303 - 18.5	IP20	H2	134F9363
	CDS303 - 18.5	IP55	H3	134G4003
	CDS303 - 18.5	IP55	H2	134G4004
VZH170-J	CDS303 - 22.0	IP20	H3	134G3586
	CDS303 - 22.0	IP20	H2	134F9365
	CDS303 - 22.0	IP55	H3	134G4005
	CDS303 - 22.0	IP55	H2	134G4006

LCP: *user interface 120Z0326 (accessory)*

Technical data and ordering

VZH - Inverter scrolls compressors - VZH028CJ-VZH035CJ-VZH044CJ

EN12900

Type	[rpm]	[rps]	Te	-30		-25		-20		-15		-10		-5		0		5		10		15		20	
			Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH028CJ	1800	30	5	–	–	1791	0.54	2252	0.519	2798	0.499	3437	0.479	4177	0.46	5027	0.442	–	–	–	–	–	–	–	–
			25	–	–	1460	0.812	1873	0.804	2351	0.79	2905	0.771	3541	0.747	4269	0.717	5096	0.682	6031	0.643	7081	0.599	8257	0.55
			45	–	–	–	–	–	–	1805	1.198	2256	1.218	2772	1.227	3359	1.224	4027	1.21	4783	1.185	5636	1.149	6593	1.103
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	3009	1.04	3787	1.056	4725	1.042	5840	0.984	7151	0.869	8676	0.68	10435	0.403	–	–	–	–	–	–	–	–
			25	2371	1.492	3054	1.527	3863	1.572	4817	1.613	5934	1.634	7232	1.622	8730	1.56	10445	1.436	12396	1.234	14602	0.94	17081	0.539
			45	–	–	2284	2.296	2937	2.292	3702	2.323	4597	2.375	5638	2.431	6845	2.479	8235	2.502	9825	2.487	11634	2.419	13680	2.283
			65	–	–	–	–	–	–	–	–	–	–	3761	3.567	4622	3.615	5626	3.68	6789	3.744	8128	3.795	9660	3.818
	6000	100	5	5025	1.96	6302	2.006	7834	1.996	9651	1.917	11784	1.756	14263	1.499	17119	1.131	–	–	–	–	–	–	–	–
			25	4004	2.64	5147	2.772	6495	2.887	8075	2.972	9920	3.012	12058	2.994	14520	2.905	17336	2.73	20536	2.456	24150	2.068	28209	1.555
			45	–	–	3860	3.845	4978	3.968	6278	4.1	7789	4.225	9540	4.331	11560	4.403	13879	4.429	16527	4.393	19532	4.283	22923	4.084
			65	–	–	–	–	–	–	–	–	–	–	6426	6.069	7912	6.187	9633	6.296	11616	6.383	13888	6.433	16477	6.434
VZH035CJ	1800	30	5	–	–	2268	0.658	2851	0.633	3542	0.608	4350	0.584	5287	0.561	6363	0.539	–	–	–	–	–	–	–	–
			25	–	–	1848	0.99	2370	0.98	2977	0.964	3677	0.94	4483	0.91	5403	0.874	6450	0.832	7634	0.784	8964	0.73	10452	0.67
			45	–	–	–	–	–	–	2284	1.461	2856	1.485	3508	1.496	4252	1.492	5098	1.475	6055	1.445	7134	1.401	8346	1.345
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	3808	1.268	4794	1.287	5981	1.27	7392	1.2	9052	1.059	10983	0.829	13209	0.491	–	–	–	–	–	–	–	–
			25	3002	1.82	3866	1.862	4890	1.917	6098	1.966	7512	1.992	9155	1.977	11050	1.903	13222	1.751	15692	1.505	18484	1.146	21622	0.657
			45	–	–	2891	2.799	3718	2.795	4687	2.833	5819	2.895	7137	2.965	8665	3.022	10424	3.051	12437	3.033	14727	2.95	17316	2.784
			65	–	–	–	–	–	–	–	–	–	–	4760	4.349	5851	4.408	7121	4.487	8594	4.566	10289	4.628	12228	4.655
	6000	100	5	6361	2.344	7977	2.398	9916	2.387	12217	2.293	14917	2.1	18055	1.792	21670	1.353	–	–	–	–	–	–	–	–
			25	5069	3.157	6516	3.314	8221	3.452	10222	3.553	12557	3.601	15263	3.58	18379	3.473	21944	3.264	25994	2.936	30570	2.473	35708	1.859
			45	–	–	4885	4.597	6301	4.745	7947	4.902	9859	5.052	12076	5.178	14633	5.265	17569	5.295	20920	5.253	24723	5.121	29017	4.883
			65	–	–	–	–	–	–	–	–	–	–	8134	7.256	10015	7.397	12193	7.528	14704	7.632	17580	7.692	20857	7.693
VZH044CJ	1800	30	5	–	–	2916	0.824	3666	0.792	4554	0.76	5594	0.731	6799	0.702	8183	0.675	–	–	–	–	–	–	–	–
			25	–	–	2377	1.239	3048	1.227	3828	1.206	4729	1.176	5765	1.139	6949	1.094	8295	1.041	9817	0.98	11527	0.913	13441	0.839
			45	–	–	–	–	–	–	2938	1.828	3673	1.858	4512	1.871	5468	1.867	6556	1.846	7787	1.808	9175	1.753	10733	1.682
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	4897	1.558	6165	1.581	7691	1.561	9507	1.475	11641	1.301	14124	1.018	16986	0.604	–	–	–	–	–	–	–	–
			25	3860	2.235	4972	2.288	6289	2.355	7842	2.416	9660	2.448	11773	2.429	14211	2.337	17003	2.152	20180	1.849	23770	1.408	27806	0.807
			45	–	–	3718	3.439	4782	3.433	6027	3.48	7483	3.557	9179	3.642	11143	3.713	13405	3.748	15994	3.726	18939	3.624	22269	3.42
			65	–	–	–	–	–	–	–	–	–	–	6122	5.343	7524	5.416	9158	5.512	11052	5.609	13232	5.685	15725	5.718
	6000	100	5	8180	2.932	10259	3	12752	2.986	15711	2.868	19183	2.627	23219	2.242	27868	1.692	–	–	–	–	–	–	–	–
			25	6518	3.949	8379	4.146	10572	4.318	13145	4.445	16148	4.505	19628	4.478	23636	4.345	28220	4.083	33429	3.673	39313	3.094	45920	2.326
			45	–	–	6283	5.751	8103	5.936	10220	6.132	12679	6.32	15529	6.478	18818	6.586	22593	6.624	26903	6.571	31794	6.406	37316	6.109
			65	–	–	–	–	–	–	–	–	–	–	10460	9.077	12879	9.254	15681	9.418	18909	9.547	22608	9.623	26823	9.624

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW] (with drive loss)*
Superheat: *10 K*
Subcooling: *0 K*

Technical data and ordering

VZH - Inverter scrolls compressors - VZH028CG-VZH035CG-VZH044CG

EN12900

Type	[rpm]	[rps]	Te	-30		-25		-20		-15		-10		-5		0		5		10		15		20	
			Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH028CG	1800	30	5	–	–	1791	0.535	2252	0.514	2798	0.494	3437	0.474	4177	0.456	5027	0.438	–	–	–	–	–	–	–	–
			25	–	–	1460	0.804	1873	0.796	2351	0.783	2905	0.763	3541	0.739	4269	0.71	5096	0.676	6031	0.636	7081	0.593	8257	0.544
			45	–	–	–	–	–	–	1805	1.186	2256	1.206	2772	1.215	3359	1.212	4027	1.198	4783	1.173	5636	1.138	6593	1.092
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	3009	1.03	3787	1.045	4725	1.032	5840	0.975	7151	0.86	8676	0.673	10435	0.399	–	–	–	–	–	–	–	–
			25	2371	1.478	3054	1.512	3863	1.557	4817	1.597	5934	1.618	7232	1.605	8730	1.545	10445	1.422	12396	1.222	14602	0.931	17081	0.533
			45	–	–	2284	2.273	2937	2.269	3702	2.3	4597	2.351	5638	2.407	6845	2.454	8235	2.478	9825	2.463	11634	2.395	13680	2.261
			65	–	–	–	–	–	–	–	–	–	–	3761	3.531	4622	3.58	5626	3.643	6789	3.707	8128	3.758	9660	3.78
	6000	100	5	5025	1.941	6302	1.986	7834	1.976	9651	1.898	11784	1.739	14263	1.484	17119	1.12	–	–	–	–	–	–	–	–
			25	4004	2.614	5147	2.745	6495	2.859	8075	2.942	9920	2.982	12058	2.964	14520	2.876	17336	2.703	20536	2.431	24150	2.048	28209	1.539
			45	–	–	3860	3.807	4978	3.929	6278	4.059	7789	4.183	9540	4.288	11560	4.36	13879	4.385	16527	4.349	19532	4.24	22923	4.044
			65	–	–	–	–	–	–	–	–	–	–	6426	6.009	7912	6.126	9633	6.234	11616	6.32	13888	6.37	16477	6.37
VZH035CG	1800	30	5	–	–	2268	0.652	2851	0.627	3542	0.602	4350	0.578	5287	0.555	6363	0.534	–	–	–	–	–	–	–	–
			25	–	–	1848	0.981	2370	0.971	2977	0.954	3677	0.931	4483	0.901	5403	0.866	6450	0.824	7634	0.776	8964	0.723	10452	0.664
			45	–	–	–	–	–	–	2284	1.447	2856	1.471	3508	1.481	4252	1.478	5098	1.461	6055	1.431	7134	1.388	8346	1.331
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	3808	1.256	4794	1.274	5981	1.258	7392	1.188	9052	1.049	10983	0.82	13209	0.486	–	–	–	–	–	–	–	–
			25	3002	1.802	3866	1.844	4890	1.898	6098	1.947	7512	1.973	9155	1.958	11050	1.884	13222	1.734	15692	1.49	18484	1.135	21622	0.65
			45	–	–	2891	2.771	3718	2.767	4687	2.805	5819	2.867	7137	2.935	8665	2.993	10424	3.021	12437	3.003	14727	2.921	17316	2.757
			65	–	–	–	–	–	–	–	–	–	–	4760	4.306	5851	4.365	7121	4.442	8594	4.52	10289	4.582	12228	4.609
	6000	100	5	6361	2.321	7977	2.374	9916	2.363	12217	2.27	14917	2.079	18055	1.774	21670	1.339	–	–	–	–	–	–	–	–
			25	5069	3.126	6516	3.282	8221	3.418	10222	3.518	12557	3.565	15263	3.544	18379	3.438	21944	3.231	25994	2.907	30570	2.449	35708	1.841
			45	–	–	4885	4.551	6301	4.698	7947	4.853	9859	5.002	12076	5.127	14633	5.213	17569	5.243	20920	5.2	24723	5.07	29017	4.835
			65	–	–	–	–	–	–	–	–	–	–	8134	7.184	10015	7.324	12193	7.454	14704	7.556	17580	7.616	20857	7.617
VZH044CG	1800	30	5	–	–	2916	0.815	3666	0.784	4554	0.753	5594	0.723	6799	0.695	8183	0.668	–	–	–	–	–	–	–	–
			25	–	–	2377	1.227	3048	1.214	3828	1.194	4729	1.165	5765	1.128	6949	1.083	8295	1.03	9817	0.971	11527	0.904	13441	0.83
			45	–	–	–	–	–	–	2938	1.81	3673	1.84	4512	1.853	5468	1.849	6556	1.828	7787	1.79	9175	1.736	10733	1.666
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	4897	1.543	6165	1.565	7691	1.545	9507	1.46	11641	1.288	14124	1.008	16986	0.598	–	–	–	–	–	–	–	–
			25	3860	2.213	4972	2.265	6289	2.332	7842	2.392	9660	2.423	11773	2.405	14211	2.314	17003	2.13	20180	1.831	23770	1.394	27806	0.799
			45	–	–	3718	3.405	4782	3.399	6027	3.446	7483	3.522	9179	3.606	11143	3.676	13405	3.711	15994	3.689	18939	3.588	22269	3.386
			65	–	–	–	–	–	–	–	–	–	–	6122	5.29	7524	5.362	9158	5.457	11052	5.553	13232	5.629	15725	5.662
	6000	100	5	8180	2.903	10259	2.97	12752	2.956	15711	2.84	19183	2.601	23219	2.22	27868	1.675	–	–	–	–	–	–	–	–
			25	6518	3.91	8379	4.105	10572	4.276	13145	4.401	16148	4.46	19628	4.434	23636	4.302	28220	4.042	33429	3.637	39313	3.063	45920	2.303
			45	–	–	6283	5.694	8103	5.877	10220	6.071	12679	6.257	15529	6.414	18818	6.521	22593	6.559	26903	6.506	31794	6.343	37316	6.049
			65	–	–	–	–	–	–	–	–	–	–	10460	8.988	12879	9.162	15681	9.324	18909	9.453	22608	9.528	26823	9.528

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW] (with drive loss)*
Subcooling: *0 K*
Superheat: *10 K*

Technical data and ordering

VZH - Inverter scrolls compressors - VZH028CJ-VZH035CJ-VZH044CJ

ARI

Type	[rpm]	[rps]	Te	-30		-25		-20		-15		-10		-5		0		5		10		15		20	
			Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH028CJ	1800	30	5	–	–	1894	0.54	2380	0.519	2954	0.499	3626	0.479	4405	0.46	5298	0.442	–	–	–	–	–	–	–	–
			25	–	–	1568	0.812	2009	0.804	2521	0.79	3111	0.771	3790	0.747	4565	0.717	5445	0.682	6440	0.643	7557	0.599	8805	0.55
			45	–	–	–	–	–	–	1990	1.198	2484	1.218	3048	1.227	3690	1.224	4418	1.21	5242	1.185	6171	1.149	7212	1.103
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	3183	1.04	4004	1.056	4992	1.042	6167	0.984	7546	0.869	9150	0.68	10999	0.403	–	–	–	–	–	–	–	–
			25	2550	1.492	3280	1.527	4145	1.572	5164	1.613	6356	1.634	7740	1.622	9336	1.56	11162	1.436	13237	1.234	15582	0.94	18215	0.539
			45	–	–	2526	2.296	3244	2.292	4082	2.323	5062	2.375	6200	2.431	7518	2.479	9034	2.502	10767	2.487	12737	2.419	14963	2.283
			65	–	–	–	–	–	–	–	–	–	–	4505	3.567	5520	3.615	6701	3.68	8067	3.744	9637	3.795	11431	3.818
	6000	100	5	5317	1.96	6663	2.006	8277	1.996	10191	1.917	12435	1.756	15043	1.499	18044	1.131	–	–	–	–	–	–	–	–
			25	4305	2.64	5528	2.772	6969	2.887	8657	2.972	10625	3.012	12905	2.994	15527	2.905	18525	2.73	21928	2.456	25770	2.068	30082	1.555
			45	–	–	4269	3.845	5497	3.968	6922	4.1	8576	4.225	10491	4.331	12697	4.403	15226	4.429	18111	4.393	21383	4.283	25074	4.084
			65	–	–	–	–	–	–	–	–	–	–	7698	6.069	9450	6.187	11474	6.296	13802	6.383	16466	6.433	19498	6.434
VZH035CJ	1800	30	5	–	–	2398	0.658	3012	0.633	3740	0.608	4590	0.584	5576	0.561	6707	0.539	–	–	–	–	–	–	–	–
			25	–	–	1985	0.99	2543	0.98	3191	0.964	3939	0.94	4797	0.91	5778	0.874	6893	0.832	8151	0.784	9565	0.73	11146	0.67
			45	–	–	–	–	–	–	2519	1.461	3145	1.485	3858	1.496	4670	1.492	5593	1.475	6636	1.445	7811	1.401	9129	1.345
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	4029	1.268	5069	1.287	6319	1.27	7806	1.2	9552	1.059	11583	0.829	13922	0.491	–	–	–	–	–	–	–	–
			25	3227	1.82	4152	1.862	5247	1.917	6537	1.966	8046	1.992	9798	1.977	11817	1.903	14129	1.751	16756	1.505	19724	1.146	23057	0.657
			45	–	–	3198	2.799	4106	2.795	5168	2.833	6407	2.895	7849	2.965	9517	3.022	11436	3.051	13630	3.033	16123	2.95	18941	2.784
			65	–	–	–	–	–	–	–	–	–	–	5703	4.349	6988	4.408	8483	4.487	10212	4.566	12199	4.628	14469	4.655
	6000	100	5	6730	2.344	8434	2.398	10478	2.387	12900	2.293	15741	2.1	19041	1.792	22841	1.353	–	–	–	–	–	–	–	–
			25	5449	3.157	6998	3.314	8821	3.452	10958	3.553	13449	3.601	16335	3.58	19655	3.473	23449	3.264	27758	2.936	32621	2.473	38079	1.859
			45	–	–	5403	4.597	6958	4.745	8763	4.902	10856	5.052	13279	5.178	16072	5.265	19274	5.295	22926	5.253	27067	5.121	31739	4.883
			65	–	–	–	–	–	–	–	–	–	–	9744	7.256	11962	7.397	14524	7.528	17471	7.632	20844	7.692	24681	7.693
VZH044CJ	1800	30	5	–	–	3083	0.824	3874	0.792	4809	0.76	5903	0.731	7171	0.702	8625	0.675	–	–	–	–	–	–	–	–
			25	–	–	2553	1.239	3271	1.227	4104	1.206	5065	1.176	6169	1.139	7431	1.094	8864	1.041	10483	0.98	12301	0.913	14333	0.839
			45	–	–	–	–	–	–	3239	1.828	4044	1.858	4961	1.871	6006	1.867	7192	1.846	8533	1.808	10045	1.753	11740	1.682
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	5182	1.558	6518	1.581	8127	1.561	10038	1.475	12284	1.301	14896	1.018	17904	0.604	–	–	–	–	–	–	–	–
			25	4150	2.235	5340	2.288	6748	2.355	8407	2.416	10347	2.448	12600	2.429	15197	2.337	18169	2.152	21548	1.849	25365	1.408	29652	0.807
			45	–	–	4113	3.439	5280	3.433	6646	3.48	8239	3.557	10093	3.642	12238	3.713	14706	3.748	17528	3.726	20734	3.624	24357	3.42
			65	–	–	–	–	–	–	–	–	–	–	7334	5.343	8986	5.416	10909	5.512	13132	5.609	15688	5.685	18607	5.718
	6000	100	5	8654	2.932	10846	3	13474	2.986	16589	2.868	20243	2.627	24487	2.242	29373	1.692	–	–	–	–	–	–	–	–
			25	7008	3.949	9000	4.146	11344	4.318	14092	4.445	17296	4.505	21007	4.478	25276	4.345	30155	4.083	35696	3.673	41950	3.094	48969	2.326
			45	–	–	6949	5.751	8949	5.936	11269	6.132	13961	6.32	17077	6.478	20668	6.586	24786	6.624	29483	6.571	34809	6.406	40816	6.109
			65	–	–	–	–	–	–	–	–	–	–	12531	9.077	15383	9.254	18678	9.418	22468	9.547	26805	9.623	31740	9.624

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Pe: *Power input in [kW] (with drive loss)*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Rating point: *ARI at 60 rps*
To / Tc / SH / SC: *7.2 °C / 54.4 °C / 11.1 K / 8.3 K at 60 rps*

Technical data and ordering

VZH - Inverter scrolls compressors - VZH028CG-VZH035CG-VZH044CG

ARI

Type	[rpm]	[rps]	Te	-30		-25		-20		-15		-10		-5		0		5		10		15		20	
			Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH028CG	1800	30	5	–	–	1894	0.535	2380	0.514	2954	0.494	3626	0.474	4405	0.456	5298	0.438	–	–	–	–	–	–	–	–
			25	–	–	1568	0.804	2009	0.796	2521	0.783	3111	0.763	3790	0.739	4565	0.71	5445	0.676	6440	0.636	7557	0.593	8805	0.544
			45	–	–	–	–	–	–	1990	1.186	2484	1.206	3048	1.215	3690	1.212	4418	1.198	5242	1.173	6171	1.138	7212	1.092
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	3183	1.03	4004	1.045	4992	1.032	6167	0.975	7546	0.86	9150	0.673	10999	0.399	–	–	–	–	–	–	–	–
			25	2550	1.478	3280	1.512	4145	1.557	5164	1.597	6356	1.618	7740	1.605	9336	1.545	11162	1.422	13237	1.222	15582	0.931	18215	0.533
			45	–	–	2526	2.273	3244	2.269	4082	2.3	5062	2.351	6200	2.407	7518	2.454	9034	2.478	10767	2.463	12737	2.395	14963	2.261
			65	–	–	–	–	–	–	–	–	–	–	4505	3.531	5520	3.58	6701	3.643	8067	3.707	9637	3.758	11431	3.78
	6000	100	5	5317	1.941	6663	1.986	8277	1.976	10191	1.898	12435	1.739	15043	1.484	18044	1.12	–	–	–	–	–	–	–	–
			25	4305	2.614	5528	2.745	6969	2.859	8657	2.942	10625	2.982	12905	2.964	15527	2.876	18525	2.703	21928	2.431	25770	2.048	30082	1.539
			45	–	–	4269	3.807	5497	3.929	6922	4.059	8576	4.183	10491	4.288	12697	4.36	15226	4.385	18111	4.349	21383	4.24	25074	4.044
			65	–	–	–	–	–	–	–	–	–	–	7698	6.009	9450	6.126	11474	6.234	13802	6.32	16466	6.37	19498	6.37
VZH035CG	1800	30	5	–	–	2398	0.652	3012	0.627	3740	0.602	4590	0.578	5576	0.555	6707	0.534	–	–	–	–	–	–	–	–
			25	–	–	1985	0.981	2543	0.971	3191	0.954	3939	0.931	4797	0.901	5778	0.866	6893	0.824	8151	0.776	9565	0.723	11146	0.664
			45	–	–	–	–	–	–	2519	1.447	3145	1.471	3858	1.481	4670	1.478	5593	1.461	6636	1.431	7811	1.388	9129	1.331
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	4029	1.256	5069	1.274	6319	1.258	7806	1.188	9552	1.049	11583	0.82	13922	0.486	–	–	–	–	–	–	–	–
			25	3227	1.802	4152	1.844	5247	1.898	6537	1.947	8046	1.973	9798	1.958	11817	1.884	14129	1.734	16756	1.49	19724	1.135	23057	0.65
			45	–	–	3198	2.771	4106	2.767	5168	2.805	6407	2.867	7849	2.935	9517	2.993	11436	3.021	13630	3.003	16123	2.921	18941	2.757
			65	–	–	–	–	–	–	–	–	–	–	5703	4.306	6988	4.365	8483	4.442	10212	4.52	12199	4.582	14469	4.609
	6000	100	5	6730	2.321	8434	2.374	10478	2.363	12900	2.27	15741	2.079	19041	1.774	22841	1.339	–	–	–	–	–	–	–	–
			25	5449	3.126	6998	3.282	8821	3.418	10958	3.518	13449	3.565	16335	3.544	19655	3.438	23449	3.231	27758	2.907	32621	2.449	38079	1.841
			45	–	–	5403	4.551	6958	4.698	8763	4.853	10856	5.002	13279	5.127	16072	5.213	19274	5.243	22926	5.2	27067	5.07	31739	4.835
			65	–	–	–	–	–	–	–	–	–	–	9744	7.184	11962	7.324	14524	7.454	17471	7.556	20844	7.616	24681	7.617
VZH044CG	1800	30	5	–	–	3083	0.815	3874	0.784	4809	0.753	5903	0.723	7171	0.695	8625	0.668	–	–	–	–	–	–	–	–
			25	–	–	2553	1.227	3271	1.214	4104	1.194	5065	1.165	6169	1.128	7431	1.083	8864	1.03	10483	0.971	12301	0.904	14333	0.83
			45	–	–	–	–	–	–	3239	1.81	4044	1.84	4961	1.853	6006	1.849	7192	1.828	8533	1.79	10045	1.736	11740	1.666
			65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	60	5	5182	1.543	6518	1.565	8127	1.545	10038	1.46	12284	1.288	14896	1.008	17904	0.598	–	–	–	–	–	–	–	–
			25	4150	2.213	5340	2.265	6748	2.332	8407	2.392	10347	2.423	12600	2.405	15197	2.314	18169	2.13	21548	1.831	25365	1.394	29652	0.799
			45	–	–	4113	3.405	5280	3.399	6646	3.446	8239	3.522	10093	3.606	12238	3.676	14706	3.711	17528	3.689	20734	3.588	24357	3.386
			65	–	–	–	–	–	–	–	–	–	–	7334	5.29	8986	5.362	10909	5.457	13132	5.553	15688	5.629	18607	5.662
	6000	100	5	8654	2.903	10846	2.97	13474	2.956	16589	2.84	20243	2.601	24487	2.22	29373	1.675	–	–	–	–	–	–	–	–
			25	7008	3.91	9000	4.105	11344	4.276	14092	4.401	17296	4.46	21007	4.434	25276	4.302	30155	4.042	35696	3.637	41950	3.063	48969	2.303
			45	–	–	6949	5.694	8949	5.877	11269	6.071	13961	6.257	17077	6.414	20668	6.521	24786	6.559	29483	6.506	34809	6.343	40816	6.049
			65	–	–	–	–	–	–	–	–	–	–	12531	8.988	15383	9.162	18678	9.324	22468	9.453	26805	9.528	31740	9.528

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Pe: *Power input in [kW] (with drive loss)*
Rating point: *ARI at 60 rps*
To / Tc / SH / SC: *7.2° C / 54.4 °C / 11.1 K / 8.3 K at 60 rps*

Technical data and ordering

Inverter scrolls compressors - VZH 088-170BG - R410A

Low pressure ratio - ARI

Type	[rpm]	Te	-25		-20		-15		-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH088BG	1500	20	–	–	6500	1.795	7900	1.699	9400	1.613	11200	1.541	13300	1.488	15700	1.457	–	–	–	–
	1500	30	–	–	5600	2.335	6900	2.256	8300	2.176	10000	2.098	12000	2.025	14200	1.963	16700	1.914	19600	1.882
	1500	40	–	–	4700	2.925	5900	2.886	7300	2.833	8900	2.77	10700	2.701	12700	2.628	15100	2.558	17700	2.492
	1500	50	–	–	–	–	–	–	6200	3.651	7600	3.624	9300	3.579	11200	3.52	13400	3.449	15800	3.371
	1500	60	–	–	–	–	–	–	–	–	–	–	7900	4.727	9600	4.702	11600	4.653	13900	4.585
	1500	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	11900	4.447	14600	4.419	17800	4.338	21700	4.232	26200	4.133	31400	4.071	37400	4.074	–	–	–	–
	3600	30	10500	5.484	13100	5.537	16200	5.5	19800	5.405	24100	5.281	28900	5.157	34400	5.064	40700	5.032	47700	5.091
	3600	40	–	–	11700	6.799	14600	6.856	18000	6.818	21900	6.715	26300	6.579	31400	6.438	37100	6.322	43500	6.262
	3600	50	–	–	–	–	–	–	15900	8.502	19500	8.47	23500	8.368	28100	8.226	33200	8.074	39100	7.943
	3600	60	–	–	–	–	–	–	–	–	–	–	20200	10.556	24300	10.461	29000	10.321	34200	10.166
	3600	63	–	–	–	–	–	–	–	–	–	–	–	–	23200	11.223	27600	11.096	32700	10.943
	6000	20	–	–	23900	7.6	28900	7.596	34900	7.554	42000	7.54	50200	7.618	59600	7.857	–	–	–	–
	6000	30	–	–	22000	9.669	26900	9.74	32700	9.694	39500	9.598	47300	9.517	56200	9.517	66400	9.666	77900	10.029
	6000	40	–	–	19800	11.778	24500	12.018	29900	12.063	36200	11.98	43400	11.835	51700	11.693	61100	11.621	71800	11.685
	6000	50	–	–	–	–	–	–	26400	14.579	32000	14.605	38500	14.489	45900	14.3	54400	14.103	64100	13.964
	6000	60	–	–	–	–	–	–	–	–	–	–	32600	17.398	39100	17.256	46500	17.029	55100	16.781
	6000	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH117BG	1500	20	–	–	8700	2.357	10500	2.231	12700	2.118	15100	2.024	17900	1.954	21100	1.913	–	–	–	–
	1500	30	–	–	7500	3.066	9200	2.963	11200	2.858	13500	2.755	16100	2.66	19100	2.578	22500	2.513	26300	2.472
	1500	40	–	–	6300	3.842	7900	3.791	9800	3.721	11900	3.638	14300	3.547	17100	3.452	20200	3.359	23800	3.273
	1500	50	–	–	–	–	–	–	8300	4.795	10200	4.76	12500	4.701	15000	4.623	18000	4.53	21300	4.428
	1500	60	–	–	–	–	–	–	–	–	–	–	10600	6.209	12900	6.175	15600	6.111	18700	6.021
	1500	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	15900	5.84	19600	5.804	23900	5.697	29100	5.559	35200	5.429	42200	5.347	50200	5.351	–	–	–	–
	3600	30	14100	7.203	17600	7.272	21800	7.224	26600	7.099	32300	6.935	38800	6.773	46200	6.651	54600	6.61	64000	6.687
	3600	40	–	–	15700	8.93	19600	9.004	24200	8.954	29400	8.82	35300	8.64	42100	8.455	49800	8.303	58500	8.224
	3600	50	–	–	–	–	–	–	21400	11.167	26100	11.124	31500	10.99	37700	10.804	44600	10.605	52400	10.432
	3600	60	–	–	–	–	–	–	–	–	–	–	27200	13.864	32700	13.739	38900	13.555	45900	13.352
	3600	63	–	–	–	–	–	–	–	–	–	–	–	–	31100	14.74	37100	14.573	43900	14.373
	6000	20	–	–	32000	9.981	38800	9.977	46900	9.922	56300	9.902	67300	10.006	80000	10.319	–	–	–	–
	6000	30	–	–	29500	12.699	36100	12.792	43900	12.732	53000	12.605	63500	12.499	75500	12.5	89200	12.695	104600	13.171
	6000	40	–	–	26600	15.469	32900	15.784	40100	15.844	48500	15.735	58300	15.544	69400	15.357	82000	15.263	96300	15.347
	6000	50	–	–	–	–	–	–	35400	19.148	43000	19.182	51700	19.03	61600	18.782	73100	18.522	86000	18.34
	6000	60	–	–	–	–	–	–	–	–	–	–	43800	22.851	52500	22.664	62500	22.365	73900	22.04
	6000	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH170BG	1500	20	–	–	12400	3.172	14900	3.041	17900	2.907	21400	2.762	25400	2.597	30000	2.405	–	–	–	–
	1500	30	–	–	10800	4.297	13300	4.157	16100	4.026	19400	3.895	23200	3.755	27600	3.599	32500	3.418	38100	3.204
	1500	40	–	–	9300	5.546	11600	5.397	14300	5.268	17300	5.15	20900	5.035	24900	4.915	29600	4.781	34800	4.625
	1500	50	–	–	–	–	–	–	12200	6.784	15100	6.679	18300	6.589	22000	6.504	26300	6.416	31200	6.318
	1500	60	–	–	–	–	–	–	–	–	–	–	15500	8.566	18900	8.516	22800	8.475	27300	8.434
	1500	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	22900	8.352	28200	8.195	34600	8.029	42200	7.839	51100	7.608	61400	7.321	73300	6.961	–	–	–	–
	3600	30	20500	10.392	25600	10.262	31600	10.137	38700	10.004	47000	9.845	56600	9.646	67700	9.389	80400	9.06	94800	8.642
	3600	40	–	–	22900	12.728	28400	12.623	34900	12.524	42500	12.416	51300	12.282	61500	12.106	73100	11.873	86400	11.566
	3600	50	–	–	–	–	–	–	30900	15.652	37600	15.572	45500	15.481	54600	15.363	65200	15.204	77200	14.986
	3600	60	–	–	–	–	–	–	–	–	–	–	39300	19.495	47300	19.414	56600	19.306	67400	19.156
	3600	63	–	–	–	–	–	–	–	–	–	–	–	–	45100	20.821	54100	20.725	64500	20.59
	6000	20	–	–	47100	14.689	57600	14.8	70000	14.747	84500	14.48	101400	13.947	120800	13.097	–	–	–	–
	6000	30	–	–	42800	17.702	52900	17.949	64700	18.102	78500	18.111	94400	17.924	112700	17.488	133500	16.754	157200	15.669
	6000	40	–	–	38300	21.481	47700	21.744	58700	21.983	71500	22.147	86300	22.185	103200	22.046	122600	21.676	144700	21.026
	6000	50	–	–	–	–	–	–	52000	26.837	63500	27.037	76900	27.18	92400	27.216	110100	27.091	130400	26.756
	6000	60	–	–	–	–	–	–	–	–	–	–	66600	33.356	80400	33.446	96400	33.447	114700	33.306
	6000	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 50 and 60 Hz*

Technical data and ordering

Inverter scrolls compressors - VZH088-VZH170BG - R410A

Low pressure ratio - EN12900

Type	[rpm]	Te	-25		-20		-15		-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH088BG	1500	20	–	–	6100	1.795	7400	1.699	8800	1.613	10600	1.541	12500	1.488	14700	1.457	–	–	–	–
	1500	30	–	–	5200	2.335	6400	2.256	7800	2.176	9300	2.098	11200	2.025	13200	1.963	15600	1.914	18300	1.882
	1500	40	–	–	4300	2.925	5400	2.886	6700	2.833	8100	2.77	9800	2.701	11700	2.628	13900	2.558	16300	2.492
	1500	50	–	–	–	–	–	–	5500	3.651	6900	3.624	8400	3.579	10100	3.52	12100	3.449	14300	3.371
	1500	60	–	–	–	–	–	–	–	–	–	–	6800	4.727	8400	4.702	10100	4.653	12200	4.585
	1500	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	11100	4.447	13600	4.419	16700	4.338	20400	4.232	24600	4.133	29500	4.071	35100	4.074	–	–	–	–
	3600	30	9700	5.484	12200	5.537	15000	5.5	18400	5.405	22400	5.281	26900	5.157	32000	5.064	37900	5.032	44500	5.091
	3600	40	–	–	10700	6.799	13400	6.856	16500	6.818	20100	6.715	24200	6.579	28800	6.438	34100	6.322	40100	6.262
	3600	50	–	–	–	–	–	–	14300	8.502	17500	8.47	21100	8.368	25300	8.226	30000	8.074	35300	7.943
	3600	60	–	–	–	–	–	–	–	–	–	–	17600	10.556	21200	10.461	25200	10.321	29800	10.166
	3600	63	–	–	–	–	–	–	–	–	–	–	–	–	19800	11.223	23700	11.096	28100	10.943
	6000	20	–	–	22300	7.6	27100	7.596	32700	7.554	39400	7.54	47100	7.618	56000	7.857	–	–	–	–
	6000	30	–	–	20400	9.669	25000	9.74	30400	9.694	36700	9.598	44000	9.517	52400	9.517	61900	9.666	72700	10.029
	6000	40	–	–	18100	11.778	22400	12.018	27400	12.063	33200	11.98	39900	11.835	47500	11.693	56200	11.621	66100	11.685
	6000	50	–	–	–	–	–	–	23700	14.579	28800	14.605	34700	14.489	41400	14.3	49100	14.103	57900	13.964
	6000	60	–	–	–	–	–	–	–	–	–	–	28300	17.398	34000	17.256	40600	17.029	48100	16.781
	6000	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH117BG	1500	20	–	–	8200	2.357	9900	2.231	11900	2.118	14200	2.024	16800	1.954	19800	1.913	–	–	–	–
	1500	30	–	–	6900	3.066	8500	2.963	10400	2.858	12500	2.755	15000	2.66	17800	2.578	20900	2.513	24500	2.472
	1500	40	–	–	5700	3.842	7200	3.791	8900	3.721	10900	3.638	13200	3.547	15700	3.452	18600	3.359	21900	3.273
	1500	50	–	–	–	–	–	–	7400	4.795	9200	4.76	11200	4.701	13600	4.623	16200	4.53	19200	4.428
	1500	60	–	–	–	–	–	–	–	–	–	–	9200	6.209	11200	6.175	13600	6.111	16300	6.021
	1500	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	14900	5.84	18300	5.804	22400	5.697	27300	5.559	33000	5.429	39600	5.347	47200	5.351	–	–	–	–
	3600	30	13100	7.203	16300	7.272	20200	7.224	24700	7.099	30000	6.935	36100	6.773	43000	6.651	50900	6.61	59700	6.687
	3600	40	–	–	14400	8.93	18000	9.004	22100	8.954	26900	8.82	32400	8.64	38700	8.455	45800	8.303	53800	8.224
	3600	50	–	–	–	–	–	–	19200	11.167	23500	11.124	28400	10.99	34000	10.804	40300	10.605	47400	10.432
	3600	60	–	–	–	–	–	–	–	–	–	–	23600	13.864	28400	13.739	33900	13.555	40100	13.352
	3600	63	–	–	–	–	–	–	–	–	–	–	–	–	26500	14.74	31800	14.573	37700	14.373
	6000	20	–	–	30000	9.981	36400	9.977	43900	9.922	52900	9.902	63200	10.006	75200	10.319	–	–	–	–
	6000	30	–	–	27400	12.699	33500	12.792	40800	12.732	49300	12.605	59100	12.499	70300	12.5	83100	12.695	97500	13.171
	6000	40	–	–	24400	15.469	30100	15.784	36800	15.844	44500	15.735	53500	15.544	63800	15.357	75500	15.263	88700	15.347
	6000	50	–	–	–	–	–	–	31800	19.148	38600	19.182	46500	19.03	55600	18.782	66000	18.522	77700	18.34
	6000	60	–	–	–	–	–	–	–	–	–	–	38000	22.851	45600	22.664	54400	22.365	64500	22.04
	6000	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH170BG	1500	20	–	–	11600	3.172	14000	3.041	16800	2.907	20100	2.762	23800	2.597	28200	2.405	–	–	–	–
	1500	30	–	–	10000	4.297	12300	4.157	15000	4.026	18100	3.895	21600	3.755	25700	3.599	30300	3.418	35500	3.204
	1500	40	–	–	8500	5.546	10600	5.397	13100	5.268	15900	5.15	19200	5.035	22900	4.915	27200	4.781	32000	4.625
	1500	50	–	–	–	–	–	–	11000	6.784	13500	6.679	16500	6.589	19900	6.504	23800	6.416	28200	6.318
	1500	60	–	–	–	–	–	–	–	–	–	–	13500	8.566	16500	8.516	19900	8.475	23800	8.434
	1500	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	21400	8.352	26400	8.195	32400	8.029	39600	7.839	47900	7.608	57700	7.321	68900	6.961	–	–	–	–
	3600	30	19000	10.392	23700	10.262	29300	10.137	35900	10.004	43700	9.845	52700	9.646	63000	9.389	74900	9.06	88400	8.642
	3600	40	–	–	20900	12.728	26000	12.623	32000	12.524	39000	12.416	47100	12.282	56500	12.106	67300	11.873	79600	11.566
	3600	50	–	–	–	–	–	–	27700	15.652	33800	15.572	41000	15.481	49300	15.363	58800	15.204	69800	14.986
	3600	60	–	–	–	–	–	–	–	–	–	–	34100	19.495	41100	19.414	49300	19.306	58800	19.156
	3600	63	–	–	–	–	–	–	–	–	–	–	–	–	38500	20.821	46300	20.725	55300	20.59
	6000	20	–	–	44100	14.689	54000	14.8	65700	14.747	79300	14.48	95200	13.947	113500	13.097	–	–	–	–
	6000	30	–	–	39700	17.702	49100	17.949	60100	18.102	72900	18.111	87800	17.924	104900	17.488	124500	16.754	146600	15.669
	6000	40	–	–	35000	21.481	43700	21.744	53800	21.983	65600	22.147	79200	22.185	94900	22.046	112900	21.676	133300	21.026
	6000	50	–	–	–	–	–	–	46700	26.837	57100	27.037	69300	27.18	83300	27.216	99400	27.091	117800	26.756
	6000	60	–	–	–	–	–	–	–	–	–	–	57800	33.356	69900	33.446	84000	33.447	100100	33.306
	6000	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage code: *G: 380 – 480 V / 3 / 50 and 60 Hz*

Technical data and ordering

Inverter scrolls compressors - VZH088-VZH170AG - R410A

High pressure ratio - ARI

Type	[rpm]	Te	-25		-20		-15		-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH088AG	1500	20	–	–	5700	1.472	7100	1.542	8600	1.623	10400	1.677	12500	1.665	14900	1.549	–	–	–	–
	1500	30	–	–	5200	2.043	6500	2.008	7900	2.032	9700	2.076	11600	2.103	13900	2.073	16400	1.949	19200	1.692
	1500	40	–	–	4600	2.917	5800	2.735	7200	2.659	8800	2.651	10700	2.673	12700	2.687	15000	2.654	17600	2.537
	1500	50	–	–	–	–	5100	3.786	6400	3.568	7800	3.466	9500	3.441	11300	3.457	13400	3.473	15800	3.453
	1500	60	–	–	–	–	–	–	–	–	6600	4.587	8100	4.473	9700	4.447	11600	4.47	13600	4.504
	1500	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	12000	4.19	14700	4.258	17900	4.335	21700	4.424	26100	4.529	31200	4.652	37100	4.798	–	–	–	–
	3600	30	10600	5.044	13100	5.11	16200	5.181	19700	5.262	23900	5.357	28600	5.467	34100	5.596	40300	5.748	47300	5.926
	3600	40	–	–	11700	6.214	14600	6.274	17800	6.34	21600	6.417	26000	6.507	31000	6.613	36800	6.74	43200	6.889
	3600	50	–	–	–	–	12900	7.746	15800	7.79	19300	7.843	23200	7.906	27700	7.982	32900	8.076	38800	8.191
	3600	60	–	–	–	–	–	–	–	–	16600	9.767	20100	9.796	24100	9.836	28700	9.891	34000	9.963
	3600	68	–	–	–	–	–	–	–	–	–	–	–	–	21300	11.759	25600	11.777	30400	11.81
	6000	20	–	–	24000	7.654	29200	7.958	35400	8.307	42700	8.709	51100	9.176	60700	9.716	–	–	–	–
	6000	30	–	–	21800	9.043	26800	9.284	32700	9.558	39500	9.875	47400	10.245	56400	10.677	66700	11.18	78300	11.765
	6000	40	–	–	19800	10.85	24400	11.021	29800	11.213	36100	11.439	43300	11.705	51600	12.023	61000	12.401	71700	12.849
	6000	50	–	–	–	–	21800	13.353	26600	13.458	32200	13.585	38700	13.741	46100	13.938	54600	14.184	64200	14.49
	6000	60	–	–	–	–	–	–	–	–	27900	16.498	33500	16.538	40000	16.607	47400	16.715	55900	16.87
	6000	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH117AG	1500	20	–	–	7700	1.933	9500	2.025	11600	2.132	14000	2.203	16800	2.187	20000	2.035	–	–	–	–
	1500	30	–	–	6900	2.683	8700	2.638	10700	2.669	13000	2.727	15600	2.762	18600	2.723	22000	2.56	25800	2.223
	1500	40	–	–	6100	3.831	7800	3.592	9700	3.492	11900	3.482	14300	3.511	17100	3.529	20200	3.486	23700	3.332
	1500	50	–	–	–	–	6800	4.973	8500	4.686	10500	4.552	12700	4.52	15200	4.54	18000	4.561	21200	4.535
	1500	60	–	–	–	–	–	–	–	–	8900	6.024	10800	5.875	13100	5.841	15500	5.871	18300	5.916
	1500	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	16200	5.503	19800	5.592	24000	5.693	29100	5.811	35000	5.948	41900	6.11	49700	6.301	–	–	–	–
	3600	30	14200	6.625	17600	6.711	21700	6.805	26500	6.912	32000	7.035	38500	7.18	45800	7.35	54100	7.55	63600	7.783
	3600	40	–	–	15700	8.162	19500	8.24	23900	8.327	29100	8.428	34900	8.546	41700	8.686	49300	8.852	58000	9.048
	3600	50	–	–	–	–	17300	10.173	21300	10.232	25800	10.3	31100	10.383	37200	10.484	44100	10.607	52000	10.757
	3600	60	–	–	–	–	–	–	–	–	22300	12.828	27000	12.866	32400	12.919	38500	12.991	45600	13.086
	3600	68	–	–	–	–	–	–	–	–	–	–	–	–	28700	15.444	34300	15.467	40800	15.512
	6000	20	–	–	32300	10.053	39200	10.452	47500	10.91	57300	11.439	68500	12.052	81500	12.761	–	–	–	–
	6000	30			29300	11.877	36000	12.193	43900	12.553	53000	12.97	63600	13.455	75700	14.023	89500	14.684	105100	15.452
	6000	40	–	–	26500	14.25	32800	14.474	40000	14.728	48500	15.023	58200	15.373	69300	15.791	81900	16.287	96200	16.876
	6000	50					29200	17.538	35800	17.676	43300	17.842	52000	18.048	61900	18.306	73300	18.63	86200	19.03
	6000	60	–	–	–	–	–	–	–	–	37400	21.668	45000	21.721	53600	21.812	63600	21.953	75000	22.157
	6000	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH170AG	1500	20	–	–	11900	3.095	14500	3.074	17500	3.047	21100	2.982	25200	2.844	29900	2.601	–	–	–	–
	1500	30	–	–	10700	4.019	13100	3.962	16000	3.949	19400	3.948	23300	3.925	27700	3.847	32700	3.68	38400	3.391
	1500	40	–	–	9300	5.287	11600	5.112	14300	5.032	17400	5.013	21000	5.023	25000	5.029	29700	4.996	34900	4.891
	1500	50	–	–	–	–	9900	6.724	12300	6.495	15100	6.378	18300	6.339	21900	6.346	26100	6.366	30800	6.363
	1500	60	–	–	–	–	–	–	–	–	12500	8.242	15200	8.074	18400	8.001	22100	7.99	26300	8.009
	1500	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	24500	7.456	29300	7.626	35200	7.808	42400	7.979	50800	8.115	60700	8.191	72100	8.184	–	–	–	–
	3600	30	21800	9.377	26500	9.47	32200	9.611	39000	9.775	46900	9.94	56200	10.081	66900	10.174	79100	10.196	93100	10.122
	3600	40	–	–	24000	11.86	29300	11.904	35500	12.007	42800	12.146	51300	12.297	61100	12.435	72400	12.538	85200	12.581
	3600	50	–	–	–	–	26200	14.819	31700	14.806	38200	14.865	45800	14.97	54500	15.1	64600	15.229	76200	15.333
	3600	60	–	–	–	–	–	–	–	–	32900	18.228	39400	18.234	47000	18.299	55900	18.399	66100	18.511
	3600	68	–	–	–	–	–	–	–	–	–	–	–	–	41000	21.332	49000	21.369	58200	21.447
	6000	20	–	–	48200	13.279	58500	13.868	70800	14.517	85300	15.273	102100	16.184	121500	17.296	–	–	–	–
	6000	30	–	–	43000	16.274	52900	16.84	64400	17.388	77900	17.965	93500	18.618	111400	19.394	131800	20.341	154900	21.505
	6000	40	–	–	38900	19.827	48100	20.446	58800	20.967	71200	21.439	85400	21.909	101800	22.423	120400	23.03	141400	23.776
	6000	50	–	–	–	–	43400	24.851	53100	25.421	64200	25.863	77000	26.224	91700	26.551	108400	26.892	127300	27.294
	6000	60	–	–	–	–	–	–	–	–	56400	31.402	67700	31.729	80600	31.943	95400	32.094	112200	32.226
	6000	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *8.3 K*
Superheat: *11.1 K*
Voltage code: *G: 380 – 480 V / 3 / 50 and 60 Hz*

Technical data and ordering

Inverter scrolls compressors - VZH088-VZH170AG - R410A

High pressure ratio - EN12900

Type	[rpm]	Te	-25		-20		-15		-10		-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
VZH088AG	1500	20	–	–	5400	1.472	6600	1.542	8100	1.623	9800	1.677	11800	1.665	14000	1.549	–	–	–	–
	1500	30	–	–	4800	2.043	6000	2.008	7400	2.032	9000	2.076	10800	2.103	12900	2.073	15300	1.949	17900	1.692
	1500	40	–	–	4200	2.917	5300	2.735	6600	2.659	8100	2.651	9800	2.673	11700	2.687	13800	2.654	16200	2.537
	1500	50	–	–	–	–	4500	3.786	5700	3.568	7000	3.466	8500	3.441	10200	3.457	12100	3.473	14300	3.453
	1500	60	–	–	–	–	–	–	–	–	5700	4.587	7000	4.473	8500	4.447	10100	4.47	11900	4.504
	1500	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	11300	4.19	13800	4.258	16800	4.335	20300	4.424	24500	4.529	29300	4.652	34800	4.798	–	–	–	–
	3600	30	9800	5.044	12200	5.11	15000	5.181	18300	5.262	22200	5.357	26700	5.467	31800	5.596	37600	5.748	44200	5.926
	3600	40	–	–	10700	6.214	13300	6.274	16300	6.34	19900	6.417	23900	6.507	28500	6.613	33800	6.74	39800	6.889
	3600	50	–	–	–	–	11500	7.746	14200	7.79	17300	7.843	20900	7.906	25000	7.982	29700	8.076	35000	8.191
	3600	60	–	–	–	–	–	–	–	–	14400	9.767	17500	9.796	21000	9.836	25000	9.891	29600	9.963
	3600	68	–	–	–	–	–	–	–	–	–	–	–	–	17300	11.759	20800	11.777	24800	11.81
	6000	20	–	–	22500	7.654	27400	7.958	33200	8.307	40000	8.709	48000	9.176	57100	9.716	–	–	–	–
	6000	30	–	–	20200	9.043	24900	9.284	30400	9.558	36700	9.875	44100	10.245	52500	10.677	62100	11.18	73000	11.765
	6000	40	–	–	18100	10.85	22300	11.021	27300	11.213	33100	11.439	39800	11.705	47400	12.023	56200	12.401	66000	12.849
	6000	50	–	–	–	–	19500	13.353	23900	13.458	29000	13.585	34900	13.741	41600	13.938	49300	14.184	58000	14.49
	6000	60	–	–	–	–	–	–	–	–	24200	16.498	29100	16.538	34800	16.607	41300	16.715	48800	16.87
	6000	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH117AG	1500	20	–	–	7200	1.933	8900	2.025	10800	2.132	13100	2.203	15800	2.187	18800	2.035	–	–	–	–
	1500	30	–	–	6400	2.683	8000	2.638	9900	2.669	12100	2.727	14500	2.762	17300	2.723	20500	2.56	24100	2.223
	1500	40	–	–	5600	3.831	7100	3.592	8900	3.492	10900	3.482	13100	3.511	15700	3.529	18600	3.486	21800	3.332
	1500	50	–	–	–	–	6100	4.973	7700	4.686	9400	4.552	11500	4.52	13700	4.54	16300	4.561	19100	4.535
	1500	60	–	–	–	–	–	–	–	–	7700	6.024	9400	5.875	11400	5.841	13500	5.871	16000	5.916
	1500	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	15100	5.503	18500	5.592	22500	5.693	27300	5.811	32900	5.948	39300	6.11	46700	6.301	–	–	–	–
	3600	30	13100	6.625	16400	6.711	20200	6.805	24600	6.912	29800	7.035	35800	7.18	42600	7.35	50400	7.55	59300	7.783
	3600	40	–	–	14400	8.162	17900	8.24	21900	8.327	26700	8.428	32100	8.546	38300	8.686	45400	8.852	53400	9.048
	3600	50	–	–	–	–	15500	10.173	19100	10.232	23200	10.3	28000	10.383	33600	10.484	39900	10.607	47000	10.757
	3600	60	–	–	–	–	–	–	–	–	19300	12.828	23400	12.866	28100	12.919	33600	12.991	39800	13.086
	3600	68	–	–	–	–	–	–	–	–	–	–	–	–	23200	15.444	27900	15.467	33300	15.512
	6000	20	–	–	30200	10.053	36800	10.452	44600	10.91	53700	11.439	64400	12.052	76600	12.761	–	–	–	–
	6000	30	–	–	27200	11.877	33400	12.193	40700	12.553	49300	12.97	59200	13.455	70500	14.023	83400	14.684	98000	15.452
	6000	40	–	–	24200	14.25	30000	14.474	36700	14.728	44500	15.023	53400	15.373	63700	15.791	75400	16.287	88600	16.876
	6000	50	–	–	–	–	26200	17.538	32100	17.676	38900	17.842	46800	18.048	55800	18.306	66100	18.63	77900	19.03
	6000	60	–	–	–	–	–	–	–	–	32400	21.668	39000	21.721	46700	21.812	55400	21.953	65500	22.157
	6000	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VZH170AG	1500	20	–	–	11200	3.095	13600	3.074	16400	3.047	19800	2.982	23600	2.844	28100	2.601				
	1500	30	–	–	9900	4.019	12200	3.962	14900	3.949	18000	3.948	21600	3.925	25800	3.847	30500	3.68	35800	3.391
	1500	40	–	–	8500	5.287	10600	5.112	13100	5.032	16000	5.013	19200	5.023	23000	5.029	27300	4.996	32200	4.891
	1500	50	–	–	–	–	8900	6.724	11000	6.495	13600	6.378	16400	6.339	19800	6.346	23600	6.366	27900	6.363
	1500	60	–	–	–	–	–	–	–	–	10800	8.242	13200	8.074	16000	8.001	19200	7.99	22900	8.009
	1500	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3600	20	22900	7.456	27500	7.626	33000	7.808	39700	7.979	47700	8.115	57000	8.191	67700	8.184	–	–	–	–
	3600	30	20200	9.377	24600	9.47	29900	9.611	36200	9.775	43600	9.94	52300	10.081	62300	10.174	73800	10.196	86800	10.122
	3600	40	–	–	21900	11.86	26800	11.904	32500	12.007	39300	12.146	47100	12.297	56200	12.435	66600	12.538	78500	12.581
	3600	50	–	–	–	–	23400	14.819	28500	14.806	34300	14.865	41200	14.97	49200	15.1	58400	15.229	68900	15.333
	3600	60	–	–	–	–	–	–	–	–	28500	18.228	34200	18.234	40900	18.299	48700	18.399	57700	18.511
	3600	68	–	–	–	–	–	–	–	–	–	–	–	–	33200	21.332	39800	21.369	47400	21.447
	6000	20	–	–	45100	13.279	54800	13.868	66400	14.517	80100	15.273	95900	16.184	114200	17.296	–	–	–	–
	6000	30	–	–	39900	16.274	49000	16.84	59800	17.388	72400	17.965	87000	18.618	103700	19.394	122800	20.341	144500	21.505
	6000	40	–	–	35600	19.827	44100	20.446	53900	20.967	65300	21.439	78500	21.909	93500	22.423	110800	23.03	130300	23.776
	6000	50	–	–	–	–	38900	24.851	47700	25.421	57800	25.863	69400	26.224	82700	26.551	97800	26.892	115000	27.294
	6000	60	–	–	–	–	–	–	–	–	48900	31.402	58800	31.729	70100	31.943	83100	32.094	97900	32.226
	6000	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

To: *Evaporating temperature in [°C]*
Tc: *Condensing temperature in [°C]*
Pe: *Power input in [kW]*
Qo: *Cooling capacity in [W]*
Subcooling: *0 K*
Superheat: *10 K*
Voltage code: *G: 380 – 480 V / 3 / 50 and 60 Hz*

Nomenclature and Dimensions

V Z H 044 C G A N A

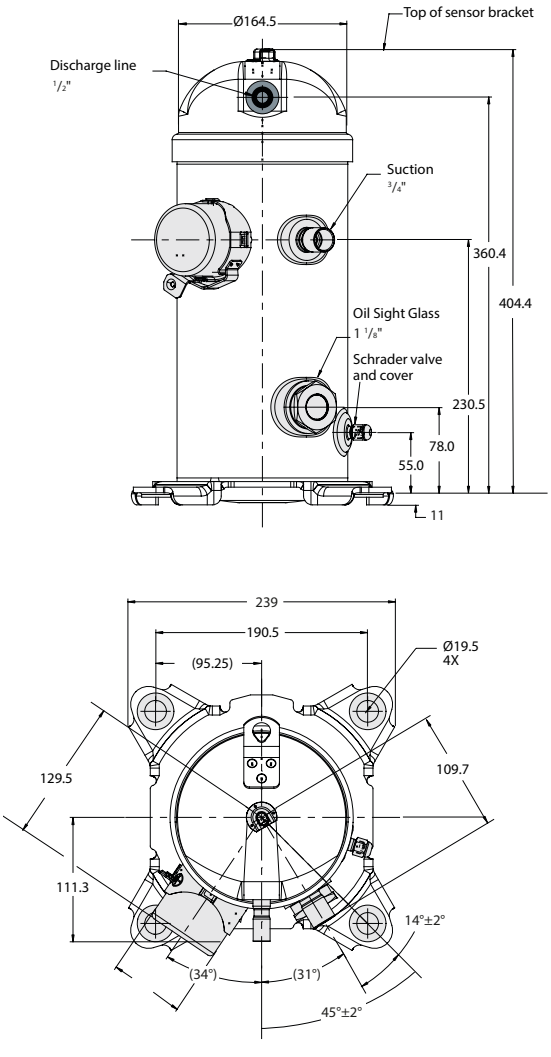
- **V** — Variable speed
- **Z** — Family: VZH scroll
- **H** — Lubricant: PVE 32(FVC32D) lubricant, R410A refrigerant
- **044** — Swept volume: in [cm³/rev]
- **C** — Design pressure ratio: C: IDV and IEER optimized
- **G** — Motor voltage code to CDS803: *)
  - G: 380 – 480 V / 3 ~ / 50 / 60 Hz
  - J: 200 – 240 V / 3 ~ / 50 / 60 Hz
- **A** — Equipement version:
  - A: brazed connections, single version
  - B: brazed connections, manifold version

	Oil sight glass	Oil level switch
Single version	Threaded	None
Manifold version	None	Threaded

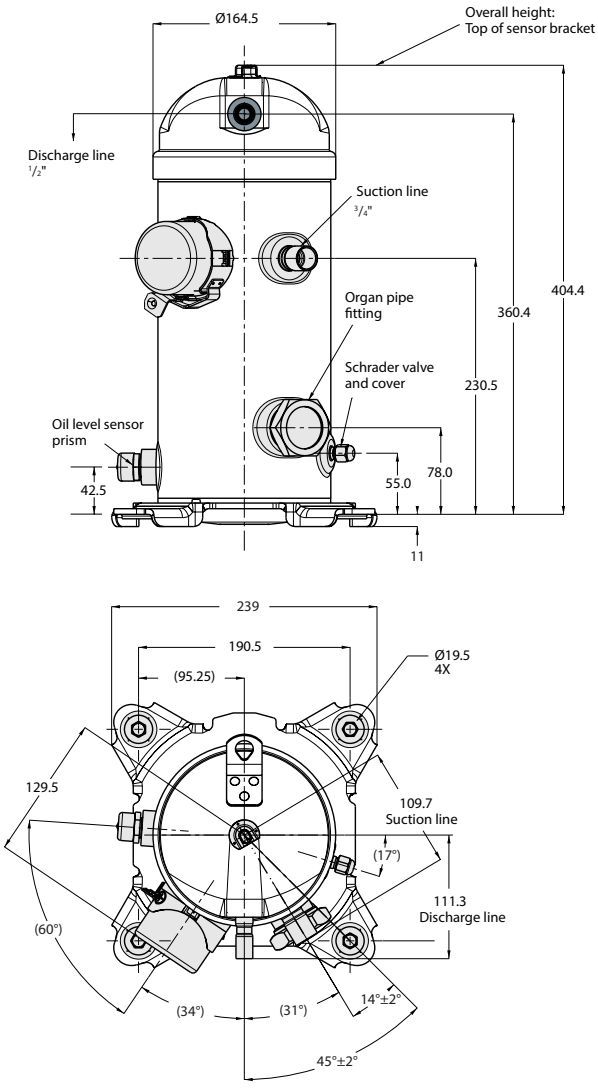
- **N** — Motor protection: N: no internal motor protection (protection by drive)
- **A** — Evolution index

*) main supply voltage to frequency converter

VZH028-035-044G / J - Single version



VZH028-035-044G / J - Manifold version



Note: Manifolding drawing is a preliminary version

Nomenclature and Dimensions

V Z H 117 A G A N A

Variable speed:

Family:
VZH scroll

Lubricant:
POE lubrificant
R410A refrigerant

Swept volume:
in [cm³/rev]

Design pressure ratio:
A: high PR
B: low PR

Motor voltage code to CDS303: *)
G: 380 – 480 V / 3 ~ / 50 / 60 Hz
H: 252 – 600 V / 3 ~ / 50 / 60 Hz
J: 200 – 240 V / 3 ~ / 50 / 60 Hz

*) main supply voltage to frequency converter

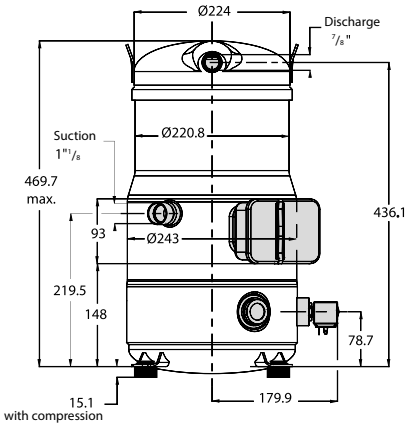
Equipement version:
A: brazed connections, single version
B: brazed connections, manifold version

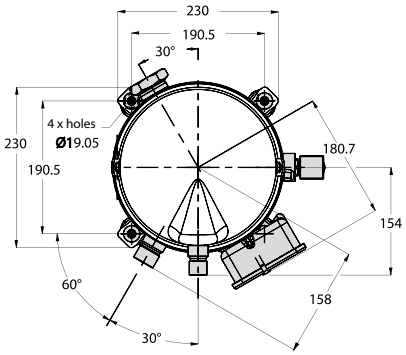
	Oil sight glass	Oil level switch
Single version	Threaded	None
Manifold version	None	Threaded

Motor protection:
N: no internal motor protection (protection by drive)

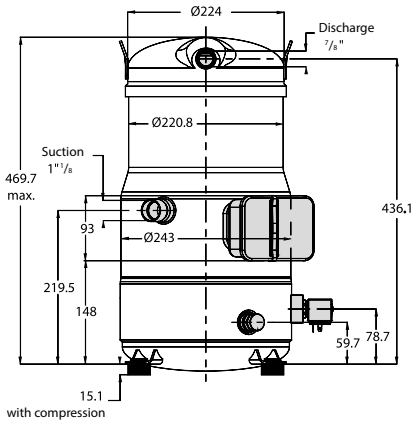
Evolution index

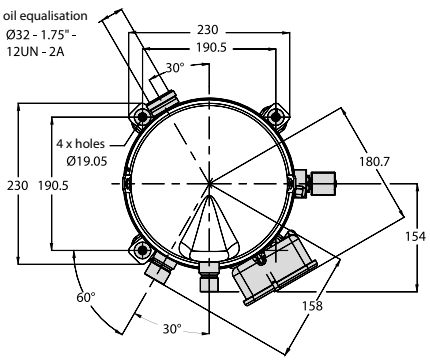
VZH088-G-H - Single version





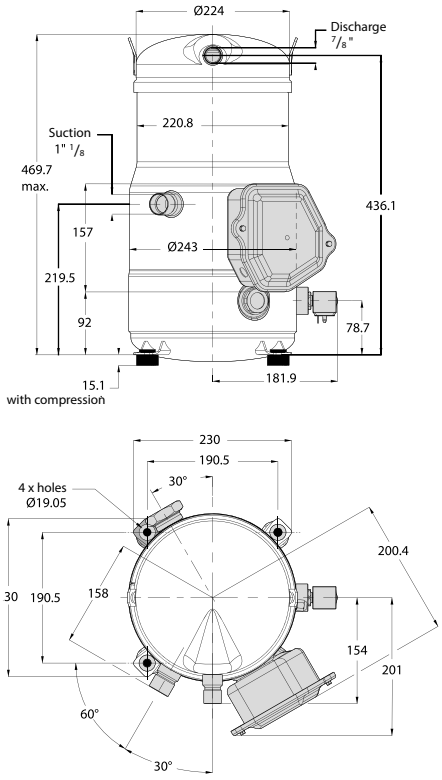
VZH088-G-H - Manifolded version



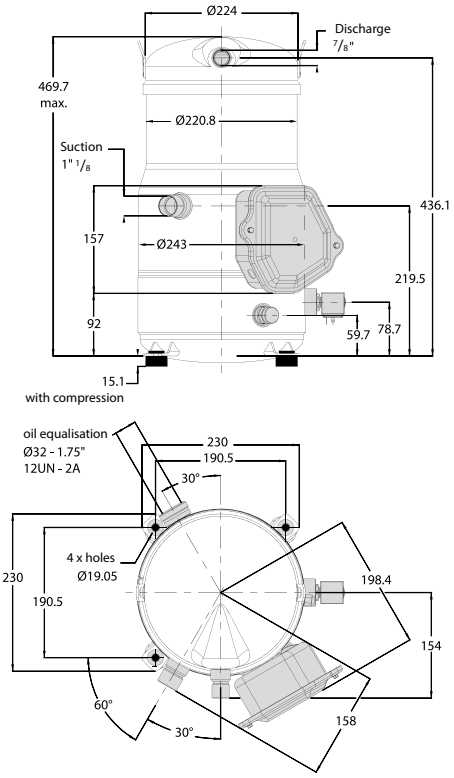


Dimensions

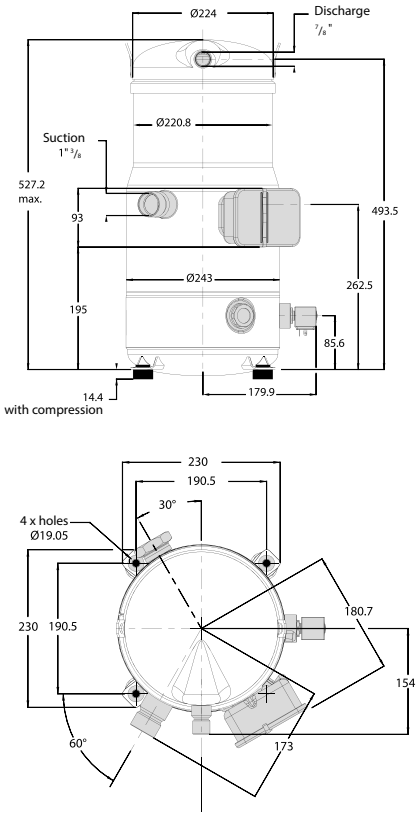
VZH088-J - Single version



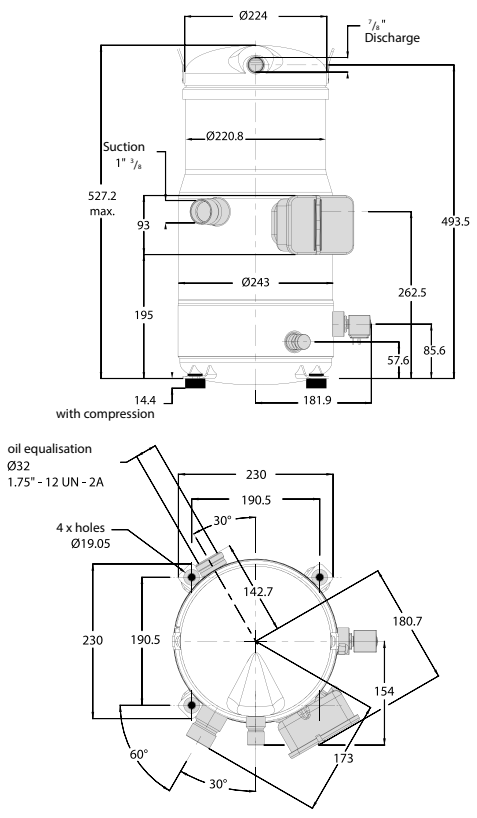
VZH088-J - Manifolded version



VZH117-G-H - Single version

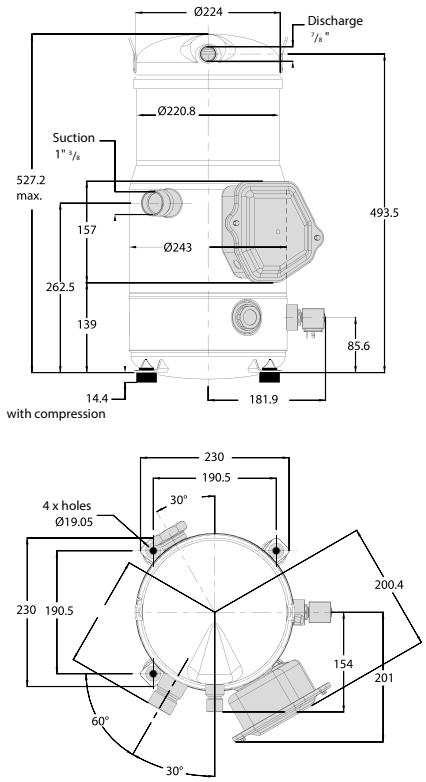


VZH117-G-H - Manifolded version

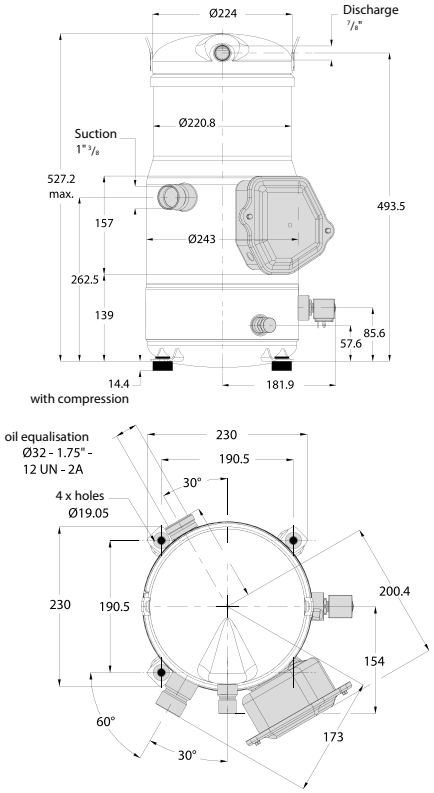


Dimensions

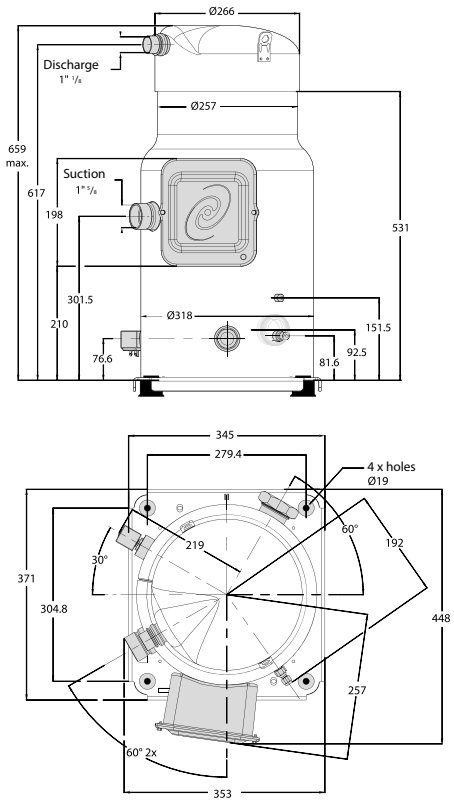
VZH117-J - Single version



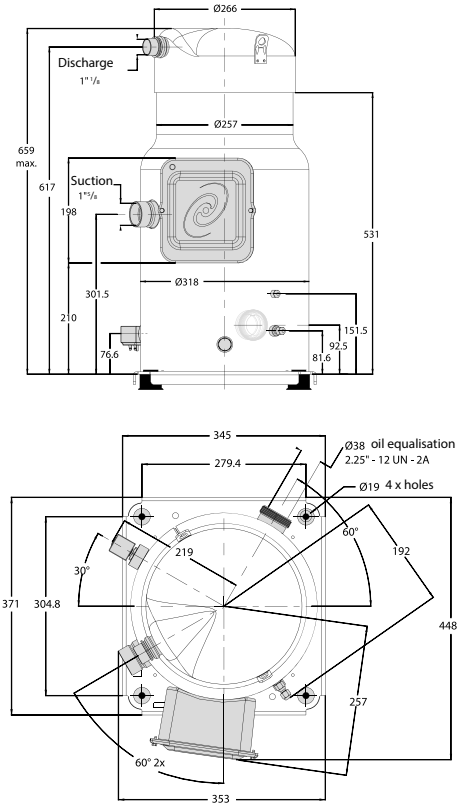
VZH117-J - Manifolded version



VZH170-G-H - Single version

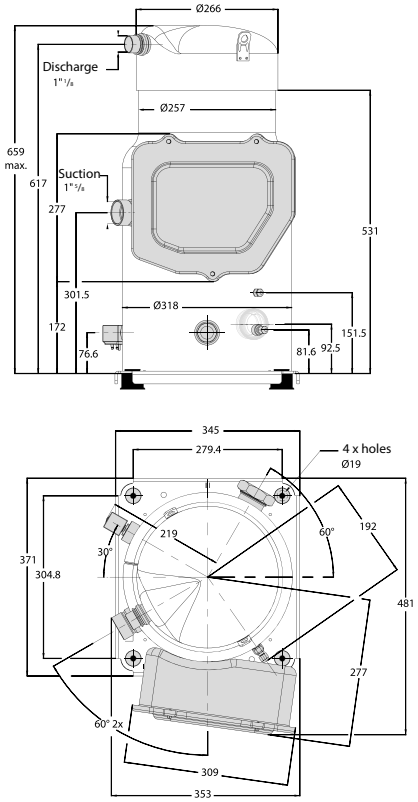


VZH170-G-H - Manifolded version

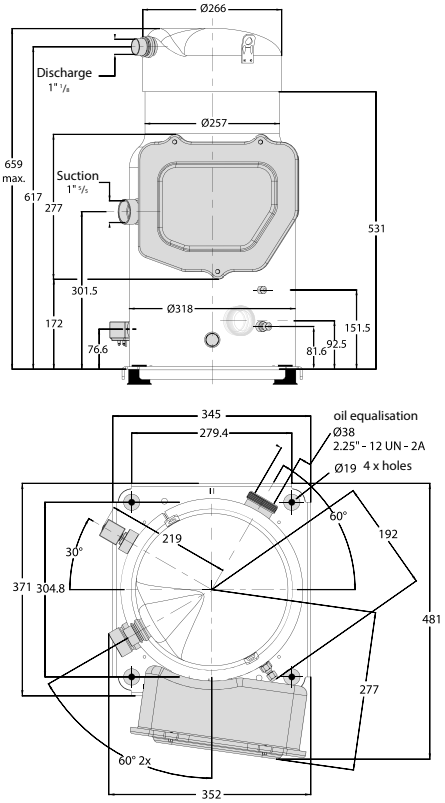


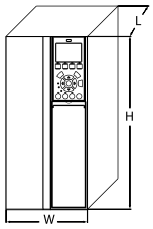
Dimensions

VZH170-J - Single version



VZH170-J - Manifolded version





Inverter Scroll Compressors - VZH 028-044 converter

Frequency converter dimensions

Drive supply voltage	Drive power [kW]	Compressor voltage code	Compressor model	IP20			
				Drive enclosure	Overall drive size (H x W x L) [mm]	Overall drive size incl. decoupling plate (H x W x L) [mm]	Clearance above /below [mm/inch.]
T2: 200 – 240 / 3 / 50 – 60	6	J	VZH028	H4	296 x 135 x 241	359 x 135 x 241	100 / 4
	7.5		VZH035	H4	296 x 135 x 241	359 x 135 x 241	100 / 4
	10		VZH044	H5	334 x 150 x 255	402 x 150 x 255	100 / 4
T4: 380 – 480 / 3 / 50 – 60	6	G	VZH028	H3	255 x 100 x 206	329 x 100 x 206	100 / 4
	7.5		VZH035	H3	255 x 100 x 206	329 x 100 x 206	100 / 4
	10		VZH044	H4	296 x 135 x 241	359 x 135 x 241	100 / 4

Frequency converter dimensions depend on supply voltage, IP rating and power
The table gives an overview of the overall dimensions and different drive enclosures (H3 - H5)
Details for each drive enclosure are on the following pages

Inverter Scroll Compressors - VZH 088-170 converter

Frequency converter dimensions

Drive supply voltage	Drive power [kW]	Compressor voltage code	Compressor model	IP20		IP55	
				Drive enclosure	Overall drive size (H x W x L) [mm]	Drive enclosure	Overall drive size (H x W x L) [mm]
T2:200 – 240 / 3 / 50 – 60	15	J	VZH088	B4	595 x 231 x 242	C1	680 x 308 x 310
	18.5	J	VZH117	C3	630 x 308 x 334	C1	680 x 308 x 310
	22	J	VZH170	C3	630 x 308 x 334	C1	680 x 308 x 310
T4: 380 – 480 / 3 / 50 – 60	15	G	VZH088	B3	419 x 165 x 248	B1	480 x 240 x 260
	18.5	G	VZH117	B4	595 x 231 x 242	B2	650 x 242 x 260
	22	G	VZH170	B4	595 x 231 x 242	B2	650 x 242 x 260
T6: 525 – 600 / 3 / 50 – 60	18	H	VZH088	B4	595 x 230 x 242	–	–
	30	H	VZH117	B4	595 x 230 x 242	–	–
	30	H	VZH170	B4	595 x 230 x 242	–	–

Frequency converter dimensions depend on supply voltage, IP rating and power
The table gives an overview of the overall dimensions and different drive enclosures (B1 - C3)
Details for each drive enclosure are on the following pages

Optyma™ - Condensing Units

4 ranges to fit the different market needs of LBP, MBP refrigeration:

- Broad choice for various climates
- Fast installation and maintenance
- Low noise to fit in residential areas
- F-Gas: ready for refrigerants with lower GWP
- Eco Design compliance

Designed by Danfoss with 40 years of know-how in condensing units
Various options:






Optyma™

The widest range of hermetic condensing units with reciprocating compressors

Optyma™ **Slim Pack**

The compact and cost effective packaged unit with Micro Channel Heat Exchanger technology

Optyma™ **Plus New Generation**

The premium condensing unit: energy optimized, low noise levels and quick installation / maintenance

Optyma™ **Plus INVERTER**

Combines ease of use and energy efficiency with the latest Danfoss inverter scroll technology

Range span by refrigerant

Minimum / maximum Cooling capacity in [kW]	Optyma™	Optyma™ Slim Pack	Optyma™ Plus New Generation	Optyma™ Plus INVERTER
MBP				
R134a	0.1 / 13.6	2.1 / 6.7	1.7 / 10.4	–
R404A	0.3 / 21.9	0.8 / 10.6	0.6 / 16.5	1.8 / 9.2
R407A	1.8 / 19.5	3.3 / 10.1	3.3 / 14.9	1.7 / 8.6
R407C	1.7 / 20	–	–	–
R407F	1.9 / 20.5	3.5 / 10.8	3.5 / 15.9	1.8 / 9.3
LBP				
R404A	0.2 / 10.3	0.6 / 5.6	0.7 / 9.6	–

Rating Conditions: Ambient Temperature 32 °C, Superheat 10 K, Subcooling 0 K, Evaporator Temperature MBP: -10 °C / LBP: -25 °C

Quick Selection Notes:

Optyma™ - Condensing Units

Optyma™ is the widest range of hermetic condensing units on the market. Optyma™ condensing unit is available with reciprocating compressors to cover a large range of commercial refrigeration applications, reducing costs and complexity of the systems.
All Optyma™ condensing units are extremely efficient and reliable.

That means less energy consumption and less running costs, less cost for service and maintenance. In addition to the wide Optyma™ range, we also offer local support and guidance if needed.
A network of partner wholesalers and local Danfoss teams can offer you help and will do their outmost to fulfil your needs. At Danfoss we simply believe it is important to offer an "Optimum service".





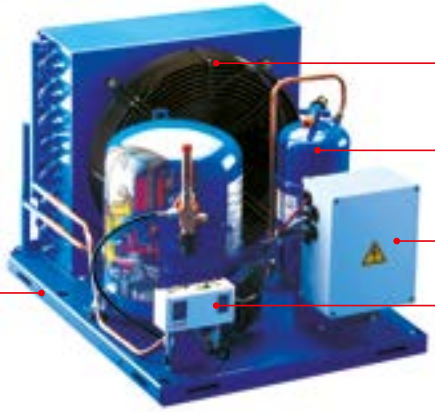
Optimum airflow due to Danfoss designed fan cowl

Pre-mounted LP / HP tubes for easy connection of pressure switch

Easy accessible valves

Base rails designed for easy installition

***) A01**



Single or double fan design

Receiver equipped with 3/8 inch. NPTF plug and shuft-OFF valve with access port

Fully prewired and factory tested

Compact design and extended application envelope

Combined HP / LP pressure switch Danfoss KP17WB

**) Version:*
A00 - without valves and receiver for capillary tubes
A04 - A01 + KP17WB + FSA-kit + power cord

A02

Facts

- Danfoss Optyma™ condensing units perfectly suit applications like:
  - Cold stores and freezer rooms
  - Milk cooling
  - Beer and wine cellars
  - Small food retail and mini markets
  - Garage forecourt shops
  - Display cabinets
  - Ice cream freezers
  - Bottle coolers
- HFC refrigerants R134a, R404A / R507, R407A, R407F, R407C and propane (R290)
- Capacity: from a few to 20000 Watt (R404A)
- High COP
- 100% factory tested for leakage
- Low energy consumption
- Wide application range
- Powder coated steel parts
- Crankcase heater standard (optional for fractional units)
- Service valves standard with access ports
- Access valves / stubs for easy connection
- High-efficiency condensers allowing an extended application envelope in high ambient conditions
- Low electrical consumption and low running costs
- Reliable components for longer life and less warranty call out costs
- Fully pre-wired and factory tested, reducing commissioning time on site
- Built-in grab handles for easier handling on site
- Base plate designed to allow easy mounting on wall brackets
- Flexible add-on design options including: fan speed control, oil separator, pressure switches or weather proof housing
- Easy access to all components for higher serviceability and simplified maintenance
- Compact dimensions and minimum foot print for easy handling, shipping and installation

Quick Selection Notes:

Technical data and ordering

Optyma™ - R404A/R507 LBP

Fan	Test conditions	Unit	Version code	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity [Btu/h] at evaporating temperature				
			D40				-40 °C	-35 °C	-30 °C	-25 °C	-20 °C
	SH = 18 K SC = 3 K	OP-LJZ048D	114N3343 114N3344	N Q	NTZ048	32	2950	4400	6100	8000	10200
						35	2700	4050	5650	7500	9550
						38	2400	3700	5200	6950	8900
						43	1950	3100	4500	6050	7850
		OP-LJZ068D	114N3347 114N3348 114N3349	N Q R	NTZ068	32	5050	7000	9200	11700	14450
						35	4650	6500	8600	10950	13550
						38	4250	6000	8000	10250	12700
						43	3650	5250	7050	9100	11350
		OP-LJZ108D	114N3352 114N3353 114N3354	N Q R	NTZ108	32	6550	9800	13600	17950	22850
						35	6050	9100	12700	16800	21450
						38	5500	8400	11800	15650	20050
						43	–	7150	10250	13750	17650
		OP-LJZ136D	114N3356 114N3357 114N3358	N Q R	NTZ136	32	9350	13500	18350	23900	30250
						35	8550	12500	17100	22450	28550
						38	7700	11500	15900	21000	26800
						43	–	9800	13900	18600	23950
		OP-LGZ215D	114N3360 114N3361	Q R	NTZ215	32	14900	20800	27750	35800	44950
						35	13500	19200	25850	33500	42250
						38	12100	17500	23900	31200	39500
						43	9700	14700	20500	27200	34800
		OP-LGZ271D	114N3363 114N3364	Q R	NTZ271	32	20200	27600	36250	46000	56900
						35	18600	25700	33900	43200	53500
						38	17050	23800	31550	40300	50050
						43	14400	20550	27550	35500	44300

Electrical codes:
N - Compressor 230 V / 1-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
Q - Compressor 230 V / 3-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
R - Compressor 460 V / 3-ph / 60 Hz , Fan(s) 460 V / 1-ph / 60 Hz

Cooling capacity for three-phase models shown. For single-phase models a difference of ± 1% shall apply
The consumption values shown relate to an ambient temperature in the equipment room of 32°C.

Technical data and ordering

Optyma™ - R404A/R507 LBP

Unit	Condenser			Fan Ø [mm]	Receiver [L]	Power consumption [Btu/h] at evaporating temp.	Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Internal volume [l]			-25 °C	Figure	Height H [mm]	Depth D [mm]	Length L [mm]	Suction line	Liquid line	Gross	Net
OP-LJZ048D	D8	2400	0.4	1x355	3	1900	1B	463	310	1000	5/8"	3/8"	85	76
OP-LJZ068D	D8	2400	0.4	1x355	3	2700	1B	463	310	1000	5/8"	3/8"	85	76
OP-LJZ108D	J8	6300	1.3	1x457	8	4450	1B	688	420	1150	7/8"	1/2"	134	121
OP-LJZ136D	J8	6300	1.3	1x457	8	5650	1B	688	420	1150	7/8"	1/2"	134	121
OP-LGZ215D	N8	8800	1.6	2x457	14	8650	2B	715	800	1200	1 1/8"	5/8"	201	186
OP-LGZ271D	N8	8800	1.6	2x457	14	10950	2B	715	800	1200	1 1/8"	5/8"	201	186

Technical data and ordering

Optyma™ - R404A / R507 LBP

Unit	Code no. Version A06	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity range in [W] at evaporating temperature [°C]						Power consumption [W] at -30 °C evap temp	Dimensions (mm)			Weight
					-35 °C	-30 °C	-25 °C	-20 °C	-15 °C	-10 °C		Height	Depth	Length	
												mm	mm	mm	Kg
OP-LCHE068	114X8000	G	NTZ068	35	1569	2094	2693	3366	4111	4924	1780	445	600	800	67
	114X8001	D		43	1251	1699	2210	2785	3425	4126	1851				
				48	1069	1469	1926	2441	3015	3647	1891				
OP-LCHE096	114X8002	D	NTZ096	35	1823	2496	3306	4258	5351	6582	2113	655	760	700	71
				43	1368	1935	2620	3432	4372	5439	2053				
				48	1093	1589	2195	2919	3763	4729	1991				
OP-LGHE108	114X8003	D	NTZ108	35	2175	2955	3849	4853	5957	7150	2497	555	700	1000	92
				43	1664	2327	3084	3932	4864	5874	2462				
				48	-	1944	2615	3365	4191	–	2409				
OP-LGHE136	114X8004	D	NTZ136	35	2865	3829	4951	6233	7675	9271	3466	555	700	1000	97
				43	2244	3067	4025	5121	6358	7732	3467				
				48	1868	2600	3453	4432	5540	-	3469				
OP-LGHE215	114X8005	D	NTZ215	35	4038	5371	6855	8473	10206	12031	5008	725	800	1210	141
				43	3010	4147	5404	6769	8228	–	4905				
				48	2377	3390	4502	5710	–	–	4766				
OP-LGHE271	114X8006	D	NTZ271	35	5787	7594	9616	11828	14203	16712	6729	725	800	1210	144
				43	4544	6066	7759	9607	11592	–	6817				
				48	3772	5112	6597	8217	–	–	6818				

Quick Selection Notes:

Technical data and ordering

Optyma™ - R404A/R507 MBP/HBP

Fan	Test conditions	Unit	Version code		Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity [Btu/h] at evaporating temperature								
			D32	D40				-30 °C	-25 °C	-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C
	SH = 18 K SC = 3 K	OP-HJZ018D	114N3207 114N3209 114N3211	114N3208 114N3210 114N3212	N Q R	MTZ018	32	2400	3950	5700	7800	10150	12850	15800	19050	22600
							35	2100	3600	5300	7300	9550	12150	15000	18100	21500
							38	1800	3200	4850	6800	8950	11400	14150	17150	20400
							43	1300	2650	4150	5900	7950	10200	12700	15500	18550
		OP-HJZ022D	114N3223 114N3225 114N3227	114N3224 114N3226 114N3228	N Q R	MTZ022	32	4250	6000	8100	10500	13300	16400	19800	23450	27400
							35	3900	5600	7600	9950	12600	15550	18750	22300	26050
							38	3550	5200	7100	9350	11850	14650	17700	21050	24650
							43	3000	4500	6250	8250	10550	13100	15900	19000	22300
		OP-HJZ028D	114N3238 114N3240	114N3239 114N3241	N Q R	MTZ028	32	6300	8650	11400	14550	18150	22150	26650	31500	36800
							35	5900	8150	10800	13850	17250	21150	25400	30100	35200
							38	5450	7650	10150	13100	16400	20100	24200	28650	33550
							43	4650	6750	9100	11800	14850	18250	22050	26200	30750
		OP-HJZ036D	114N3251 114N3253 114N3255	114N3252 114N3254 114N3256	N Q R	MTZ036	32	7350	10300	13750	17700	22200	27200	32700	38650	45050
							35	6750	9550	12900	16700	21000	25800	31050	36750	42900
							38	6150	8850	12050	15650	19800	24350	29400	34850	40750
							43	5150	7700	10650	14000	17750	22000	26650	31700	37200
		OP-HJZ040D	114N3267 114N3269 114N3271	114N3268 114N3270 114N3272	N Q R	MTZ040	32	8750	12250	16400	21200	26700	32900	39850	47400	55650
							35	8100	11450	15450	20050	25300	31250	37900	45150	53050
							38	7400	10650	14450	18900	23900	29600	35900	42900	50450
							43	6350	9350	12900	16950	21600	26800	32650	39100	46200
		OP-HJZ050D	114N3281 114N3283 114N3285	114N3282 114N3284 114N3286	N Q R	MTZ050	32	10850	15100	20000	25750	32250	39600	47750	56750	66500
							35	9900	14000	18750	24250	30500	37600	45450	54100	63500
							38	8950	12900	17450	22750	28750	35550	43100	51350	60450
							43	7350	11000	15250	20150	25750	32050	39050	46800	55300
		OP-HGZ064D	114N3296 114N3298 114N3300	114N3297 114N3299 114N3301	N Q R	MTZ064	32	13700	18800	24700	31500	39100	47550	56700	66600	77200
							35	12550	17450	23150	29600	36900	44950	53750	63250	73400
							38	11400	16100	21550	27750	34700	42400	50800	59850	69650
							43	9500	13850	18900	24600	30950	38050	45800	54250	63400
		OP-HGZ080D	114N3308 114N3310	114N3309 114N3311	Q R	MTZ080	32	19300	25650	33000	41500	51100	61800	73550	86350	100150
							35	17950	24050	31100	39200	48400	58650	69900	82150	95400
							38	16600	22450	29200	36900	45650	55450	66200	77950	90650
							43	14400	19750	25950	33050	41050	50050	59950	70850	82750
		OP-HGZ100D	114N3318 114N3320	114N3319 114N3321	Q R	MTZ100	32	19800	27300	35950	45800	56850	68950	82150	96300	111400
							35	18000	25200	33500	42900	53450	65050	77650	91250	105750
							38	16250	23150	31100	40050	50100	61150	73200	86200	100100
							43	13400	19800	27100	35300	44550	54700	65800	77900	90900
		OP-HGZ125D	114N3328 114N3330	114N3329 114N3331	Q R	MTZ125	32	29600	39100	50100	62700	76950	92950	110500	129750	150550
							35	27300	36450	47050	59150	72800	88100	105000	123450	143450
							38	25000	33850	44000	55550	68600	83250	99400	117100	136300
							43	21250	29450	38850	49550	61600	75100	90050	106550	124500
		OP-HGZ160D	114N3338 114N3340	114N3339 114N3341	Q R	MTZ160	32	38250	49550	62500	77250	93750	112000	132000	153550	176700
							35	35500	46300	58750	72900	88700	106200	125300	146050	168350
							38	32700	43150	55000	68500	83600	100350	118650	138600	160050
							43	28200	37850	48850	61250	75200	90650	107650	126250	146500

Electrical codes:
N - Compressor 230 V / 1-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
Q - Compressor 230 V / 3-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
R - Compressor 460 V / 3-ph / 60 Hz , Fan(s) 460 V / 1-ph / 60 Hz

Cooling capacity for three-phase models shown. For single-phase models a difference of ± 1% shall apply
The consumption values shown relate to an ambient temperature in the equipment room of 32°C.

Technical data and ordering

Optyma™ - R404A/R507 MBP/HBP

Unit	Condenser			Fan Ø [mm]	Receiver [L]	Power consumption [Btu/h] at evaporating temp.		Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Internal volume [l]			-10°C	5°C	Figure	Height H [mm]	Depth D [mm]	Length L [mm]	Suction line	Liquid line	Gross	Net
OP-HJZ018D	D8	2400	0.4	1x355	3	1900	2250	D32= 1A D40= 1B	463	310	1000	1/2"	3/8"	D32= 64 D40= 80	D32= 55 D40= 71
OP-HJZ022D	D8	2400	0.4	1x355	3	2100	2700	D32= 1A D40= 1B	463	310	1000	1/2" 5/8" (N)	3/8"	D32= 64 D40= 80	D32= 55 D40= 71
OP-HJZ028D	G8	4800	0.5	1x457	6	3250	3900	D32= 1A D40= 1B	538	420	1150	1/2" 5/8" (N)	1/2"	D32= 83 D40= 107	D32= 71 D40= 95
OP-HJZ036D	G8	4800	0.5	1x457	8	3850	5000	D32= 1A D40= 1B	538	420	1150	5/8"	1/2"	D32= 85 D40= 109	D32= 73 D40= 97
OP-HJZ040D	J8	6300	1.3	1x457	8	4150	5350	D32= 1A D40= 1B	688	420	1150	5/8"	1/2"	D32= 93 D40= 120	D32= 80 D40= 107
OP-HJZ050D	J8	6300	1.3	1x457	8	4850	5900	D32= 1A D40= 1B	688	420	1150	7/8"	1/2"	D32= 104 D40= 134	D32= 91 D40= 121
OP-HGZ064D	N8	8800	1.6	2x457	10	6850	8350	D32= 2A D40= 2B	715	800	1200	1 1/8"	1/2"	D32= 140 D40= 182	D32= 125 D40= 167
OP-HGZ080D	N8	8800	1.6	2x457	14	8800	11100	D32= 2A D40= 2B	715	800	1200	1 1/8"	5/8"	D32= 143 D40= 185	D32= 128 D40= 170
OP-HGZ100D	N8	8800	1.6	2x457	14	9800	12150	D32= 2A D40= 2B	715	800	1200	1 1/8"	5/8"	D32= 159 D40= 201	D32= 144 D40= 186
OP-HGZ125D	Q8	13 980	2.5	2x550	14	12150	15100	D32= 2A D40= 2B	971	800	1500	1 1/8"	5/8"	D32= 243 D40= 302	D32= 225 D40= 284
OP-HGZ160D	Q8	13 980	2.5	2x550	14	15450	20250	D32= 2A D40= 2B	971	800	1500	1 1/8"	5/8"	D32= 248 D40= 307	D32= 230 D40= 289

Technical data and ordering

Optyma™ - R404A/R507 MBP/HBP

Fan	Test conditions	Unit	Version code	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity [Btu/h] at evaporating temperature								
			D40				-30 °C	-25 °C	-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C
	SH = 18 K SC = 3 K	OP-HNU015D	114N3366 114N3367 114N3368	N Q R	MLZ015	32	6400	8400	10700	13250	16100	19350	23000	27100	31600
						35	–	7900	10100	12600	15350	18500	22000	25900	30250
						38	–	7350	9500	11900	14550	17550	20950	24700	28950
						43	–	–	8450	10700	13200	16000	19150	22700	26650
		OP-HNU021D	114N3370 114N3371 114N3372	N Q R	MLZ021	32	9650	12150	15000	18300	22000	26150	30750	35800	41300
						35	–	11550	14300	17450	21000	25000	29450	34350	39750
						38	–	10900	13550	16550	19950	23800	28100	32900	38150
						43	–	–	12250	15050	18200	21850	25900	30450	35550
		OP-HNU030D	114N3374 114N3375 114N3376	N Q R	MLZ030	32	14400	18000	22150	27000	32500	38700	45600	53200	61500
						35	–	17100	21100	25750	31000	37000	43650	51000	59100
						38	–	16200	20000	24450	29500	35250	41650	48800	56700
						43	–	–	18100	22200	26900	32250	38300	45100	52700
		OP-HRU038D	114N3378 114N3379 114N3380	N Q R	MLZ038	32	16950	21650	27000	33000	39800	47350	55850	65300	75700
						35	–	20600	25750	31550	38050	45350	53550	62650	72800
						38	–	19450	24450	30050	36300	43300	51200	60000	69850
						43	–	–	22150	27350	33250	39800	47200	55500	64850
		OP-HRU048D	114N3382 114N3383	Q R	MLZ048	32	22750	28200	34700	42200	50800	60350	70900	82450	95000
						35	–	26850	33050	40250	48450	57600	67800	79000	91200
						38	–	25400	31300	38200	46000	54850	64650	75450	87350
						43	–	–	28300	34600	41850	50100	59250	69500	80900
		OP-HRU058D	114N3385 114N3386	Q R	MLZ058	32	23800	32050	41250	51450	62750	75300	89150	104300	120850
						35	–	29900	38800	48600	59450	71450	84700	99300	115200
						38	–	27700	36250	45700	56050	67550	80200	94150	109400
						43	–	–	31950	40650	50200	60750	72400	85300	99450
		OP-HRU076D	114N3388 114N3389	Q R	MLZ076	32	35600	44500	54600	66150	79200	93850	110150	128100	147700
						35	–	42300	52000	63000	75400	89400	104950	122100	140950
						38	–	40000	49250	59750	71550	84850	99650	116050	134150
						43	–	–	44550	54150	64950	77050	90650	105800	122650

Electrical codes:
N - Compressor 230 V / 1-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
Q - Compressor 230 V / 3-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
R - Compressor 460 V / 3-ph / 60 Hz , Fan(s) 460 V / 1-ph / 60 Hz

Cooling capacity for three-phase models shown. For single-phase models a difference of ± 1% shall apply
The consumption values shown relate to an ambient temperature in the equipment room of 32°C.

Technical data and ordering

Optyma™ - R404A/R507 MBP/HBP

Unit	Condenser			Fan Ø [mm]	Receiver [L]	Power consumption [Btu/h] at evaporating temp.		Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Internal volume [l]			-10°C	5°C	Figure	Height H [mm]	Depth D [mm]	Length L [mm]	Suction line	Liquid line	Gross	Net
OP-HNU015D	G8	4800	0.5	1x457	6	2350	2600	3A	538	420	1150	5/8"	1/2"	115	103
OP-HNU021D	G8	4800	0.5	1x457	6	3450	3700	3A	538	420	1150	5/8"	1/2"	115	103
OP-HNU030D	J8	6300	1.3	1x457	8	4450	4850	3A	688	420	1150	7/8"	1/2"	136	123
OP-HRU038D	N8	8800	1.6	2x457	10	5350	5900	4A	715	800	1200	7/8"	1/2"	182	167
OP-HRU048D	N8	8800	1.6	2x457	10	7550	8250	4A	715	800	1200	7/8"	1/2"	182	167
OP-HRU058D	Q8	13 980	2.5	2x550	14	8950	10050	4A	971	800	1500	1 1/8"	5/8"	287	269
OP-HRU076D	Q8	13 980	2.5	2x550	14	11000	12300	4A	971	800	1500	1 1/8"	5/8"	288	270

Technical data and ordering

Optyma™ - R404A / R507 MBP

Unit	Code no. Version A06	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity range in [W] at evaporating temperature [°C]					Power consumption [W] at -10 °C evap temp	Dimensions (mm)			Weight
					-15 °C	-10 °C	-5 °C	0 °C	5 °C		Height	Depth	Length	
											mm	mm	mm	Kg
OP- MGZE038	114X8007	G	MTZ22	35	2273	2924	3668	4502	5422	1457	445	600	800	67
				43	1840	2392	3027	3743	4540	1530				
				48	1578	2066	2631	3273	3992	1571				
OP- MGZE048	114X8008	D	MTZ28	35	2847	3616	4473	5413	6433	1951	445	600	800	69
				43	2305	2971	3714	4532	5423	2039				
				48	1979	2580	3251	3993	–	2089				
OP- MGZE060	114X8009	G	MTZ36	35	3912	4865	5912	7048	8263	2580	555	700	1000	84
				43	3230	4043	4935	5901	6937	2718				
				48	2803	3528	4323	5186	–	2790				
OP- MGZE086	114X8010	D	MTZ50	35	5172	6528	8074	9797	11678	3608	725	800	1210	102
				43	4182	5327	6626	8070	9645	3759				
				48	3610	4605	5734	6990	–	3836				
OP- MGZE108	114X8011	D	MTZ64	35	6499	8097	9824	11656	13562	4619	725	800	1210	118
				43	5326	6672	8109	9618	11182	4814				
				48	4609	5779	7019	–	–	4914				
OP- MGZE136	114X8012	D	MTZ80	35	8866	10969	13308	15875	18656	5606	725	800	1210	128
				43	7386	9194	11209	13428	15844	5901				
				48	6477	8099	9910	11912	–	6072				
OP- MGZE171	114X8013	D	MTZ100	35	10661	13458	16598	20068	23851	6641	1005	875	1510	208
				43	8841	11239	13922	16890	20134	7027				
				48	7685	9839	12244	14905	17819	7209				
OP- MGZE215	114X8014	D	MTZ125	35	13211	16475	20134	24171	28561	8433	1005	875	1510	220
				43	10892	13678	16819	20306	24124	8864				
				48	9501	11984	14799	17942	–	9120				
OP- MGZE242	114X8015	D	MTZ144	35	15217	18722	22584	26777	31271	9876	1005	875	1510	223
				43	12576	15559	18853	22443	26308	10331				
				48	10945	13597	16534	19748	–	10585				
OP- MGZE271	114X8016	D	MTZ160	35	16714	20561	24799	29399	34321	11190	1005	875	1510	228
				43	13860	17146	20772	24721	28967	11732				
				48	12093	15021	18262	–	–	12058				
OP- MGUE126	114X8045	D	MLZ058	35	11266	13629	16275	19139	22157	5905	1005	875	1510	201
				43	9237	11328	13665	16187	18834	7036				
				48	7853	9779	11929	14244	16667	7897				
OP- MGUE148	114X8046	D	MLZ066	35	13164	15629	18342	21310	24544	6760	1005	875	1510	201
				43	11354	13504	15845	18393	21168	7994				
				48	10142	12101	14215	16507	19001	6454				
OP- MGUE162	114X8047	D	MLZ076	35	14923	17445	20230	23298	26686	7944	1005	875	1510	201
				43	12653	14592	16774	19224	21983	9268				
				48	11196	12741	14508	16550	18903	10204				
OP- MGZE217	114X8760	D	SZ160	35	16483	20068	24105	28568	33452	11282	1005	875	1510	249
				43	14225	17781	20006	23801	27957	13111				
				48	–	16799	19764	20630	24323	14558				

Quick Selection Notes:

Technical data and ordering

Optyma™ - R134a MBP/HBP

Fan	Test conditions	Unit	Version code		Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity [Btu/h] at evaporating temperature						
			D32	D40				-10 °C	-5 °C	0 °C	5 °C	10 °C	15 °C	20 °C
	SH = 18 K SC = 3 K	OP-HJZ018D	114N3207 114N3209 114N3211	114N3208 114N3210 114N3212	N Q R	MTZ018	32	6000	7750	9900	12450	15400	18850	22750
							35	5650	7350	9400	11900	14800	18150	21950
							38	5300	6950	8950	11350	14200	17450	21100
							43	4700	6250	8200	10450	13150	16200	19700
		OP-HJZ022D	114N3223 114N3225 114N3227	114N3224 114N3226 114N3228	N Q R	MTZ022	32	7600	9900	12600	15750	19300	23250	27600
							35	7250	9450	12100	15100	18550	22400	26600
							38	6850	9000	11550	14450	17800	21450	25500
							43	6250	8250	10650	13350	16450	19900	23700
		OP-HJZ028D	114N3238 114N3240	114N3239 114N3241	N Q	MTZ028	32	10400	13500	17000	21000	25500	30400	35850
							35	9950	12950	16400	20250	24600	29400	34700
							38	9450	12350	15700	19500	23700	28400	33500
							43	8600	11400	14600	18150	22150	26600	31450
		OP-HJZ036D	114N3251 114N3253 114N3255	114N3252 114N3254 114N3256	N Q R	MTZ036	32	13500	17100	21250	26000	31300	37150	43550
							35	12800	16350	20400	25000	30150	35850	42050
							38	12150	15600	19550	24000	29000	34550	40550
							43	11050	14300	18100	22300	27050	32300	38000
		OP-HJZ040D	114N3267 114N3269 114N3271	114N3268 114N3270 114N3272	N Q R	MTZ040	32	17050	21100	25700	31050	37050	43850	51350
							35	16000	20000	24550	29800	35700	42350	49800
							38	15000	18900	23400	28550	34350	40950	48200
							43	13350	17150	21500	26550	32200	38550	45650
		OP-HJZ050D	114N3281 114N3283 114N3285	114N3282 114N3284 114N3286	N Q R	MTZ050	32	16950	22500	29000	36450	45000	54550	65100
							35	16300	21700	28050	35300	43600	52900	63150
							38	15600	20900	27000	34100	42150	51150	61050
							43	14300	19350	25200	31900	39500	48050	57450
		OP-HGZ064D	114N3296 114N3298 114N3300	114N3297 114N3299 114N3301	N Q R	MTZ064	32	21800	28750	36750	45850	56000	67100	79100
							35	20900	27650	35400	44250	54050	64800	76400
							38	19950	26500	34050	42550	52050	62450	73650
							43	18200	24450	31600	39700	48600	58400	69000
		OP-HGZ080D	114N3308 114N3310	114N3309 114N3311	Q R	MTZ080	32	29000	37600	47600	59000	71850	86100	101700
							35	27750	36150	45850	56900	69350	83200	98300
							38	26500	34650	44050	54800	66850	80250	94900
							43	24400	32100	41000	51150	62600	75250	89150
		OP-HGZ100D	114N3318 114N3320	114N3319 114N3321	Q R	MTZ100	32	33250	43200	54700	67600	82050	97950	115150
							35	31350	41000	52150	64650	78650	93950	110600
							38	29450	38800	49550	61650	75150	89950	106000
							43	26250	35100	45150	56550	69250	83150	98250
		OP-HGZ125D	114N3328 114N3330	114N3329 114N3331	Q R	MTZ125	32	42950	55750	70650	87600	106750	127900	151050
							35	40600	53050	67450	83900	102350	122800	145200
							38	38300	50350	64250	80100	97950	117650	139250
							43	34450	45800	58850	73700	90350	108850	129050
		OP-HGZ160D	114N3338 114N3340	114N3339 114N3341	Q R	MTZ160	32	60400	75500	92550	111500	132400	155100	179550
							35	57700	72400	89000	107450	127700	149700	173400
							38	54950	69250	85400	103250	122900	144200	167150
							43	50250	63850	79100	96050	114600	134750	156400

Electrical codes:
N - Compressor 230 V / 1-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
Q - Compressor 230 V / 3-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
R - Compressor 460 V / 3-ph / 60 Hz , Fan(s) 460 V / 1-ph / 60 Hz

Cooling capacity for three-phase models shown. For single-phase models a difference of ± 1% shall apply
The consumption values shown relate to an ambient temperature in the equipment room of 32°C.

Technical data and ordering

Optyma™ - R134a MBP/HBP

Unit	Condenser			Fan Ø [mm]	Receiver [L]	Power consumption [Btu/h] at evaporating temp.		Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Internal volume [l]			-10°C	5°C	Figure	Height H [mm]	Depth D [mm]	Length L [mm]	Suction line	Liquid line	Gross	Net
OP-HJZ018D	D8	2400	0.4	1x355	3	1050	1300	D32= 1A D40= 1B	463	310	1000	1/2"	3/8"	D32= 64 D40= 80	D32= 55 D40= 71
OP-HJZ022D	D8	2400	0.4	1x355	3	1250	1600	D32=1A D40=1B	463	310	1000	1/2" 5/8" (N)	3/8"	D32=64 D40=80	D32=55 D40=71
OP-HJZ028D	G8	4800	0.5	1x457	6	2150	2600	D32=1A D40=1B	538	420	1150	1/2" 5/8" (N)	1/2"	D32=83 D40=107	D32=71 D40=95
OP-HJZ036D	G8	4800	0.5	1x457	8	2650	3350	D32=1A D40=1B	538	420	1150	5/8"	1/2"	D32= 85 D40= 109	D32= 73 D40= 97
OP-HJZ040D	J8	6300	1.3	1x457	8	2850	3600	D32= 1A D40= 1B	688	420	1150	5/8"	1/2"	D32= 93 D40= 120	D32= 80 D40= 107
OP-HJZ050D	J8	6300	1.3	1x457	8	3000	3600	D32= 1A D40= 1B	688	420	1150	7/8"	1/2"	D32= 104 D40= 134	D32= 91 D40= 121
OP-HGZ064D	N8	8800	1.6	2x457	10	3600	4550	D32= 2A D40= 2B	715	800	1200	1 1/8"	1/2"	D32= 140 D40= 182	D32= 125 D40= 167
OP-HGZ080D	N8	8800	1.6	2x457	14	5250	6500	D32= 2A D40= 2B	715	800	1200	1 1/8"	5/8"	D32= 143 D40= 185	D32= 128 D40= 170
OP-HGZ100D	N8	8800	1.6	2x457	14	6050	7600	D32= 2A D40= 2B	715	800	1200	1 1/8"	5/8"	D32= 159 D40= 201	D32= 144 D40= 186
OP-HGZ125D	Q8	13 980	2.5	2x550	14	6900	8800	D32= 2A D40= 2B	971	800	1500	1 1/8"	5/8"	D32= 243 D40= 302	D32= 225 D40= 284
OP-HGZ160D	Q8	13 980	2.5	2x550	14	9200	11800	D32= 2A D40= 2B	971	800	1500	1 1/8"	5/8"	D32= 248 D40= 307	D32= 230 D40= 289

Technical data and ordering

Optyma™ - R134a MBP/HBP

Fan	Test conditions	Unit	Version code	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity [Btu/h] at evaporating temperature						
			D40				-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C	15 °C
	SH = 18 K SC = 3 K	OP-HNU015D	114N3366 114N3367 114N3368	N Q R	MLZ015	32	7500	9500	11900	14600	17600	20900	24450
						35	7200	9200	11550	14200	17100	20350	23850
						38	6950	8900	11150	13750	16650	19800	23200
						43	6450	8350	10500	13000	15750	18800	22100
		OP-HNU021D	114N3370 114N3371 114N3372	N Q R	MLZ021	32	10300	13300	16650	20400	24650	29300	34500
						35	9900	12850	16150	19850	24000	28600	33650
						38	9450	12400	15650	19300	23350	27850	32750
						43	8750	11600	14800	18300	22200	26550	31250
		OP-HNU030D	114N3374 114N3375 114N3376	N Q R	MLZ030	32	15600	19850	24800	30500	36900	43950	51600
						35	15000	19200	24100	29700	35950	42850	50350
						38	14450	18550	23350	28800	34950	41700	49100
						43	13450	17400	22050	27350	33250	39750	46850
		OP-HRU038D	114N3378 114N3379 114N3380	N Q R	MLZ038	32	18300	23050	28750	35400	42850	51000	59800
						35	17700	22300	27900	34400	41700	49700	58350
						38	17100	21600	27050	33400	40500	48350	56850
						43	16100	20350	25550	31600	38500	46050	54200
		OP-HRU048D	114N3382 114N3383	Q R	MLZ048	32	24100	30400	37700	46100	55450	65850	77200
						35	23200	29300	36450	44650	53800	63950	75050
						38	22300	28200	35150	43150	52100	62000	72900
						43	20700	26350	32950	40550	49150	58700	69100
		OP-HRU058D	114N3385 114N3386	Q R	MLZ058	32	28550	35800	44100	53500	64050	75650	88350
						35	27600	34600	42650	51850	62100	73500	85950
						38	26600	33400	41200	50150	60150	71250	83450
						43	25000	31350	38750	47250	56800	67450	79150
		OP-HRU076D	114N3388 114N3389	Q R	MLZ076	32	37800	46950	57850	70400	84450	100000	116850
						35	36450	45450	56100	68350	82100	97250	113650
						38	35050	43850	54300	66250	79650	94400	110450
						43	32650	41150	51150	62600	75450	89600	104900

Electrical codes:
N - Compressor 230 V / 1-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
Q - Compressor 230 V / 3-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
R - Compressor 460 V / 3-ph / 60 Hz , Fan(s) 460 V / 1-ph / 60 Hz

Cooling capacity for three-phase models shown. For single-phase models a difference of +/- 1% shall apply
The consumption values shown relate to an ambient temperature in the equipment room of 32°C.

Technical data and ordering

Optyma™ - R134a MBP/HBP

Unit	Condenser			Fan Ø [mm]	Receiver [L]	Power consumption [Btu/h] at evaporating temp.		Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Internal volume [l]			-10°C	5°C	Figure	Height H [mm]	Depth D [mm]	Length L [mm]	Suction line	Liquid line	Gross	Net
OP-HNU015D	G8	4800	0.5	1x457	6	2450	2650	3A	538	420	1150	5/8"	1/2"	115	103
OP-HNU021D	G8	4800	0.5	1x457	6	3100	3400	3A	538	420	1150	5/8"	1/2"	115	103
OP-HNU030D	J8	6300	1.3	1x457	8	4050	4550	3A	688	420	1150	7/8"	1/2"	136	123
OP-HRU038D	N8	8800	1.6	2x457	10	5400	5950	4A	715	800	1200	7/8"	1/2"	182	167
OP-HRU048D	N8	8800	1.6	2x457	10	6750	7550	4A	715	800	1200	7/8"	1/2"	182	167
OP-HRU058D	Q8	13 980	2.5	2x550	14	7600	8350	4A	971	800	1500	1 1/8"	5/8"	287	269
OP-HRU076D	Q8	13 980	2.5	2x550	14	9750	10900	4A	971	800	1500	1 1/8"	5/8"	288	270

Technical data and ordering

Optyma™ - R134a MBP

Unit	Code no. Version A06	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity range in [W] at evaporating temperature [°C]					Power consumption [W] at -10 °C evap temp	Dimensions (mm)			Weight
					-15 °C	-10 °C	-5 °C	0 °C	5 °C		Height	Depth	Length	
											mm	mm	mm	Kg
OP- MGZE038	114X8007	G	MTZ22	35	1220	1700	2273	2946	3721	789	445	600	800	67
				43	1004	1436	1949	2550	3243	822				
				48	889	1286	1757	2309	2946	835				
OP- MGZE048	114X8008	D	MTZ28	35	1516	2054	2716	3511	4443	985	445	600	800	69
				43	1306	1785	2374	3081	3911	1040				
				48	1201	1635	2171	2817	3579	1069				
OP- MGZE060	114X8009	G	MTZ36	35	2444	3179	4045	5046	6186	1409	555	700	1000	84
				43	2138	2810	3596	4503	5533	1489				
				48	1952	2579	3309	4151	5108	1528				
OP- MGZE086	114X8010	D	MTZ50	35	2990	4030	5279	6747	8441	1967	725	800	1210	102
				43	2496	3441	4569	5893	7417	2033				
				48	2238	3111	4152	5373	6783	2060				
OP- MGZE108	114X8011	D	MTZ64	35	3682	4977	6506	8278	10294	2404	725	800	1210	118
				43	3070	4257	5653	7264	9095	2471				
				48	2729	3840	5142	6644	8350	2494				
OP- MGZE136	114X8012	D	MTZ80	35	5404	7113	9119	11434	14069	3053	725	800	1210	128
				43	4603	6177	8013	10128	12527	3158				
				48	4118	5594	7312	9288	11530	3204				
OP- MGZE171	114X8013	D	MTZ100	35	5877	7949	10433	13360	16751	3513	1005	875	1510	208
				43	4964	6854	9112	11765	14840	3692				
				48	4481	6237	8332	10796	13655	3777				
OP- MGZE215	114X8014	D	MTZ125	35	7377	9867	12808	16225	20133	4094	1005	875	1510	220
				43	6130	8420	11107	14221	17773	4211				
				48	5419	7560	10070	12974	16290	4239				
OP- MGZE242	114X8015	D	MTZ144	35	9417	12318	15702	19587	23977	5294	1005	875	1510	223
				43	8079	10738	13822	17346	21321	5556				
				48	7296	9781	12655	15936	19635	5692				
OP- MGZE271	114X8016	D	MTZ160	35	10425	13589	17295	21559	26383	5721	1005	875	1510	228
				43	9051	11919	15258	19082	23398	5992				
				48	8254	10903	13979	17504	21476	6143				
OP- MGUE126	114X8045	D	MLZ058	35	6314	7990	9922	12133	14643	3228	1005	875	1510	201
				43	5599	7163	8959	11011	13339	3774				
				48	–	6632	8339	10287	12497	4135				
OP- MGUE148	114X8046	D	MLZ066	35	7321	9203	11405	13938	16810	3725	1005	875	1510	201
				43	6522	8259	10291	12631	15287	4347				
				48	–	7654	9575	11788	14304	4757				
OP- MGUE162	114X8047	D	MLZ076	35	8068	10168	12608	15403	18564	4291	1005	875	1510	201
				43	7242	9138	11362	13930	16852	5018				
				48	–	8496	10571	12983	15745	5503				
OP- MGZE217	114X8760	D	SZ160	35	11469	14602	18198	22277	26851	6145	1005	875	1510	249
				43	10241	13170	16520	20306	24543	7188				
				48	–	12235	15413	19001	23015	7944				

Technical data and ordering

Optyma™ - R22 MBP

Unit	Code no. Version A06	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity range in [W] at evaporating temperature [°C]					Power consumption [W] at -10 °C evap temp	Dimensions (mm)			Weight
					-15 °C	-10 °C	-5 °C	0 °C	5 °C		Height	Depth	Length	
											mm	mm	mm	Kg
OP- MCME038	114X8017	G	MT22	35°C	2064	2740	3505	4362	5310	1260	445	600	800	67
				43°C	1703	2322	3020	3800	4664	1317				
				48°C	1479	2058	2711	3440	4247	1342				
OP- MCME048	114X8018	D	MT28	35°C	3028	3853	4762	5757	6833	1811	445	600	800	69
				43°C	2596	3358	4195	5103	6084	1887				
				48°C	2318	3038	3826	4680	5597	1927				
OP- MCME060	114X8111	G	MT36	35°C	3928	4952	6071	7289	8598	2350	655	760	700	72
	114X8112	D		43°C	3361	4313	5349	6470	7672	2494				
				48°C	3001	3904	4886	5942	7073	2582				
OP- MGME086	114X8019	D	MT50	35°C	4809	6111	7642	9415	11434	2917	725	800	1210	102
				43°C	4119	5306	6703	8318	10162	3111				
				48°C	3692	4799	6104	7620	9351	3214				
OP- MGME108	114X8022	D	MT64	35°C	6018	7687	9559	11630	13890	3942	725	800	1210	118
				43°C	5284	6808	8511	10387	12429	4170				
				48°C		6308	7896	9643	11541	4280				
OP- MGME121	114X8025	D	MT73	35°C	6997	9058	11373	13946	16766	4156	725	800	1210	122
				43°C	6024	7910	10026	12364	14929	4401				
				48°C	5414	7192	9180	11375	13783	4521				
OP- MGME136	114X8026	D	MT80	35°C	8424	10732	13308	16144	19231	4860	725	800	1210	128
				43°C	7340	9448	11784	14352	17143	5196				
				48°C	6666	8643	10831	13226	15831	5369				
OP- MGME171	114X8028	D	MT100	35°C	9639	12347	15478	19049	23065	5680	1005	875	1510	208
				43°C	8153	10638	13504	16769	20441	5966				
				48°C	7353	9681	12365	15424	18866	6147				
OP- MGME215	114X8029	D	MT125	35°C	12580	15909	19678	23900	28560	7499	1005	875	1510	220
				43°C	10927	13918	17300	21066	25225	7968				
				48°C	9964	12721	15835	19310	23143	8221				
OP- MGME242	114X8030	D	MT144	35°C	14038	17667	21765	26337	31357	8495	1005	875	1510	223
				43°C	12146	15382	19030	23084	27531	8995				
				48°C		14013	17351	21062	25133	9263				
OP- MGME271	114X8031	D	MT160	35°C	15601	19605	24156	29241	34840	9530	1005	875	1510	228
				43°C	13559	17148	21207	25724	30714	10084				
				48°C		15655	19381	23538	28112	10382				
OP- MGUE126	114X8045	D	MLZ058	35°C	10651	12994	15712	18822	22341	5000	1005	875	1510	201
				43°C	9680	11783	14249	17095	20338	5868				
				48°C		10867	13165	15834	18891	5333				
OP- MGUE148	114X8046	D	MLZ066	35°C	11923	14751	17971	21538	25402	5729	1005	875	1510	201
				43°C	10885	13477	16432	19704	23245	6715				
				48°C		12522	15303	18382	21714	7477				
OP- MGUE162	114X8047	D	MLZ076	35°C	13977	17042	20480	24279	28416	6896	1005	875	1510	201
				43°C	12636	15471	18635	22118	25900	8139				
				48°C		14714	17311	20592	24148	9038				
OP- MGME217	114X8660	D	SM160	35°C	17697	21780	26359	31427	36989	9660	1005	875	1510	249
				43°C	16402	19757	23798	28482	33611	11401				
				48°C		18666	21960	26397	31240	12659				

Technical data and ordering

Optyma™ - R22 MBP/HBP

Fan	Test conditions	Unit	Version code		Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity [Btu/h] at evaporating temperature						
			D32	D40				-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C
	SH = 18 K SC = 3 K	OP-HJM018D	114N3200 114N3203	114N3201 114N3204	N Q	MT018	32	4350	6100	8150	10600	13500	16800	20450
							35	4100	5750	7750	10100	12900	16050	19550
							38	3850	5400	7350	9600	12250	15250	18650
							43	3400	4900	6650	8750	11150	14000	17150
		OP-HJM022D	114N3216 114N3219	114N3217 114N3220	N Q	MT022	32	6350	8750	11500	14550	17950	21700	25750
							35	5900	8250	10900	13850	17150	20750	24650
							38	5400	7700	10250	13150	16300	19800	23550
							43	4650	6800	9200	11950	14900	18200	21700
		OP-HJM028D	114N3232 114N3235	114N3233 114N3236	N Q	MT028	32	10400	13650	17350	21450	26000	30950	36350
							35	9800	13000	16600	20600	25050	29850	35100
							38	9200	12350	15850	19750	24050	28750	33850
							43	8250	11250	14600	18300	22400	26850	31650
		OP-HJM036D	114N3244 114N3247	114N3245 114N3248	N Q	MT036	32	13300	17250	21650	26450	31700	37350	43400
							35	12550	16400	20700	25400	30500	36000	41850
							38	11750	15550	19700	24300	29250	34600	40300
							43	10450	14100	18100	22450	27200	32250	37650
		OP-HJM040D	114N3259 114N3262	114N3260 114N3263	N Q	MT040	32	15000	19450	24500	30100	36400	43350	51000
							35	14100	18500	23450	29050	35250	42100	49600
							38	13150	17550	22450	27950	34050	40850	48250
							43	11650	15950	20750	26150	32100	38700	45950
		OP-HJM050D	114N3274 114N3277	114N3275 114N3278	N Q	MT050	32	16300	21600	27700	34700	42500	51150	60600
							35	15500	20650	26550	33300	40850	49200	58300
							38	14750	19700	25400	31900	39200	47250	56050
							43	13500	18150	23550	29650	36500	44050	52300
 		OP-HGM064D	114N3289 114N3292	114N3290 114N3293	N Q	MT064	32	21100	27400	34700	43000	52300	62500	73600
							35	20300	26300	33350	41350	50300	60150	70800
							38	19450	25250	32000	39700	48300	57750	68050
							43	18150	23500	29750	36900	44950	53800	63450
		OP-HGM080D	114N3303	114N3304	Q	MT080	32	28250	36700	46350	57350	69600	83050	97800
							35	27050	35200	44600	55250	67100	80200	94400
							38	25750	33700	42800	53100	64600	77250	91000
							43	23650	31200	39800	49500	60350	72300	85250
		OP-HGM100D	114N3313	114N3314	Q	MT100	32	30850	40050	50750	62950	76650	91850	108550
							35	28750	37750	48150	60000	73350	88100	104250
							38	26800	35550	45650	57200	70100	84400	100000
							43	23900	32200	41800	52650	64850	78350	93000
		OP-HGM125D	114N3323	114N3324	Q	MT125	32	42950	55500	70050	86650	105250	125950	148600
							35	40650	52850	66900	82950	100950	120900	142750
							38	38450	50250	63800	79250	96650	115800	136850
							43	35000	46050	58750	73200	89400	107300	126900
		OP-HGM160D	114N3333	114N3334	Q	MT160	32	53000	67900	85100	104650	126450	150500	176550
							35	50250	64700	81350	100100	121150	144300	169350
							38	47600	61500	77550	95650	115850	138050	162100
							43	43400	56450	71350	88200	106950	127600	149950

Electrical codes:
N - Compressor 230 V / 1-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
Q - Compressor 230 V / 3-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz

Cooling capacity for three-phase models shown. For single-phase models a difference of +/- 1% shall apply
The consumption values shown relate to an ambient temperature in the equipment room of 32°C.

Technical data and ordering

Optyma™ - R22 MBP/HBP

Unit	Condenser			Fan Ø [mm]	Receiver [L]	Power consumption [Btu/h] at evaporating temp.		Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Internal volume [l]			-10°C	5°C	Figure	Height H [mm]	Depth D [mm]	Length L [mm]	Suction line	Liquid line	Gross	Net
OP-HJM018D	D8	2400	0.4	1x355	3	1400	1800	D32= 1A D40= 1B	463	310	1000	1/2"	3/8"	D32= 64 D40= 80	D32= 55 D40= 71
OP-HJM022D	D8	2400	0.4	1x355	3	1800	2350	D32= 1A D40= 1B	463	310	1000	1/2" 5/8" (N)	3/8"	D32= 64 D40= 80	D32= 55 D40= 71
OP-HJM028D	G8	4800	0.5	1x457	6	3000	3550	D32= 1A D40= 1B	538	420	1150	1/2" 5/8" (N)	1/2"	D32= 83 D40= 107	D32= 71 D40= 95
OP-HJM036D	G8	4800	0.5	1x457	8	3650	4550	D32= 1A D40= 1B	538	420	1150	5/8"	1/2"	D32= 85 D40= 109	D32= 73 D40= 97
OP-HJM040D	J8	6300	1.3	1x457	8	3900	4800	D32= 1A D40= 1B	688	420	1150	5/8"	1/2"	D32=93 D40=120	D32= 80 D40= 107
OP-HJM050D	J8	6300	1.3	1x457	8	4250	5250	D32= 1A D40= 1B	688	420	1150	7/8"	1/2"	D32= 104 D40= 134	D32= 91 D40= 121
OP-HGM064D	N8	8800	1.6	2x457	10	5950	7200	D32= 2A D40= 2B	715	800	1200	1 1/8"	1/2"	D32= 140 D40= 182	D32= 125 D40= 167
OP-HGM080D	N8	8800	1.6	2x457	14	7350	9400	D32= 2A D40= 2B	715	800	1200	1 1/8"	5/8"	D32= 143 D40= 185	D32= 128 D40= 170
OP-HGM100D	N8	8800	1.6	2x457	14	8650	10650	D32= 2A D40= 2B	715	800	1200	1 1/8"	5/8"	D32= 159 D40= 201	D32= 144 D40= 186
OP-HGM125D	Q8	13,980	2.5	2x550	14	10700	13350	D32= 2A D40= 2B	971	800	1500	1 1/8"	5/8"	D32= 243 D40= 302	D32= 225 D40= 284
OP-HGM160D	Q8	13,980	2.5	2x550	14	13150	16850	D32= 2A D40= 2B	971	800	1500	1 1/8"	5/8"	D32= 248 D40= 307	D32= 230 D40= 289

Technical data and ordering

Optyma™ - R22 MBP/HBP

Fan	Test conditions	Unit	Version code	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity [Btu/h] at evaporating temperature						
			D40				-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C
	SH = 18 K SC = 3 K	OP-HNU015D	114N3366 114N3367 114N3368	N Q R	MLZ015	32	10000	12400	15100	18150	21550	25300	29350
						35	9650	12000	14650	17650	20950	24600	28600
						38	9250	11550	14200	17100	20350	23900	27800
						43	–	10950	13450	16250	19350	22800	26550
		OP-HNU021D	114N3370 114N3371 114N3372	N Q R	MLZ021	32	13800	17050	20800	25050	29700	34700	40050
						35	13350	16550	20200	24300	28850	33750	39000
						38	12900	15950	19550	23550	27950	32750	37900
						43	–	15000	18400	22250	26500	31100	36050
		OP-HNU030D	114N3374 114N3375 114N3376	N Q R	MLZ030	32	20000	24900	30600	37000	44050	51650	59700
						35	19450	24200	29750	36000	42900	50300	58250
						38	18800	23450	28850	34950	41650	48950	56700
						43	–	22050	27200	33050	39500	46500	53950
		OP-HRU038D	114N3378 114N3379 114N3380	N Q R	MLZ038	32	23550	29450	36350	44200	52750	61950	71600
						35	22900	28600	35350	43000	51350	60350	69800
						38	22200	27750	34300	41750	49950	58750	68000
						43	–	26150	32400	39550	47400	55900	64850
		OP-HRU048D	114N3382 114N3383	Q R	MLZ048	32	31450	39200	48000	57800	68600	80350	92900
						35	30250	37800	46400	56000	66600	78050	90400
						38	29000	36400	44750	54150	64450	75700	87750
						43	–	33900	41900	50900	60750	71550	83200
		OP-HRU058D	114N3385 114N3386	Q R	MLZ058	32	37000	46100	56850	69200	83000	98200	114700
						35	36000	44800	55250	67250	80750	95650	111800
						38	34900	43400	53500	65200	78350	92900	108800
						43	–	40850	50400	61500	74050	88100	103400
		OP-HRU076D	114N3388 114N3389	Q R	MLZ076	32	48600	60650	74700	90400	107500	125700	144650
						35	47250	58950	72600	87950	104600	122350	140950
						38	45700	57100	70400	85350	101600	118950	137050
						43	–	53500	66250	80600	96150	112850	130250

Electrical codes:
N - Compressor 230 V / 1-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
Q - Compressor 230 V / 3-ph / 60 Hz, Fan(s) 230 V / 1-ph / 60 Hz
R - Compressor 460 V / 3-ph / 60 Hz , Fan(s) 460 V / 1-ph / 60 Hz

Cooling capacity for three-phase models shown. For single-phase models a difference of +/- 1% shall apply
The consumption values shown relate to an ambient temperature in the equipment room of 32°C.

Technical data and ordering

Optyma™ - R22 MBP/HBP

Unit	Condenser			Fan Ø [mm]	Receiver [L]	Power consumption [Btu/h] at evaporating temp.		Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Internal volume [l]			-10°C	5°C	Figure	Height H [mm]	Depth D [mm]	Length L [mm]	Suction line	Liquid line	Gross	Net
OP-HNU015D	G8	4800	0.5	1x457	6	2450	2650	3A	538	420	1150	5/8"	1/2"	115	103
OP-HNU021D	G8	4800	0.5	1x457	6	3100	3400	3A	538	420	1150	5/8"	1/2"	115	103
OP-HNU030D	J8	6300	1.3	1x457	8	4050	4550	3A	688	420	1150	7/8"	1/2"	136	123
OP-HRU038D	N8	8800	1.6	2x457	10	5400	5950	4A	715	800	1200	7/8"	1/2"	182	167
OP-HRU048D	N8	8800	1.6	2x457	10	6750	7550	4A	715	800	1200	7/8"	1/2"	182	167
OP-HRU058D	Q8	13,980	2.5	2x550	14	7600	8350	4A	971	800	1500	1 1/8"	5/8"	287	269
OP-HRU076D	Q8	13,980	2.5	2x550	14	9750	10900	4A	971	800	1500	1 1/8"	5/8"	288	270

Technical data and ordering

Optyma™ - LBP

Electrical characteristics - 230 V / 1phase / 60 Hz

Unit	Wiring diagram	LRA compressor (A) 230 V / 1 phase	MCC compressor (A) 230 V / 1 phase	FLA Fan (A) 230 V / 1 phase
OP-LJZ048D	–	43.7	13.2	1.2
OP-LJZ068D	–	72	21	1.2
OP-LJZ108D	–	97	33	3.6
OP-LJZ136D	–	140	41	3.6

Optyma™ - LBP

Electrical characteristics - 230 V / 3phase / 60 Hz

Unit	Wiring diagram	LRA compressor (A) 230 V / 3 phase	MCC compressor (A) 230 V / 3 phase	FLA Fan (A) 230 V / 1 phase
OP-LJZ048D	–	32	10.1	1.2
OP-LJZ068D	–	48.5	14.8	1.2
OP-LJZ108D	–	72	21.4	3.6
OP-LJZ136D	–	97.2	29	3.6
OP-LGZ215D	–	147.7	42.3	7.2
OP-LGZ271D	–	198	56.5	7.2

Optyma™ - LBP

Electrical characteristics - 460 V / 3phase / 60 Hz

Unit	Wiring diagram	LRA compressor (A) 460 V / 3 phase	MCC compressor (A) 460 V / 3 phase	FLA Fan (A) 230 V / 1 phase
OP-LJZ068D	–	25	8.4	0.6
OP-LJZ108D	–	45	12.1	1.8
OP-LJZ136D	–	51	14.3	1.8
OP-LGZ215D	–	74	22.3	3.6
OP-LGZ271D	–	96	27	3.6

Technical data and ordering

Optyma™ - MBP

Electrical characteristics - 230 V / 1phase / 60 Hz

Unit	LRA compressor (A) 230 V / 1 phase	MCC compressor (A) 230 V / 1 phase	FLA Fan (A) 230 V / 1 phase
OP-HJM(Z)018D	51	13	1.2
OP-HJM(Z)022D	49.3	17	1.2
OP-HJM(Z)028D	81	25	3.6
OP-HJM(Z)036D	84	30	3.6
OP-HJM(Z)040D	99	34	3.6
OP-HJM(Z)050D	114	36	3.6
OP-HGM(Z)064D	143	46	7.2
OP-HNU015D	69	19	3.6
OP-HNU021D	97	24.5	3.6
OP-HNU030D	150	38	3.6
OP-HRU038D	160	45	7.2

Optyma™ - MBP

Electrical characteristics - 230 V / 3phase / 60 Hz

Unit	LRA compressor (A) 230 V / 3 phase	MCC compressor (A) 230 V / 3 phase	FLA Fan (A) 230 V / 1 phase
OP-HJM(Z)018D	38	9	1.2
OP-HJM(Z)022D	38	11	1.2
OP-HJM(Z)028D	57	16	3.6
OP-HJM(Z)036D	74	17	3.6
OP-HJM(Z)040D	98	22	3.6
OP-HJM(Z)050D	115	25	3.6
OP-HGM(Z)064D	137	29	7.2
OP-HGM(Z)080D	140	36	7.2
OP-HGM(Z)100D	157	43	7.2
OP-HGM(Z)125D	210	54	8.8
OP-HGM(Z)160D	259	70	8.8
OP-HNU015D	60	14.5	3.6
OP-HNU021D	95	17.5	3.6
OP-HNU030D	120	26	3.6
OP-HRU038D	123	26	7.2
OP-HRU048D	190	37	7.2
OP-HRU058D	190	40	8.8
OP-HRU076D	235	50	8.8

Optyma™ - MBP

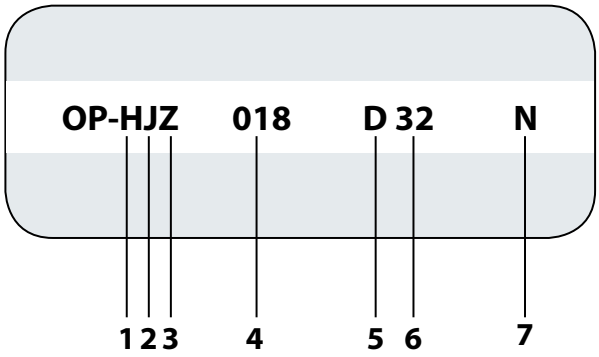
Electrical characteristics - 460 V / 3phase / 60 Hz

Unit	LRA compressor (A) 460 V / 3 phase	MCC compressor (A) 460 V / 3 phase	FLA Fan (A) 230 V / 1 phase
OP-HJM(Z)018D	20	5	0.6
OP-HJM(Z)022D	16	6	0.6
OP-HJM(Z)028D	23	7.5	1.8
OP-HJM(Z)036D	30	9	1.8
OP-HJM(Z)040D	38	10	1.8
OP-HJM(Z)050D	48.5	11.5	1.8
OP-HGM(Z)064D	64	14	3.6
OP-HGM(Z)080D	80	19	3.6
OP-HGM(Z)100D	90	22	3.6
OP-HGM(Z)125D	105	27	4.4
OP-HGM(Z)160D	130	36	4.4
OP-HNU015D	30	7	1.8
OP-HNU021D	45	9.5	1.8
OP-HNU030D	60	13	1.8
OP-HRU038D	70	15	3.6
OP-HRU048D	87	16	3.6
OP-HRU058D	95	20	4.4
OP-HRU076D	140	25	4.4

Nomenclature

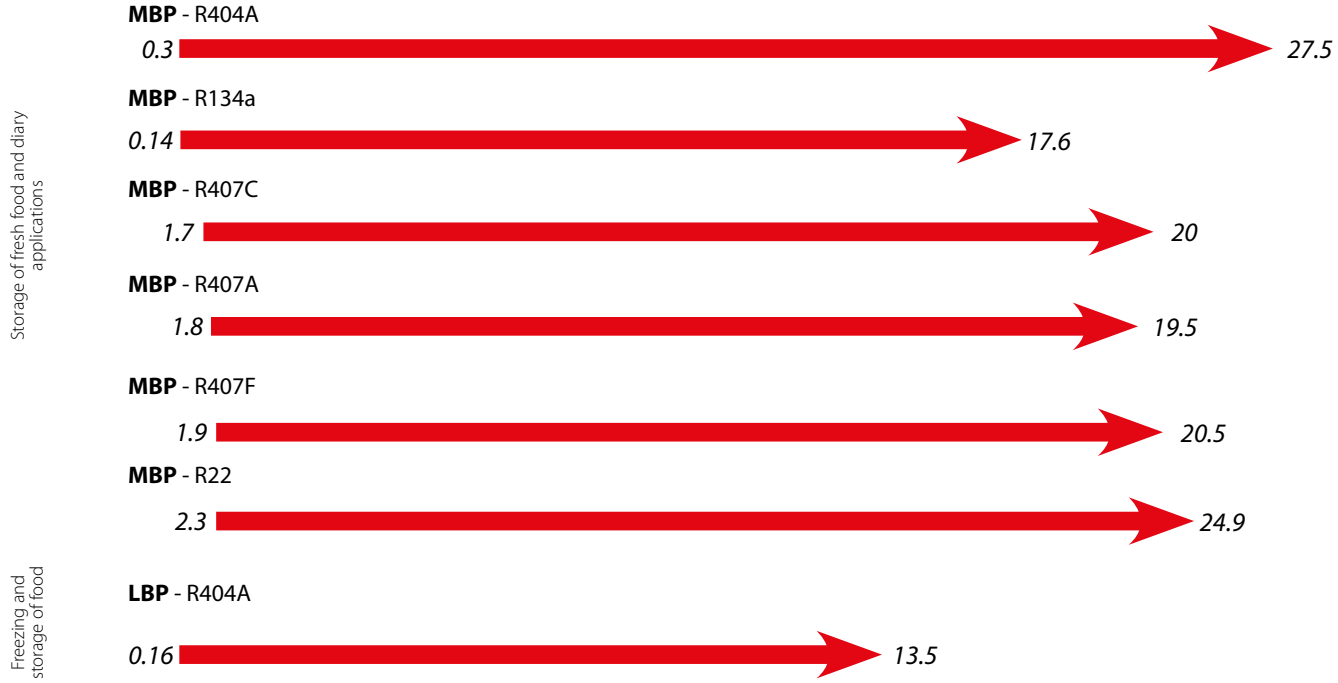
Designation system for the Optyma™ standard programm

(additional programm voltage, frequency etc.: please contact your local wholesaler)



No.	Title	Description	No.	Title	Description
1	Application	H = High and medium evaporating temperature (MBP) L = Low evaporating temperature (LBP)	5	Platform	D = Micro-channel technology
2	Platform or design	J = Condensing unit with reciprocating compressor and one fan N = Condensing unit with scroll compressor and one fan G = Condensing unit with reciprocating compressor and two fans R = Condensing unit with scroll compressor and two fans	6	Product configuration	32 / 40 = See table below
3	Refrigerant	M = R22 - Mineral Z = R134a/R404A/R507 - Polyolester U = R22/R134a/R404A/R507 – Polyvinyl ether			
4	Compressor model	MT and MTZ series for MBP reciprocating compressor NTZ series for LBP scroll compressor MLZ series for MBP scroll compressor	7	Version Electrical code	N = Compressor 230 V/1-ph/60 Hz , fan 230 V/1-ph/60 Hz Q = Compressor 230 V/3-ph/60 Hz , fan 230 V/1-ph/60 Hz R = Compressor 460 V/3-ph/60 Hz , fan 460 V/1-ph/60 Hz

Cooling capacity range [kW]



Test condition	***LBP***	***MBP***
Ambient temperature:	*32 °C*	*32 °C*
Evaporating temperature:	*-25 °C*	*-10 °C*

Superheat and Subcooling depend on compressor type used in condensing units: for details please see cooling capacity tables

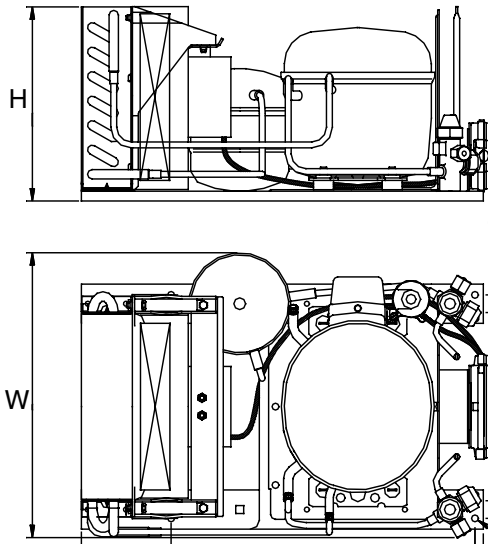
Optyma™ units can work in the following evaporating temperature range:

LBP R404A:	*-40 °C – -10 °C*
MBP R404A:	*-20 – 10 °C*
MBP R407A / R407F:	*-20 – 10 °C*
MBP R134a:	*-15 °C – 15 °C*
MBP R407C:	*-15 °C – 10 °C*

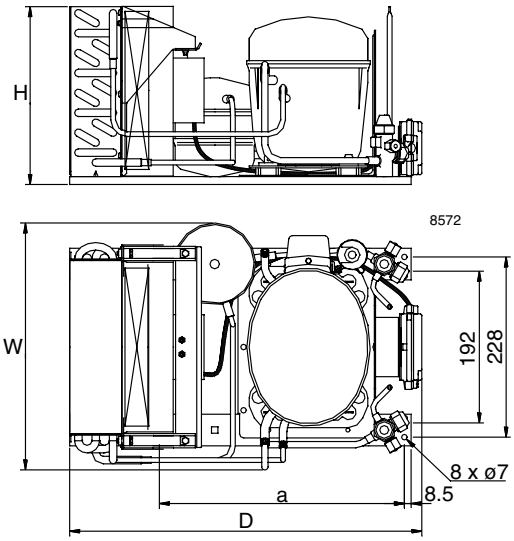
For further detailed information, please contact Danfoss or use dedicated software

Dimensions

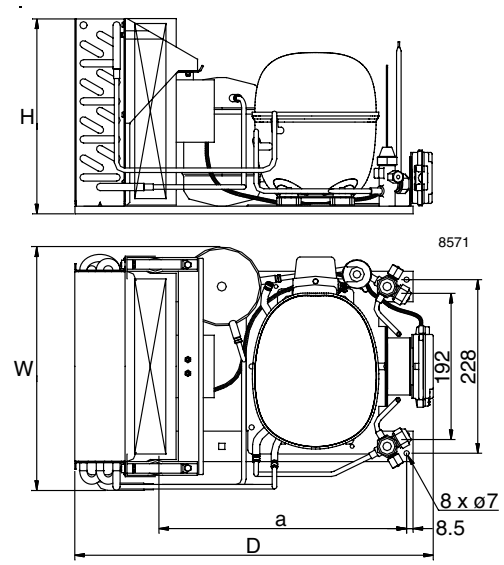
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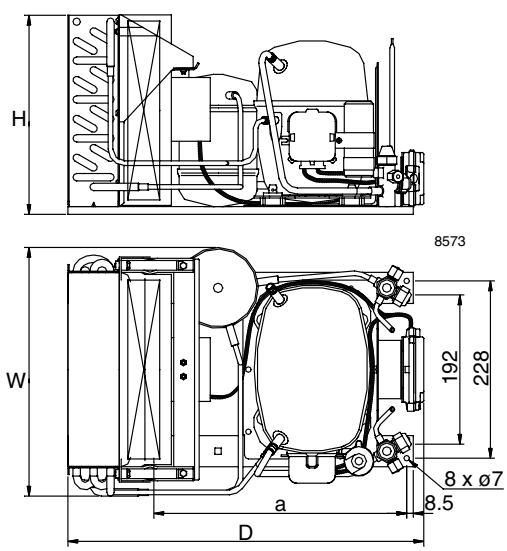
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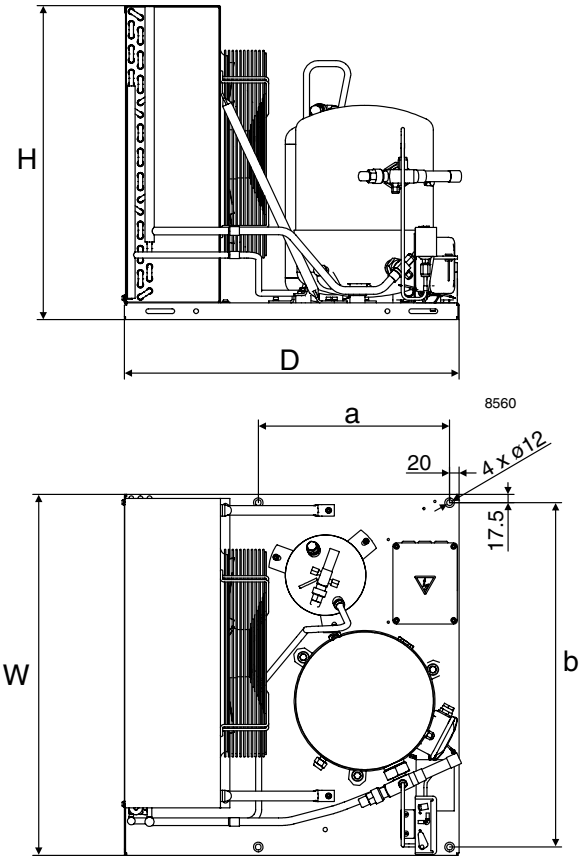
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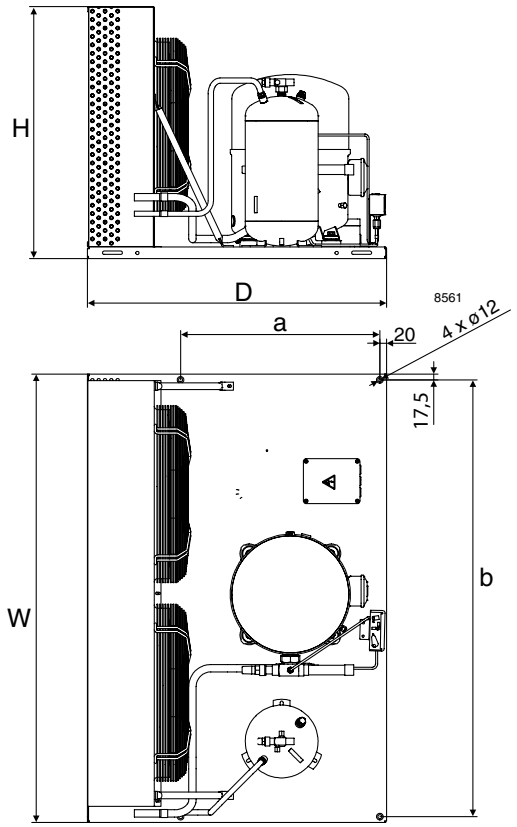


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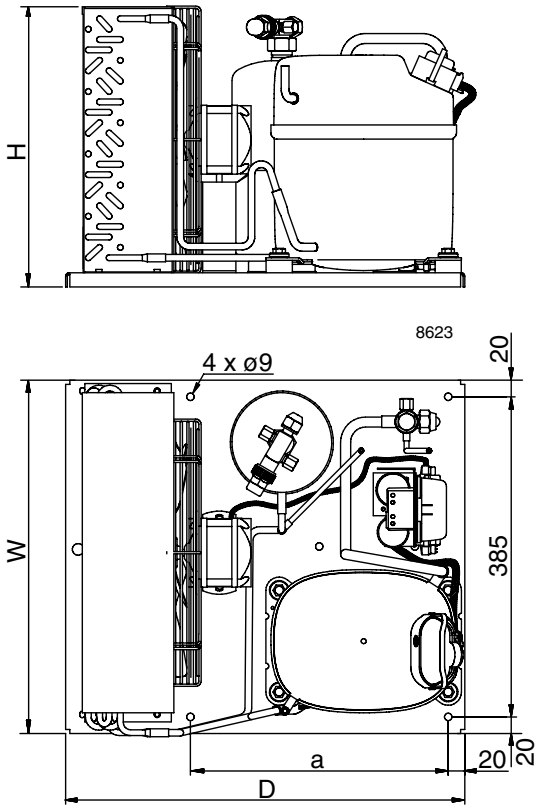


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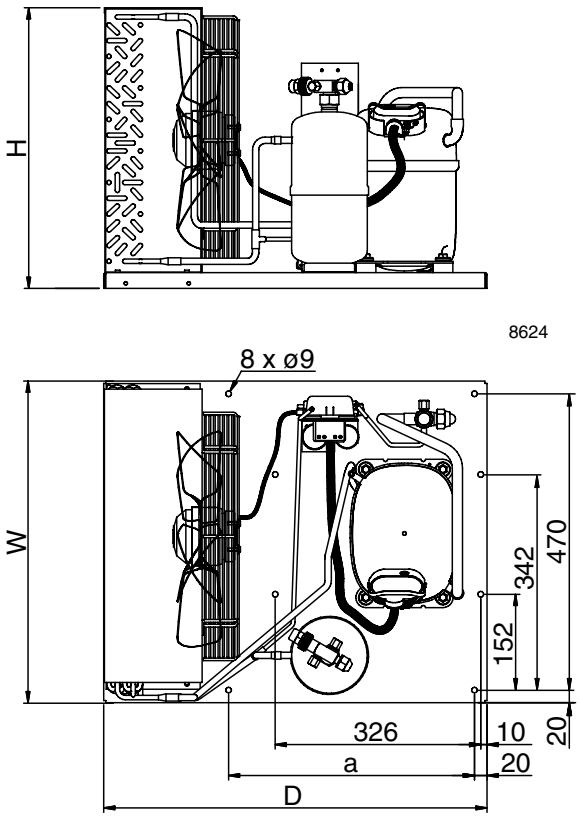
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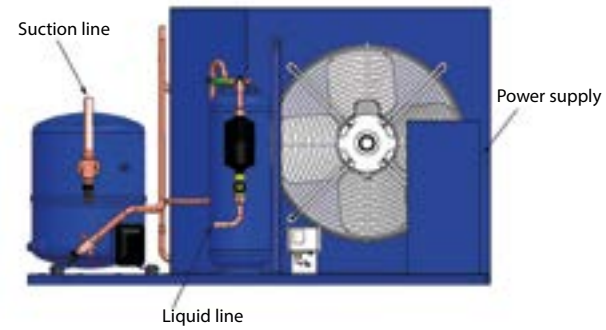
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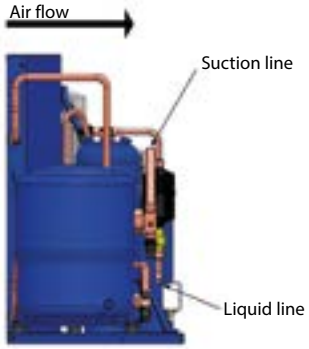
Dimensions

Figure 1A - D32 version (Reciprocating compressor - 1 fan)

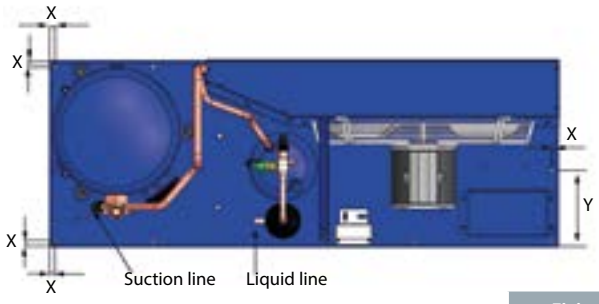
Front view



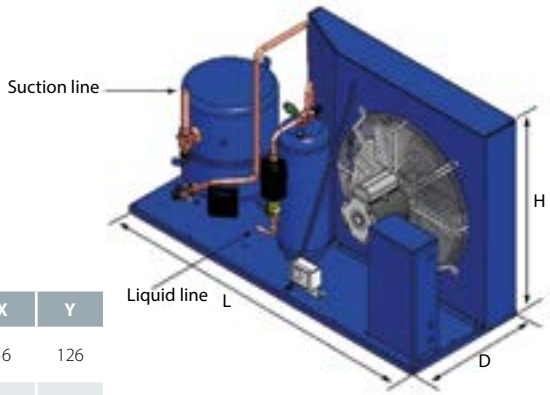
Viewed from rear left



Top view



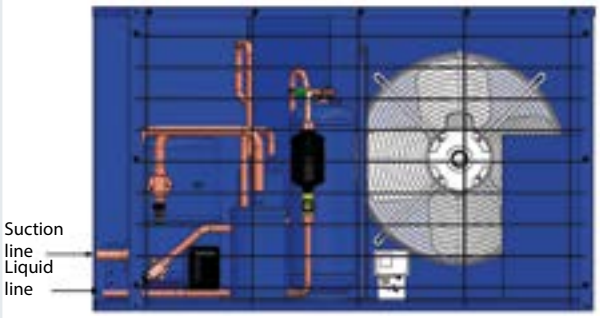
Isometric view



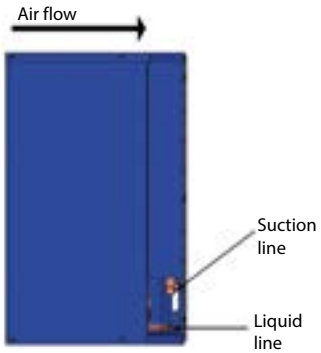
Fixing points	X	Y
OP-HJ...018D to 022D	16	126
OP-HJ...028D to 050D	14	174

Figure 1B - D40 version (Reciprocating compressor - 1 fan)

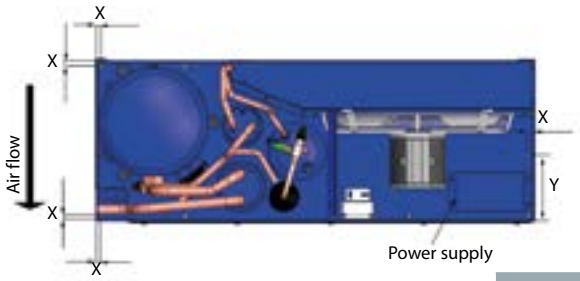
Front view



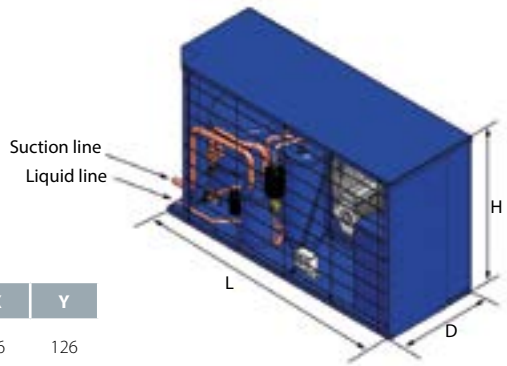
Viewed from rear left



Top view (without cover cap)



Isometric view

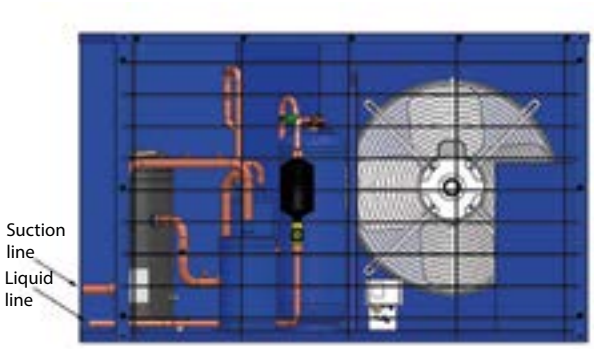


Fixing points	X	Y
OP-HJ...018D to 022D OP-LJ...048D to 068D	16	126
OP-HJ...028D to 050D OP-LJ…108D to 136D	14	174

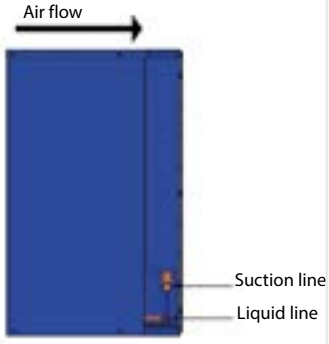
Dimensions

Figure 3A - D40 version (scroll compressor - 1 fan)

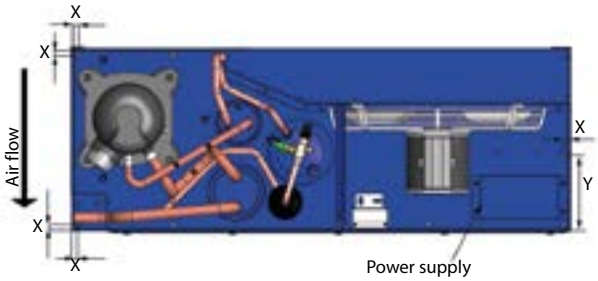
Front view



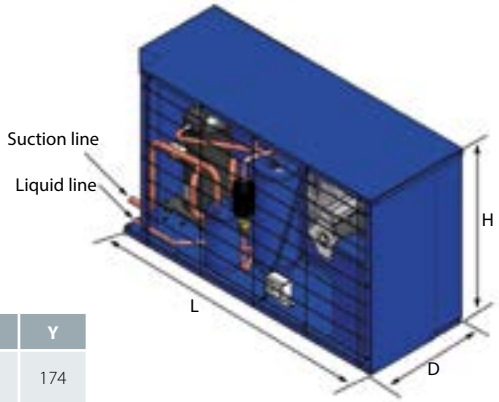
Viewed from rear left



Top view (without cover cap)



Isometric view



Fixing points	X	Y
OP-HNU…015D to 030D	14	174

Figure 2A - D32 version (Reciprocating compressor - 2 fans)

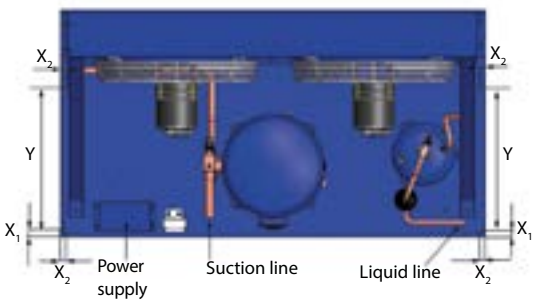
Front view



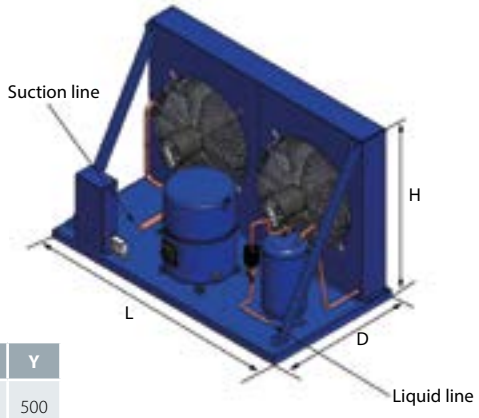
Viewed from rear left



Top view



Isometric view

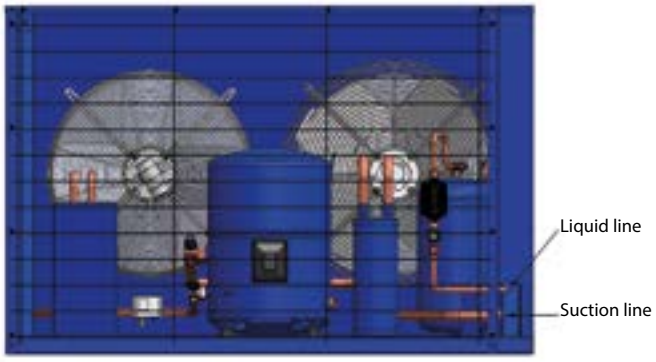


Fixing points	X_1	X_2	Y
OP-HG...064D to 160D	25	20	500

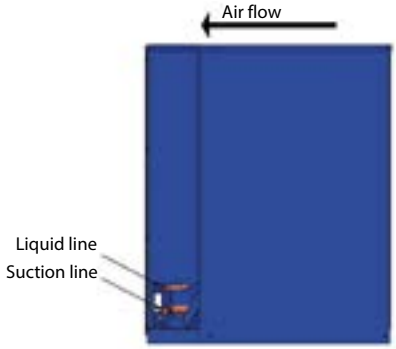
Dimensions

Figure 2B - D40 version (Reciprocating compressor - 2 fans)

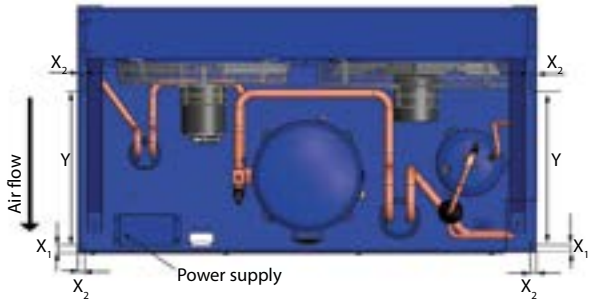
Front view



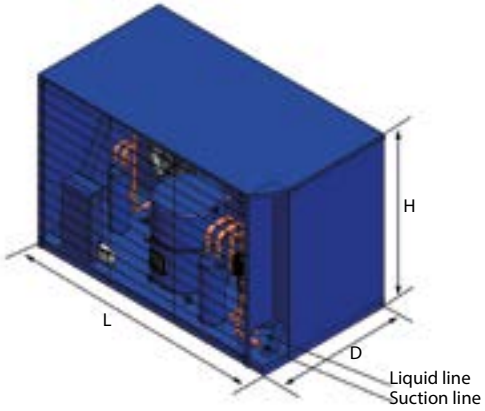
Viewed from rear right



Top view (without cover cap)



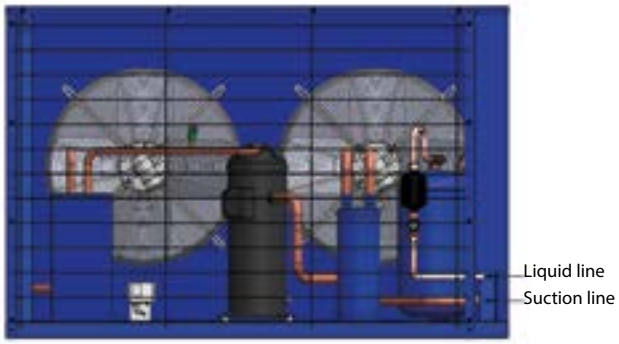
Isometric view



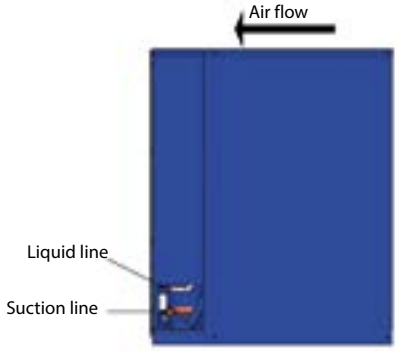
Fixing points	X_1	X_2	Y
OP-HG...064D to 160D OP-LG…215D to 271D	25	20	500

Figure 4A - D40 version (scroll compressor - 2 fans)

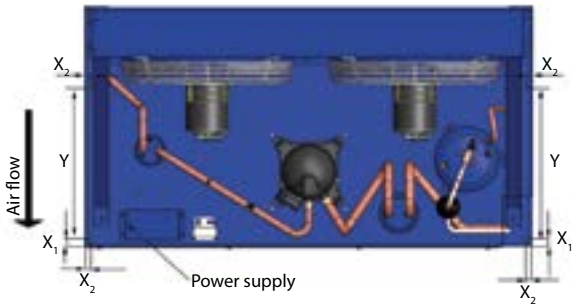
Front view



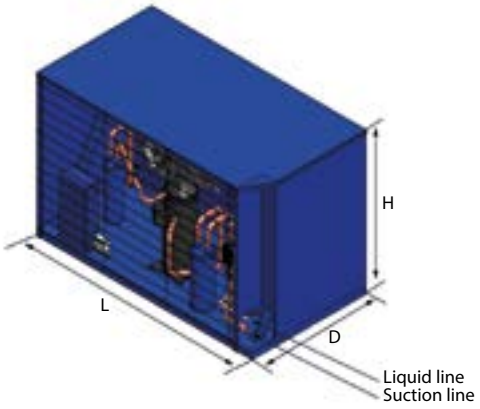
Viewed from rear right



Top view (without cover cap)



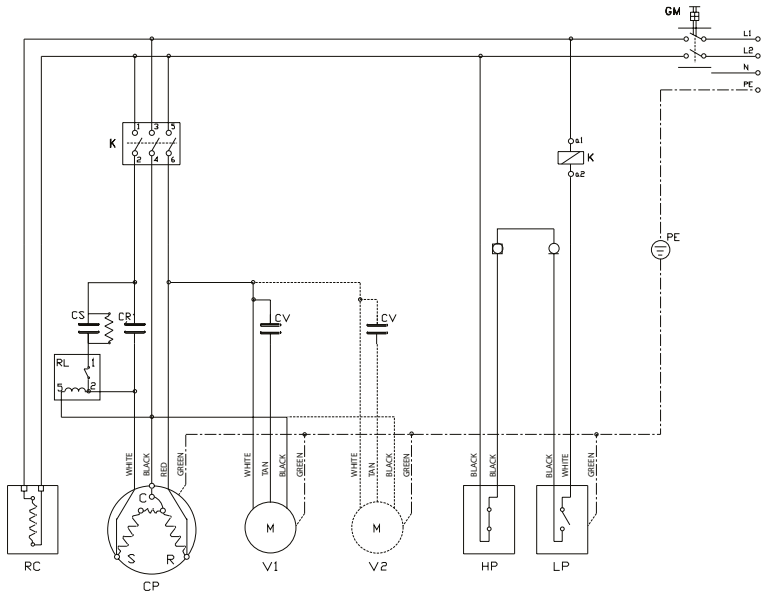
Isometric view



Fixing points	X_1	X_2	Y
OP-HRU…038D to 076D	25	20	500

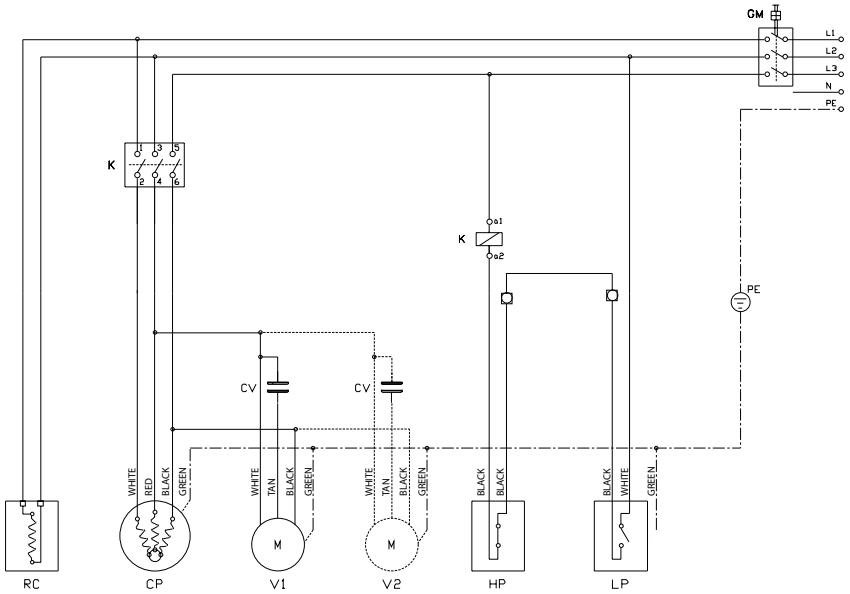
Wiring diagram

Electrical code N - 230 V/1-ph/60 Hz - Units equipped with reciprocating hermetic and scroll compressors



Legend	
CP	Compressor
CR	Run capacitor
CS	Starting capacitor
CV	Fan capacitor
GM	Motor protection
K	Contactor
HP	High-pressure switch
LP	Low-pressure switch
RC	Crankcase heater
RL	Relay
V	Fan

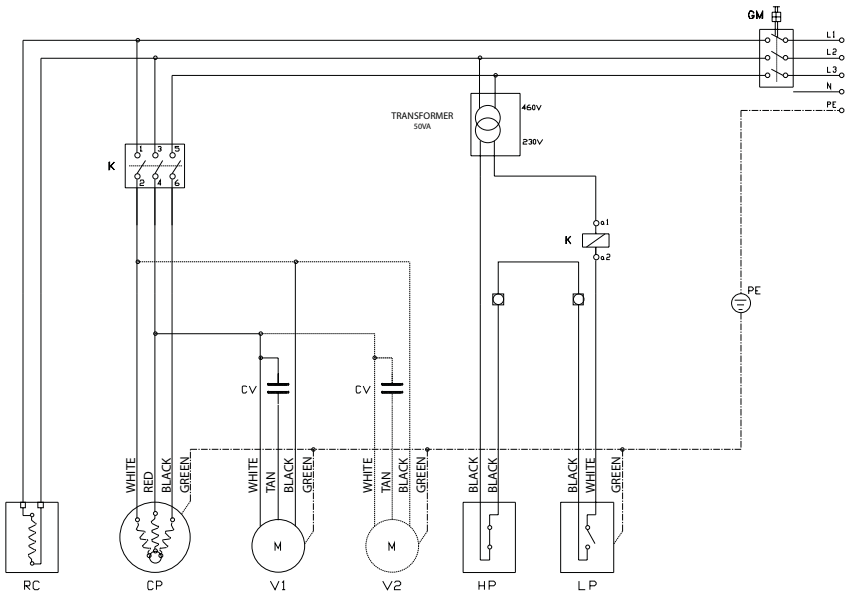
Electrical code Q - 230 V/3-ph/60 Hz - Units equipped with reciprocating hermetic compressors



Legend	
CP	Compressor
CV	Fan capacitor
GH	Motor protection
K	Contactor
HP	High-pressure switch
LP	Low-pressure switch
RC	Crankcase heater
V1-V2	Fan

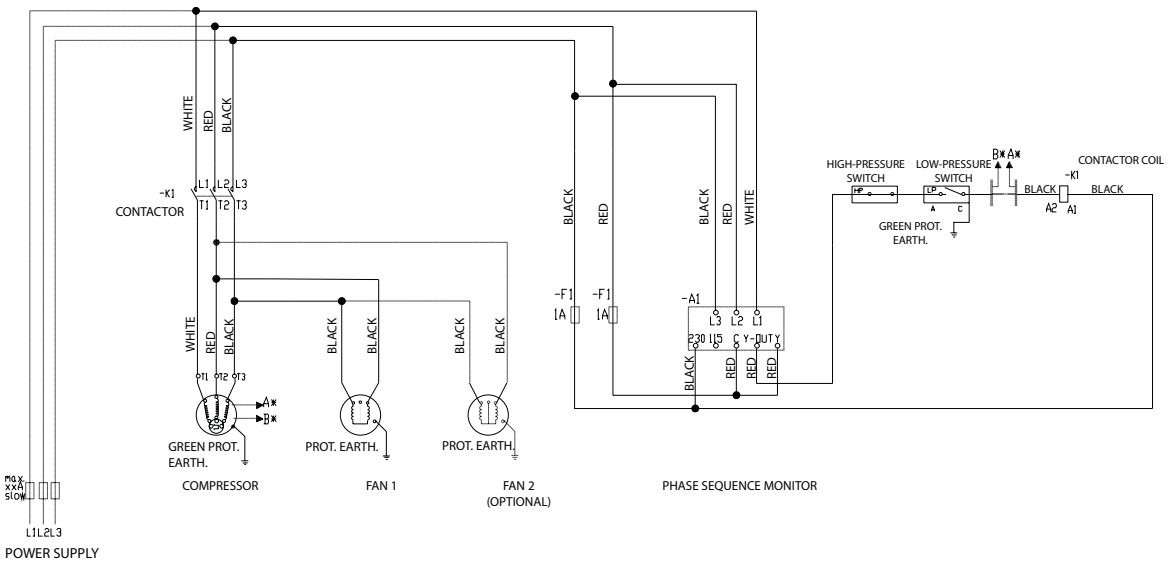
Wiring diagram

Electrical code R - 460 V/3-ph/60 Hz - Units equipped with reciprocating hermetic compressors



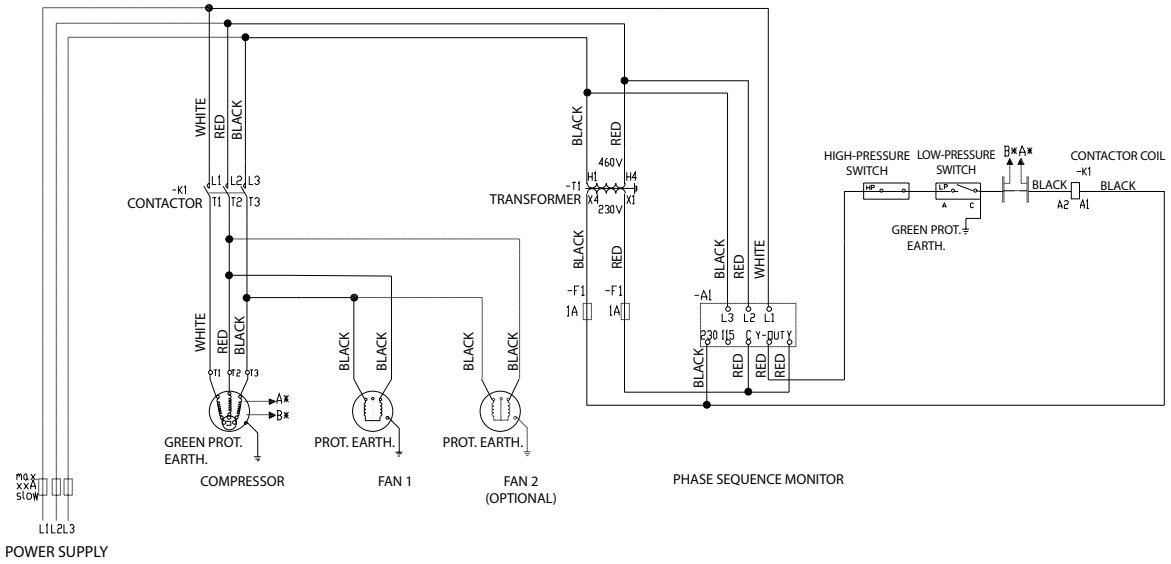
Legend	
CP	Compressor
CV	Fan capacitor
GM	Motor protection
K	Contactor
HP	High-pressure switch
LP	Low-pressure switch
RC	Crankcase heater
V1-V2	Fan

Electrical code Q - 230 V/3-ph/60 Hz - Units equipped with scroll compressors



Wiring diagram

Electrical code R - 460 V/3-ph/60 Hz - Units equipped with scroll compressors



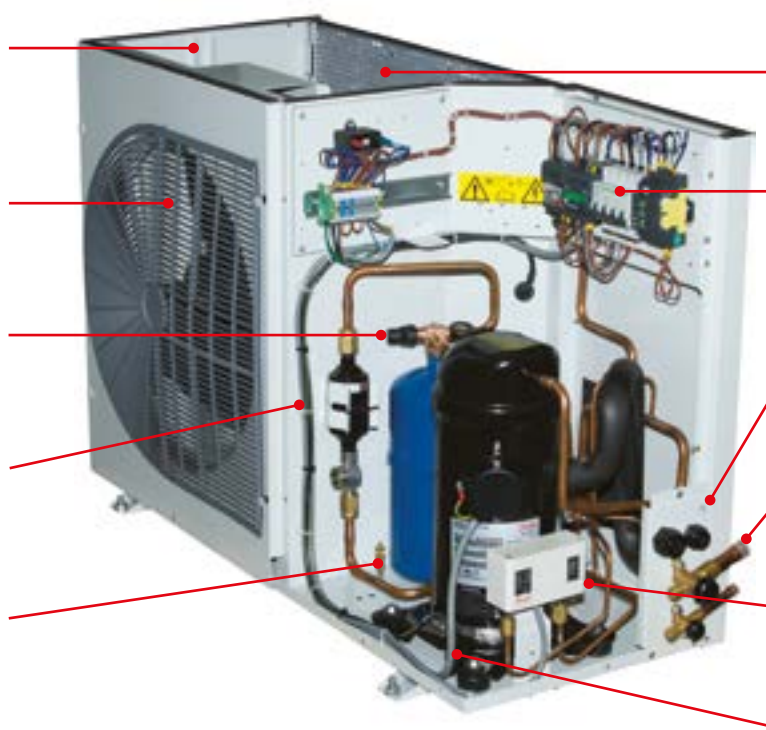
Quick Selection Notes:

Optyma™ **Slim Pack - The cost effective outdoor solution**

Optyma™ **Slim Pack** is the cost effective packaged condensing unit with a new condenser technology - Micro Channel Heat Exchanger. Danfoss has developed Optyma™ **Slim Pack** to meet all customers' needs in MBP and LBP applications.

Reliability, compactness and low cost make the Danfoss Optyma™ **Slim Pack** condensing unit an optimal cooling solution for refrigeration. Dedicated outdoor condensing unit for cold, fermentation and storage rooms in all kinds of convenience stores or restaurants.





Resistance to corrosion of the heat exchanger and housing prolongs the lifetime of the unit

Accessible fan and condenser for easy maintenance

Receiver with shut-off valve makes servicing easier

Filter drier and sight glass protect the unit from moisture, acids and solid particles. Flare connections simplify maintenance

Thanks to Schrader valve the unit is prepared for using different types of fan control

Micro-channel heat exchanger is light and easy to clean

Accessible pre-wired electrical junction panel enables easy servicing

Quick connections accelerate installation: just mount, braze and plug

Accessible service ports on service valves (suction and liquid)

Dual KP17WB pressure control for enhanced safety

Crankcase heater protects the compressor when operating under cold weather conditions

Facts

Applications:
- Mini-markets / supermarkets
- Restaurants
- Wine cellars
- Fish markets
- Butchers' shops
- Bakeries
- Laboratories
- Florists Petrol stations
- Industrial processes
- Milk cooling
- Dairy and general food storage
- Freezers

- System designed to perfectly fit into a compact and light housing. The Optyma™ **Slim Pack** weights up to 87 kg, which makes it the lightest solution in the market
- With quick connections of suction and liquid lines and service ports outside Optyma™ **Slim Pack** is among the fastest and easiest to install. Easy to clean MCHE saves your time and efforts, ensuring longer lifetime and optimized efficiency
- Thanks to weatherproof housing the Optyma™ **Slim Pack** meets outdoor application requirements and completes the Optyma™ range

- We provide the units with highly reliable compressors, micro channel heat exchangers and all needed components which are pre-assembled, integrated and factory tested
- Danfoss Optyma™ **Slim Pack** extends your possibilities with models for low and medium temperatures
- Danfoss Optyma™ **Slim Pack** condensing units meet the Energy related Product (ErP) directive applicable for fan motors

Quick Selection Notes:

Technical data and ordering

Optyma™ Slim Pack - R404A / R507 LBP

Fan	Test conditions	Unit	Code no.	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity range in [W] at evaporating temperature [°C]							Sound power level [dB (A)]	Sound pressure level full sphere 10 m [dB (A)]
							-40 °C	-35 °C	-30 °C	-25 °C	-20 °C	-15 °C	-10 °C		
	SH = 10 K	OP- LSHM015	114X7081	G	SC15CLX.2	27	340	460	590	760	950	1170	1420	63	32
						32	300	400	530	680	860	1070	1300		
						38	240	340	460	600	760	950	1160		
						43	200	290	390	520	670	840	1040		
		OP- LSHM018	114X7082	G	SC18CLX.2	27	370	500	650	830	1030	1270	1540	63	32
						32	320	440	580	750	940	1160	1410		
						38	270	370	500	650	820	1030	1260		
						43	220	310	430	570	730	910	1120		
		OP- LSHM026	114X7085	G	CAJ2446Z	27	500	700	1000	1250	1600	2000	2450	67	36
						32	450	650	850	1150	1450	1800	2200		
						38	–	550	750	1000	1250	1600	1950		
						43	–	450	650	850	1100	1400	1750		
		OP-LSHM034	114X7086	G	CAJ2464Z	27	700	950	1250	1650	2100	2600	3150	68	37
						32	600	850	1150	1500	1900	2350	2900		
						38	500	750	1000	1300	1650	2100	2600		
						43	–	650	850	1150	1500	1850	2300		
		OP-LSHM048	114X7087	G	NTZ048	27	800	1150	1550	2050	2650	3300	4000	71	40
						32	650	1000	1400	1850	2350	2950	3600		
			114X7088	E		38	550	850	1200	1600	2050	2550	3150		
						43	450	700	1000	1350	1750	–	–		
		OP- LSHM074	114X7095	G	FH2511Z	27	1200	1650	2250	2950	3700	4550	5450	71	40
						32	1000	1450	1950	2600	3300	4050	4950		
			114X7096	E	TFH2511Z	38	–	1150	1650	2200	2800	3550	4300		
						43	–	950	1400	1900	2450	3100	3800		
		OP-LSHM068	114X7089	G	NTZ068	27	1350	1850	2450	3100	3850	4650	5550	71	40
						32	1150	1650	2150	2750	3450	4200	5050		
			114X7090	E		38	950	1350	1850	2400	3000	3650	4400		
						43	800	1200	1600	2100	2600	–	–		
		OP-LSHM067	114X7091	E	LLZ013	27	2200	2850	3550	4450	5400	6550	7850	71	40
						32	2050	2600	3300	4100	5000	6050	7250		
						38	1800	2350	2950	3700	4500	5450	6550		
						43	1600	2100	2650	3300	4100	4950	5950		
		OP-LSHM084	114X7092	E	LLZ015	27	2650	3400	4300	5300	6550	7900	9500	73	42
						32	2450	3150	3950	4900	6000	7300	8750		
						38	2200	2800	3550	4400	5400	6550	7850		
						43	1950	2500	3150	3950	4850	5850	7050		
		OP-LSHM098	114X7075	E	LLZ018	27	3100	3950	4950	6150	7550	9100	10900	74	43
						32	2850	3650	4600	5650	6950	8400	10000		
						38	2550	3250	4100	5050	6200	7500	8950		
						43	2250	2900	3650	4550	5550	6700	8050		

Test condition

	SH 10 K
Superheat:	*10 K*
Subcooling:	*0 K*

Electrical code

E: compressor 400 V / 3 phase / 50 Hz, fan 230 V / 1 phase / 50 Hz
G compressor 230 V / 1 phase / 50Hz, fan 230 V / 1 phase / 50 Hz

Power consumption referred at 32 °C ambient temperature

LLZ type compressor models are scroll compressors.
Cooling capacity is given for units with 3-phase compressor.
Capacity of single-phase versions is within ± 1% of this value.

Technical data and ordering

Optyma™ Slim Pack - R404A / R507 LBP

Unitw	Condenser coil			Condenser fan Fan blade Ø [mm]	Receiver volume [L]	Power consumption [W] at evap. temp. -25 °C	Housing	Dimensions [mm]			Line [in]		Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]					Height H	Width W	Depth D	Suction	Liquid	Gross	Net
OP-LSHM015	A7	2200	0.4	365	1.3	600	B1	680	950	443	3/8	3/8	53	41
OP-LSHM018	A7	2200	0.4	365	1.3	720	B1	680	950	443	3/8	3/8	53	41
OP-LSHM026	D7	3300	0.6	450	3.4	900	B2	695	1106	464	1/2	1/2	78	63
OP-LSHM034	D7	3300	0.6	450	3.4	1100	B2	695	1106	464	1/2	1/2	79	64
OP-LSHM048	D7	3300	0.6	450	3.4	1450	B2	695	1106	464	5/8	1/2	74	60
OP-LSHM074	D7	3300	0.6	450	3.4	2100	B2	695	1106	464	5/8	1/2	92 88	77 73
OP-LSHM068	D7	3300	0.6	450	3.4	2150	B2	695	1106	464	5/8	1/2	74	60
OP-LSHM067	G7	5200	1.8	500	6.2	2850	B3	830	1106	464	3/4	1/2	90	73
OP-LSHM084	G7	5200	1.8	500	6.2	3400	B3	830	1106	464	3/4	1/2	90	73
OP-LSHM098	G7	5200	1.8	500	6.2	3850	B3	830	1106	464	3/4	1/2	90	73

Technical data and ordering

Optyma™ Slim Pack - R404A / R507 MBP

Fan	Test conditions	Unit	Code no.	Electrical code	Compressor	Amb. temp. [°C]	Cooling capacity range in [W] at evaporating temperature [°C]							Sound power level [dB (A)]	Sound pressure level full sphere 10 m [dB (A)]
							-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C		
	SH = 10 K	OP-MSHM010	114X7077	G	SC10MLX	27	570	730	920	1140	1410	1710	–	62	31
						32	510	650	820	1030	1270	1550	–		
						38	430	560	710	890	1110	1360	–		
						43	–	480	610	780	970	–	–		
		OP-MSHM012	114X7078	G	SC12MLX	27	700	890	1110	1380	1690	2060	–	62	31
						32	620	790	1000	1240	1530	1870	–		
						38	530	680	860	1080	1340	1640	–		
						43	–	590	750	940	1170	–	–		
		OP-MSHM015	114X7079	G	SC15MLX	27	870	1100	1370	1690	2070	2510	–	63	32
						32	770	980	1230	1540	1890	2300	–		
						38	660	850	1070	1340	1660	2040	–		
						43	–	730	940	1180	1470	–	–		
		OP-MSHM018	114X7080	G	SC18MLX	27	1010	1280	1590	1970	2410	2920	–	63	32
						32	900	1140	1440	1790	2200	2670	–		
						38	770	990	1250	1560	1930	2370	–		
						43	–	860	1090	1370	1710	–	–		
		OP-MSHM024	114X7097	G	CAJ9513Z	27	1400	1800	2300	2800	3400	4100	4800	67	36
						32	1250	1650	2050	2550	3100	3700	4400		
						38	1100	1400	1800	2250	2750	3300	3900		
						43	–	1250	1600	2000	2450	2950	3500		
		OP-MSHM026	114X7083	G	CAJ4517Z	27	1600	2050	2500	3100	3700	4400	5150	67	36
						32	1400	1800	2300	2800	3400	4000	4700		
			114X7093	E	TAJ4517Z	38	1200	1550	2000	2450	3000	3550	4200		
						43	–	1350	1750	2200	2650	3200	3750		
		OP-MSHM034	114X7084	G	CAJ4519Z	27	2000	2550	3100	3750	4450	5250	6100	68	37
						32	1800	2300	2800	3400	4100	4800	5600		
			114X7094	E	TAJ4519Z	38	1550	2000	2500	3000	3600	4250	4950		
						43	–	1750	2200	2700	3250	3800	4450		
		OP-MSUM034	114X7061	G	MLZ015	27	2500	3100	3750	4450	5250	6150	7100	69	38
						32	2250	2800	3400	4050	4800	5650	6550		
			114X7062	E		38	1950	2400	2950	3600	4250	5000	5800		
						43	1650	2100	2600	3150	3750	4450	5200		
		OP-MSUM046	114X7063	G	MLZ021	27	3400	4100	4950	5850	6800	7900	9100	69	38
						32	3100	3750	4500	5350	6250	7250	8400		
			114X7064	E		38	2750	3350	4000	4750	5550	6500	7500		
						43	2400	2950	3550	4200	4950	5800	–		
		OP-MSUM057	114X7065	G	MLZ026	27	4100	4900	5850	6900	8000	9200	10500	69	38
						32	3700	4500	5350	6250	7300	8400	9600		
			114X7066	E		38	3200	3900	4650	5500	6450	7450	8550		
						43	2800	3400	4100	4850	5700	6600	–		
		OP-MSUM068	114X7067	G	MLZ030	27	5400	6600	7950	9500	11200	13100	15200	70	39
						32	4950	6050	7300	8750	10350	12150	14100		
			114X7068	E		38	4400	5400	6550	7850	9300	10950	12800		
						43	3900	4800	5850	7050	8400	9900	11600		
		OP-MSUM080	114X7069	G	MLZ038	27	6300	7700	9250	11000	12950	15100	17500	70	39
						32	5800	7050	8500	10150	11950	13950	16200		
			114X7070	E		38	5100	6250	7550	9050	10700	12550	14600		
						43	4550	5600	6750	8100	9600	11300	13200		
		OP-MSUM099	114X7071	E	MLZ045	27	7400	9000	10800	12800	15000	17400	20000	70	39
						32	6750	8250	9900	11750	13800	16050	18500		
						38	5950	7250	8750	10450	12300	14350	16650		
						43	5250	6400	7750	9300	11000	12900	15000		
		OP-MSUM108	114X7072	E	MLZ048	27	8000	9700	11600	13700	16000	18550	21350	70	39
						32	7300	8850	10600	12550	14700	17050	19700		
						38	6400	7800	9350	11100	13050	15200	17650		
						43	5600	6900	8300	9850	11650	13650	–		

Test condition

	SH 10 K
Superheat:	*10 K*
Subcooling:	*0 K*

Electrical code

E: compressor 400 V / 3 phase / 50 Hz, fan 230 V / 1 phase / 50 Hz
G compressor 220 V / 1phase / 50Hz, fan 220 V / 1phase / 50 Hz

MLZ type compressor models are scroll compressors.Cooling capacity is given for units with 3-phase compressor. Capacity of single-phase versions is within ± 1% of this value

Power consumption referred at 32 °C ambient temperature

Technical data and ordering

Optyma™ Slim Pack - R404A / R507 MBP

Unit	Condenser coil			Condenser fan Fan blade Ø [mm]	Receiver volume [L]	Power consumption [W] at evap. temp.		Housing	Dimensions [mm]			Line [in]		Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]			-10 °C	5 °C		Height H	Width W	Depth D	Suction	Liquid	Gross	Net
OP-MSHM010	A7	2200	0.4	365	1.3	570	680	B1	680	950	443	3/8	1/4	53	41
OP-MSHM012	A7	2200	0.4	365	1.3	660	800	B1	680	950	443	3/8	3/8	53	41
OP-MSHM015	A7	2200	0.4	365	1.3	830	1020	B1	680	950	443	3/8	3/8	53	41
OP-MSHM018	A7	2200	0.4	365	1.3	910	1120	B1	680	950	443	3/8	3/8	53	41
OP-MSHM024	D7	3300	0.6	450	3.4	1050	1300	B2	695	1106	464	1/2	1/2	78	63
OP-MSHM026	D7	3300	0.6	450	3.4	1250	1550	B2	695	1106	464	1/2	1/2	78 76	63 61
OP-MSHM034	D7	3300	0.6	450	3.4	1550	2000	B2	695	1106	464	1/2	1/2	79 78	64 63
OP-MSUM034	D7	3300	0.6	450	3.4	1700	1750	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM046	D7	3300	0.6	450	3.4	2300	2550	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM057	D7	3300	0.6	450	3.4	3050	3450	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM068	G7	5200	1.8	500	6.2	3200	3450	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM080	G7	5200	1.8	500	6.2	3850	4250	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM099	G7	5200	1.8	500	6.2	4800	5400	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM108	G7	5200	1.8	500	6.2	5250	5850	B3	830	1106	464	7/8	1/2	96	87

Technical data and ordering

Optyma™ Slim Pack - R134a MBP

Fan	Test conditions	Unit	Code no.	Electrical code	Compressor	Amb. temp. [°C]	Coling capacity range in [W] at evaporating temperature [°C]						Sound power level [dB (A)]	Sound pressure level full sphere 10 m [dB (A)]
							-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C		
	SH = 10 K	OP-MSUM034	114X7061	G	MLZ015	27	1800	2300	2850	3500	4200	5050	69	38
						32	1700	2150	2700	3300	4000	4800		
			114X7062	E		38	1600	2000	2500	3100	3750	4500		
						43	–	1900	2350	2900	3500	4250		
		OP-MSUM046	114X7063	G	MLZ021	27	2450	3100	3800	4650	5600	6650	69	38
						32	2350	2900	3600	4400	5300	6300		
			114X7064	E		38	2150	2700	3350	4100	4950	5900		
						43	–	2500	3150	3850	4650	5550		
		OP-MSUM057	114X7065	G	MLZ026	27	2950	3750	4600	5600	6700	7950	69	38
						32	2800	3500	4350	5300	6350	7550		
			114X7066	E		38	2600	3250	4050	4900	5900	7050		
						43	2400	3050	3750	4600	5550	6600		
		OP-MSUM068	114X7067	G	MLZ030	27	3750	4700	5850	7150	8650	10400	70	39
						32	3550	4450	5550	6800	8250	9900		
			114X7068	E		38	3300	4150	5150	6350	7750	9300		
						43	3100	3900	4850	6000	7300	8750		
		OP-MSUM080	114X7069	G	MLZ038	27	4350	5500	6800	8350	10050	12000	70	39
						32	4100	5200	6450	7900	9550	11450		
			114X7070	E		38	3800	4800	6000	7400	8950	10700		
						43	3550	4500	5650	6950	8400	10100		
		OP-MSUM099	114X7071	E	MLZ045	27	5350	6750	8350	10200	12300	14600	70	39
						32	5050	6350	7900	9650	11700	13900		
						38	4700	5900	7300	9000	10900	13000		
						43	4400	5500	6850	8400	10200	12200		
		OP-MSUM108	114X7072	E	MLZ048	27	5700	7100	8800	10750	12900	15300	70	39
						32	5350	6700	8300	10150	12250	14550		
						38	4950	6200	7700	9450	11400	13600		
						43	4600	5800	7200	8850	10700	12750		

Test condition

	SH 10 K
Superheat:	*10 K*
Subcooling:	*0 K*

Electrical code

E: compressor 400 V / 3 phase / 50 Hz, fan 230 V / 1 phase / 50 Hz
G compressor 220 V / 1phase / 50Hz, fan 220 V / 1phase / 50 Hz

Power consumption referred at 32 °C ambient temperature

MLZ type compressor models are scroll compressors.Cooling capacity is given for units with 3-phase compressor.
Capacity of single-phase versions is within ± 1% of this value

Technical data and ordering

Optyma™ **Slim Pack - R134a MBP**

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Power consumption [W] at evap. temp.		Housing	Dimensions [mm]			Line [in]		Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		-10 °C	5 °C		Height H	Width W	Depth D	Suction	Liquid	Gross	Net
OP-MSUM034	D7	3300	0.6	450	3.4	1000	1050	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM046	D7	3300	0.6	450	3.4	1300	1450	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM057	D7	3300	0.6	450	3.4	1600	1850	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM068	G7	5200	1.8	500	6.2	1850	2000	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM080	G7	5200	1.8	500	6.2	2250	2450	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM099	G7	5200	1.8	500	6.2	2600	2900	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM108	G7	5200	1.8	500	6.2	2800	3150	B3	830	1106	464	7/8	1/2	96	87

Technical data and ordering

Optyma™ Slim Pack - R407A MBP

Fan	Test conditions	Unit	Code no.	Electrical code	Compressor	Amb. temp. [°C]	Coling capacity range in [W] at evaporating temperature [°C]							Sound power level [dB (A)]	Sound pressure level full sphere 10 m [dB (A)]
							-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C		
	SH = 10 K	OP-MSUM034	114X7061	G	MLZ015	27	2300	2850	3550	4300	5200	6200	7350	69	38
						32	2100	2650	3300	4000	4850	5800	6900		
			114X7062	E		38	1850	2350	2950	3650	4450	5300	6350		
						43	–	2150	2700	3300	4050	4900	5850		
		OP-MSUM046	114X7063	G	MLZ021	27	2950	3700	4550	5550	6600	7850	9150	69	38
						32	2700	3400	4250	5150	6200	7300	8550		
			114X7064	E		38	2400	3100	3850	4700	5650	6700	7850		
						43	–	2750	3450	4250	5150	6150	–		
		OP-MSUM057	114X7065	G	MLZ026	27	3600	4500	5500	6650	7900	9300	10800	69	38
						32	3300	4150	5100	6150	7350	8650	10050		
			114X7066	E		38	2900	3700	4600	5550	6650	7850	9150		
						43	–	3300	4150	5050	6050	7150	–		
		OP-MSUM068	114X7067	G	MLZ030	27	4800	5950	7350	8950	10800	12850	15200	70	39
						32	4500	5550	6850	8350	10100	12050	14300		
			114X7068	E		38	4150	5100	6300	7650	9250	11100	13200		
						43	–	4750	5850	7100	8600	10300	12250		
		OP-MSUM080	114X7069	G	MLZ038	27	5500	6800	8350	10150	12250	14550	17150	70	39
						32	5150	6350	7800	9500	11450	13650	16100		
			114X7070	E		38	4750	5850	7150	8700	10500	12550	14850		
						43	–	5450	6650	8050	9700	11600	13800		
		OP-MSUM099	114X7071	E	MLZ045	27	6500	8200	10150	12350	14850	17600	20650	70	39
						32	5900	7500	9350	11450	13800	16400	19300		
						38	5150	6650	8350	10300	12500	14950	17650		
						43	–	5900	7500	9350	11400	13700	16250		
		OP-MSUM108	114X7072	E	MLZ048	27	7050	8900	11000	13350	16000	18900	22100	70	39
						32	6400	8100	10100	12350	14850	17600	20650		
						38	5600	7200	9000	11100	13450	16000	18900		
						43	–	6350	8100	10050	12200	14650	–		

Test condition

	SH 10 K
Superheat:	*10 K*
Subcooling:	*0 K*

Electrical code

E: compressor 400 V / 3 phase / 50 Hz, fan 230 V / 1 phase / 50 Hz
G compressor 230 V / 1phase / 50Hz, fan 230 V / 1phase / 50 Hz

Power consumption referred at 32 °C ambient temperature

MLZ type compressor models are scroll compressors.Cooling capacity is given for units with 3-phase compressor.
Capacity of single-phase versions is within ± 1% of this value

Technical data and ordering

Optyma™ Slim Pack - R407A MBP *)

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Power consumption [W] at evap. temp.		Housing	Dimensions [mm]			Line [in]		Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		-10 °C	5 °C		Height H	Width W	Depth D	Suction	Liquid	Gross	Net
OP-MSUM034	D7	3300	0.6	450	3.4	1500	1700	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM046	D7	3300	0.6	450	3.4	2200	2650	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM057	D7	3300	0.6	450	3.4	2850	3550	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM068	G7	5200	1.8	500	6.2	2850	3150	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM080	G7	5200	1.8	500	6.2	3350	3750	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM099	G7	5200	1.8	500	6.2	4500	5150	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM108	G7	5200	1.8	500	6.2	5050	5800	B3	830	1106	464	7/8	1/2	96	87

Technical data and ordering

Optyma™ Slim Pack - R407F MBP

Fan	Test conditions	Unit	Code no.	Electrical code	Compressor	Amb. temp. [°C]	Coling capacity range in [W] at evaporating temperature [°C]							Sound power level [dB (A)]	Sound pressure level full sphere 10 m [dB (A)]
							-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C		
	SH = 10 K	OP-MSUM034	114X7061	G	MLZ015	27	2450	3050	3750	4600	5500	6600	7750	69	38
						32	2250	2850	3500	4300	5150	6200	7300		
			114X7062	E		38	–	2550	3200	3900	4750	5650	6700		
						43	–	–	–	–	–	–	–		
		OP-MSUM046	114X7063	G	MLZ021	27	3150	3950	4850	5900	7050	8300	9650	69	38
						32	2900	3650	4550	5500	6550	7750	9050		
			114X7064	E		38	–	3300	4100	5000	6000	–	–		
						43	–	–	–	–	–	–	–		
		OP-MSUM057	114X7065	G	MLZ026	27	3850	4800	5850	7050	8400	9800	11350	69	38
						32	3550	4450	5450	6550	7800	9150	10600		
			114X7066	E		38	–	–	4900	5950	7050	–	–		
						43	–	–	–	–	–	–	–		
		OP-MSUM068	114X7067	G	MLZ030	27	5150	6400	7850	9500	11400	13600	16000	70	39
						32	4850	6000	7350	8900	10750	12800	15100		
			114X7068	E		38	–	5550	6800	8250	9900	11800	14000		
						43	–	–	–	–	–	–	–		
		OP-MSUM080	114X7069	G	MLZ038	27	5900	7300	8900	10800	12950	15350	18050	70	39
						32	5550	6850	8350	10150	12150	14450	17000		
			114X7070	E		38	–	6350	7700	9350	11200	13350	15750		
						43	–	–	–	–	–	–	–		
		OP-MSUM099	114X7071	E	MLZ045	27	7000	8750	10800	13100	15700	18550	21700	70	39
						32	6350	8050	10000	12200	14650	17350	20350		
						38	–	7150	9000	11050	13300	15850	18700		
						43	–	–	–	–	–	–	–		
		OP-MSUM108	114X7072	E	MLZ048	27	7550	9500	11700	14150	16900	19950	23250	70	39
						32	6900	8700	10800	13100	15750	18600	21750		
						38	–	7750	9650	11850	14300	–	–		
						43	–	–	–	–	–	–	–		

Test condition

	SH 10 K
Superheat:	*10 K*
Subcooling:	*0 K*

Electrical code

E: compressor 400 V / 3 phase / 50 Hz, fan 230 V / 1 phase / 50 Hz
G compressor 230 V / 1phase / 50Hz, fan 230 V / 1phase / 50 Hz

Power consumption referred at 32 °C ambient temperature

MLZ type compressor models are scroll compressors.Cooling capacity is given for units with 3-phase compressor.
Capacity of single-phase versions is within ± 1% of this value

Technical data and ordering

Optyma™ Slim Pack - R407F MBP *)

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Power consumption [W] at evap. temp.		Housing	Dimensions [mm]			Line [in]		Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		-10 °C	5 °C		Height H	Width W	Depth D	Suction	Liquid	Gross	Net
OP-MSUM034	D7	3300	0.6	450	3.4	1600	1850	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM046	D7	3300	0.6	450	3.4	2400	2900	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM057	D7	3300	0.6	450	3.4	3150	3900	B2	695	1106	464	3/4	1/2	74	66
OP-MSUM068	G7	5200	1.8	500	6.2	3050	3400	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM080	G7	5200	1.8	500	6.2	3600	4050	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM099	G7	5200	1.8	500	6.2	4900	5650	B3	830	1106	464	7/8	1/2	96	87
OP-MSUM108	G7	5200	1.8	500	6.2	5500	6400	B3	830	1106	464	7/8	1/2	96	87

Technical data and ordering

Optyma™ Slim Pack - MBP

Electrical characteristics - 230 V / 1phase - 50 Hz

Unit	Wiring diagram	LRA compressor (A) 230 V / 1 phase	MCC compressor (A) 230 V / 1 phase	Max cont. power consumption (kW)	MCC Fan (A) 230 V / 1 phase	Fan Power [W]
OP-MSHM010	WD 1	18.4	4.8	0.78	0.32	1x25
OP-MSHM012		23.4	5.7	0.93	0.32	1x25
OP-MSHM015		23.5	6.2	1.17	0.32	1x25
OP-MSHM018	WD 2	23.6	6.1	1.28	0.32	1x25
OP-MSHM024		33.5	10.2	1.75	0.47	1x68
OP-MSHM026		38.5	12.7	2	0.47	1x68
OP-MSHM034		45.0	15.2	2.74	0.47	1x68
OP-MSUM034	WD 3	60	19	2.53	0.47	1x68
OP-MSUM046		97	25	3.38	0.47	1x68
OP-MSUM057		97	26	4.42	0.47	1x68
OP-MSUM068	WD 4	127	32	4.89	0.97	1x130
OP-MSUM080		130	38	5.77	0.97	1x130

Optyma™ Slim Pack - MBP

Electrical characteristics - 400 V / 3phase - 50 Hz

Unit	Wiring diagram	LRA compressor (A) 400 V / 3phase	MCC compressor (A) 400 V / 3phase	Max cont. power consumption (kW)	MCC Fan (A) 230 V / 1 phase	Fan Power [W]
OP-MSHM026	WD 7	18	4	2.09	0.47	1x68
OP-MSHM034		22	4.8	2.7	0.47	1x68
OP-MSUM034	WD 6	30	7	2.73	0.47	1x68
OP-MSUM046		45	9.5	3.33	0.47	1x68
OP-MSUM057		45	10	4.14	0.47	1x68
OP-MSUM068	WD 5	60	13	4.88	0.97	1x130
OP-MSUM080		70	15	5.78	0.97	1x130
OP-MSUM099		82	15	7.01	0.97	1x130
OP-MSUM108		87	16	7.55	0.97	1x130

Note:
LRA: Locked Rotor Amps
MCC: Maximum Continuous Current

Optyma™ Slim Pack - MBP

Spare parts

Unit	Compressor			Filter drier *)		Sight glass		Receiver [L]		Condenser	Dual Pressure switch	
	Model	1 phase	3 phases									
OP-MSHM010	SC10MLX	195B0345	–	DML083	023Z5040	SGP 10s N	014L0182	1,3	118U3474	118U3492	KP 17 WB	060-539766
OP-MSHM012	SC12MLX	195B0323	–	DML083	023Z5040	SGP 10s N	014L0182	1,3	118U3474	118U3492	KP 17 WB	060-539766
OP-MSHM015	SC15MLX	195B0391	–	DML083	023Z5040	SGP 10s N	014L0182	1,3	118U3474	118U3492	KP 17 WB	060-539766
OP-MSHM018	SC18MLX	195B0624	–	DML083	023Z5040	SGP 10s N	014L0182	1,3	118U3474	118U3492	KP 17 WB	060-539766
OP-MSHM024	CAJ9513Z	118U3912	–	DML084	023Z5041	SGP 12 N	014L0173	3,4	118U3475	118U3493	KP 17 WB	060-539766
OP-MSHM026	CAJ4517Z / TAJ4517Z	118U3810	118U3770	DML084	023Z5041	SGP 12 N	014L0173	3,4	118U3475	118U3493	KP 17 WB	060-539766
OP-MSHM034	CAJ4519Z / TAJ4519Z	118U3811	118U3751	DML084	023Z5041	SGP 12 N	014L0173	3,4	118U3475	118U3493	KP 17 WB	060-539766
OP-MSUM034	MLZ015	121U8024	121U8002	DML084	023Z5041	SGP 12 N	014L0173	3,4	118U3475	118U3493	KP 17 WB	060-539766
OP-MSUM046	MLZ021	121U8028	121U8006	DML084	023Z5041	SGP 12 N	014L0173	3,4	118U3475	118U3493	KP 17 WB	060-539766
OP-MSUM057	MLZ026	121U8030	121U8008	DML084	023Z5041	SGP 12 N	014L0173	3,4	118U3475	118U3493	KP 17 WB	060-539766
OP-MSUM068	MLZ030	121U8032	121U8010	DML164	023Z5044	SGP 12 N	014L0173	6,2	118U3476	118U3494	KP 17 WB	060-539766
OP-MSUM080	MLZ038	121U8034	121U8012	DML164	023Z5044	SGP 12 N	014L0173	6,2	118U3476	118U3494	KP 17 WB	060-539766
OP-MSUM099	MLZ045	–	121U8014	DML164	023Z5044	SGP 12 N	014L0173	6,2	118U3476	118U3494	KP 17 WB	060-539766
OP-MSUM108	MLZ048	–	121U8016	DML164	023Z5044	SGP 12 N	014L0173	6,2	118U3476	118U3494	KP 17 WB	060-539766

**) Filter drier DCL (appropriate model and size) can be used as a service replacememnt of DML*

Technical data and ordering

Optyma™ **Slim Pack - MBP**

Spare parts

Unit	Fan capacitor [µF]		Fan motor [W] (capacitor not included)		Fan blad [mm]		Fan grill		Crankcase heater		Suction valve		Liquid valve	
OP-MSHM010	1.8	118U3296	25	118U3477	365	118U3480	B1	118U3483	Belt 50 W	120Z0057	3/8" brazed	118U3414	1/4" brazed	118U3413
OP-MSHM012	1.8	118U3296	25	118U3477	365	118U3480	B1	118U3483	Belt 50 W	120Z0057	3/8" brazed	118U3414	3/8" brazed	118U3414
OP-MSHM015	1.8	118U3296	25	118U3477	365	118U3480	B1	118U3483	Belt 50 W	120Z0057	3/8" brazed	118U3414	3/8" brazed	118U3414
OP-MSHM018	1.8	118U3296	25	118U3477	365	118U3480	B1	118U3483	Belt 50 W	120Z0057	3/8" brazed	118U3414	3/8" brazed	118U3414
OP-MSHM024	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 50 W	120Z0057	1/2" brazed	118U3761	1/2" brazed	118U3761
OP-MSHM026	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 50 W	120Z0057	1/2" brazed	118U3761	1/2" brazed	118U3761
OP-MSHM034	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 50 W	120Z0057	1/2" brazed	118U3761	1/2" brazed	118U3761
OP-MSUM034	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 70 W	120Z5040	3/4" brazed	118U3762	1/2" brazed	118U3761
OP-MSUM046	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 70 W	120Z5040	3/4" brazed	118U3762	1/2" brazed	118U3761
OP-MSUM057	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 70 W	120Z5040	3/4" brazed	118U3762	1/2" brazed	118U3761
OP-MSUM068	5	included	130	Full fan assembly *) 118U3829 (500 mm)			B3	118U3485	Belt 70 W	120Z5040	7/8" brazed	118U3763	1/2" brazed	118U3761
OP-MSUM080	5	included	130	Full fan assembly *) 118U3829 (500 mm)			B3	118U3485	Belt 70 W	120Z5040	7/8" brazed	118U3763	1/2" brazed	118U3761
OP-MSUM099	5	included	130	Full fan assembly *) 118U3829 (500 mm)			B3	118U3485	Belt 70 W	120Z5040	7/8" brazed	118U3763	1/2" brazed	118U3761
OP-MSUM108	5	included	130	Full fan assembly *) 118U3829 (500 mm)			B3	118U3485	Belt 70 W	120Z5040	7/8" brazed	118U3763	1/2" brazed	118U3761

**) For B3 models produced before the 26th week of 2014 fan parts are the following:*
Fan capacitor - 118U3298 (6 µF)
Fan motor - 118U3479 (130 W)
Fan blade - 118U3833 (f24")

Optyma™ **Slim Pack - MBP**

Accessory

Unit	Acoustic hood	Fan speed control	Oil
OP-MSHM010	N/A	061H3142	N/A
OP-MSHM012	N/A	061H3142	N/A
OP-MSHM015	N/A	061H3142	N/A
OP-MSHM018	N/A	061H3142	N/A
OP-MSHM024	N/A	061H3142	N/A
OP-MSHM026	N/A	061H3142	N/A
OP-MSHM034	N/A	061H3142	N/A
OP-MSUM034	120Z5043	061H3142	120Z5034
OP-MSUM046	120Z5043	061H3142	120Z5034
OP-MSUM057	120Z5043	061H3142	120Z5034
OP-MSUM068	120Z5044	061H3142	120Z5034
OP-MSUM080	120Z5044	061H3142	120Z5034
OP-MSUM099	120Z5044	061H3142	120Z5034
OP-MSUM108	120Z5044	061H3142	120Z5034

Technical data and ordering

Optyma™ **Slim Pack - LBP**

Electrical characteristics - 230 V / 1phase - 50 Hz

Unit	Wiring diagram	LRA compressor [A] 230 V / 1 phase	MCC compressor [A] 230 V / 1 phase	Max cont. power consumption [kW]	MCC Fan [A] 230 V /1 phase	Fan Power [kW]
OP-LSHM015	WD 1	19.6	4.7	0.95	0.32	1x25
OP-LSHM018		23.5	5.3	1.07	0.32	1x25
OP-LSHM026	WD 2	29	7.9	1.4	0.47	1x68
OP-LSHM034		40	10	1.87	0.47	1x68
OP-LSHM048		37	11	2.19	0.47	1x68
OP-LSHM074		81	24	3.45	0.47	1x68
OP-LSHM068		53	17	3.62	0.47	1x68

Optyma™ **Slim Pack - LBP**

Electrical characteristics - 400 V / 3phase - 50 Hz

Unit	Wiring diagram	LRA compressor [A] 400 V / 3 phase	MCC compressor [A] 400 V / 3 phase	Max cont. power consumption [kW]	MCC Fan [A] 230 V / 1 phase	Fan Power [kW]
OP-LSHM048	WD 7	16	4.8	2.28	0.47	1x68
OP-LSHM074		28	7.2	3.34	0.47	1x68
OP-LSHM068		25	8.4	3.57	0.47	1x68
OP-LSHM067	WD5	62	12	4.59	0.97	1x130
OP-LSHM084		88.5	15	5.49	0.97	1x130
OP-LSHM098		90	14.4	6.2	0.97	1x130

Note:
LRA: Locked Rotor Amps
MCC: Maximum Continuous Current

Optyma™ **Slim Pack - LBP**

Spare parts

Unit	Compressor			Filter drier *)		Sight glass		Receiver [L]		Condenser	Dual Pressure switch	
	Model	1 phase	3 phases									
OP-LSHM015	SC15CLX.2	195B0399	–	DML083	023Z5040	SGP 10s N	014L0182	1.3	118U3474	118U3492	KP 17 WB	060-539766
OP-LSHM018	SC18CLX.2	195B0332	–	DML083	023Z5040	SGP 10s N	014L0182	1.3	118U3474	118U3492	KP 17 WB	060-539766
OP-LSHM026	CAJ2446Z	118U3779	–	DML084	023Z5041	SGP 12 N	014L0173	3.4	118U3475	118U3493	KP 17 WB	060-539766
OP-LSHM034	CAJ2464Z	118U3769	–	DML084	023Z5041	SGP 12 N	014L0173	3.4	118U3475	118U3493	KP 17 WB	060-539766
OP-LSHM048	NTZ048	120F0087	120F0001	DML084	023Z5041	SGP 12 N	014L0173	3.4	118U3475	118U3493	KP 17 WB	060-539766
OP-LSHM074	FH2511Z	118U3914	–	DML084	023Z5041	SGP 12 N	014L0173	3.4	118U3475	118U3493	KP 17 WB	060-539766
	TFH2511Z	–	118U3915	DML084	023Z5041	SGP 12 N	014L0173	3.4	118U3475	118U3493	KP 17 WB	060-539766
OP-LSHM068	NTZ068	120F0088	120F0002	DML084	023Z5041	SGP 12 N	014L0173	3.4	118U3475	118U3493	KP 17 WB	060-539766
OP-LSHM067	LLZ013	–	121L9517	DML164	023Z5044	SGP 12 N	014L0173	6.2	118U3476	118U3494	KP 17 WB	060-539766
OP-LSHM084	LLZ015	–	121L9513	DML164	023Z5044	SGP 12 N	014L0173	6.2	118U3476	118U3494	KP 17 WB	060-539766
OP-LSHM098	LLZ018	–	121L9509	DML164	023Z5044	SGP 12 N	014L0173	6.2	118U3476	118U3494	KP 17 WB	060-539766

**) Filter drier DCL (appropriate model and size) can be used as a service replacememnt of DML*

Technical data and ordering

Optyma™ Slim Pack - LBP

Spare parts

Unit	Fan capacitor [µF]		Fan motor [W] (capacitor not included)		Fan blade [mm]		Fan grill		Crankcase heater		Suction valve		Liquid valve	
OP-LSHM015	1.8	118U3296	25	118U3477	365	118U3480	B1	118U3483	Belt 50 W	120Z0057	3/8" brazed	118U3414	3/8" brazed	118U3414
OP-LSHM018	1.8	118U3296	25	118U3477	365	118U3480	B1	118U3483	Belt 50 W	120Z0057	3/8" brazed	118U3414	3/8" brazed	118U3414
OP-LSHM026	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 50 W	120Z0057	1/2" brazed	118U3761	1/2" brazed	118U3761
OP-LSHM034	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	Belt 50 W	120Z0057	1/2" brazed	118U3761	1/2" brazed	118U3761
OP-LSHM048	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	PTC 35 W	120Z0459	5/8" brazed	118U3764	1/2" brazed	118U3761
OP-LSHM074	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	PTC 35 W	120Z0459	5/8" brazed	118U3764	1/2" brazed	118U3761
OP-LSHM068	3.5	118U3297	68	118U3823	450	118U3481	B2	118U3484	PTC 35 W	120Z0459	5/8" brazed	118U3764	1/2" brazed	118U3761
OP-LSHM067	5	included	130	Full fan assembly *) 118U3829 (500 mm)			B3	118U3485	Belt 70 W	120Z5040	3/4" brazed	118U3762	1/2" brazed	118U3761
OP-LSHM084	5	included	130	Full fan assembly *) 118U3829 (500 mm)			B3	118U3485	Belt 70 W	120Z5040	3/4" brazed	118U3762	1/2" brazed	118U3761
OP-LSHM098	5	included	130	Full fan assembly *) 118U3829 (500 mm)			B3	118U3485	Belt 70 W	120Z5040	3/4" brazed	118U3762	1/2" brazed	118U3761

**) For B3 models produced before the 26th week of 2014 fan parts are the following:*
Fan capacitor - 118U3298 (6 µF)
Fan motor - 118U3479 (130 W)
Fan blade - 118U3833 (f24")

Optyma™ Slim Pack - LBP

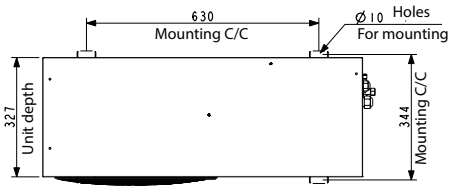
Accessory

Unit	Acoustic hood	Fan speed control	Oil
OP-LSHM015	N/A	061H3142	N/A
OP-LSHM018	N/A	061H3142	N/A
OP-LSHM026	N/A	061H3142	N/A
OP-LSHM034	N/A	061H3142	N/A
OP-LSHM048	120Z0471	061H3142	7754019
OP-LSHM074	N/A	061H3142	N/A
OP-LSHM068	120Z0471	061H3142	7754019
OP-LSHM067	120Z5052 **)	061H3142	120Z5034
OP-LSHM084	120Z5052 **)	061H3142	120Z5034
OP-LSHM098	120Z5052 **)	061H3142	120Z5034

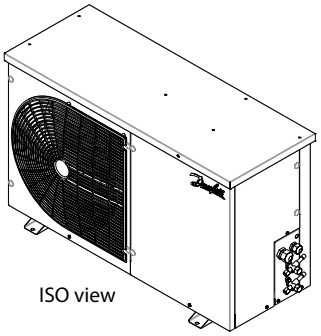
***) Acoustic hood is included*

Dimensions

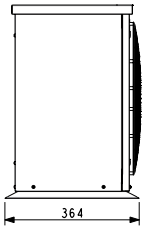
Housing B1



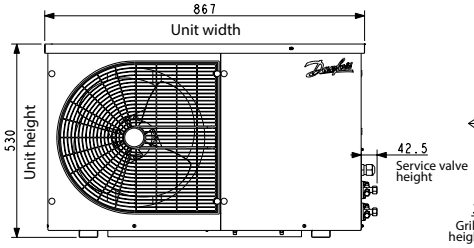
Top view



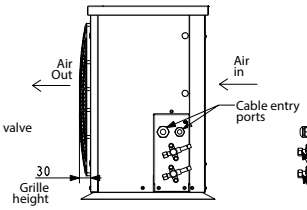
ISO view



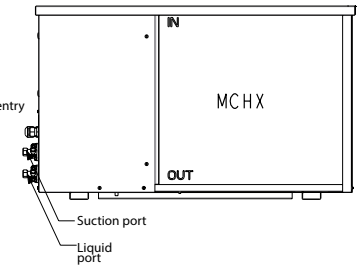
LH view



Front view

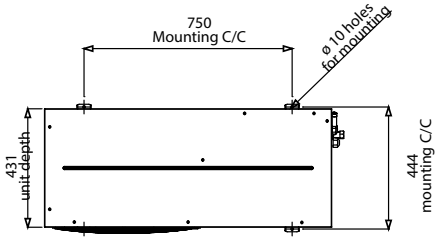


RH view

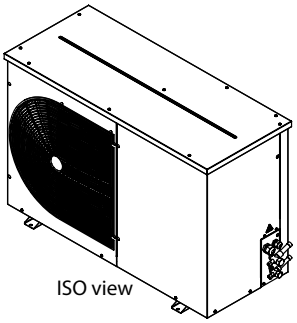


Back view

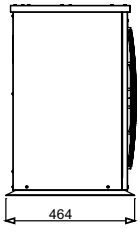
Housing B2



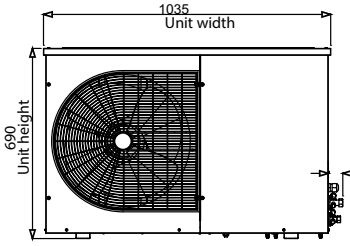
Top view



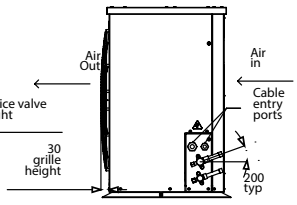
ISO view



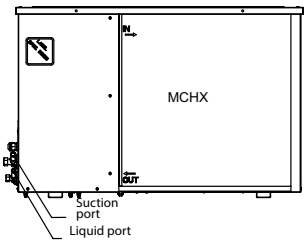
LH view



Front view



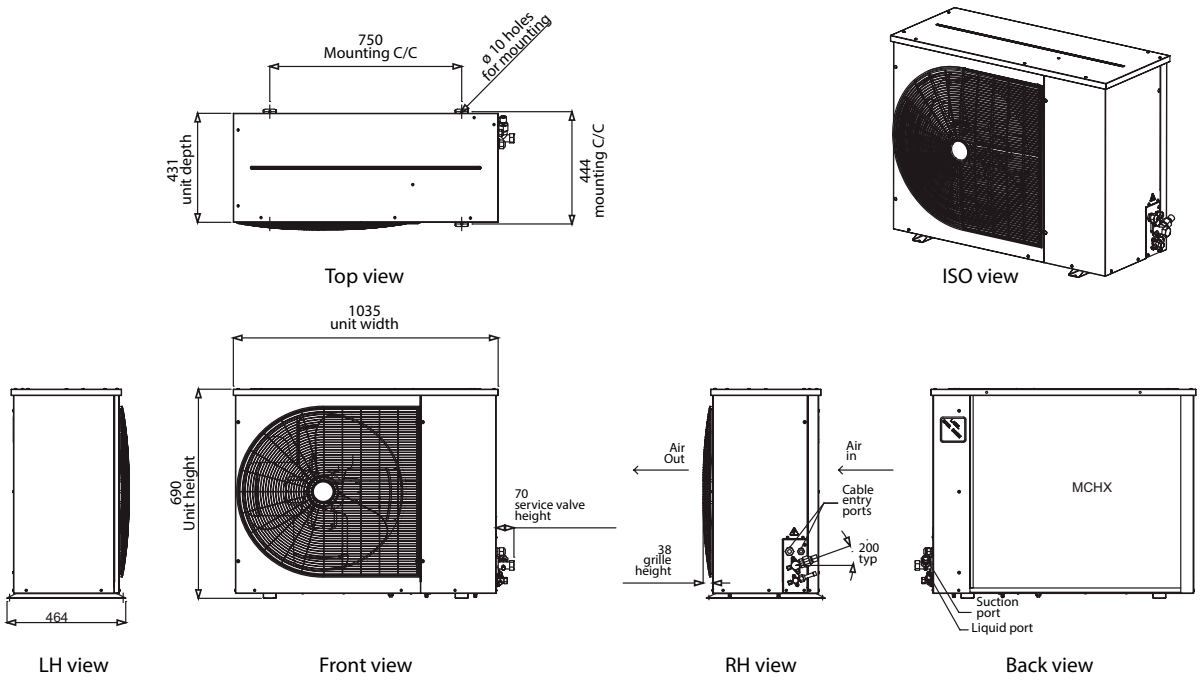
RH view



Back view

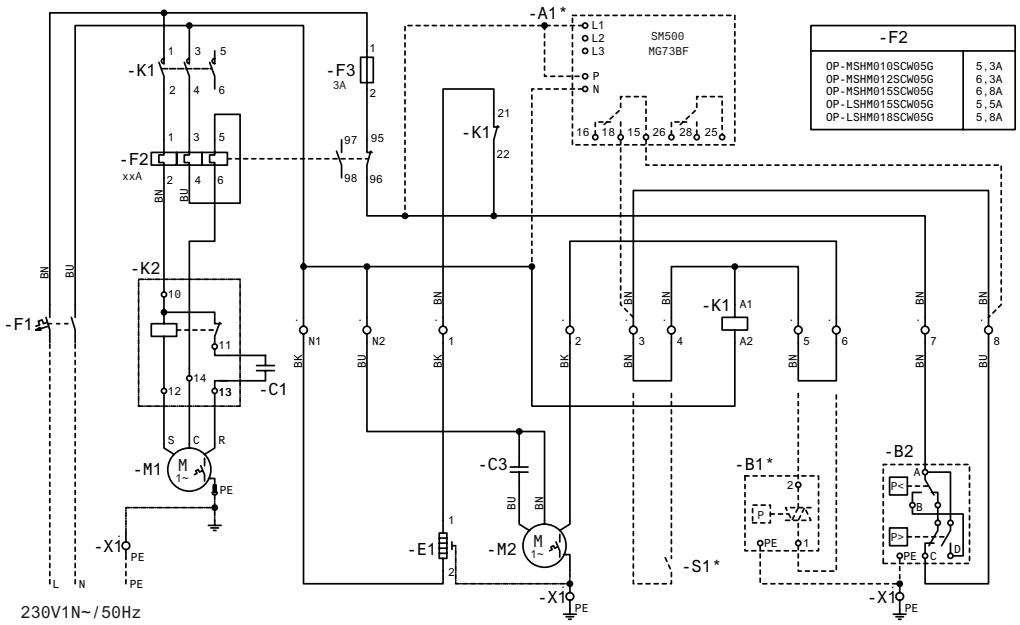
Dimensions

Housing B3



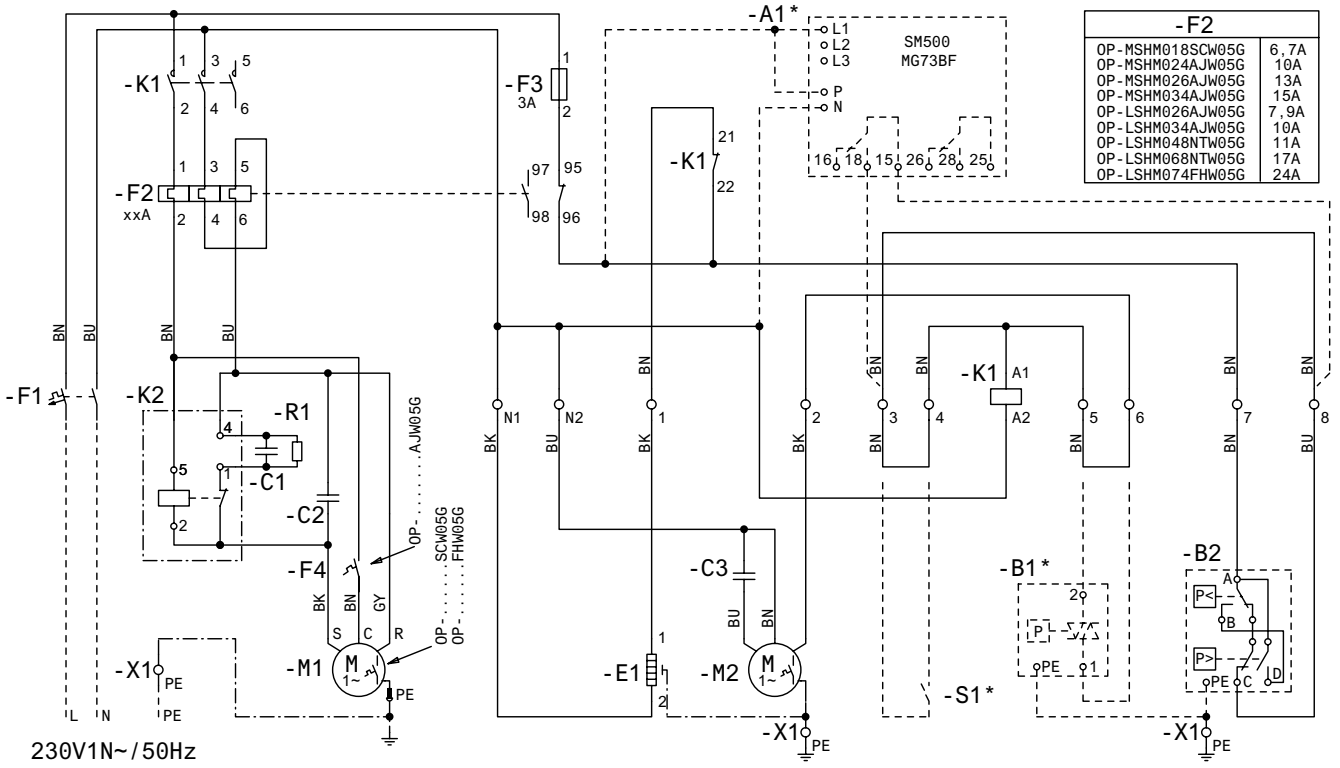
Wiring diagram

Code G : OP-MSHM010- 012 - 015, OP-LSHM015 - 018



WD 1

Code G : OP-LSHM026 - 034 - 048 - 074 - 068, OP-MSHM018 - 024 - 026 - 034



WD 2

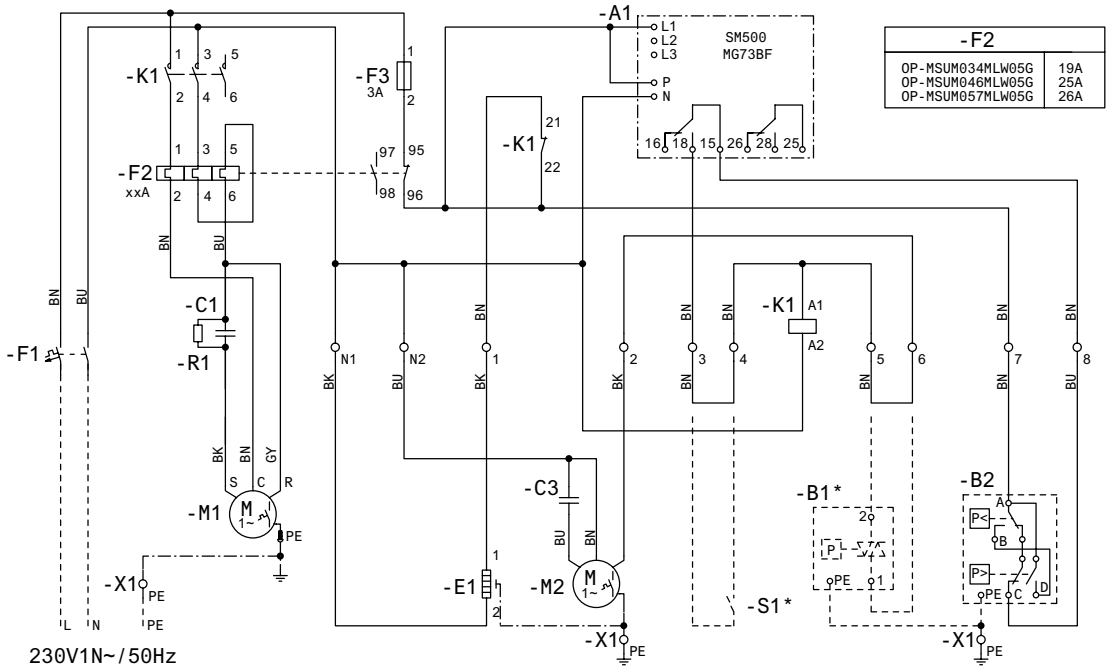
BK) *black*
BU) *blue*
BN) *brown*
GY) *grey*
RD) *red*
WH) *white*

A1*) *Voltage relay (option)*
B1*) *Fan speed controller (option)*
B2) *High and Low pressure switch*
C1) *Start capacitor compressor*
C2) *WD1:Start capacitor compressor*
WD2: Run capacitor compressor
C3) *Run capacitor fan*
E1) *Crankcase heater*
F1) *Main switch*
F2) *Overload relay*
F3) *Fuse control circuit*

F4) *Compressor thermal protector*
M1) *Compressor*
M2) *Fan motor*
K1) *Contactor*
K2) *Start relay*
R1) *Bleeder resistor*
S1*) *Room thermostat (option)*
X1) *Terminals*
****)*** *Option (remove bridge)*

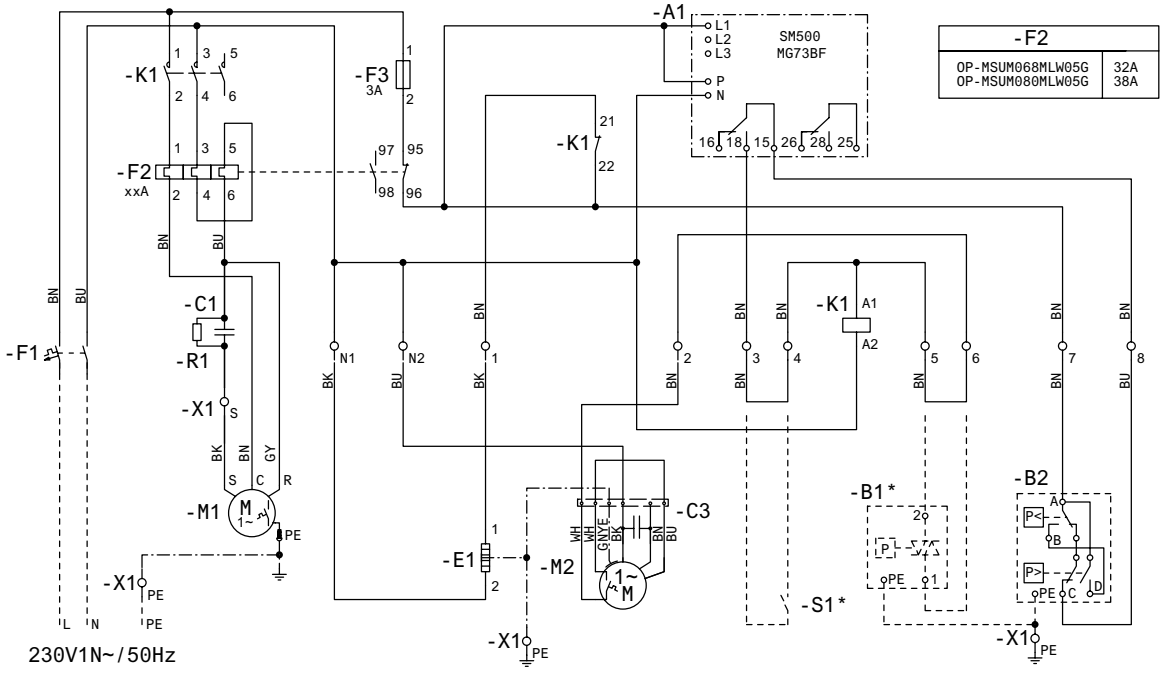
Wiring diagram

Code G : OP-MSUM034 - 046 - 057



WD 3

Code G : OP-MSUM068 - 080



WD 4

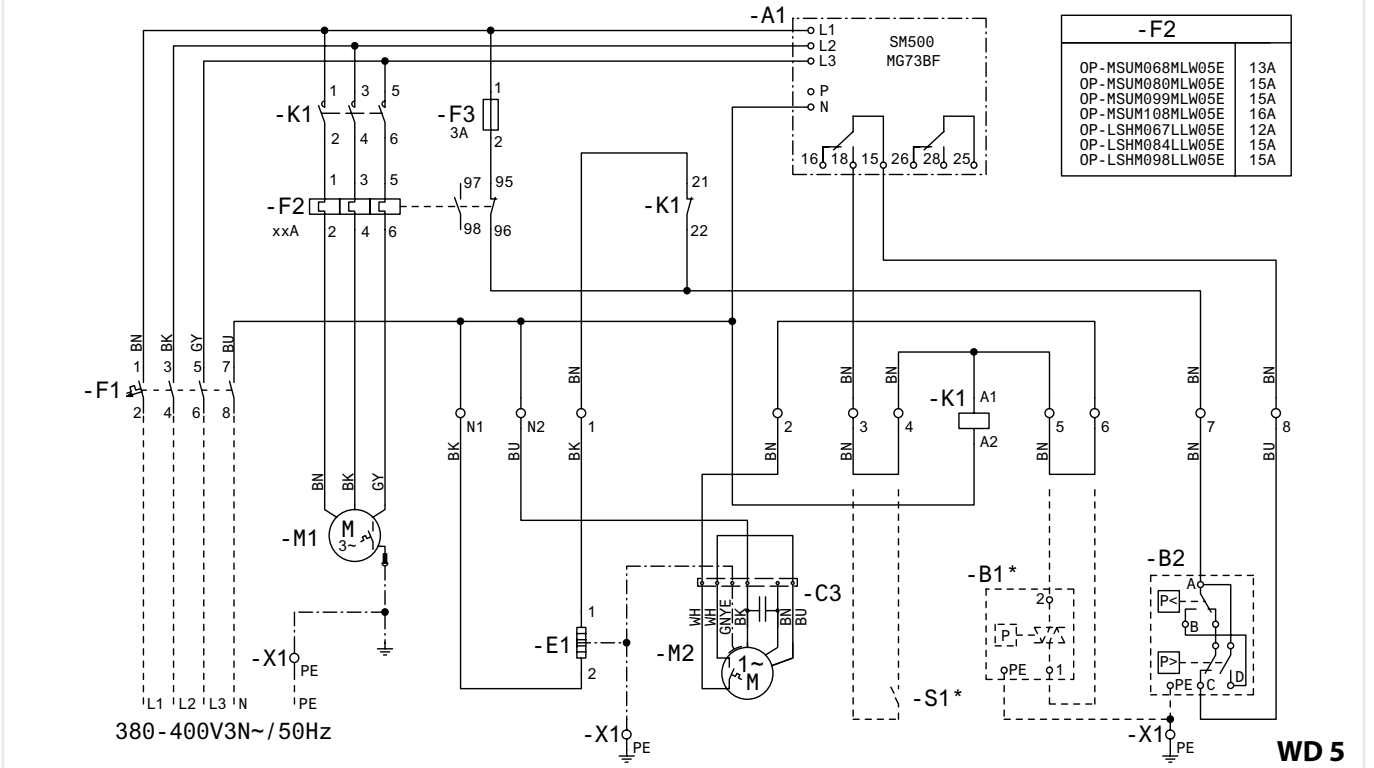
BK)	*black*
BU)	*blue*
BN)	*brown*
GY)	*grey*
RD)	*red*
WH)	*white*

A1)	*Voltage relay*
B1*)	*Fan speed controller (option)*
B2)	*High and Low pressure switch*
C1)	*Run capacitor compressor*
C3)	*Run capacitor fan*
E1)	*Crankcase heater*
F1)	*Main switch*
F2)	*Overload relay*
F3)	*Fuse control circuit*

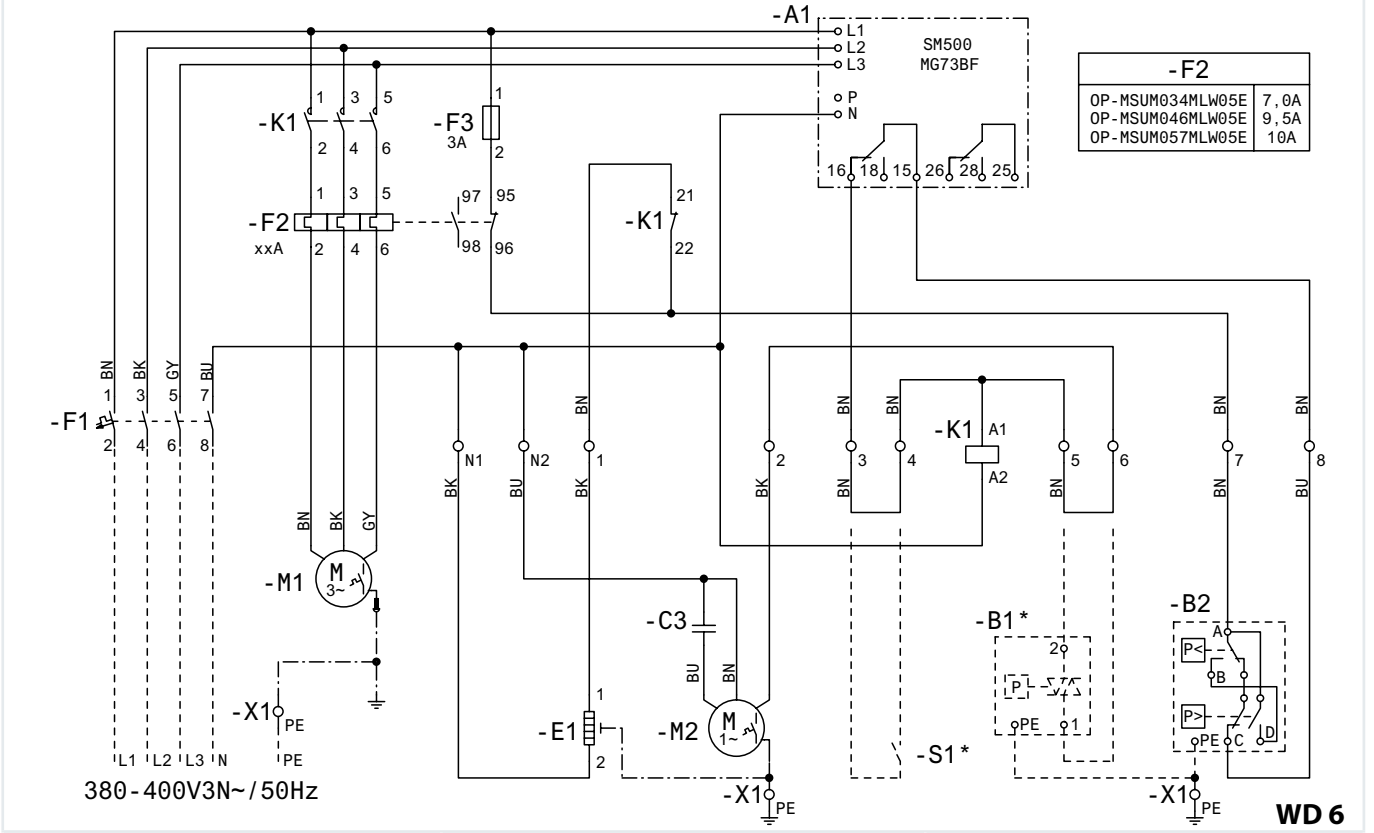
M1)	*Compressor*
M2)	*Fan motor*
K1)	*Contactor*
K2)	*Start relay*
R1)	*Bleeder resistor*
S1*)	*Room thermostat (option)*
X1)	*Terminals*
***)**	*Option (remove bridge)*

Wiring diagram

Code E : OP-MSUM068 - 080 - 099 - 108, OP-LSHM067 - 084 - 098



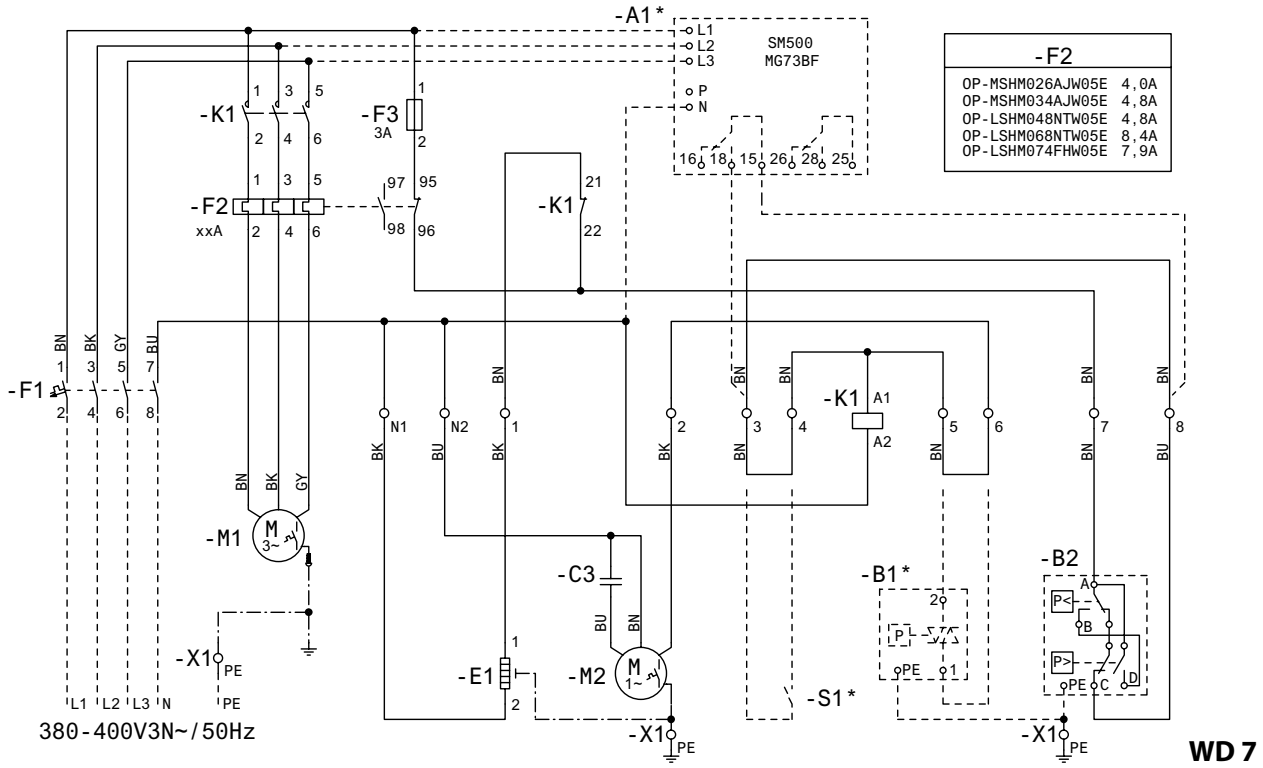
Code E : OP-MSUM034 - 046 - 057



BK)	*black*	***A1)***	*Voltage relay*	***M1)***	*Compressor*
BU)	*blue*	***B1*)***	*Fan speed controller (option)*	***M2)***	*Fan motor*
BN)	*brown*	***B2)***	*High and Low pressure switch*	***K1)***	*Contactor*
GY)	*grey*	***C3)***	*Run capacitor fan*	***K2)***	*Start relay*
RD)	*red*	***E1)***	*Crankcase heater*	***S1*)***	*Room thermostat (option)*
WH)	*white*	***F1)***	*Main switch*	***X1)***	*Terminals*
		F2)	*Overload relay*	****)***	*Option (remove bridge)*
		F3)	*Fuse control circuit*		

Wiring diagram

Code E : OP-LSHM048 - 074 - 068, OP-MSHM026 - 034



BK)	*black*
BU)	*blue*
BN)	*brown*
GY)	*grey*
RD)	*red*
WH)	*white*

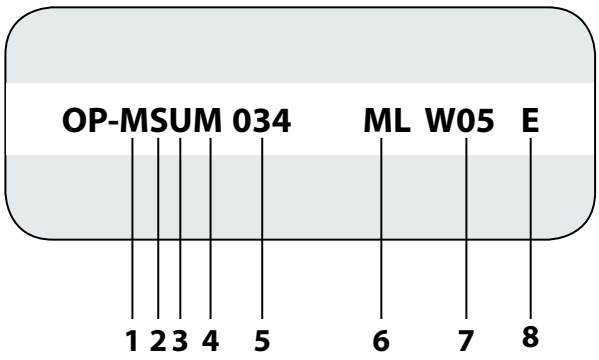
A1*)	*Voltage relay (option)*
B1*)	*Fan speed controller (option)*
B2)	*High and Low pressure switch*
C3)	*Run capacitor fan*
E1)	*Crankcase heater*
F1)	*Main switch*
F2)	*Overload relay*
F3)	*Fuse control circuit*

M1)	*Compressor*
M2)	*Fan motor*
K1)	*Contactor*
K2)	*Start relay*
S1*)	*Room thermostat (option)*
X1)	*Terminals*
****)***	*Option (remove bridge)*

Nomenclature

Designation system for the Optyma™ Slim Pack range

(additional program frequency etc.: please contact your local wholesaler)



Number	Title	Description
1	Application	M = MBP L = LBP
2	Condensing unit family	S = Optyma™ **Slim Pack**
3	Refrigerant	U = R134a / R404A / R507 / R22 / R407A / R407F H = R404A / R507
4	Condenser type	M = Standard with micro channel heat exchanger
5	Displacement	cm^3
6	Compressor platform	SC = SC reciprocating AJ = CAJ / TAJ reciprocating ML = MLZ scroll NT = NTZ reciprocating LL = LLZ scroll
7	Version	W05
8	Voltage code:	G = 230 V / 1ph compressor and fan E = 400 V / 3ph compressor and 230 V / 1ph fan

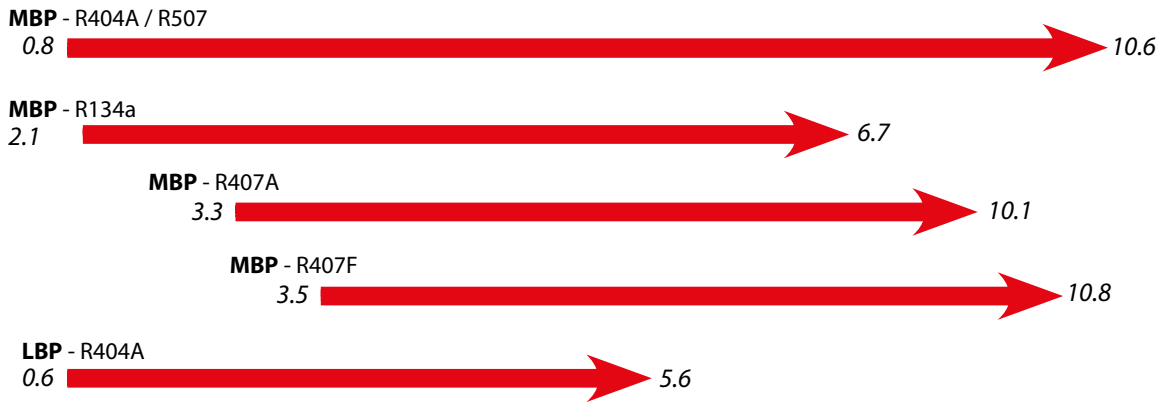
Quick selection

Select the right Danfoss Optyma™ **Slim Pack** condensing unit according to your needs

Model and cooling capacity by cold room type	Meat 1 °C – 18 h		Fish 1 °C – 18 h		Laboratory 12 °C – 18 h		Fruit & vegetables 8 °C – 18 h		Fruit & vegetables 0 °C – 18 h		Butter, eggs & cheese 5 °C – 18 h		Freezers -18 °C – 16 h	
	Cap. *) [W]	CR **) [m³]	Cap. *) [W]	CR **) [m³]	Cap. *) [W]	CR **) [m³]	Cap. *) [W]	CR **) [m³]	Cap. *) [W]	CR **) [m³]	Cap. *) [W]	CR **) [m³]	Cap. *) [W]	CR **) [m³]
OP-MSHM010	900	6	900	6	1270	8	1270	17	900	7	1030	9	–	–
OP-MSHM012	1090	8	1090	8	1530	10	1530	25	1090	8	1240	12	–	–
OP-MSHM015	1350	11	1350	11	1890	13	1890	30	1350	12	1530	16	–	–
OP-MSHM018	1570	14	1570	14	2200	15	2200	40	1570	14	1790	20	–	–
OP-MSHM024	2280	20	2280	20	3100	20	3100	60	2280	20	2250	25	–	–
OP-MSHM026	2600	22	2600	22	3500	22	3500	70	2600	22	2900	35	–	–
OP-MSHM034	3200	30	3200	30	4300	30	4300	90	3200	30	3600	45	–	–
OP-MSUM034	3700	45	3700	45	4800	40	4800	120	3700	45	4050	65	–	–
OP-MSUM046	4850	60	4850	60	6250	60	6250	180	4850	65	5350	85	–	–
OP-MSUM057	5500	75	5500	75	7300	75	7300	210	5500	75	6250	110	–	–
OP-MSUM068	7850	110	7850	110	10350	150	10350	280	7850	120	8750	160	–	–
OP-MSUM080	9100	140	9100	140	11950	180	11950	350	9100	140	10150	200	–	–
OP-MSUM099	10800	170	10800	170	13800	210	13800	430	10800	170	11750	245	–	–
OP-MSUM108	11350	180	11350	180	14700	220	14700	450	11350	180	12550	260	–	–
OP-LSHM015	–	–	–	–	–	–	–	–	–	–	–	–	680	2
OP-LSHM018	–	–	–	–	–	–	–	–	–	–	–	–	750	3
OP-LSHM026	–	–	–	–	–	–	–	–	–	–	–	–	1200	6
OP-LSHM034	–	–	–	–	–	–	–	–	–	–	–	–	1500	9
OP-LSHM048	–	–	–	–	–	–	–	–	–	–	–	–	1850	16
OP-LSHM074	–	–	–	–	–	–	–	–	–	–	–	–	2600	25
OP-LSHM068	–	–	–	–	–	–	–	–	–	–	–	–	2750	30
OP-LSHM067	–	–	–	–	–	–	–	–	–	–	–	–	4100	50
OP-LSHM084	–	–	–	–	–	–	–	–	–	–	–	–	4900	60
OP-LSHM098	–	–	–	–	–	–	–	–	–	–	–	–	5650	70

Data refers to 32 °C ambient temperature
Refer to Danfoss for different working conditions
Application - Cold room Temperature - Daily working hours
**) Cooling capacity at 32 °C ambient temperature*
***) Volume of cold room*

Optyma™ **Slim Pack - COOLING CAPACITY RANGE [kW]**



Conditions:	***MBP***	***LBP***
Ambient temperature:	*32 °C*	*32 °C*
Evaporating temperature:	*-10 °C*	*-25 °C*

Optyma™ Slim Pack units can work in the following evaporating temperature range:

MBP R404A / R507	*-20 – 10 °C*
MBP R407A / R407F	*-20 – 10 °C*
MBP R134a	*-15 °C – 15 °C*
LBP R404A / R507	*-40 °C – -10 °C*

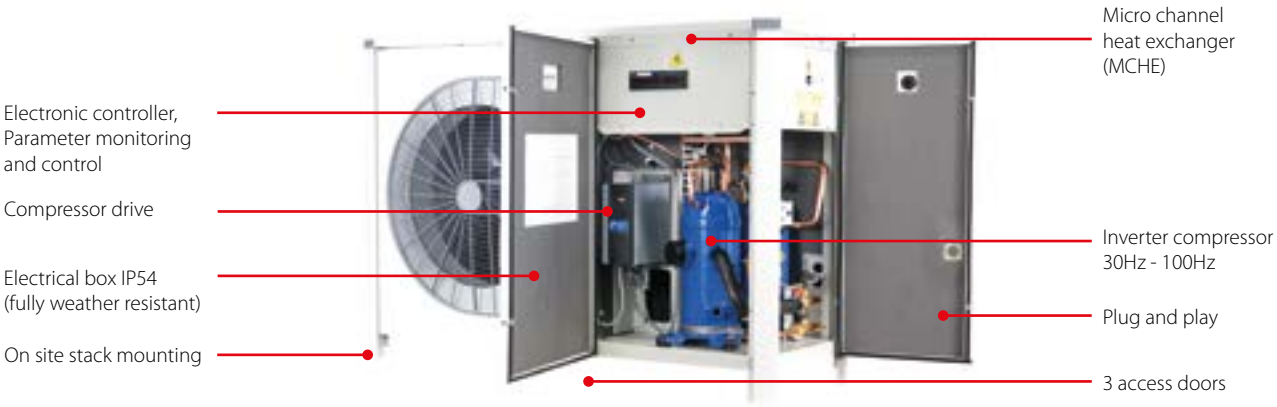
For further detailed information, please contact Danfoss

Optyma™ **Plus Inverter**
Capacity modulation in a simple and **adapative** package

Optyma™ **Plus INVERTER** combines our market leading expertise in condensing unit design with the unique benefits of stepless inverter scroll technology.

The result is 25% higher energy efficiency in an adaptive package, for medium and high temperature refrigeration applications in the range of 2kW to 9kW with R407A, R407F and R404A.





Facts

Unique Danfoss features
- Danfoss inverter scroll and drive tuned to work together for a wide range of refrigeration applications
- Danfoss micro-channel heat exchanger
- IDV* technology enhances part-load efficiency and allows less stress on components
- Danfoss proven condensing unit design
- Optyma™ **Plus Controller**

Plug-and-play variable speed technology
- One model suits several applications and model selection is easy and safe, especially in sensitive applications where the loads change rapidly
- The installation of an Optyma™ Plus INVERTER is as simple as a standard Optyma™ Plus. Preset parameters and Modbus communication makes start-up and maintenance of the condensing unit effortlessly quick and easy

High reliability for safe food preservation
- Accurate temperature and humidity control can be tailored to suit the requirements of different foods and beverages
- Improved food preservation and less waste of valuable products
- Electronic controller enables quick and accurate diagnostics
- Built-in compressor protection functions

**IDV: Intermediate Discharge Valves*

Quick Selection Notes:

Technical data and ordering

Technical specifications

Unit	Condenser coil			Condenser fan	Receiver	Dimensions					Weight [kg]	
	Type	Air flow [m^3/h]	Internal volume [dm^3]	Fan blade Ø [mm]	volume [L] (without valve)	Depth D [mm]	Width W [mm]	Height H [mm]	Suction line	Liquid line	Gross	Net
OP-MPLM028	G7	5200	1.8	1x500	6.2	481	1406	965	3/4"	5/8"	150	124
OP-MPLM035	G7	5200	1.8	1x500	6.2	481	1406	965	3/4"	5/8"	151	125
OP-MPLM044	G7	5200	1.8	1x500	6.2	481	1406	965	3/4"	5/8"	151	125

Technical data and ordering

Optyma™ Plus INVERTER, R407A

Unit	Code no	Compressor	Compressor speed, rps	Amb. temp. °C	Capacity range in (W) at evaporating temperature [°C]					Sound powe level dB(A)	Sound pressure level full speed @10m dB(A)	Power consumption EN13215, SH10K, Amb. temp. 32°C	
					-15 °C	-10 °C	-5 °C	0 °C	5 °C			-10 °C	0 °C
OP-MPLM028	114X4300	VLZ028	30	27	1440	1810	2240	2750	3340	72.8	41.8	894	897
				32	1350	1690	2100	2590	3150				
				38	-	1570	1940	2400	2920				
				43	-	-	-	-	-				
			50	27	2400	3020	3740	4580	5560	73.4	42.4	1321	1417
				32	2260	2850	3540	4350	5280				
				38	-	2640	3300	4060	4940				
				43	-	2470	3080	3800	4630				
			75	27	3530	4460	5530	6780	8200	74.0	43.0	1978	2176
				32	3340	4220	5250	6430	7790				
				38	-	3930	4890	6000	7270				
				43	-	3670	4570	5620	6810				
			100	27	4600	5820	7220	8830	10650	75.3	44.3	2781	3069
				32	4360	5520	6840	8360	10080				
				38	-	5150	6380	7790	9390				
				43	-	4830	5980	7300	8810				
OP-MPLM035	114X4315	VLZ035	30	27	1810	2270	2820	3450	4200	71.7	40.7	1049	1059
				32	1700	2130	2640	3250	3950				
				38	-	1970	2440	3010	3670				
				43	-	-	-	-	-				
			50	27	3010	3790	4690	5740	6940	72.3	41.3	1580	1711
				32	2840	3580	4440	5440	6600				
				38	-	3320	4130	5070	6160				
				43	-	3090	3850	4740	5770				
			75	27	4420	5580	6910	8440	10180	72.9	41.9	2404	2671
				32	4180	5280	6540	8000	9650				
				38	-	4900	6090	7450	8990				
				43	-	4570	5680	6960	8420				
			100	27	5750	7250	8960	10920	13120	74.6	43.6	3414	3811
				32	5450	6870	8480	10330	12400				
				38	-	6400	7900	9600	11530				
				43	-	5990	7400	8990	10800				
OP-MPLM044	114X4333	VLZ044	30	27	2320	2900	3590	4390	5330	72.6	41.6	1265	1286
				32	2170	2720	3370	4130	5020				
				38	-	2510	3110	3830	4660				
				43	-	-	-	-	-				
			50	27	3830	4810	5950	7270	8780	73.1	43.1	1944	2127
				32	3610	4540	5630	6890	8330				
				38	-	4210	5230	6410	7760				
				43	-	3910	4870	5980	7260				
			75	27	5610	7050	8710	10600	12740	73.7	43.7	3006	3379
				32	5290	6670	8240	10030	12060				
				38	-	6180	7650	9320	11210				
				43	-	5750	7120	8690	10460				
			100	27	7260	9120	11220	13590	16240	74.4	43.4	4317	4883
				32	6870	8630	10610	12840	15330				
				38	-	8020	9850	11920	14230				
				43	-	7500	9210	11130	13290				

Electrical code E: Compressor 400V/3/50 Hz, fan 230V/1/50 Hz

Technical data and ordering

Optyma™ **Plus INVERTER, R407F**

Unit	Code no	Compressor	Compressor speed, rps	Amb. temp. °C	Capacity range in (W) at evaporating temperature [°C]					Sound powe level dB(A)	Sound pressure level full speed @10m dB(A)	Power consumption EN13215, SH10K, Amb. temp. 32 °C	
					-15 °C	-10 °C	-5 °C	0 °C	5 °C			-10 °C	0 °C
OP-MPLM028	114X4300	VLZ028	30	27	1540	1920	2380	2910	3520	71.7	40.7	939	943
				32	1450	1820	2250	2750	3340				
				38	-	1690	2090	2560	3120				
				43	-	-	-	-	-				
			50	27	2620	3280	4060	4950	5970	72.3	41.3	1395	1475
				32	2470	3110	3850	4700	5680				
				38	-	2890	3590	4400	5320				
				43	-	2700	3360	4130	5010				
			75	27	3860	4850	5970	7270	8730	72.9	41.9	2090	2277
				32	3650	4590	5670	6910	8310				
				38	-	4280	5300	6470	7790				
				43	-	4000	4970	6080	7340				
			100	27	5010	6260	7700	9330	11180	74.2	43.2	2923	3226
				32	4750	5950	7320	8880	10640				
				38	-	5560	6850	8320	9980				
				43	-	5230	6450	7840	9420				
OP-MPLM035	114X4315	VLZ035	30	27	1940	2420	2990	3650	4420	71.2	40.2	1106	1117
				32	1830	2290	2820	3460	4190				
				38	-	2120	2630	3220	3910				
				43	-	-	-	-	-				
			50	27	3280	4120	5080	6190	7450	71.9	40.9	1675	1788
				32	3100	3900	4820	5880	7090				
				38	-	3620	4490	5490	6630				
				43	-	3370	4200	5160	6240				
			75	27	4830	6060	7450	9040	10830	72.5	41.5	2546	2805
				32	4560	5730	7070	8590	10300				
				38	-	5330	6590	8030	9640				
				43	-	4980	6180	7540	9070				
			100	27	6250	7800	9550	11550	13780	73.55	42.5	3595	4014
				32	5920	7400	9070	10970	13100				
				38	-	6910	8480	10270	12270				
				43	-	6490	7980	9670	11560				
OP-MPLM044	114X4333	VLZ044	30	27	2480	3090	3810	4650	5620	72	41	1338	1362
				32	2340	2920	3600	4400	5320				
				38	-	2710	3350	4100	4960				
				43	-	-	-	-	-				
			50	27	4180	5230	6450	7830	9410	72.6	41.6	2069	2235
				32	3940	4950	6110	7430	8940				
				38	-	4590	5680	6930	8350				
				43	-	4270	5310	6500	7850				
			75	27	6120	7650	9380	11350	13560	73.2	42.2	3194	3566
				32	5770	7230	8890	10770	12870				
				38	-	6710	8280	10040	12020				
				43	-	6260	7740	9420	11290				
			100	27	7880	9790	11960	14390	17090	74	43	4558	5156
				32	7460	9280	11340	13650	16220				
				38	-	8650	10580	12750	15160				
				43	-	8110	9940	11980	14260				

Electrical code E: Compressor 400V/3/50 Hz, fan 230V/1/50 Hz

Technical data and ordering

Optyma™ Plus INVERTER, R404A

Unit	Code no	Compressor	Compressor speed, rps	Amb. temp. °C	Capacity range in (W) at evaporating temperature [°C]					Sound powe level dB(A)	Sound pressure level full speed @10m dB(A)	Power consumption EN13215, SH10K, Amb. temp. 32 °C	
					-15 °C	-10 °C	-5 °C	0 °C	5 °C			-10 °C	0 °C
OP-MPLM028	114X4300	VLZ028	30	27	1540	1920	2380	2910	3530	71.2	40.2	971	962
				32	1450	1800	2210	2700	3280				
				38	-	-	-	-	-				
				43	-	-	-	-	-				
			50	27	2680	3340	4100	4970	5950	71.9	40.9	1462	1492
				32	2510	3130	3850	4660	5580				
				38	2300	2880	3540	4290	5140				
				43	2110	2650	3270	3970	4770				
			75	27	4000	4980	6080	7320	8710	72.5	41.5	2197	2328
				32	3730	4660	5700	6870	8180				
				38	3380	4250	5220	6310	7530				
				43	3070	3890	4810	5830	6960				
			100	27	5200	6440	7840	9400	11140	73.7	42.7	3064	3348
				32	4840	6020	7340	8810	10440				
				38	4390	5480	6710	8060	9570				
				43	4000	5020	6160	7420	8830				
OP-MPLM035	114X4315	VLZ035	30	27	1940	2420	2980	3650	4410	73.1	42.1	1147	1143
				32	1830	2260	2780	3390	4100				
				38	-	-	-	-	-				
				43	-	-	-	-	-				
			50	27	3360	4190	5130	6200	7400	73.8	42.8	1760	1811
				32	3140	3920	4810	5820	6950				
				38	2870	3600	4420	5350	6390				
				43	2640	3310	4080	4950	5920				
			75	27	4990	6190	7550	9070	10750	74.4	43.4	2679	2865
				32	4640	5790	7070	8500	10080				
				38	4200	5270	6470	7790	9260				
				43	3810	4820	5940	7180	8550				
			100	27	6450	7970	9670	11550	13630	75.4	44.4	3767	4148
				32	6000	7430	9030	10800	12750				
				38	5420	6760	8230	9860	11660				
				43	4920	6170	7540	9050	10720				
OP-MPLM044	114X4333	VLZ044	30	27	2480	3080	3790	4630	5590	73.1	42.1	1393	1400
				32	2340	2880	3530	4300	5190				
				38	-	-	-	-	-				
				43	-	-	-	-	-				
			50	27	4270	5310	6490	7820	9310	73.9	42.9	2178	2267
				32	3990	4970	6070	7320	8720				
				38	3640	4550	5570	6720	8010				
				43	3340	4180	5140	6210	7410				
			75	27	6290	7790	9460	11320	13360	74.5	43.5	3363	3635
				32	5840	7260	8840	10590	12510				
				38	5270	6590	8060	9680	11450				
				43	4750	6000	7380	8880	10540				
			100	27	8070	9940	11990	14260	16720	75.5	44.5	4771	5297
				32	7480	9240	11170	13290	15600				
				38	6740	8370	10150	12090	14210				
				43	6080	7600	9260	11060	13010				

Electrical code E: Compressor 400V/3/50 Hz, fan 230V/1/50 Hz

Technical data and ordering

Optyma™ **Plus INVERTER - MBP**

Electrical characteristics - 400 V / 3 Phases / 50 Hz

Unit	MCC compressor [A] 400V/3phase	Max cont. power consumption [kW]	MCC Fan [A] 230V/1 phase	Fan power output [W]	Fan power consumption [W]
OP-MPLM028	8.1	3.98	0.96	1 x 130	1 x 220
OP-MPLM028	9.8	4.94	0.96	1 x 130	1 x 220
OP-MPLM044	12.0	6.33	0.96	1 x 130	1 x 220

Optyma™ **Plus INVERTER - MBP**

Spare parts

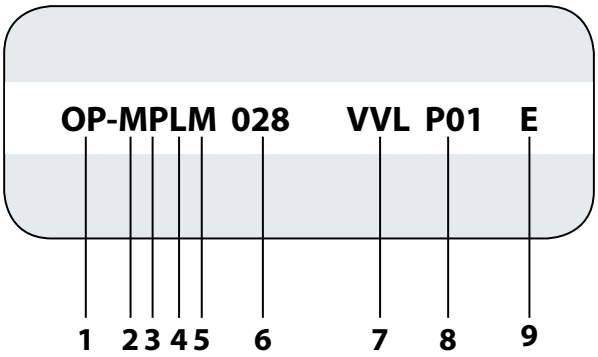
Unit	Compressor	Condenser	Fan assembly	Receiver	Filter	Sight glass	Liquid line valve	Suction line valve	High pressure transmitter	Low pressure transmitter	Suction and ambient temperature	Discharge temperature sensor	Fan grill
OP-MPLM028	120G0069	118U3494	118U3829	118U3476	023Z5045	014F0174	009G7053	009G7054	118U3722	118U3721	084N0003	084N2007	118U3485
OP-MPLM035	120G0070	118U3494	118U3829	118U3476	023Z5045	014F0174	009G7053	009G7054	118U3722	118U3721	084N0003	084N2007	118U3485
OP-MPLM044	120G0071	118U3494	118U3829	118U3476	023Z5045	014F0174	009G7053	009G7054	118U3722	118U3721	084N0003	084N2007	118U3485

Unit	Controller*	Main switch	Compressor contact	Door handle	Crankcase heater	High pressure switch	Low pressure switch	Acoustic hood	Compressor Drive	EMI filter (Drive)	EMI filter (Controller)	Compressor oil	Oil separator
OP-MPLM028	118U3465	118U3852	118U3847	118U3858	120Z5040	118U3718	118U3720	120Z5043	118U3973	118U3972	118U3974	120Z5034	118U3981
OP-MPLM035	118U3465	118U3852	118U3847	118U3858	120Z5040	118U3718	118U3720	120Z5043	118U3973	118U3972	118U3974	120Z5034	118U3981
OP-MPLM044	118U3465	118U3852	118U3847	118U3858	120Z5040	118U3718	118U3720	120Z5043	118U3973	118U3972	118U3974	120Z5034	118U3982

** For service replacement of controller in Optyma™ Plus INVERTER only new version of controller can be used: code number on the controller is 084B8080.*

Nomenclature

Designation system for the Optyma™ Plus INVERTER - MBP



Number	Title	Description
1	Product family	Optyma™
2	Application	M = MBP
3	Design	P = Packaged units
4	Refrigerant	L = R404A, R407A, R407F
5	Condenser type	M = Standard with micro channel heat exchanger
6	Displacement	028 = 28 cm^3/rev
7	Compressor platform	VVL = variable speed scroll VLZ compressor
8	Version	P01
9	Electrical code	E = Compressor 400 V/3 phase/50 Hz, fan 230 V/1 phase/ 50 Hz

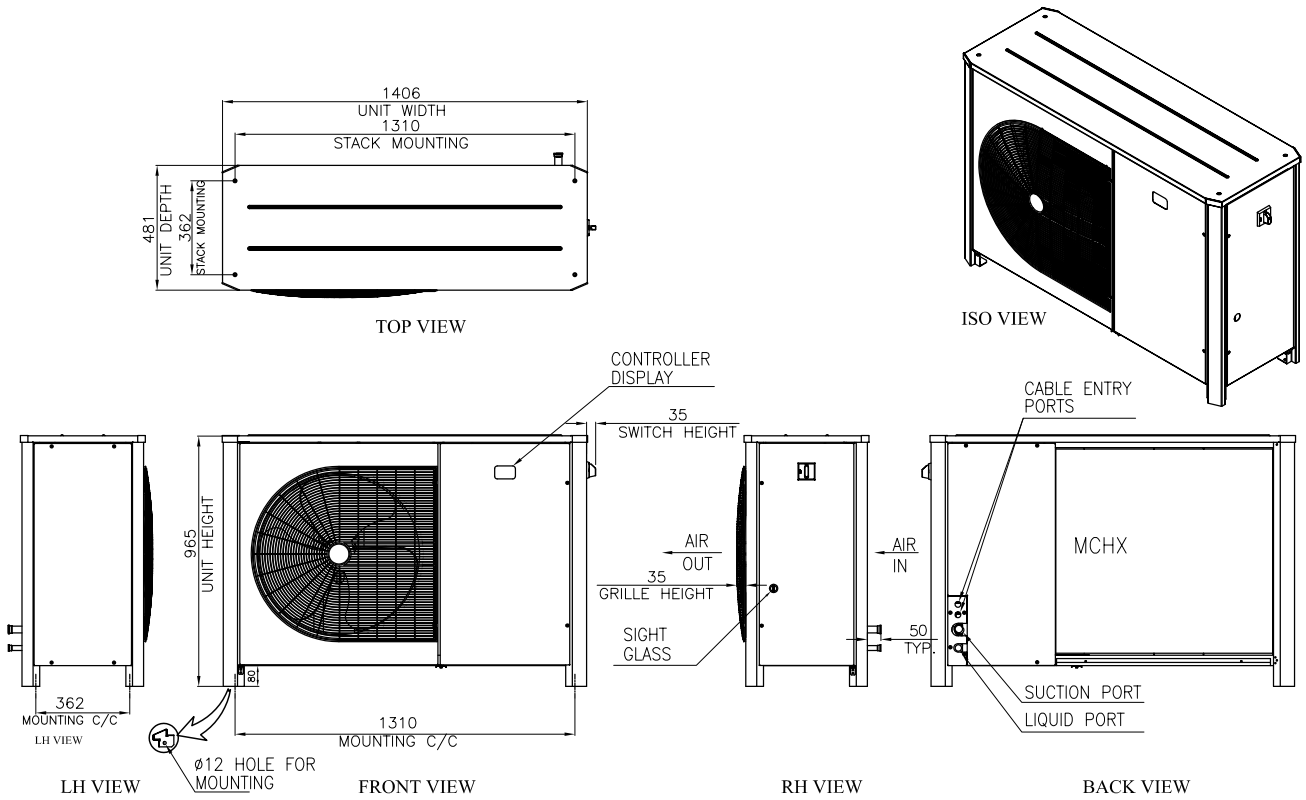
Optyma™ Plus INVERTER - cooling capacity range presentation [kW]



Condition: ***MBP***
Ambient temperature *32 °C*
Evaporating temperature *-10 °C*
Minimum at minimal speed 30Hz and maximum cooling capacity at maximal speed 100Hz

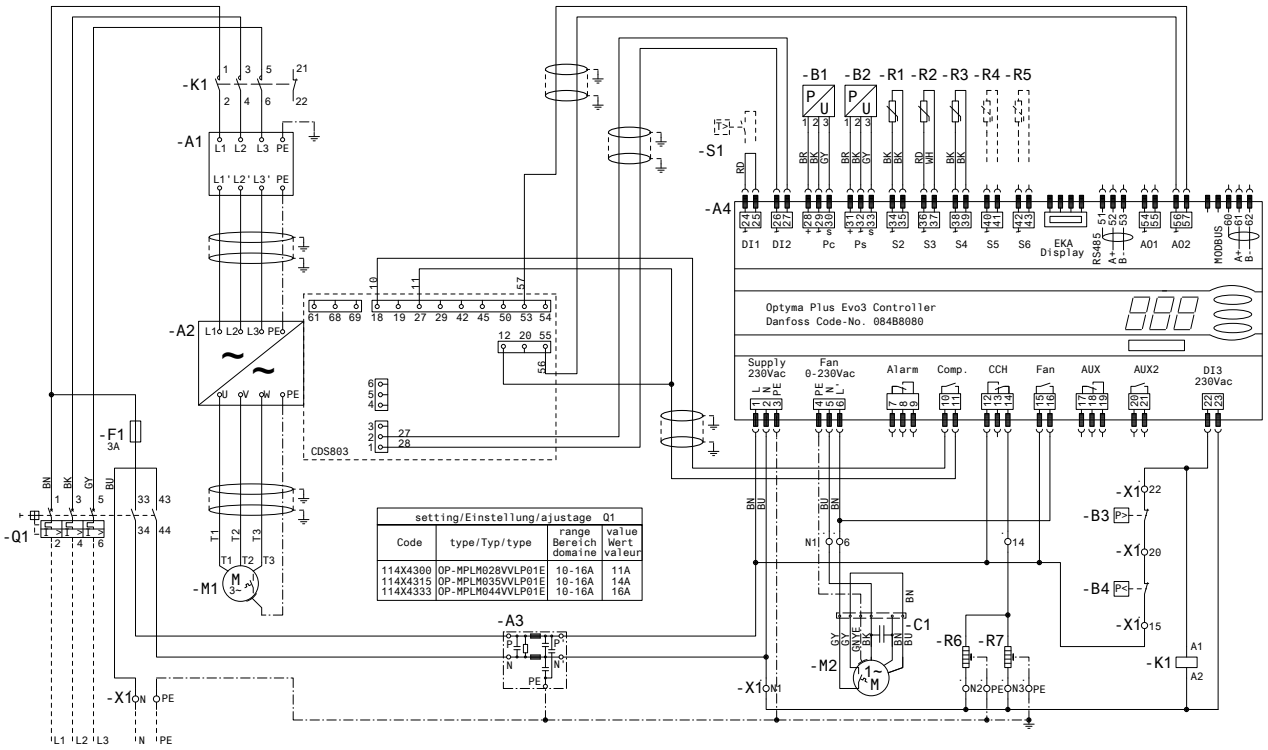
Dimensions

OP-MPLM028-035-044

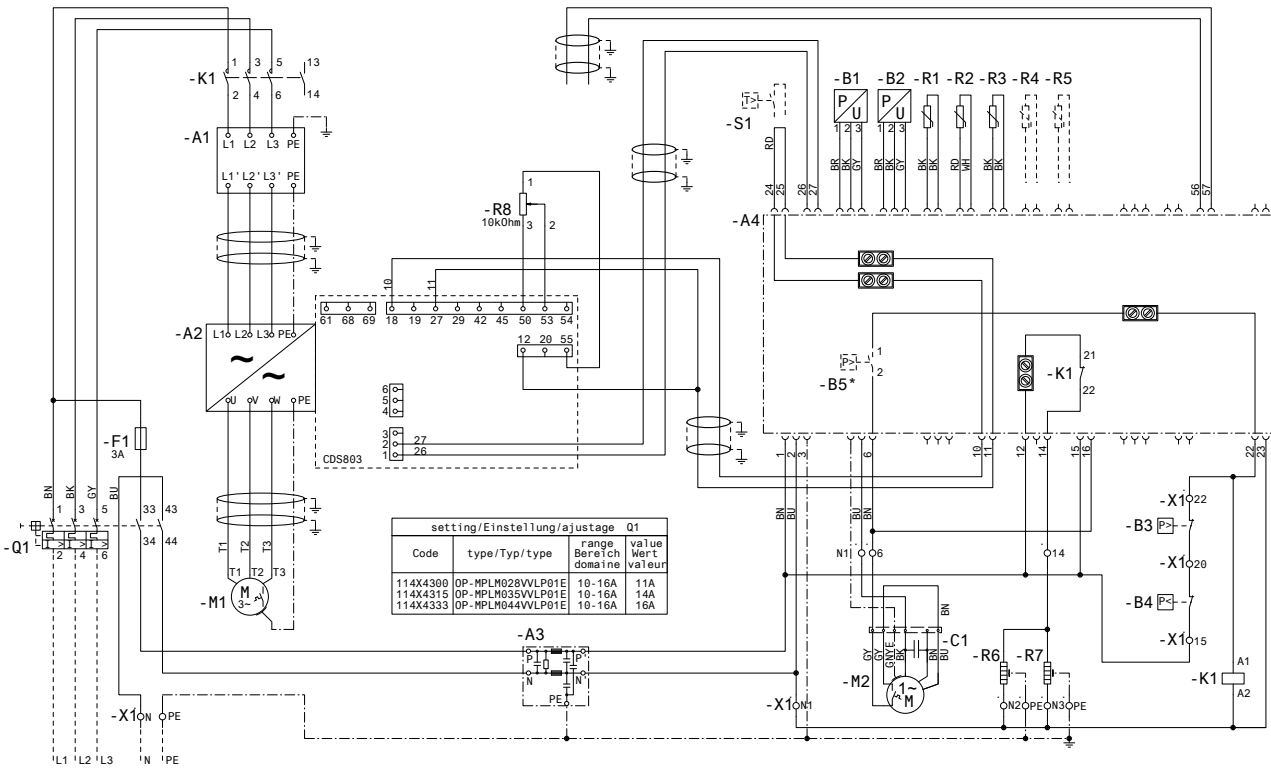


Electrical wiring diagrams

OP-MPLM028-035-044



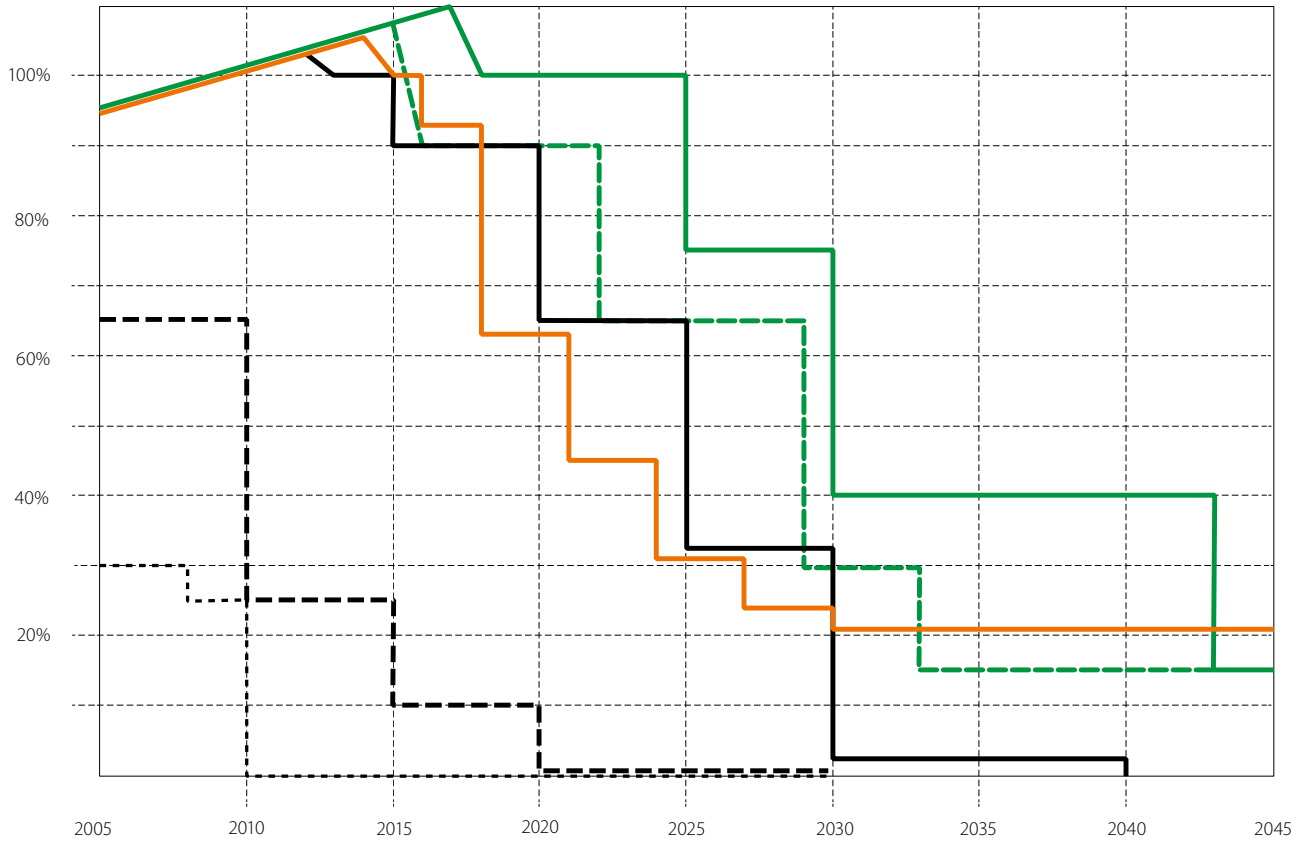
OP-MPLM028-035-044 - Emergency Wiring



A1) *EMC/RFI Filter (Compressor)*
A2) *Frequency Converter*
A3) *EMI Filter (Controls)*
A4) *Optyma™ Plus Controller*
B1) *Condensing Pressure Transducer*
B2) *Suction Pressure Transducer*
B3) *High Pressure Switch*
B4) *Low Pressure Switch*
B5*) *Fan Speed Controller / Pressure Switch*
C1) *Run Capacitor (Fan)*
F1) *Fuse (Control Circuit)*
K1) *Contactor*
M1) *Compressor*
M2) *Fan Motor*
Q1) *Main Switch*
R1) *Ambient Temp. Sensor*
R2) *Discharge Temp. Sensor*
R3) *Suction Temp. Sensor*
R4,R5) *Auxiliary Temp. Sensor (optional)*
R6) *Crankcase Heater*
R7) *Oil Separator Heater*
R8) *Compressor Speed Potentiometer*
S1) *Room Thermostat (optional)*
X1) *Terminal*
Supply) *Supply*
Fan) *Fan*
Alarm) *Alarm*
Comp.) *Compressor*
CCH) *Crankcase Heater*
Aux) *Auxiliary*

Refrigerant control schedules

The graph below shows the phase-out of HCFC refrigerants as agreed under the Montreal Protocol and the various proposals for HFC phase-down. Initial slope of HFC proposals are indicative and not part of the proposals.



HCFC Phase-out
US, other developed countries
EU regulations
Developing countries

HFC Phase-down
(US Proposal)
US, other developed countries
Developing countries

HFC Phase-down
(Proposal by EU Commission)
EU F-gas regulations

Perhaps the most effective mechanism of the F-gas regulation will be the GWP-based phase-down of HFC refrigerants.
The phase-down will effectively reduce the supply of high-GWP refrigerants to where demand cannot be met. In turn, this will lead to significantly higher prices on HFC refrigerants. The higher the GWP, the higher the price. Although transitional refrigerants such as R407A and R407F are not directly affected by refrigerant bans in the near term, prices will undoubtedly increase and may become prohibitive in most applications with more than a few kg charge.

Overview of refrigerant trends

Refrigerant	Application / Region	Refrigeration										Air Conditioning			
		Domestic – household refrigerators		Mobile – containers, trucks		Light Commercial		Commercial		Industrial		Air Conditioning		Heat pumps	
		50 – 300 W		100 – 10,000 W		150 – 5,000 W		> 5,000 W		> 100,000 W		All		All	
		Today	2020	Today	2020	Today	2020	Today	2020	Today	2020	Today	2020	Today	2020
CO_2	Europe														
	North America														
	Rest of the world														
NH_3	Europe														
	North America														
	Rest of the world														
HC	Europe														
	North America														
	Rest of the world														
HFC	Europe														
	North America														
	Rest of the world														
Mildly flammable HFC and HFO	Europe														
	North America														
	Rest of the world														

Main refrigerant
Some use
Limited use and only niche applications
Not applicable or unclear situation

Refrigerant benefits in your application

The refrigeration and air conditioning industry has made tremendous progress over the past two decades in reducing the use of ozone-depleting refrigerants. Seen from a global perspective, the tendency is that the industry is moving more and more toward natural refrigerants where this is technologically feasible. Synthetic refrigerants are still likely to play a large role in the refrigeration and air conditioning industry, but this will be in minimal charge systems and with new low-GWP substances. Parameters such as efficiency, safety, environmental impact, relatively short atmospheric lifetimes, chemical properties and economy all influence the choice of future refrigerant options. Below is a brief overview of the refrigerant benefits in various applications.

CO_2 (R744)

- The low-GWP nature of CO_2 lends itself well to **food retail applications**, where there is a minimal impact in case of leaks and where the thermodynamic properties make it the ideal media for heat recovery
- Transcritical CO_2 cycles reject a large proportion of the cycle heat at high temperatures which makes it suitable for **heat pumps**
- In **industrial refrigeration**, CO_2 provides a means to reduce the charge of Ammonia, increase efficiency and decrease the footprint of freezing equipment
- In **transport refrigeration, light commercial applications** and **electronics cooling**, CO_2 provides a non-flammable, environmentally benign solution

Ammonia (NH_3)

- Ammonia is one of the most **energy efficient** refrigerants in applications ranging from high to low temperatures. With the increasing focus on energy consumption, ammonia is a safe and sustainable choice for the future
- Ammonia has better **heat transfer properties** than most of chemical refrigerants and therefore plant construction cost will be lower. These properties also benefit the thermodynamic efficiency in the system, hence it reduces the operating costs
- With a GWP and ODP (Ozone Depletion Potential) equal to zero ammonia is a very **environmentally friendly refrigerant**
- In many countries the cost of ammonia (per kg) is considerably lower than the cost of HFCs

Hydrocarbons (R290, R600)

- Provides high energy-efficiency and capacities compared to HFCs
- The flammability limits the use to **small systems** and **chillers** (e.g. **chillers for food retail systems** or for **air conditioning** for a whole building)
- Allows for very low evaporating temperatures without overheating the compressor when used in **heat pumps** (with HFCs you need to supplement with an electrical heating element for the really cold days)

HFC

- A transitional solution that can be used in retrofitting high-GWP HFC systems. Typically R407A / F replacing R404A

Mildly flammable HFC & HFO

- The low GWP and low flammability makes it suitable for **relatively large systems**
- Especially interesting for **air conditioning** where there is a lack of ultra low-GWP natural alternatives
- Also suitable for **refrigeration** systems where traditional HFC system design can be used with minor modifications (often with a minor performance decrease)

Products for low GWP refrigerants

Danfoss' approval process

Danfoss uses a thorough approval process when releasing products for flammable refrigerants. The major steps includes:

- Ensure compliance with the EU Pressure Equipment Regulation 97 / 23 / EC (PED) for fluid group I. Attain 3rd party approval if needed
- Evaluate ignition sources for compliance with ATEX zone 2. Attain 3rd party approval if needed
- Evaluate or test chemical compatibility between elastomers and the specific flammable refrigerants in question
- Update internal documentation to ensure future product changes will take flammability into account
- Update literature, capacity tables and other relevant documentation for Danfoss customers

The approval process is one part of the continuous risk evaluation process that guides our approach to flammable refrigerants. This process continuously evaluates the legislation, safety standards and the industry's experience with flammable refrigerants. The outcome is a continuously updated internal framework for sales and product design matching the market needs while prioritising safety.

Products for low-GWP refrigerants

Product grouping	Product	Product description	Refrigerants					
			CO_2	NH_3	R290, R600	R32	R407A	R407F
Electronic controllers	AK-PC 7XX	Advanced pack controllers	•	•	•	•	•	•
	AK-PC 351 / 5XX	Standard pack controllers		•	•	•	•	•
	AK-CC 550 / 750	Case controller for electronic expansion valves	•	•	•	•	•	•
	AK-CC 250 / 350 / 450	Case controller for thermostatic expansion valves	•	•	•	•	•	•
	EKC 326a	CO_2 gas pressure controllers	•					
	MCX	Programmable controllers	•	•	•	•	•	•
	EIM 336, EKD 316, EXD 316	Electronic superheat controllers [1]	•		•	•	•	•
	EKC 316A, EKC 312	Electronic superheat controllers [1]	•		•	•	•	
	EKC 313	Cascade injection with CO_2	•	•	•	•	•	•
	EKC 315a	Superheat controllers	•	•	•	•	•	•
	EKC 361	Liquid level controllers	•	•	•	•	•	•
	EKE 347	Temperature controllers	•	•	•	•	•	•
Compressors	MTZ	Reciprocating compressor for medium temperature refrigeration					•	•
	MLZ	Scroll compressor for medium temperature refrigeration					•	•
	ASL	Scroll compressor for air conditioning [2]				•		
	P / T / D / N / SC	AC reciprocating compressor for LBP / MBP refrigeration			•			
	SLV	Variable speed reciprocating compressor for LBP / MBP refrigeration			•			
	BD	AC / DC compressors for mobile cooling			•			
Condensing units	Optyma™	Condensing Units for low and medium refrigeration [2]			•		•	•
	Optyma™ Slim Pack	Packaged Condensing Units for low and medium refrigeration [2]					•	•
	Optyma™ Plus	Premium packaged Condensing Units for low and medium refrigeration [2]					•	•
Electronic expansion valves	AKV	Pulse width modulating expansion valves	46 bar				•	•
	AKVA	Pulse width modulating expansion valves	42 bar	•			•	•
	AKVH	Pulse width modulating expansion valves	90 bar				•	•
	CCM	High pressure standstill capable motorized expansion valves	90 bar					
	CCMT	High pressure standstill capable motorized expansion valves	140 bar					
	ETS	Electronically operated expansion valves					•	•
	ICM	Industrial motorized expansion valves	65 bar	•			•	•
	ICMTS	High pressure industrial motorized expansion valves	140 bar					
Electronic pressure & temperature regulating valves	CCM	Standstill capable electronic backpressure regulators	90 bar					
	CCMT	Standstill capable electronic backpressure regulators	140 bar					
	KVS	Electronic suction modulating valves					•	•
	ICM	Industrial motorized regulating valves	65 bar	•			•	•
	ICMTS	High pressure industrial motorized regulating valves	140 bar					
Sensors & transmitters	AKS 32	1 – 5 / 0 – 10 / 0 – 5 / 1 – 6 V DC, high accuracy	100 bar	•	•	•	•	•
	AKS 32 R	0.5 – 4.5 V DC – 5 V supply, ratiometric, compact	55 bar	•	•	•	•	•
	AKS 33	4 – 20 mA, high accuracy	55 bar	•	•	•	•	•
	AKS 3000	4 – 20 mA, compact	100 bar	•	•	•	•	•
	AKS 11	Temperature sensors, Pt 1000	•	•	•	•	•	•
	AKS 12	Temperature sensors, Pt 1000	•	•	•	•	•	•
	AKS 21	Temperature sensors, Pt 1000	•	•	•	•	•	•
	GD	Gas detecting sensors	•	•	•			
Heat exchangers	BPHE	Brazed Plate heat exchangers		•	•	•	•	•
	MPHE	Micro Plate heat exchangers			•	•	•	•
	MCHE	Micro Channel heat exchangers			•	•		

[1]) Parameters for other refrigerants can be entered manually

Refrigerant

Product grouping	Product	Product description	Refrigerants					
			CO_2	NH_3	R290, R600	R32	R407A	R407F
Thermostatic expansion valves	TUB / TCB	Stainless steel thermostatic expansion valves	42 bar			•	•	•
	TUC / TCC	Stainless steel thermostatic expansion valves	42 bar		•	•	•	•
	T2	Small thermostatic expansion valves					•	•
	TD1	Thermostatic expansion valves			•		•	•
	TGE	Large thermostatic expansion valves			•	•	•	•
	TEA	Industrial thermostatic expansion valves		•				
Solenoid valves	EVR	Allround solenoid valves			•	•	•	•
	EVRA	Solenoid valves	42 bar	•			•	•
	EVRH	High pressure solenoid valves	46 bar					
	EVU	Semi-hermetic solenoid valves	70 bar				•	•
	EVUL	Fully-hermetic solenoid valves	90 bar			•	•	•
	ICLX	Flexline™ solenoid valves	52 bar	•	•	•	•	•
Valve stations	ICF	Flexline™ valve stations	52 bar	•			•	•
Mechanical pressure and temperature regulating valves	KVD	Receiver pressure regulators			•		•	•
	KVC	Capacity regulators			•		•	•
	KVL	Crankcase pressure regulators			•		•	•
	KVP	Evaporating pressure regulators			•		•	•
	KVR	Condensing pressure regulators			•		•	•
	CPCE	Hot gas bypass regulating valves			•		•	•
	ICS	Mechanical backpressure regulators	52 bar	•	•	•	•	•
	REG-S	Flexline™ regulating valves	52 bar	•		•	•	•
Switches	AKS 38	Electro-mechanical float switches	28 bar	•		•	•	•
	KP	Pressure switches	46 bar	•	•		•	•
	RT	Pressure switches		•	•		•	•
	MP	Differential pressure switches		•	•		•	•
	RT	Differential pressure switches		•	•		•	•
	CCB	Cartridge pressure controls	165 bar					
Water regulating valves	WVFX	Pressure operated water valves			•		•	•
	WVO	Pressure operated water valves			•		•	•
	WVS	Pressure operated water valves		•	•		•	•
Filters and driers	DCR	Receiver filter driers	46 bar		•	•	•	•
	DMC	Receiver filter driers				•	•	•
	DCC	Receiver filter driers				•	•	•
	DML	Liquid line filter driers	46 bar		•	•	•	•
	DCL	Liquid line filter driers			•	•	•	•
	DMB	Bi-flow filter driers	46 bar		•	•	•	•
	DCB	Bi-flow filter driers			•	•	•	•
	DAS	Burn-out filter driers				•	•	•
	DMT	Filter driers for transcritical applications	140 bar					
	FIA	Flexline™ filters	65 bar	•		•	•	•
Check valves	NRV	Piston check valves	90 bar		•	•	•	•
	NRVA	Piston check valves		•	•	•	•	•
	CHV-X	Flexline™ check valves	65 bar	•			•	•
	SCA-X	Flexline™ check and stop valves	65 bar	•			•	•
Shut-off valves	GBC	Shut-off ball valves	90 bar			•	•	•
	BML	Shut-off diaphragm valves			•		•	•
	SVA	Flexline™ stop valves	65 bar	•	•	•	•	•
Sight glasses	SG	Sight glasses for low pressures					•	•
	SGP	Sight glasses for high pressures	52 bar		•	•	•	•
	MLI	Sight glasses		•			•	•

Our portfolio is constantly being updated – to see an updated list of our low-GWP products go to www.danfoss.com/lowGWP

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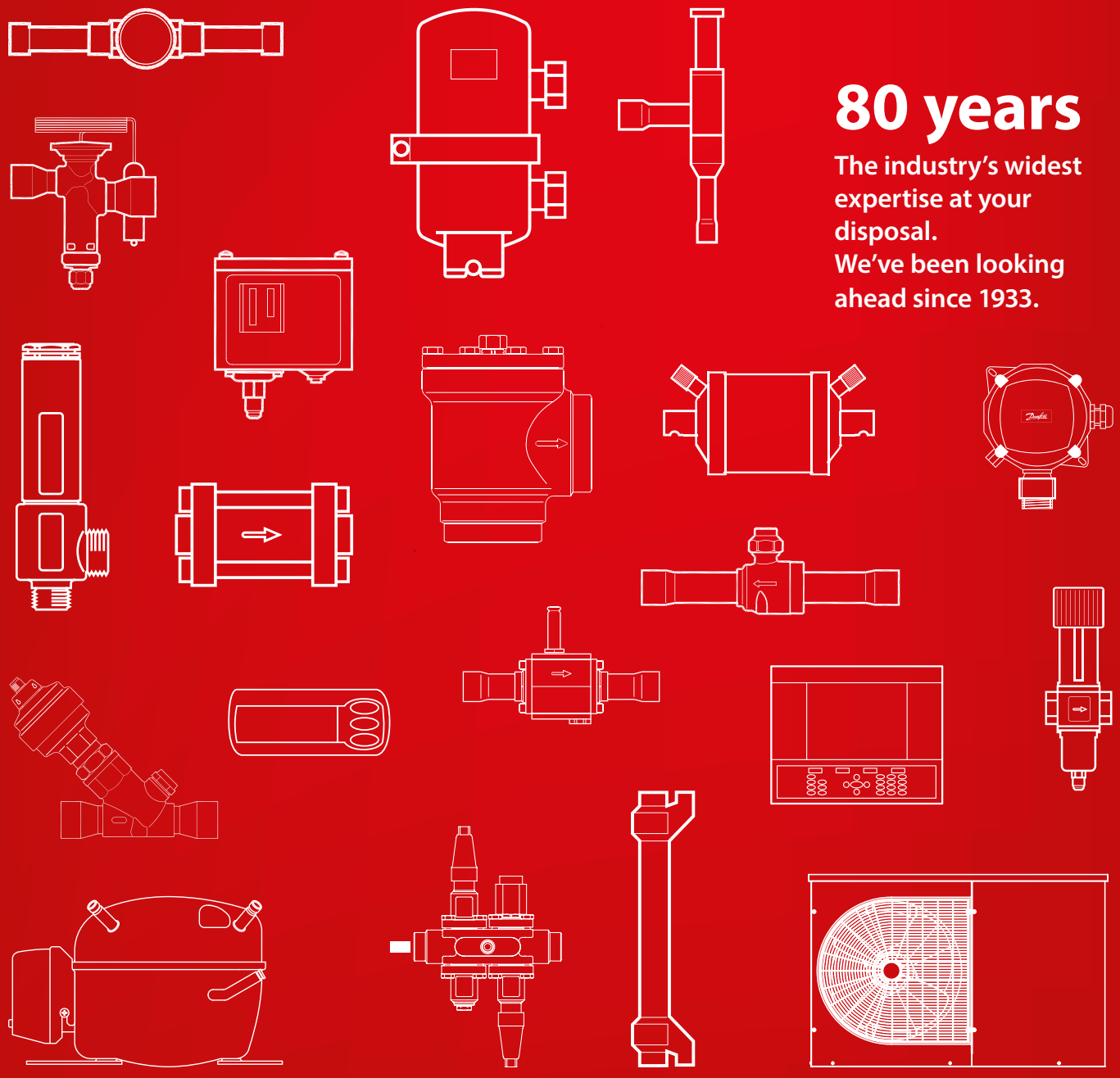
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