



Quick Selection 2013/2014

Automatic controls, electronic controls, compressors and condensing units

This catalogue covers the most popular refrigeration products and code numbers.

> 100

products in one catalogue

The most frequently used refrigeration products from the extended Danfoss ranges have been collected in one catalogue. A timesaving way to find exactly what you are looking for. A part of your toolbox.

> 5000

code numbers in one catalogue

Simply the most easy way to find the code numbers you need for your specific application – all in one place.



Welcome to Coolselector®

- Please select section:
- > Industrial Refrigeration Controls
 - > Commercial Refrigeration Controls
 - > Compressors and Condensing Units

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Database Version: 1.0.0.1

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The screenshot displays the Coolselector software interface. The main window is titled 'Thermostatic Expansion Valve' and shows a 'Component Selector' for 'Commercial Refrigeration Controls'. It includes a search criteria section for 'Refrigerant' and a table of 'Compressors for Refrig. and A/C'. The table lists various compressor models with their respective refrigerants, phases, voltages, cooling capacities, and power inputs. A graph on the right shows the performance of a selected component, plotting 'Superheat (K)' against 'Evaporating Temperature (°C)'. The interface also includes a 'Component Selector' for 'Industrial Refrigeration Controls' and a 'Line Design' section for 'Flooded evaporator/pump / Liquid line with or without phase change'. The 'Line Design' section includes search criteria for 'Refrigerant', 'Cooling Capacity', 'Mass Flow', 'design velocity', and 'Valve Body Sizes'. It also features a 'Pump' section with a table of 'Pump' models and a 'Feedback' section with a table of 'Feedback' values.

Model	Code No.	Refrigerant	Phases	Name	Voltage (V)	Cooling Capacity (W)	Power Input (W)
HRP6074	120U1680	R407C	3	380-400	6.932	3.498	3.498
HRP6075	120U1683	R407C	1	230-230	7.147	3.454	3.454
HRP6076	120U1720	R407C	3	380-400	7.132	3.376	3.376
HRP6077	120U1723	R407C	3	380-400	7.132	3.376	3.376
HRP6078	120U1726	R407C	3	380-400	7.132	3.376	3.376
HRP6079	120U1729	R407C	3	380-400	7.132	3.376	3.376
HRP6074	120U1726	R407C	3	380-400	7.132	3.376	3.376
HRP6075	120U1721	R407C	3	380-400	7.132	3.376	3.376

Coolselector® – Select the right component the coolest way

As the world gets more complicated we all need support to make the right choices.

Danfoss helps you make the right selections also for the other components that you will need in your professional daily life. Coolselector® calculates for you the performance of the component at your conditions, not just according to the standards.

Select the right component the coolest way

Do you pick your solenoid valve for your cold room by connection size alone?

Maybe you could actually go for a size smaller, or maybe the cold room would have done better if you had optimized the selection of that particular valve to the flow. Most professionals know that selecting a thermostatic expansion valve can turn out to be a tricky task if the conditions are not exactly standard conditions. You will need to take superheat, sub cooling and pressure drop into consideration to find the optimal valve with the right orifice. But also other components require consideration before selecting the best valve for the purpose. Even the solenoid valve should be checked for the specific performance under the conditions you intend to expose it to.

Coolselector® helps you optimize the choice of component and even tells you how the component behaves at the conditions given.

With the new version of Coolselector® you have all the components required to control a commercial refrigeration plant. Danfoss have now included the well-known compressor and condensing unit selection program RS+3 in Coolselector® which means that you no longer have to open several programs to calculate a compressor, a solenoid valve and an expansion valve. You can now do this in just one program.

The new section with compressors and condensing units also includes compressors for heat pumps which mean that you easily can select the best suited compressor for heat pump applications. Danfoss have on purpose kept the familiar and user friendly interface from RS+3 and just extended the content in accordance with the additional compressors. Coolselector® will continue development and enhancement and offers you automatic-updates also in future.

Please do not hesitate and go to the web address: coolselector.danfoss.com to down-load the program.

Table of contents

1. Thermostatic Expansion Valves

Thermostatic expansion valves.....	T2/TE2.....	6
Thermostatic expansion valves.....	TE5-55.....	10
Thermostatic expansion valves.....	TUA/TUAE/TCAE.....	14
Thermostatic expansion valves.....	TUB/TUBE.....	20
Thermostatic expansion valves.....	PHT.....	24
Thermostatic expansion valves.....	TGE (Bi-flow).....	27
Thermostatic expansion valves.....	TDE/TRE (cross ref).....	32

Electronically operated

Expansion valves.....	AKV.....	40
Electronic expansion valves.....	ETS 6..... <i>New</i>	46
Electronic expansion valves.....	ETS 12.5 - 400.....	48
Electrically operated valves for CO ₂ ...	CCM..... <i>New</i>	52
Electrically operated valves for transcritical and subcritical CO ₂ appl. ...	CCMT..... <i>New</i>	54
Electrically operated suction modulating control valves.....	KVS.....	56

2. Solenoid valves and coils

Solenoid valves/coils.....	EVR/EVRH.....	60
Solenoid valves/coils.....	EVRs/EVRST..... <i>New</i>	64
Solenoid valves/coils.....	EVRA/EVRAT.....	68
Solenoid coils.....	Extended Listing.....	66-67

3. Pressure controls and thermostats

Pressure controls/ Temperature controls.....	KP.....	72
Domestic thermostats.....	077B.....	76
Temperature controls.....	UT.....	78
Pressure controls/ Temperature controls.....	RT.....	80
Differential pressure controls.....	MP.....	84

4. Pressure regulators

Evaporator pressure regulators.....	KVP.....	88
Condensing pressure regulators.....	KVR/NRD.....	90
Crankcase pressure regulators.....	KVL.....	92
Receiver pressure regulators.....	KVD.....	94
Capacity regulators.....	KVC.....	96
Capacity regulators.....	CPCE.....	98
Flexline™ Motor valves.....	ICM 20-150.....	100
Flexline™ Pilot controlled servo valves.....	ICS 25-150.....	104
Pilot valves for servo operated main valves.....	<i>New</i>	110
Flexline™ Valve stations.....	ICF..... <i>New</i>	112
Liquid level sensors.....	AKS 4100/4100U..... <i>New</i>	120

5. Water valves

Water solenoid.....	EV220 B.....	123
Pressure controlled water valves.....	WVFX, WVO, WVS.....	124
Thermostatic controlled water valves.....	AVTA.....	126

6. Line components – Commercial

Ball valves.....	GBC.....	128
Ball valves for CO ₂	GBC..... <i>New</i>	130
Shut-off valves.....	BM.....	132
Check valves.....	NRV/NRVH.....	134
Liquid line filter driers.....	DML.....	136
Drier shells.....	DCR.....	138
Replacement cores.....	48-D.....	141
Bi-flow filter driers.....	DMB.....	142
Combined filter driers and receivers..	DMC.....	144
Suction Burn-out driers.....	DAS.....	146
Sight glasses.....	SGN+.....	148
Oil separators.....	OUB.....	150
Heat exchanger.....	HE.....	152

General

Cotactors & Overloads.....	323
CO ₂ Product range overview.....	324
Industrial Automation Quick Overview.....	328

7. Line components – Industrial

Flexline™ Stop valves.....	SVA-S/SVA-L..... <i>New</i>	154
Stop needle valves.....	SNV-ST/SNV-SS..... <i>New</i>	158
Flexline™ Filters.....	FIA..... <i>New</i>	160
Flexline™ Regulating valves.....	REG-SA/REG-SB.....	164
Flexline™ Stop check and Check valves.....	SCA-X/CHV-X..... <i>New</i>	168
Check valves.....	NRVA.....	170
Safety relief valves.....	SFA 15.....	172
Safety relief valves.....	SFV.....	174
Double stop valves.....	DSV.....	176
Quick closing oil drain valves.....	QDV.....	178
Liquid level glasses.....	LLG.....	180

8. Gas Detector

Gas detectors.....	GD.....	182
Gas sensors.....	DGS..... <i>New</i>	184

9. Electronic controls

Electronic controls overview.....	<i>New</i>	188
Temperature controller.....	EKC 102.....	190
Refrigeration controllers.....	EKC 202.....	192
Refrigeration controllers.....	EKC 302.....	194
Universal refrigeration controller.....	AK-CC 210.....	196
Universal refrigeration controller.....	AK-CC 250A/250B.....	198
Universal refrigeration controller.....	AK-CC 350.....	200
Controller for appliance control.....	AK-CC 450.....	202
Controller for appliance control.....	AK-CC 550A.....	204
Controller for evaporator control.....	AK-CC 750.....	206
Refrigeration controllers.....	EKC 315A.....	208
Superheat controller.....	EKC 312.....	210
Superheat controller.....	EKC 316A.....	212
Superheat controller.....	EKD 316.....	214
Controller for temperature control of unpacked food products.....	EKC 368.....	216
Liquid level controller.....	EKC 347.....	218
Capacity controller.....	EKC 331T.....	220
Capacity controller.....	AK-PC 530.....	222
Optyma™ Control.....	AK-RC 101/AK-RC 103... ..	224
Liquid Level Sensor.....	AKS 4100/4100U.....	228
System Manager.....	AK-SM 350.....	232
System Controller.....	AK-SC 255.....	234

10. Sensor and Transmitters

Temp sensors & press transmitters.....	EKS/AKS.....	236
PT1000 resistance table.....	PT1000.....	239

11. Compressors

Direct Current BD Compressors.....	244	
Household & Light commercial.....	252	
.....	R134a.....	252
.....	R404A/R507.....	254
.....	R290/R600a.....	256
Commercial reciprocating.....	MT/Z.....	262
Commercial reciprocating.....	NTZ.....	266
Common spare parts.....	MT/Z & NTZ.....	267
Light commercial scroll.....	Performer H.....	269
Commercial scroll.....	SM,SZ,SY.....	272
Commercial scroll.....	R410A SH.....	280
Refrigeration scroll.....	MLZ.....	282
Refrigeration scroll.....	MLZ spares.....	287
Heat pump scroll.....	HHP.....	290
Variable speed reciprocating.....	VTZ.....	292

12. Condensing Units

Black Star™ Units Fractional.....	299
Optyma™ Units.....	303

Table of contents – Type

AK IO Extension modules (AK- XM).....	234
AK-355 CS.....	234
AK-CC 210.....	196
AK-CC 250A/250B.....	198
AK-CC 350.....	300
AK-CC 450.....	202
AK-CC 550A.....	204
AK-CC 750.....	206
AK-PC 530.....	222
AK-SC 255.....	234
AK-RC 101/AK-RC 103.....	224
AK-SM 350.....	232
AKS 4100/4100U.....	228
AKV.....	40
AVTA.....	126
BD35F, BD50F, BD80F.....	from 244
BM.....	132
CCM.....	52
CCMT.....	54
CO ₂ overview products.....	324
Contactors Cl.....	323
CPCE.....	98
Danfoss hydrocarbon product range.....	326
DAS.....	146
DCR replacement cores.....	141
DCR shells.....	138
DGS.....	184
Direct current compressors.....	244
DMB.....	142
DMC.....	144
DML.....	136
DSV.....	176
EKC 102.....	190
EKC 202.....	192
EKC 302.....	194
EKC 312.....	210
EKC 315A.....	208
EKC 316A.....	212
EKC 331T.....	220
EKC 347.....	218
EKC 368.....	216
EKD 316.....	214
EKS/AKS.....	236
Electronic controls overview.....	188
ETS 12.5 - 400.....	48
ETS 6.....	46
EVR/EVRH.....	60
EVRA/EVRAT.....	68
EVRS/EVRST.....	64
EV220B.....	123
FIA.....	160
FR.....	from 252
GBC.....	128, 130
GD.....	182
GS Compressor.....	from 252
HCP.....	from 269
HE.....	152
HHP.....	from 290
HLP.....	from 269
HRP.....	from 269
ICF.....	112
ICM 20-150.....	100
ICS 25-150.....	104
KP.....	72
KVC.....	96
KVD.....	94
KVL.....	92
KVP.....	88
KVR/NRD.....	90
KVS.....	56
LLG.....	180
LTZ (cross reference).....	266

Table of contents – Type

Magnet (EVR service tool)	61 and 67
MLZ	from 282
MP 54 and MP 55	84
MT	from 262
MTZ Quick ordering guide	from 263
MTZ	from 262
NL compressor	from 252
NRV/NRVH	134
NRVA	170
NTZ	from 264, 266
Oil Safety MP 54,55	84
OP-LCHC	from 304
OP-LGHC	from 304
OP-MCHC	from 306
OP-MCUC	from 310
OP-MCZC	from 308
OP-MCZC	from 314
OP-MGUC	from 308
OP-MGUD	from 294
OP-MGZC	from 308
OP-MGZC	from 314
OP-MGZD	from 308
OP-MGZD	from 314
Optyma™ condensing units	303
Optyma™ Control	224
OUB	150
PHT	24
Pilot valves for servo operated main valves	110
PL compressor	from 252
PT 1000 resistance table	239
QDV	178
Reciprocating compressors - Variable speed	292
Reciprocating compressors – Commercial	262
Reciprocating compressors – Household & Light commercial	252
REG-SA/REG-SB	164
RT	80
SC compressor	from 252
SCA-X/CHV-X	168
Scroll compressors – H series	269
Scroll compressors – Heat pumps	290
Scroll compressors – SH series	280
SFA 15	172
SFV	174
Simulator (product temp sensor)	237
SGN+	148
SH	from 280
Solenoid coils	from 66
SM	from 272
SNV-ST/SNV-SS	158
SVA-S/SVA-L	154
SY	from 272
SZ	from 272
T2/TE2	6
TCBE	19
TE5-55	10
TGE (TGEX, TGEN, TGEZ, TGEL & TGES)	27
TL compressor	from 252
TUA/TUAE/TCAE	14
TUB/TUBE	20
UT	78
UT 72	78
VTZ	from 292
WVFX, WVO, WVS	124
Water solenoids EV 220B	123
Zone 1 Ex Demko coils	63



T2/TE2 – Thermostatic expansion valves

Thermostatic expansion valves regulate the injection of liquid refrigerant into evaporators. 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.

Features

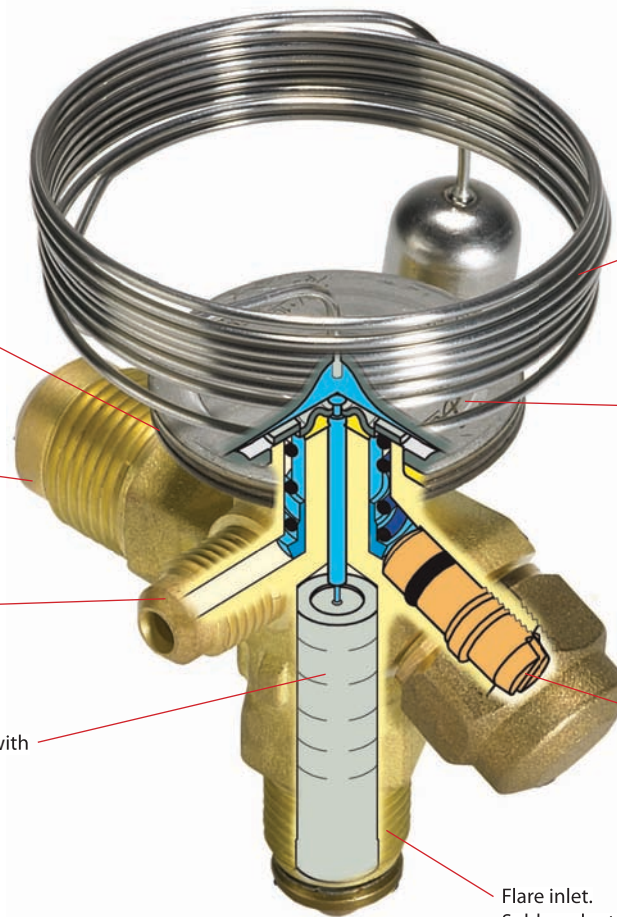
Laser-welded power element in stainless steel

- longer diaphragm life
- high pressure tolerance and working pressure
- high corrosion resistance

Flare or solder outlet

Flare or solder pressure equalization

Interchangeable orifice assembly with dirt protection strainer



Stainless steel capillary tube and bulb:

- high corrosion resistance
- high strength and vibration resistance

Laser-engraved label

Easy adjustment of superheat setting

Flare inlet.
Solder adaptor available as an option

Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Heat pump systems · Air conditioning units · Liquid coolers · Transport refrigeration 	<ul style="list-style-type: none"> · Large temperature range. Equally applicable to freezing, refrigeration and air conditioning applications. · Interchangeable orifice assembly <ul style="list-style-type: none"> · easy stocking · easy capacity matching · better service 	<ul style="list-style-type: none"> · 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. · Flare / solder adaptor can be supplied.

⚠ Note: Valve and orifice sold separately

⚠ Note: Refrigerant designation X= R22, N= R134a, S= R404A/R507, Z= R407c

Technical data and ordering - T2/TE2

Thermostatic element with: bulb strap, without: orifice, strainer cone and nuts

Flare × flare connection

Refrigerant	Valve type	Pressure equalization Flare	Capillary tube	Connection		Code no.					
				Inlet × outlet		Range N -40 to +10°C		Range NL -40 to -5°C	Range NL -40 to -15°C	Range B -60 to -25°C	
				m	in. × in.	mm × mm	Without MOP	MOP +15°C	MOP 0°C	MOP -10°C	Without MOP
R22	TX 2	-	1.5	3/8 × 1/2	10 × 12	068Z3206	068Z3208	068Z3224	068Z3226	068Z3207	068Z3228
	TEX 2	1/4 in.	1.5	3/8 × 1/2	10 × 12	068Z3209	068Z3211	068Z3225	068Z3227	068Z3210	068Z3229
R407C	TZ 2	-	1.5	3/8 × 1/2	10 × 12	068Z3496	068Z3516	-	-	-	-
	TEZ 2	1/4 in.	1.5	3/8 × 1/2	10 × 12	068Z3501	068Z3517	-	-	-	-
R134a	TN 2	-	1.5	3/8 × 1/2	10 × 12	068Z3346	068Z3347	068Z3393	068Z3369	-	-
	TEN 2	1/4 in.	1.5	3/8 × 1/2	10 × 12	068Z3348	068Z3349	068Z3392	068Z3370	-	-
R404A/R507	TS 2	-	1.5	3/8 × 1/2	10 × 12	068Z3400	068Z3402	068Z3406	068Z3408	068Z3401	068Z3410
	TES 2	1/4 in.	1.5	3/8 × 1/2	10 × 12	068Z3403	068Z3405	068Z3407	068Z3409	068Z3404	068Z3411

⚠ Note: Special TX2(R22) Flare with 5 metre capillary (plate freezers) >068-3238

Thermostatic element with: bulb strap, without: orifice, filter cone and nuts

Flare × solder connection

Refrigerant	Valve type	Pressure equalization Solder	Capillary tube	Connection		Code no.				
				Inlet Flare	Outlet ODF solder	Range N -40 to +10°C		Range NL -40 to -15°C	Range B -60 to -25°C	
						m	Without MOP	MOP +15°C	MOP -10°C	Without MOP
R22	TX 2	-	1.5	3/8 in.	1/2 in.	068Z3281	068Z3287	-	068Z3357	-
	TX 2	-	1.5	10 mm	12 mm	068Z3302	068Z3308	-	068Z3361	-
	TEX 2	1/4 in.	1.5	3/8 in.	1/2 in.	068Z3284	068Z3290	-	068Z3359	-
	TEX 2	6 mm.	1.5	10 mm	12 mm	068Z3305	068Z3311	068Z3367	068Z3363	068Z3277
R407C	TZ 2	-	1.5	3/8 in.	1/2 in.	-	068Z3329	-	-	-
	TZ 2	-	1.5	10 mm	12 mm	068Z3502	068Z3514	-	-	-
	TEZ 2	1/4 in.	1.5	3/8 in.	1/2 in.	068Z3446	068Z3447	-	-	-
	TEZ 2	6 mm.	1.5	10 mm	12 mm	068Z3503	068Z3515	-	-	-
R134a	TN 2	-	1.5	3/8 in.	1/2 in.	068Z3383	068Z3387	-	-	-
	TN 2	-	1.5	10 mm	12 mm	068Z3384	068Z3388	-	-	-
	TEN 2	1/4 in.	1.5	3/8 in.	1/2 in.	068Z3385	068Z3389	-	-	-
	TEN 2	6 mm.	1.5	10 mm	12 mm	068Z3386	068Z3390	-	-	-
R404A/R507	TS 2	-	1.5	3/8 in.	1/2 in.	068Z3414	068Z3416	068Z3429	068Z3418	068Z3420
	TS 2	-	1.5	10 mm	12 mm	068Z3435	068Z3423	068Z3436	068Z3425	068Z3427
	TES 2	1/4 in.	1.5	3/8 in.	1/2 in.	068Z3415	068Z3417	068Z3430	068Z3419	068Z3421
	TES 2	6 mm.	1.5	10 mm	12 mm	068Z3422	068Z3424	068Z3437	068Z3426	068Z3428

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

⚠ Note: Flare/solder versions are flare-inlet and solder outlet including EXT EQ line

Orifice assembly

Valve type Orifice	R134a		R404A		R407C		R22		Code no.	
	kW	TR	kW	TR	kW	TR	kW	TR	Flare × Flare version	Solder adaptor version
T2 Orif. 0X	0.68	0.19	0.64	0.18	0.92	0.26	0.90	0.25	068-2002	068-2089
T2 Orif. 00	1.2	0.34	1.3	0.37	1.8	0.51	1.8	0.51	068-2003	068-2090
T2 Orif. 01	2.1	0.59	2.6	0.75	3.5	1.0	3.5	0.99	068-2010	068-2091
T2 Orif. 02	2.5	0.73	3.7	1.1	4.8	1.4	4.7	1.3	068-2015	068-2092
T2 Orif. 03	4.3	1.2	6.3	1.8	8.1	2.3	8.0	2.3	068-2006	068-2093
T2 Orif. 04	6.4	1.8	9.9	2.8	12.4	3.5	12.1	3.5	068-2007	068-2094
T2 Orif. 05	8.4	2.3	13.0	3.7	16.5	4.7	16.7	4.8	068-2008	068-2095
T2 Orif. 06	10.1	2.9	15.5	4.4	19.7	5.6	19.7	5.6	068-2009	068-2096

The rated capacity is based on: Evaporating temperature $t_e = +4.4$ °C for range N, condensing temperature $t_c = +38$ °C, and refrigerant temperature ahead of valve $t_i = +37$ °C.

Solder adaptor without orifice assembly

Connection – ODF solder	Code no.
1/4 in.	068-2062
6 mm	068-2063
6 mm	068-4101 ¹⁾
3/8 in.	068-2060
10 mm	068-2061
10 mm	068-4100 ¹⁾

¹⁾ Including filter.

Filter

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

The adaptor is for use with thermostatic expansion valves T2 and TE2. When the adaptor is fitted correctly it meets the sealing requirements of DIN 8964.

The flare orifice in T2 and TE2 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 in the T2 inlet.

Bulb strap (delivered with the valve) and accessories

Type	Length	Max. diameter of suction line	Code no.
T2 / TE2 Accessories	110 mm	1 1/8" (28 mm)	068U3507
	190 mm	2" (50 mm)	067N3508

Capacities - T2/TE2 orifice selection

Capacity in kW, range N -40 °C to +10 °C. Opening superheat sh= 4.4 K

Valve type/ Orifice	Cond. temp. ³⁾ [°C]	R134a					R404A					R407C					R22			
		Capacity in [kW]					Capacity in [kW]					Capacity in [kW]					Capacity in [kW]			
		Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]			
		-30	-10	-5	0	5	-40	-35	-30	-10	0	-10	-5	0	5	10	-35	-30	0	5
T2 / 0X	25	0.54	0.62	0.62	0.61	0.58	0.55	0.58	0.61	0.65	0.62	0.90	0.90	0.88	0.86	0.81	0.79	0.82	0.81	0.76
T2 / 00		0.67	0.95	1.0	1.0	1.0	0.7	0.8	0.9	1.2	1.2	1.6	1.7	1.7	1.7	1.6	1.1	1.2	1.6	1.5
T2 / 01		0.92	1.5	1.6	1.7	1.8	1.0	1.2	1.4	2.2	2.4	2.8	3.0	3.2	3.3	3.3	1.5	1.7	2.9	2.9
T2 / 02		1.0	1.7	1.9	2.1	2.2	1.1	1.3	1.6	2.8	3.3	3.4	3.8	4.2	4.5	4.6	1.7	2.0	3.8	4.0
T2 / 03		1.7	2.9	3.2	3.5	3.7	1.9	2.2	2.7	4.7	5.5	5.7	6.4	7.1	7.6	7.9	2.9	3.3	6.4	6.7
T2 / 04		2.5	4.2	4.7	5.2	5.5	2.7	3.2	3.8	7.1	8.5	8.4	9.5	10.6	11.7	12.5	4.2	4.8	9.7	10.1
T2 / 05	3.3	5.6	6.2	6.8	7.3	3.5	4.2	5.0	9.4	11.2	11.0	12.5	14.0	15.4	16.3	5.4	6.3	13.1	13.7	
T2 / 06	3.9	6.7	7.5	8.2	8.7	4.2	5.0	6.0	11.2	13.4	13.2	15.0	16.8	18.5	19.4	6.4	7.4	15.4	16.2	
T2 / 0X	35	0.57	0.67	0.68	0.69	0.68	0.52	0.55	0.59	0.67	0.68	0.94	0.95	0.95	0.94	0.92	0.82	0.86	0.92	0.89
T2 / 00		0.69	1.0	1.1	1.2	1.2	0.67	0.78	0.88	1.3	1.3	1.7	1.8	1.8	1.9	1.9	1.1	1.2	1.8	1.8
T2 / 01		0.96	1.6	1.8	2.0	2.1	0.95	1.1	1.3	2.3	2.6	2.9	3.2	3.4	3.6	3.8	1.6	1.8	3.3	3.5
T2 / 02		1.1	1.9	2.1	2.4	2.6	1.1	1.3	1.5	2.9	3.6	3.5	4.0	4.5	4.9	5.3	1.8	2.1	4.4	4.7
T2 / 03		1.8	3.1	3.5	4.0	4.4	1.8	2.1	2.6	4.9	6.1	6.0	6.8	7.6	8.4	9.0	3.0	3.5	7.4	8.0
T2 / 04		2.6	4.6	5.2	5.9	6.5	2.6	3.1	3.8	7.5	9.5	8.7	10.0	11.4	12.9	14.2	4.4	5.1	11.2	12.1
T2 / 05	3.5	6.1	6.9	7.7	8.6	3.4	4.1	4.9	9.8	12.5	11.5	13.2	15.1	17.0	18.6	5.8	6.7	15.3	16.7	
T2 / 06	4.1	7.2	8.2	9.2	10.2	4.0	4.8	5.8	11.7	14.9	13.8	15.9	18.1	20.4	22.2	6.8	7.8	17.9	19.7	
T2 / 0X	45	0.57	0.69	0.71	0.73	0.74	0.46	0.51	0.54	0.65	0.68	0.94	0.96	0.97	0.97	0.97	0.84	0.88	0.98	0.97
T2 / 00		0.70	1.1	1.2	1.3	1.3	0.61	0.70	0.81	1.2	1.3	1.7	1.8	1.9	1.9	1.9	1.1	1.3	1.9	1.9
T2 / 01		0.97	1.7	1.9	2.1	2.3	0.86	1.0	1.2	2.2	2.7	2.9	3.2	3.5	3.8	4.0	1.6	1.9	3.6	3.8
T2 / 02		1.1	1.9	2.2	2.5	2.8	0.97	1.2	1.4	2.8	3.6	3.5	4.0	4.6	5.1	5.6	1.9	2.1	4.7	5.2
T2 / 03		1.8	3.3	3.7	4.2	4.7	1.6	2.0	2.4	4.8	6.2	6.0	6.9	7.8	8.7	9.5	3.1	3.6	8.1	8.9
T2 / 04		2.7	4.8	5.5	6.2	7.1	2.4	2.9	3.5	7.3	9.7	8.8	10.2	11.7	13.4	15.0	4.7	5.4	12.2	13.4
T2 / 05	3.6	6.3	7.2	8.2	9.3	3.2	3.8	4.6	9.6	12.9	11.7	13.5	15.6	17.7	19.8	6.1	7.0	16.7	18.7	
T2 / 06	4.2	7.5	8.6	9.8	11.1	3.7	4.5	5.4	11.4	15.4	13.9	16.1	18.7	21.3	23.6	7.1	8.2	19.5	22.0	
T2 / 0X	55	0.56	0.69	0.72	0.74	0.75	0.39	0.44	0.47	0.59	0.62	0.91	0.93	0.95	0.96	0.96	0.84	0.88	1.0	1.0
T2 / 00		0.69	1.1	1.2	1.3	1.4	0.52	0.61	0.70	1.1	1.2	1.6	1.7	1.8	1.9	1.9	1.1	1.3	2.0	2.0
T2 / 01		0.95	1.7	1.9	2.1	2.3	0.74	0.89	1.1	2.0	2.4	2.8	3.1	3.4	3.7	4.0	1.6	1.9	3.7	4.0
T2 / 02		1.1	1.9	2.2	2.6	2.9	0.8	1.0	1.2	2.5	3.4	3.4	3.9	4.5	5.1	5.6	1.9	2.2	4.9	5.5
T2 / 03		1.8	3.3	3.8	4.3	4.9	1.4	1.7	2.1	4.3	5.8	5.8	6.7	7.7	8.7	9.6	3.2	3.7	8.5	9.5
T2 / 04		2.8	4.9	5.6	6.4	7.3	2.2	2.6	3.1	6.5	9.0	8.7	10.0	11.6	13.3	15.1	4.8	5.5	12.5	14.0
T2 / 05	3.6	6.4	7.3	8.4	9.6	2.8	3.4	4.1	8.6	11.9	11.4	13.3	15.4	17.8	20.0	6.3	7.2	17.3	19.6	
T2 / 06	4.3	7.5	8.7	10.0	11.4	3.3	4.0	4.8	10.3	14.3	13.6	15.9	18.5	21.3	24.0	7.3	8.4	20.3	23.2	

³⁾ Condensing temperature at bubble point.

Correction factor

Refrigerant	Subcooling [K]											
	2	4	10	15	20	25	30	35	40	45	50	
R134a	0.98	1	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54	
R404A/R507	0.96	1	1.10	1.20	1.29	1.37	1.46	1.54	1.63	1.70	1.78	
R407C	0.97	1	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57	
R22	0.98	1	1.06	1.11	1.15	1.20	1.25	1.30	1.35	1.39	1.44	

When the subcooling $\Delta t_{sub} = 4$ K then:

Plant capacity / Factor = Table value

Example:

Refrigerant = R407C

$Q_{nom} = 10$ kW

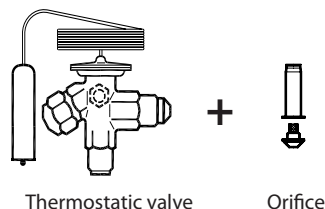
$t_e = 0^\circ\text{C}$

$t_c = 55^\circ\text{C}$

$\Delta t_{sub} = 25$ K

Selection:

$10 \text{ kW} / 1.27 = 7.9 \text{ kW} \rightarrow \text{T2, Orifice 04}$



Thermostatic valve

Orifice

Notes - T2/TE2 valves

1. T2/TE2 valves with 5 metre capillary are available as a special order on limited models.

- TX2 (R22) range 'n' flare: 068 - 3238

- TS2 (R404A/R507) range 'n' flare: 068 - 3482

- TES2 (R404A/R507) range 'n' flare: 068 - 3493

2. T2/TE2 orifice spare filter code: 068 - 0003



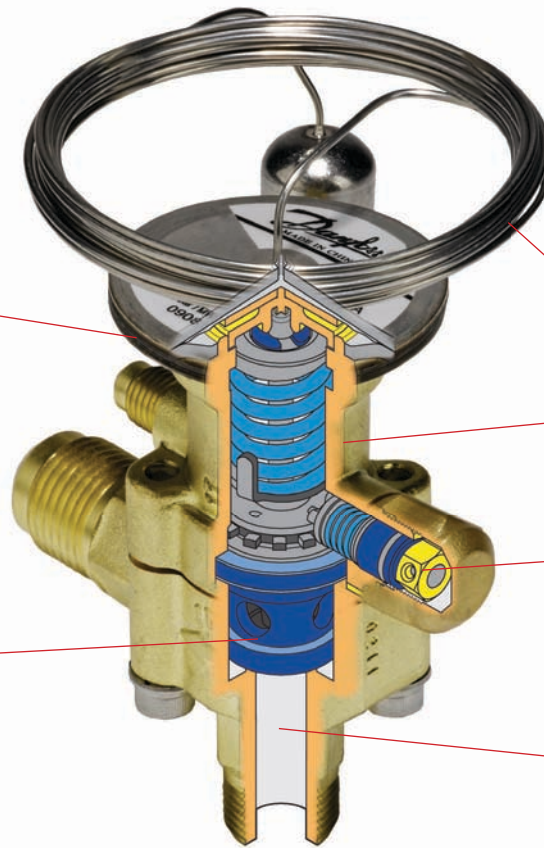
TE5-55 – Thermostatic expansion valves

Thermostatic expansion valves TE5-55 regulate the injection of refrigerant liquid into evaporators for medium sized plants (rated capacities from 8 kW to 182 kW for R404A/R507). 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.

Features

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

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



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

Large parts program ensures minimal stocks

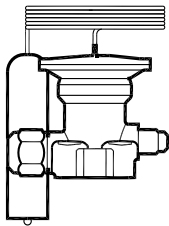
Easy adjustment of superheat setting

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

Applications	Advantages	Facts
<ul style="list-style-type: none"> • Traditional refrigeration • Air conditioning units • Ice cube machines • Water chillers 	<ul style="list-style-type: none"> • Interchangeable orifice assembly designed for: <ul style="list-style-type: none"> • Easy assembly and mounting • Optimised capacity matching • Balanced port (TE55 only) • Large temperature range -60 to +10°C 	<ul style="list-style-type: none"> • Available with MOP (Max. Operating Pressure). Protects the compressor motor against excessive evaporating pressure. • Refrigerants: R22, R134a, R404A/R507, R407C • Maximum Working Pressure: 28 bar

⚠ Note: Refrigerant designation X= R22, N= R134a, S= R404A/R507, Z= R407c

Technical data and ordering: TE5 - 55 Power elements



Thermostatic element - including bulb strap **R407C**

Valve type	Pressure equalization	Capillary tube	Code no.	
			Range N -40 to +10°C	
			1/4 in. / 6 mm	m
TEZ 5	Ext.	3	067B3278	067B3277
TEZ 12	Ext.	3	067B3366	067B3367
TEZ 20	Ext.	3	067B3371	067B3372
TEZ 55	Ext.	3	067G3240	067G3241

Thermostatic element - including bulb strap **R134a**

Valve type	Pressure equalization	Capillary tube	Code no.		
			Range N -40 to +10°C		Range NM -40 to -5°C
			1/4 in. / 6 mm	m	Without MOP
TEN 5	Ext.	3	067B3297	067B3298	067B3360
TEN 12	Ext.	3	067B3232	067B3233	-
TEN 12	Ext.	5	067B3363	-	-
TEN 20	Ext.	3	067B3292	067B3293	-
TEN 20	Ext.	5	067B3370	-	-
TEN 55	Ext.	3	067G3222	067G3223	-
TEN 55	Ext.	5	067G3230	-	-

Thermostatic element - including bulb strap

R404A/R507

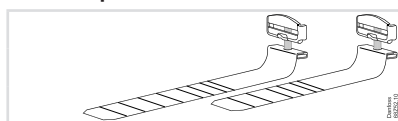
Valve type	Pressure equalization	Capillary tube	Code no.					
			Range N -40 to +10°C		Range NM-40 to -5°C	Range NL -40 to -15°C	Range B -60 to -25°C	
			1/4 in. / 6 mm	m	Without MOP	MOP +15°C	MOP 0°C	MOP -10°C
TES 5	Ext.	3	067B3342	-	067B3357	067B3358	067B3344	067B3343
TES 12	Ext.	3	067B3347	-	067B3345	067B3348	-	067B3349
TES 12	Ext.	5	067B3346	-	-	-	-	067B3350
TES 20	Ext.	3	067B3352	-	067B3351	067B3353	-	067B3354
TES 20	Ext.	5	067B3356	-	-	-	-	067B3355
TES 55	Ext.	3	067G3302	-	067G3303	067G3304	-	067G3305
TES 55	Ext.	5	067G3301	-	-	-	-	067G3306

Thermostatic element - including bulb strap

R22

Valve type	Pressure equalization	Capillary tube	Code no.					
			Range N -40°C to +10°C		Range NM -40 to -5°C	Range NL -40 to -15°C	Range B -60 to -25°C	
			1/4 in. / 6 mm	m	Without MOP	MOP+15°C	MOP 0°C	MOP -10°C
TEX 5	Ext.	3	067B3250	067B3267	067B3249	067B3253	067B3263	067B3251
TEX 12	Ext.	3	067B3210	067B3227	067B3207	067B3213	-	067B3211
TEX 12	Ext.	5	067B3209	-	-	-	-	067B3212
TEX 20	Ext.	3	067B3274	067B3286	067B3273	067B3275	-	067B3276
TEX 20	Ext.	5	067B3290	-	-	-	-	067B3287
TEX 55	Ext.	3	067G3205	067G3220	067G3206	-	-	067G3207
TEX 55	Ext.	5	067G3209	-	-	-	-	067G3217

Bulb strap (delivered with the element)



Type	Length	Max. diameter of suction line	Code no.
TE5 and TE12	225 mm	2 1/2 in. (54 mm)	067N0558
TE20 and TE55	350 mm	3 1/2 in. (78 mm)	067N0559

⚠ Note: Bolt kit is supplied with the valve body
 TE5/TE12/TE20 Bolt kit (spare part): 068B0018
 TE55 Bolt kit (spare part): 068B0514

Technical data and ordering: TE5 - 55 orifice selection

Orifice assembly

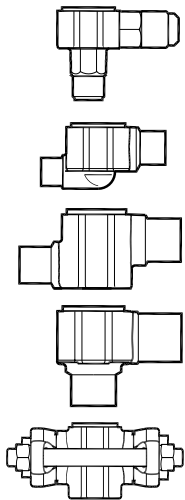
SI N	R134a		R404A/R507		R407C		R22		Orifice no.	Code no.
	kW	TR	kW	TR	kW	TR	kW	TR		
TE5 - 0.5	6.7	1.9	8.1	2.3	10.7	3.1	10.4	3.0	0.5	067B2788
TE5 - 1	12.2	3.5	14.8	4.2	19.6	5.6	19.0	5.4	1	067B2789
TE5 - 2	17.0	4.8	20.4	5.8	27.1	7.7	26.3	7.5	2	067B2790
TE5 - 3	21.8	6.2	26.2	7.5	34.7	9.9	33.8	9.6	3	067B2791
TE5 - 4	29.7	8.5	35.5	10.1	47.3	13.5	45.9	13.1	4	067B2792
TE12 - 5	37.7	10.7	50.0	14.3	56.0	16.0	57.0	16.2	5	067B2708
TE12 - 6	50.0	14.3	64.0	18.2	74.0	21.1	76.0	21.7	6	067B2709
TE12 - 7	66.0	18.8	81.0	23.1	94.0	26.8	98.0	27.9	7	067B2710
TE20 - 8	78.0	22.2	87.0	24.8	117.0	33.3	128.0	36.5	8	067B2771
TE20 - 9	92.0	26.2	101.0	28.8	136.0	38.7	150.0	42.7	9	067B2773
TE55 - 10	111.0	31.6	127.0	36.2	161.0	45.8	168.0	47.9	10	067G2701
TE55 - 11	122.0	34.8	138.0	39.3	175.0	49.9	183.0	52.1	11	067G2704
TE55 - 12	134.0	38.2	151.0	43.0	191.0	54.4	202.0	57.6	12	067G2707
TE55 - 13	166.0	47.3	182.0	51.9	231.0	65.8	245.0	69.8	13	067G2710

The rated capacity is based on:

Evaporating temperature $t_e = +4.4\text{ }^\circ\text{C}$
 Condensing temperature $t_c = +38\text{ }^\circ\text{C}$
 Refrigerant temperature ahead of valve $t_i = +37\text{ }^\circ\text{C}$

TE5 - 55 body selection

Valve body



Type	Connection Inlet × Outlet		Code no.			
	in.	mm	Flare angleway	Solder angleway	Solder straightway	Solder flanges
TE 5	$1/2 \times 5/8$	-	067B4013	067B4009 ¹⁾	067B4007 ¹⁾	-
	$1/2 \times 7/8$	-	-	067B4010 ¹⁾	067B4008 ¹⁾	-
	$5/8 \times 7/8$	-	-	067B4011 ¹⁾	067B4032 ¹⁾	-
	$7/8 \times 1 1/8$	-	-	067B4034 ²⁾	067B4033 ²⁾	-
TE 5	-	12 × 16	067B4013	067B4004 ¹⁾	067B4002 ¹⁾	-
	-	12 × 22	-	067B4005 ¹⁾	067B4003 ¹⁾	-
	-	16 × 22	-	067B4012 ¹⁾	067B4035 ¹⁾	-
	-	22 × 28	-	067B4037 ²⁾	067B4036 ²⁾	-
TE 12	$5/8 \times 7/8$	-	-	-	-	067B4025 ¹⁾
	$7/8 \times 1$	-	-	-	-	067B4026 ¹⁾
	$7/8 \times 1 1/8$	-	-	067B4023 ²⁾	067B4021 ²⁾	-
TE 12	-	16 × 22	-	-	-	067B4027 ¹⁾
	-	22 × 25	-	-	-	067B4015 ¹⁾
	-	22 × 28	-	067B4017 ²⁾	067B4016 ²⁾	-
TE 20	$7/8 \times 1 1/8$	-	-	067B4023 ²⁾	067B4021 ²⁾	-
	-	22 × 28	-	067B4017 ²⁾	067B4016 ²⁾	-
TE 55	$1 1/8 \times 1 3/8$	-	-	067G4004 ³⁾	067G4003 ³⁾	-
	-	28 × 35	-	067G4002 ³⁾	067G4001 ³⁾	-

¹⁾ ODF × ODF

²⁾ ODF × ODM

³⁾ ODM × ODM

ODF = Internal diameter

ODM = External diameter

When the subcooling $\Delta 4\text{ K}$ then:

Plant capacity / Factor = Table value

Example:

Refrigerant = R404A

Q_{nom} = 10 kW

t_e = $-10\text{ }^\circ\text{C}$

t_c = $45\text{ }^\circ\text{C}$

Dt_{sub} = 25 K

Selection:

$10\text{ kW} / 1.46 = 6.85\text{ kW} \rightarrow \text{TE5, Orifice 01}$

⚠ Note: Complete valve requires 3 components

⚠ Note: TE5/TE12/TE20/TE55 Bolt kit is supplied with the body



Thermostatic element + Orifice + Valve body

Capacities - TE5 - 55 Extended capacity tables

Capacity in kW, range N -40 °C to +10 °C. Opening superheat sh= 4.4 K

Valve type/ Orifice	Cond. temp. ³⁾ [°C]	R134a					R404A/R507					R407C					R22			
		Capacity in [kW]					Capacity in [kW]					Capacity in [kW]					Capacity in [kW]			
		Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]			
		-30	-10	-5	0	5	-40	-35	-30	-10	0	-10	-5	0	5	10	-35	-30	0	5
TE5 - 0.5	25	3.3	5.0	5.4	5.7	5.8	3.7	4.2	4.8	6.9	7.5	8.6	9.2	9.7	10.0	10.0	5.1	5.7	8.9	8.9
TE5 - 1	25	6.1	9.2	9.8	10.3	10.6	6.8	7.7	8.8	12.7	13.7	15.7	16.8	17.6	18.2	18.2	9.4	10.5	16.2	16.2
TE5 - 2	25	8.6	12.8	13.7	14.4	14.6	9.5	10.9	12.3	17.6	18.8	21.8	23.3	24.4	25.0	24.9	13.2	14.8	22.3	22.2
TE5 - 3	25	11.0	16.5	17.7	18.6	19.0	12.0	13.8	15.6	22.6	24.4	28.1	30.0	31.6	32.4	32.4	16.8	18.8	28.9	28.8
TE5 - 4	25	14.9	22.5	24.2	25.4	25.9	16.1	18.5	21.1	30.8	33.1	38.2	40.9	42.9	44.0	43.7	22.6	25.5	39.3	38.9
TE12 - 5	25	19.3	29.0	31.2	33.0	33.9	20.7	24.2	27.9	43.9	48.9	45.1	49.2	53.0	55.0	56.0	27.7	31.2	51.0	51.0
TE12 - 6	25	25.2	38.4	41.4	43.9	45.2	24.9	29.3	34.1	55.0	62.0	59.0	65.0	70.0	73.0	75.0	35.8	40.5	67.0	68.0
TE12 - 7	25	33.8	52.0	56.0	59.0	61.0	32.5	37.9	43.9	72.0	81.0	78.0	86.0	93.0	98.0	100.0	46.9	53.0	90.0	91.0
TE20 - 8	25	39.1	60.0	64.0	68.0	69.0	35.7	41.8	48.4	75.0	83.0	96.0	104.0	110.0	113.0	113.0	62.0	71.0	113.0	112.0
TE20 - 9	25	45.4	72.0	78.0	82.0	85.0	39.5	46.5	54.0	88.0	100.0	112.0	123.0	131.0	137.0	137.0	69.0	80.0	136.0	135.0
TE55 - 10	25	53.0	84.0	92.0	98.0	102.0	46.5	55.0	65.0	108.0	124.0	130.0	142.0	153.0	162.0	166.0	75.0	86.0	150.0	153.0
TE55 - 11	25	59.0	93.0	102.0	109.0	113.0	51.0	61.0	71.0	118.0	136.0	143.0	156.0	168.0	177.0	181.0	83.0	95.0	165.0	167.0
TE55 - 12	25	64.0	103.0	113.0	121.0	126.0	55.0	65.0	77.0	130.0	151.0	156.0	172.0	186.0	197.0	202.0	90.0	103.0	183.0	187.0
TE55 - 13	25	80.0	130.0	142.0	152.0	157.0	67.0	79.0	94.0	159.0	183.0	192.0	211.0	228.0	241.0	246.0	111.0	127.0	225.0	228.0
TE5 - 0.5	35	3.4	5.3	5.9	6.4	6.8	3.5	4.0	4.6	7.1	8.1	8.8	9.6	10.4	11	11.4	5.27	5.93	10.0	10.4
TE5 - 1	35	6.29	9.85	10.8	11.6	12.4	6.3	7.3	8.37	12.9	14.8	16.2	17.7	19.0	20.1	20.9	9.69	10.9	18.4	19.1
TE5 - 2	35	8.83	13.8	15.0	16.2	17.1	8.9	10.3	11.8	18.0	20.4	22.6	24.6	26.4	27.8	28.7	13.6	15.3	25.4	26.2
TE5 - 3	35	11.3	17.6	19.3	20.8	22.1	11.1	12.9	14.8	22.9	26.3	28.8	31.4	33.8	35.7	37.0	17.1	19.3	32.7	33.9
TE5 - 4	35	15.2	24.0	26.3	28.4	30.1	14.9	17.3	19.9	31.2	35.7	39.1	42.7	46.0	48.6	50.0	22.9	25.9	44.5	45.9
TE12 - 5	35	19.5	30.3	33.3	36.1	38.5	18.6	21.8	25.3	42.3	51.0	44.2	49.2	54.0	58.0	62.0	27.7	31.2	55.0	58.0
TE12 - 6	35	25.1	39.8	43.9	47.8	51.0	22.3	26.3	30.7	53.0	64.0	58.0	64.0	71.0	77.0	82.0	35.4	40.1	74.0	77.0
TE12 - 7	35	33.3	52.0	58.0	63.0	68.0	27.8	32.6	37.9	66.0	81.0	73.0	82.0	92.0	100.0	107.0	45.5	51.0	95.0	101.0
TE20 - 8	35	39.2	62.0	69.0	74.0	79.0	32.4	38.0	44.3	74.0	87.0	96.0	105.0	114.0	122.0	127.0	62.0	70.0	125.0	129.0
TE20 - 9	35	44.4	73.0	81.0	88.0	95.0	34.9	41.1	48.2	84.0	101.0	108.0	120.0	132.0	143.0	151.0	67.0	76.0	146.0	153.0
TE55 - 10	35	51.0	85.0	95.0	105.0	114.0	40.6	48.7	58.0	103.0	126.0	126.0	141.0	155.0	169.0	180.0	72.0	83.0	162.0	172.0
TE55 - 11	35	56.0	94.0	105.0	116.0	126.0	44.2	53.0	63.0	112.0	137.0	138.0	153.0	169.0	184.0	196.0	79.0	91.0	177.0	187.0
TE55 - 12	35	61.0	103.0	116.0	128.0	139.0	47.1	57.0	67.0	121.0	150.0	149.0	167.0	185.0	202.0	216.0	85.0	98.0	194.0	207.0
TE55 - 13	35	75.0	128.0	144.0	159.0	172.0	56.0	68.0	80.0	146.0	181.0	181.0	203.0	225.0	245.0	262.0	103.0	119.0	237.0	251.0
TE5 - 0.5	45	3.4	5.5	6.1	6.7	7.3	3.1	3.6	4.1	6.8	8.0	8.7	9.5	10.4	11.3	12	5.32	5.98	10.6	11.3
TE5 - 1	45	6.3	10.1	11.2	12.3	13.4	5.65	6.6	7.6	12.3	14.7	15.9	17.6	19.2	20.7	22.1	9.76	11.0	19.5	20.7
TE5 - 2	45	8.8	14.1	15.7	17.2	18.6	7.94	9.3	10.7	17.2	20.4	22.4	24.6	26.8	28.9	30.5	13.7	15.4	27.2	28.7
TE5 - 3	45	11.2	17.9	19.9	21.9	23.7	9.85	11.5	13.2	21.6	25.9	28.0	30.9	33.9	36.6	38.9	17.1	19.3	34.5	36.6
TE5 - 4	45	14.9	24.3	27.1	29.8	32.4	13.0	15.3	17.7	29.4	35.4	38.0	42.2	46.3	50.0	53.0	22.7	25.7	47.1	49.9
TE12 - 5	45	19.0	30.0	33.3	36.7	40.1	16.1	18.8	21.9	37.8	47.4	40.9	46.0	51.0	57.0	61.0	27.1	30.3	56.0	60.0
TE12 - 6	45	24.3	39.1	43.7	48.5	53.0	19.0	22.5	26.4	46.9	60.0	53.0	60.0	67.0	75.0	82.0	34.2	38.6	74.0	80.0
TE12 - 7	45	31.7	50.0	56.0	62.0	68.0	23.1	27.0	31.3	56.0	72.0	65.0	73.0	83.0	92.0	102.0	43.3	48.3	92.0	100.0
TE20 - 8	45	38.0	62.0	69.0	76.0	83.0	28.0	32.9	38.4	67.0	83.0	90.0	100.0	111.0	121.0	130.0	60.0	68.0	127.0	136.0
TE20 - 9	45	42.1	70.0	79.0	88.0	97.0	29.5	34.8	40.7	73.0	93.0	97.0	110.0	123.0	137.0	149.0	63.0	71.0	144.0	156.0
TE55 - 10	45	47.4	83.0	94.0	105.0	117.0	33.4	40.5	48.5	91.0	117.0	116.0	131.0	147.0	164.0	179.0	67.0	78.0	163.0	177.0
TE55 - 11	45	52.0	91.0	103.0	115.0	128.0	36.2	43.9	52.0	98.0	126.0	126.0	142.0	160.0	177.0	194.0	74.0	85.0	176.0	192.0
TE55 - 12	45	56.0	98.0	111.0	126.0	140.0	38.2	46.4	56.0	105.0	136.0	135.0	153.0	172.0	192.0	211.0	78.0	90.0	191.0	209.0
TE55 - 13	45	68.0	120.0	137.0	154.0	171.0	44.6	54.0	65.0	125.0	162.0	161.0	183.0	207.0	231.0	253.0	93.0	108.0	231.0	252.0
TE5 - 0.5	55	3.3	5.4	6.1	6.7	7.4	2.6	3.0	3.5	5.8	7.2	8.1	9.0	9.9	10.8	11.7	5.3	5.9	10.7	11.6
TE5 - 1	55	6.1	10.0	11.1	12.4	13.6	4.8	5.6	6.4	10.8	13.3	14.9	16.6	18.3	20.0	21.7	9.7	10.9	19.8	21.3
TE5 - 2	55	8.5	14.0	15.6	17.3	19.0	6.7	7.9	9.1	15.2	18.6	21.1	23.4	25.8	28.1	30.3	13.5	15.3	27.8	29.7
TE5 - 3	55	10.8	17.5	19.6	21.8	24.0	8.2	9.6	11.1	18.7	23.2	25.9	28.8	31.9	35.0	37.9	16.8	18.9	34.6	37.2
TE5 - 4	55	14.3	23.7	26.6	29.6	32.7	10.8	12.7	14.8	25.5	31.9	35.1	39.4	43.8	48.2	52.0	22.1	25.0	47.5	51.0
TE12 - 5	55	18.0	28.3	31.7	35.2	39.0	13.3	15.5	18.0	31.1	39.9	36.0	40.6	45.6	51.0	56.0	26.1	29.0	53.0	58.0
TE12 - 6	55	22.8	36.8	41.4	46.4	52.0	15.5	18.3	21.4	38.4	50.0	46.4	53.0	60.0	67.0	75.0	32.6	36.5	71.0	78.0
TE12 - 7	55	29.4	45.8	51.0	57.0	64.0	18.6	21.6	24.9	43.4	57.0	55.0	62.0	70.0	79.0	88.0	40.8	45.0	84.0	92.0
TE20 - 8	55	35.9	58.0	66.0	73.0	81.0	23.1	27.1	31.5	55.0	71.0	80.0	90.0	100.0	112.0	122.0	57.0	64.0	123.0	134.0
TE20 - 9	55	38.9	64.0	73.0	82.0	92.0	23.8	27.9	32.6	59.0	77.0	84.0	95.0	108.0	121.0	135.0	58.0	66.0	134.0	148.0
TE55 - 10	55	42.6	76.0	87.0	99.0	112.0	25.7	31.5	38.1	74.0	98.0	101.0	116.0	132.0	148.0	165.0	61.0	71.0	155.0	171.0
TE55 - 11	55	46.5	83.0	95.0	108.0	122.0	27.7	33.9	40.9	79.0	105.0	109.0	125.0	142.0	159.0	178.0	66.0	77.0	167.0	184.0
TE55 - 12	55	49.4	89.0	102.0	117.0	132.0	28.9	35.5	42.9	84.0	112.0	116.0	132.0	151.0	170.0	191.0	70.0	81.0	179.0	199.0
TE55 - 13	55	59.0	107.0	123.0	141.0	160.0	33.1	40.9	49.6	98.0	131.0	136.0	156.0	178.0	202.0	227.0	81.0	95.0	213.0	237.0

³⁾ Condensing temperature at bubble point.

Subcooling correction factor 'f_{sub}'

'f_{sub}' = saturated condensing temp. - liquid temp. at valve inlet

Refrigerant	Subcooling [K]										
	2	4	10	15	20	25	30	35	40	45	50
R134a	0.97	1.00	1.09	1.16	1.23	1.30	1.37	1.44	1.51	1.58	1.65
R404A/R507	0.97	1.00	1.10	1.19	1.27	1.35	1.43	1.52	1.60	1.68	1.76
R407C	0.97	1.00	1.08	1.15	1.22	1.29	1.36	1.43	1.50	1.57	1.64
R22	0.98	1.00	1.07	1.13	1.19	1.25	1.30	1.36	1.42	1.47	1.53

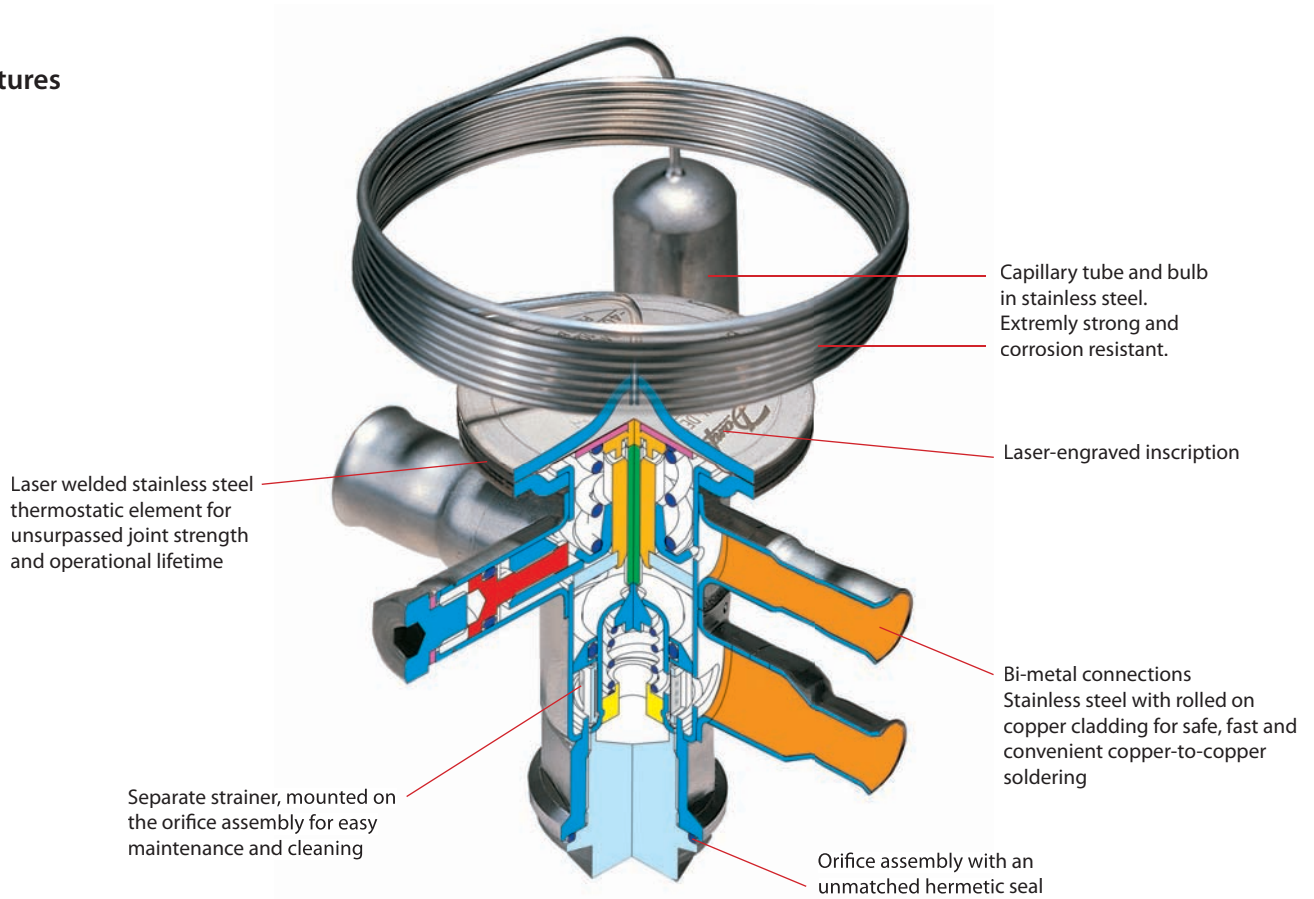


TUA/TUAE/TCAE – Thermostatic expansion valves

Thermostatic expansion valves regulate the injection of liquid refrigerant into evaporators. 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.

⚠ Note: Valve and orifice sold separately

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Heat pump systems Air conditioning units Liquid coolers Ice cube machines Transport refrigeration 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. Only 4 K opening superheat. Bi-flow function.

⚠ TUA = internally equalized
TUAE = externally equalized

Technical data and ordering: TUA/TUAE

Thermostatic element, without orifice or strainer, with bulb strap ¹⁾

Refrigerant	Type	Pressure equalization	Connections Inlet x outlet		Code no.				
					Range N -40 to +10°C		Range NM -40 to -5°C	Range B -60 to -25°C	
			in.	mm	Without MOP	MOP +15°C	MOP 0°C	Without MOP	MOP -20°C
R22	TUA	Int.	1/4 x 1/2	6 x 12	068U2234	-	-	-	-
	TUA	Int.	3/8 x 1/2		068U2230	-	-	-	-
	TUA	Int.	3/8 x 1/2		068U2235	-	-	-	-
	TUA	Int.	10 x 12	068U2231	-	-	-	-	
	TUAE	Ext. 1/4 in. Ext. 6 mm	1/4 x 1/2	6 x 12	068U2236	-	-	-	-
	TUAE	Ext. 1/4 in. Ext. 6 mm	3/8 x 1/2		068U2237	068U2245	-	-	-
TUAE	Ext. 1/4 in. Ext. 6 mm	10 x 12	068U2233		068U2241	-	-	-	
R134a	TUA	Int.	1/4 x 1/2	6 x 12	068U2204	068U2212	-	-	-
	TUA	Int.	3/8 x 1/2		068U2200	068U2208	-	-	-
	TUA	Int.	3/8 x 1/2		068U2205	068U2213	-	-	-
	TUA	Int.	10 x 12	068U2201	-	-	-	-	
	TUAE	Ext. 1/4 in. Ext. 6 mm	1/4 x 1/2	6 x 12	068U2206	068U2214	-	-	-
	TUAE	Ext. 1/4 in. Ext. 6 mm	3/8 x 1/2		068U2207	068U2215	-	-	-
TUAE	Ext. 1/4 in. Ext. 6 mm	10 x 12	068U2203		068U2211	-	-	-	
R404A/R507	TUA	Int.	1/4 x 1/2	6 x 12	068U2284	068U2292	068U2300	068U2308	068U2316
	TUA	Int.	3/8 x 1/2		068U2280	-	068U2296	-	068U2312
	TUA	Int.	3/8 x 1/2		068U2285	068U2293	-	068U2309	068U2317
	TUA	Int.	10 x 12	068U2281	-	-	-	-	
	TUAE	Ext. 1/4 in. Ext. 6 mm	1/4 x 1/2	6 x 12	068U2286	-	-	-	068U2318
	TUAE	Ext. 1/4 in. Ext. 6 mm	3/8 x 1/2		068U2282	-	-	-	-
TUAE	Ext. 1/4 in. Ext. 6 mm	10 x 12	068U2287		068U2295	068U2303	-	068U2319	
				068U2283	-	068U2299	-	068U2315	
R407C	TUA	Int.	1/4 x 1/2	6 x 12	068U2324	068U2332	-	-	-
	TUA	Int.	3/8 x 1/2		068U2320	-	-	-	-
	TUA	Int.	3/8 x 1/2		068U2325	068U2333	-	-	-
	TUA	Int.	10 x 12	068U2321	-	-	-	-	
	TUAE	Ext. 1/4 in. Ext. 6 mm	1/4 x 1/2	6 x 12	068U2326	-	-	-	-
	TUAE	Ext. 1/4 in. Ext. 6 mm	3/8 x 1/2		068U2322	068U2330	-	-	-
TUAE	Ext. 1/4 in. Ext. 6 mm	10 x 12	068U2327		068U2335	-	-	-	
				068U2323	068U2331	-	-	-	
R410A	TUA	Int.	3/8 x 1/2	10 x 12	068U2414	-	-	-	-
	TUAE	Ext. 1/4 in.	3/8 x 1/2		068U1714	-	-	-	-
	TUAE	Ext. 6 mm			068U2780	-	-	-	-

⚠ Note: only 3/8" and 1/2" versions stocked in Australia

Orifice assembly with filter and gasket

(Orifice)

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

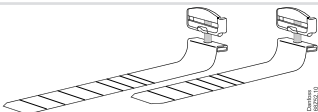
¹⁾ Capillary tube length 1.5 m.

²⁾ The rated capacity is based on: Evaporating temperature t_e = +4.4 °C for range N, condensing temperature t_c = +38 °C, refrigerant temperature ahead of valve t_l = +37 °C, and opening superheat OS = 4 K.

³⁾ For R407C plants, please select valves from the dedicated R407C program

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

Bulb strap (delivered with the valve) and Accessories

	Type	Length	Max. diameter of suction line	Code no.
	TUA / TUAE Accessories		110 mm	1 1/8" (28 mm)
		190 mm	2" (50 mm)	067N3508

Technical data and ordering: TCAE valve

Thermostatic element, without orifice or strainer, with bulb strap ³⁾

Refrigerant	Type	Pressure equalization	Connection Inlet x outlet		Code no.				
					Range N -40 to +10°C		Range NM -40 to -5°C	Range B -60 to -25°C	
			in.	mm	Without MOP	With MOP	MOP 0°C	Without MOP	With MOP
R22/R407C	TCAE	1/4 in.	3/8 x 5/8	-	068U4280	-	-	-	-
	TCAE	1/4 in.	1/2 x 5/8	-	068U4281	068U4283	-	-	-
	TCAE	6 mm	-	10 x 16	-	-	-	-	-
	TCAE	6 mm	-	12 x 16	-	-	068U4291	-	-
R134a	TCAE	1/4 in.	3/8 x 5/8	-	068U4292	-	-	-	-
	TCAE	1/4 in.	1/2 x 5/8	-	068U4293	068U4295	-	-	-
	TCAE	6 mm	-	10 x 16	068U4296	-	-	-	-
R404A/R507	TCAE	6 mm	-	12 x 16	068U4297	068U4299	-	-	-
	TCAE	1/4 in.	3/8 x 5/8	-	068U4304	-	-	-	-
	TCAE	1/4 in.	1/2 x 5/8	-	068U4305	068U4307	068U4313	068U4317	068U4319
R407C	TCAE	6 mm	-	10 x 16	068U4308	068U4310	068U4314	-	068U4322
	TCAE	6 mm	-	12 x 16	068U4309	-	068U4315	068U4321	068U4323
	TCAE	1/4 in.	3/8 x 5/8	-	068U4324	068U4326	-	-	-
R410A	TCAE	1/4 in.	1/2 x 5/8	-	068U4325	068U4327	-	-	-
	TCAE	6 mm	-	10 x 16	068U4328	-	-	-	-
	TCAE	6 mm	-	12 x 16	068U4329	068U4331	-	-	-
R410A	TCAE	1/4 in.	3/8 x 5/8	-	068U4336	-	-	-	-
	TCAE	1/4 in.	1/2 x 5/8	-	068U4337	068U4339	-	-	-
	TCAE	6 mm	-	10 x 16	-	-	-	-	-
	TCAE	6 mm	-	12 x 16	068U4341	068U4343	-	-	-

⚠ Valve and orifice sold separately

Orifice assembly with filter and gasket

(Orifice)

SI N	R134a		R404A/R507		R407C		R22		R410A		Code no.	
	kW	TR	kW	TR	kW	TR	kW	TR	kW	TR	Without bleed	With 15% bleed
TC Orif. 1	13.0	3.7	13.0	3.7	17.8	5.1	18.3	5.2	21.2	6.0	068U4100	068U4097
TC Orif. 2	14.9	4.3	15.1	4.3	20.4	5.8	21.2	6.0	24.5	7.0	068U4101	068U4098
TC Orif. 3	18.6	5.3	18.9	5.4	25.2	7.2	26.7	7.6	30.6	8.7	068U4102	068U4099

³⁾ Capillary tube length 1.5 m.

⁴⁾ The rated capacity is based on: Evaporating temperature $t_e = +4.4$ °C, condensing temperature $t_c = +38$ °C, refrigerant temperature ahead of valve $t' = +37$ °C, and opening superheat OS = 4 K.

⁵⁾ TCAE with orifice no. 3 cannot be used for biflow operation.

⁶⁾ For R407C plants, please select valves from the dedicated R407C program

⚠ Note: only 1/2" x 5/8" connection stocked in Australia

Bulb strap (delivered with the valve) and Accessories

Type	Length	Max. diameter of suction line	Code no.
TCAE	110 mm	1 1/8" (28 mm)	068U3507
Accessories	190 mm	2" (50 mm)	067N3508



⚠ TCAE is the service replacement for TCBE (fixed orifice) version

Capacities TUA/TUAE and TCAE (valve and orifice selection)

Capacity in kW, range N -40 °C to +10 °C. Opening superheat sh= 4.4 K

Valve type/ Orifice	Cond. temp. ³⁾ [°C]	R134a					R404A/R507					R407C					R22					R410A				
		Capacity in [kW]					Capacity in [kW]					Capacity in [kW]					Capacity in [kW]					Capacity in [kW]				
		Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]				
		-30	-10	-5	0	5	-40	-35	-30	-10	0	-10	-5	0	5	10	-35	-30	0	5	-10	-5	0	5	10	
TU Orif. 0	25	0.18	0.29	0.32	0.35	0.36	0.17	0.20	0.24	0.39	0.44	0.49	0.54	0.58	0.60	0.62	0.27	0.30	0.53	0.54	0.81	0.86	0.87	0.86	0.80	
TU Orif. 1	25	0.26	0.43	0.47	0.51	0.51	0.26	0.30	0.35	0.57	0.64	0.71	0.78	0.83	0.87	0.88	0.39	0.45	0.77	0.78	1.1	1.2	1.1	1.2	1.1	
TU Orif. 2	25	0.29	0.49	0.54	0.59	0.62	0.28	0.33	0.39	0.66	0.77	0.82	0.91	0.98	1.0	1.1	0.43	0.50	0.91	0.94	1.3	1.4	1.5	1.5	1.4	
TU Orif. 3	25	0.40	0.66	0.72	0.78	0.82	0.39	0.45	0.53	0.87	1.0	1.1	1.2	1.1	1.3	1.4	0.59	0.68	1.2	1.2	1.7	1.8	1.9	1.9	1.8	
TU Orif. 4	25	0.62	1.1	1.2	1.3	1.4	0.61	0.72	0.84	1.5	1.8	1.8	2.0	2.2	2.4	2.5	0.93	1.1	2.1	2.3	2.9	3.2	3.4	3.6	3.5	
TU Orif. 5	25	0.84	1.4	1.6	1.7	1.9	0.81	0.96	1.1	2.0	2.4	2.4	2.7	2.9	3.2	3.3	1.3	1.4	2.8	2.9	3.9	4.3	4.6	4.7	4.6	
TU Orif. 6	25	1.3	2.2	2.5	2.7	2.9	1.3	1.5	1.8	3.1	3.7	3.8	4.2	4.6	5.0	5.2	1.9	2.2	4.3	4.5	6.1	6.7	7.2	7.5	7.4	
TU Orif. 7	25	1.7	2.9	3.3	3.6	3.9	1.7	2.0	2.3	4.1	4.9	5.0	5.5	6.1	6.6	6.9	2.6	3.0	5.7	6.0	8.1	8.9	9.5	9.8	9.6	
TU Orif. 8	25	2.6	4.7	4.9	5.3	5.7	2.5	2.9	3.4	6.0	7.1	7.4	8.2	8.9	9.5	9.9	3.8	4.4	8.3	8.7	11.8	12.8	13.6	13.9	13.3	
TU Orif. 9	25	3.6	6.0	6.7	7.4	7.9	3.3	3.9	4.6	8.2	10.0	10.0	11.1	12.3	13.4	14.2	5.1	5.8	11.6	12.3	16.3	18.1	19.6	20.5	20.1	
TC Orif. 1	25	7.5	10.4	10.9	11.2	11.2	6.3	7.2	8.1	11.4	12.0	14.7	15.5	16.1	16.3	16.1	10.2	11.4	15.7	15.4	18.4	19.0	19.1	18.7	17.5	
TC Orif. 2	25	8.2	11.7	12.3	12.8	12.8	6.8	7.8	8.9	13.0	13.9	16.6	17.6	18.4	18.8	18.6	11.2	12.5	18.1	17.8	20.8	21.7	22.0	21.7	20.4	
TC Orif. 3	25	9.6	14.3	15.2	15.9	16.1	7.8	9.1	10.5	16.0	17.5	20.2	21.7	22.9	23.6	23.6	13.0	14.7	22.8	22.6	25.5	26.9	27.6	27.4	26.0	
TU Orif. 0	35	0.18	0.32	0.35	0.39	0.42	0.16	0.19	0.23	0.40	0.48	0.52	0.57	0.63	0.67	0.71	0.28	0.32	0.60	0.63	0.86	0.93	0.98	1.0	1.0	
TU Orif. 1	35	0.27	0.46	0.52	0.57	0.62	0.24	0.29	0.34	0.58	0.70	0.74	0.82	0.90	0.96	1.0	0.40	0.46	0.88	0.93	1.1	1.2	1.3	1.4	1.4	
TU Orif. 2	35	0.30	0.53	0.60	0.66	0.73	0.27	0.32	0.38	0.68	0.84	0.85	0.96	1.1	1.2	1.2	0.45	0.52	1.0	1.1	1.4	1.5	1.6	1.7	1.8	
TU Orif. 3	35	0.41	0.71	0.79	0.88	0.96	0.36	0.43	0.51	0.90	1.1	1.1	1.3	1.4	1.5	1.6	0.61	0.70	1.4	1.4	1.8	1.9	2.1	2.2	2.2	
TU Orif. 4	35	0.65	1.2	1.3	1.5	1.6	0.57	0.68	0.81	1.5	1.9	1.9	2.1	2.4	2.6	2.9	0.97	1.1	2.3	2.5	3.1	3.5	3.8	4.2	4.3	
TU Orif. 5	35	0.87	1.5	1.8	2.0	2.2	0.77	0.92	1.1	2.0	2.6	2.5	2.8	3.2	3.5	3.8	1.3	1.5	3.1	3.4	4.1	4.6	5.1	5.5	5.7	
TU Orif. 6	35	1.4	2.4	2.7	3.1	3.4	1.2	1.4	1.7	3.1	4.0	3.9	4.4	4.9	5.5	6.0	2.0	2.3	4.9	5.3	6.4	7.3	8.1	8.8	9.2	
TU Orif. 7	35	1.8	3.2	3.6	4.1	4.5	1.6	1.9	2.2	4.2	5.3	5.2	5.8	6.5	7.2	7.9	2.7	3.1	6.5	7.0	8.5	9.6	10.6	11.5	11.9	
TU Orif. 8	35	2.7	4.7	5.3	6.0	6.6	2.3	2.8	3.3	6.1	7.7	7.6	8.6	9.6	10.5	11.4	4.0	4.6	9.4	10.2	12.4	13.8	15.2	16.2	16.6	
TU Orif. 9	35	3.7	6.4	7.3	8.2	9.2	3.1	3.7	4.4	8.3	10.7	10.2	11.6	13.1	14.6	16.1	5.3	6.1	13.0	14.3	16.9	19.3	21.7	23.8	25.1	
TC Orif. 1	35	7.7	11.2	12.0	12.6	13.1	5.9	6.8	7.8	11.7	13.2	15.4	16.5	17.4	18.2	18.6	10.6	11.8	18.0	18.2	19.4	20.4	21.2	21.6	21.5	
TC Orif. 2	35	8.4	12.6	13.6	14.4	15.1	6.3	7.4	8.5	13.3	15.2	17.2	18.6	19.9	20.9	21.5	11.5	12.9	20.7	21.2	21.8	23.3	24.4	25.0	25.0	
TC Orif. 3	35	9.8	15.2	16.6	17.8	18.8	7.2	8.5	9.8	16.1	18.9	20.6	22.6	24.4	26.0	27.0	13.2	15.0	25.9	26.7	26.4	28.5	30.2	31.4	31.7	
TU Orif. 0	45	0.18	0.33	0.37	0.41	0.46	0.15	0.18	0.21	0.38	0.47	0.52	0.58	0.64	0.70	0.76	0.28	0.32	0.64	0.69	0.86	0.94	1.0	1.1	1.1	
TU Orif. 1	45	0.27	0.48	0.54	0.61	0.67	0.22	0.26	0.31	0.56	0.70	0.74	0.82	0.91	1.0	1.1	0.41	0.47	0.94	1.0	1.1	1.3	1.4	1.4	1.5	
TU Orif. 2	45	0.30	0.54	0.62	0.70	0.79	0.24	0.29	0.34	0.65	0.84	0.85	0.96	1.1	1.2	1.3	0.46	0.53	1.1	1.2	1.4	1.5	1.7	1.8	1.9	
TU Orif. 3	45	0.41	0.73	0.83	0.93	1.0	0.33	0.39	0.46	0.86	1.1	1.1	1.3	1.4	1.6	1.7	0.62	0.72	1.5	1.6	1.8	2.0	2.1	2.3	2.4	
TU Orif. 4	45	0.65	1.2	1.4	1.6	1.8	0.52	0.62	0.74	1.4	1.9	1.9	2.1	2.4	2.7	3.0	0.99	1.1	2.5	2.8	3.1	3.5	4.0	4.4	4.7	
TU Orif. 5	45	0.87	1.6	1.8	2.1	2.4	0.69	0.83	1.0	1.9	2.5	2.5	2.8	3.2	3.6	4.0	1.3	1.5	3.3	3.7	4.1	4.7	5.3	5.8	6.2	
TU Orif. 6	45	1.4	2.5	2.8	3.2	3.7	1.1	1.3	1.5	3.0	4.0	3.9	4.4	5.0	5.6	6.3	2.1	2.4	5.2	5.8	6.4	7.3	8.3	9.2	10.0	
TU Orif. 7	45	1.8	3.3	3.8	4.3	4.9	1.4	1.7	2.0	3.9	5.2	5.1	5.8	6.6	7.4	8.3	2.7	3.2	6.9	7.6	8.4	9.7	10.9	12.1	13.0	
TU Orif. 8	45	2.7	4.8	5.5	6.3	7.1	2.1	2.5	3.0	5.8	7.6	7.5	8.5	9.7	10.8	12.0	4.0	4.6	10.0	11.1	12.3	13.9	15.6	17.1	18.2	
TU Orif. 9	45	3.8	6.6	7.6	8.7	9.8	2.8	3.4	4.0	7.8	10.4	10.0	11.5	13.1	14.8	16.6	5.5	6.3	13.7	15.3	16.6	19.1	21.9	24.8	27.2	
TC Orif. 1	45	7.7	11.6	12.6	13.5	14.3	5.3	6.2	7.1	11.3	13.2	15.4	16.7	17.9	19.0	19.9	10.7	12.0	19.4	20.1	19.3	20.6	21.8	22.7	23.2	
TC Orif. 2	45	8.3	13.0	14.2	15.4	16.4	5.6	6.6	7.7	12.7	15.1	17.1	18.7	20.3	21.8	22.9	11.5	13.0	22.2	23.2	21.6	23.3	24.9	26.2	27.0	
TC Orif. 3	45	9.6	15.4	17.1	18.7	20.2	6.3	7.5	8.8	15.1	18.6	20.1	22.4	24.6	26.7	28.5	13.1	14.9	27.4	29.0	25.6	28.1	30.4	32.5	34.0	
TU Orif. 0	55	0.18	0.32	0.37	0.42	0.47	0.12	0.15	0.18	0.34	0.43	0.50	0.56	0.63	0.69	0.76	0.28	0.32	0.66	0.72	0.81	0.89	0.97	1.0	1.1	
TU Orif. 1	55	0.27	0.48	0.54	0.62	0.69	0.18	0.22	0.26	0.49	0.63	0.70	0.79	0.88	0.98	1.1	0.41	0.47	0.96	1.1	1.1	1.2	1.3	1.4	1.5	
TU Orif. 2	55	0.30	0.54	0.62	0.71	0.81	0.20	0.25	0.29	0.57	0.76	0.81	0.92	1.1	1.2	1.3	0.46	0.53	1.1	1.3	1.3	1.5	1.6	1.8	1.9	
TU Orif. 3	55	0.40	0.72	0.83	0.95	1.1	0.28	0.33	0.40	0.76	0.98	1.1	1.2	1.4	1.5	1.7	0.60	0.71	1.5	1.6	1.7	1.9	2.0	2.2	2.3	
TU Orif. 4	55	0.64	1.2	1.4	1.6	1.8	0.44	0.53	0.66	1.3	1.7	1.8	2.0	2.3	2.6	3.0	0.99	1.1	2.6	2.9	2.9	3.3	3.8	4.2	4.6	
TU Orif. 5	55	0.86	1.6	1.8	2.1	2.4	0.59	0.71	0.86	1.7	2.3	2.4	2.7	3.1	3.5	4.0	1.3	1.5	3.4	3.8	3.9	4.5	5.0	5.6	6.1	
TU Orif. 6	55	1.4	2.5	2.8	3.3	3.8	0.93	1.1	1.3	2.6	3.6	3.7	4.2	4.8	5.5	6.2	2.1	2.4	5.3	6.0	6.1	6.9	7.9	8.9	9.7	
TU Orif. 7	55	1.8	3.3	3.8	4.3	5.0	1.2	1.5	1.8	3.5	4.7	4.9	5.6	6.4	7.2	8.1	2.8	3.2	7.0	7.9	8.0	9.2	10.4	11.6	12.7	
TU Orif. 8	55	2.6	4.8	5.5	6.4	7.3	1.8	2.2	2.6	5.1	6.9	7.1	8.1	9.3	10.5	11.8	4.0	4.6	10.2	11.4	11.6	13.2	14.9	16.5	17.8	
TU Orif. 9	55	3.8	6.6	7.5	8.7	9.9	2.4	2.9	3.4	6.8	9.3	9.4	10.8	12.4	14.2	16.1	5.5	6.3	13.8	15.6	15.4	17.8	20.4	23.3	25.9	
TC Orif. 1	55	7.5	11.6	12.7	13.8	14.8	4.4	5.3	6.1	10.1	12.1	14.7	16.1	17.5	18.7	19.8	10.7	12.0	20.0	21.0	18.4	19.7	21.0	22.0	22.8	
TC Orif. 2	55	8.1	12.9	14.2	15.6	16.9	4																			

When the subcooling ≥ 4 K then:

Plant capacity / Factor = Table value

Example:

Refrigerant = R134a

$Q_{nom} = 8$ kW

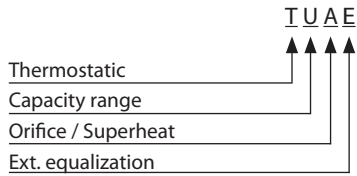
$t_e = -10$ °C

$t_c = 55$ °C

$\Delta t_{sub} = 25$ K

Selection:

8 kW / 1.25 = 6.4 kW → TU, Orifice 09



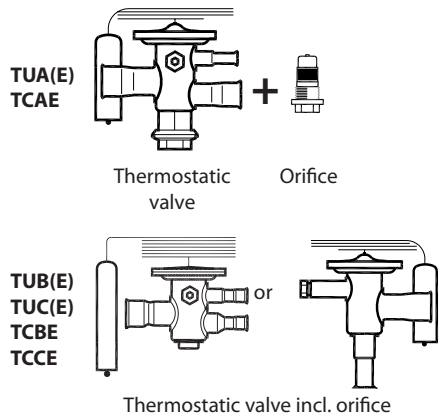
	Orifice / Superheat	
	Interchangeable	Adjustable
A	Yes	YES
B	NO	YES
C	NO	NO

N = -40°C → +10 °C

NM = -40°C → -5 °C with MOP

NL = -40°C → -15 °C with MOP

B = -60°C → -25 °C with MOP



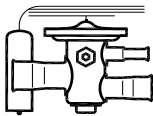
Valve types TUB(E)/TUC(E) and TCBE/TCCE can be replaced by TUA(E) and TCAE types

Notes - TUA/E and TCAE (stainless steel valves)

1. TUA/E and TCAE valves have bi-metal solder connections (copper plate internal) stainless outside.
2. Soldering of bi-metal connections does not require flux (standard brown tip copper/copper).
3. TUA/E orifice gasket code: 068U0015 (pack 24)
4. TUA/E orifice strainer/filter code: 068U0016 (pack24)

TCBE fixed orifice version (cross reference TCAE)

Ordering
TCBE, straightway
Thermostatic expansion valve with bulb strap



- 1) TC with orifice no. 3, cannot be used for biflow operation.
- 2) Rated capacity is based on:
 Evaporating temperature $t_e = +5^\circ\text{C}$
 Condensing temperature $t_c = +32^\circ\text{C}$
 Refrigerant liquid temperature $t_l = +28^\circ\text{C}$
 Opening superheat OS = 4 K

R22, R134a, R404A, R507, R407C, R410A

Refrigerant	Type	Rated capacity ²⁾		Orifice no.	Pressure equalisation	Code no.					
		kW	TR			Connection inlet × outlet in. × in.	Range N -40/+10°C		Connection inlet × outlet mm × mm	Range N -40/+10°C	
							without MOP	with MOP		without MOP	with MOP
R22	TCBE	17.5	5	1	ext.	$\frac{3}{8} \times \frac{5}{8}$	068U4200	068U4204	10 × 16	068U4208	068U4212
	TCBE	17.5	5	1	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4201	068U4205	12 × 16	068U4209	068U4213
	TCBE	21.0	6	2	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4202	068U4206	12 × 16	068U4210	068U4214
	TCBE	26.5	7.5	3 ¹⁾	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4203	068U4207	12 × 16	068U4211	068U4215
R134a	TCBE	12.0	3.5	1	ext.	$\frac{3}{8} \times \frac{5}{8}$	068U4216	068U4220	10 × 16	068U4224	068U4228
	TCBE	12.0	3.5	1	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4217	068U4221	12 × 16	068U4225	068U4229
	TCBE	14.5	4.1	2	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4218	068U4222	12 × 16	068U4226	068U4230
	TCBE	18.0	5.2	3 ¹⁾	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4219	068U4223	12 × 16	068U4227	068U4231
R404A R507	TCBE	13.5	3.8	1	ext.	$\frac{3}{8} \times \frac{5}{8}$	068U4232	068U4236	10 × 16	068U4240	068U4244
	TCBE	13.5	3.8	1	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4233	068U4237	12 × 16	068U4241	068U4245
	TCBE	16.0	4.5	2	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4234	068U4238	12 × 16	068U4242	068U4246
	TCBE	20.0	5.7	3 ¹⁾	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4235	068U4239	12 × 16	068U4243	068U4247
R407C	TCBE	19.0	5.4	1	ext.	$\frac{3}{8} \times \frac{5}{8}$	068U4248	068U4252	10 × 16	068U4256	068U4260
	TCBE	19.0	5.4	1	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4249	068U4253	12 × 16	068U4257	068U4261
	TCBE	23.0	6.5	2	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4250	068U4254	12 × 16	068U4258	068U4262
	TCBE	28.5	8.1	3 ¹⁾	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4251	068U4255	12 × 16	068U4259	068U4263
R410A	TCBE	23.0	6.5	1	ext.	$\frac{3}{8} \times \frac{5}{8}$	068U4264	068U4268	10 × 16	068U4272	068U4276
	TCBE	23.0	6.5	1	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4265	068U4269	12 × 16	068U4273	068U4277
	TCBE	27.5	7.8	2	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4266	068U4270	12 × 16	068U4274	068U4278
	TCBE	34.0	9.8	3 ¹⁾	ext.	$\frac{1}{2} \times \frac{5}{8}$	068U4267	068U4271	12 × 16	068U4275	068U4279

Capillary tube length 0.9 m
 Valves with inch connections have $\frac{1}{4}$ in. pressure equalisation.
 Valves with mm connections have 6 mm pressure equalisation.

⚠ Note: Use the above table to select TCAE orifice, identify code of TCBE valve and relevant orifice, then select service replacement TCAE and orifice from page 16.



TUB/TUBE – Thermostatic expansion valves

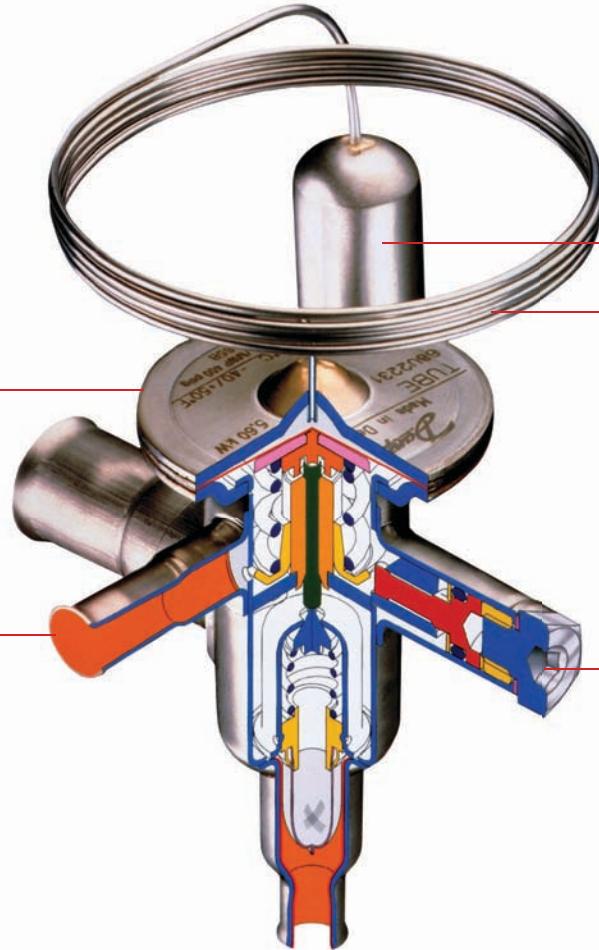
The TUB / TUBE series is delivered with fixed orifice. The thermostatic expansion valves has been developed for soldering into hermetic refrigeration systems. TU valves are made of stainless steel and are therefore very suitable for use in the food industry.

⚠ Fixed orifice OEM version only

Features

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



Capillary tube and bulb in stainless steel. Extremely strong and corrosion resistant.

Allen key superheat setting screw is convenient and space-saving compared to the standard screwdriver adjustment used in most conventional valves

Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Heat pump systems Air conditioning units Liquid coolers Ice cube machines Transport refrigeration 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. Only 4 K opening superheat. Bi-flow function.

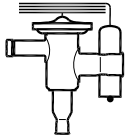
⚠ Note: Limited codes stocked in Australia, refer to TUA/TUAE series for service replacements

Technical data and ordering - TUB/TUBE (fixed orifice)

Ordering

Angleway

Supplied with bulb strap
Standard valve range



Range N = $\varnothing 40 \rightarrow +10^\circ\text{C}$

R22, R407C, R410A, R134a, R404A

Refrigerant	Type	Orifice no. ²⁾	Rated capacity Q _{nom.} ¹⁾		Pressure equalisation	Connection Inlet x Outlet			
			kW	TR		in.	Code no.	mm	Code no.
R22/	TUB	1	0.92	0.26	int.	1/4 x 1/2	068U2057	-	-
	TUB	2	1.1	0.32	int.	1/4 x 1/2	068U2058	-	-
	TUB	3	1.4	0.41	int.	1/4 x 1/2	068U2059	-	-
	TUB	4	2.5	0.72	int.	1/4 x 1/2	068U2060	-	-
	TUB	5	3.4	0.96	int.	1/4 x 1/2	068U2061	-	-
	TUB	6	5.3	1.5	int.	1/4 x 1/2	068U2062	-	-
	TUB	7	7.0	2.0	int.	3/8 x 1/2	068U2063	-	-
	TUB	8	10.1	2.9	int.	3/8 x 1/2	068U2064	-	-
	TUBE	5	3.4	0.96	ext.	1/4 x 1/2	068U2071	-	-
	TUBE	6	5.3	1.5	ext.	1/4 x 1/2	068U2072	-	-
	TUBE	7	7.0	2.0	ext.	3/8 x 1/2	068U2073	-	-
	TUBE	8	10.1	2.9	ext.	3/8 x 1/2	068U2074	-	-
	TUBE	9	14.1	4.0	ext.	3/8 x 1/2	068U2075	-	-
R407C	TUB	1	0.94	0.27	int.	-	-	6 x 12	068U1901
	TUB	2	1.1	0.32	int.	-	-	6 x 12	-
	TUB	3	1.5	0.42	int.	-	-	6 x 12	068U1903
	TUB	4	2.5	0.72	int.	-	-	6 x 12	068U1904
	TUB	5	3.4	0.96	int.	-	-	6 x 12	068U1905
	TUB	6	5.3	1.5	int.	-	-	6 x 12	068U1906
	TUB	7	7.0	2.0	int.	-	-	10 x 12	068U1907
	TUB	8	10.2	2.9	int.	-	-	10 x 12	068U1908
	TUB	9	14.0	4.0	int.	-	-	10 x 12	068U1909
	TUBE	1	0.94	0.27	ext.	-	-	6 x 12	-
	TUBE	2	1.1	0.32	ext.	-	-	6 x 12	068U1912
	TUBE	3	1.5	0.42	ext.	-	-	6 x 12	068U1913
	TUBE	4	2.5	0.72	ext.	-	-	6 x 12	068U1914
	TUBE	5	3.4	0.96	ext.	1/4 x 1/2	068U1935	6 x 12	068U1915
	TUBE	6	5.3	1.5	ext.	1/4 x 1/2	068U1936	6 x 12	068U1916
	TUBE	7	7.0	2.0	ext.	3/8 x 1/2	068U1937	10 x 12	068U1917
	TUBE	8	10.2	2.9	ext.	3/8 x 1/2	068U1938	10 x 12	068U1918
TUBE	9	14.0	4.0	ext.	3/8 x 1/2	068U1939	10 x 12	068U1919	
R410A	TUB	1	1.34	0.38	int.	1/4 x 1/2	068U1958	-	-
	TUB	2	1.7	0.48	int.	1/4 x 1/2	068U1959	-	-
	TUB	3	2.1	0.60	int.	1/4 x 1/2	068U1960	-	-
	TUB	4	4.1	1.2	int.	1/4 x 1/2	068U1961	-	-
	TUB	5	5.3	1.5	int.	1/4 x 1/2	068U1962	-	-
	TUB	6	8.5	2.4	int.	1/4 x 1/2	068U1963	-	-
	TUBE	7	11.2	3.2	ext.	3/8 x 1/2	068U1973	-	-
	TUBE	8	15.8	4.5	ext.	3/8 x 1/2	068U1974	-	-
	TUBE	9	23.1	6.6	ext.	3/8 x 1/2	068U1975	-	-
R134a	TUB	0	0.42	0.12	int.	1/4 x 1/2	068U2660	-	-
	TUB	1	0.61	0.17	int.	1/4 x 1/2	068U2027	6 x 12	068U2000
	TUB	2	0.72	0.20	int.	1/4 x 1/2	068U2028	6 x 12	068U2001
	TUB	3	0.95	0.27	int.	1/4 x 1/2	068U2029	6 x 12	068U2002
	TUB	4	1.6	0.46	int.	1/4 x 1/2	068U2030	6 x 12	068U2003
	TUB	5	2.1	0.61	int.	1/4 x 1/2	068U2031	6 x 12	068U2004
	TUB	6	3.4	0.95	int.	1/4 x 1/2	068U2032	6 x 12	068U2005
	TUBE	1	0.61	0.17	ext.	-	-	6 x 12	068U2009
	TUBE	2	0.72	0.20	ext.	-	-	6 x 12	068U2010
	TUBE	3	0.95	0.27	ext.	1/4 x 1/2	068U2020	6 x 12	068U2011
	TUBE	4	1.6	0.46	ext.	1/4 x 1/2	068U2021	6 x 12	068U2012
	TUBE	5	2.1	0.61	ext.	1/4 x 1/2	068U2022	6 x 12	068U2013
	TUBE	6	3.4	0.95	ext.	1/4 x 1/2	068U2023	6 x 12	068U2014
	TUBE	7	4.4	1.3	ext.	3/8 x 1/2	068U2024	10 x 12	068U2015
	TUBE	8	6.5	1.9	ext.	3/8 x 1/2	068U2025	10 x 12	068U2016
TUBE	9	9.0	2.6	ext.	3/8 x 1/2	068U2026	10 x 12	068U2017	

¹⁾ Rated capacity Q_{nom.} is based on:
Evaporating temperature
t_e = +4.4 °C
Condensing temperature
t_c = +38 °C
Refrigerant liquid temperature
t_l = +37 °C
Opening superheat
OS = 4 K

²⁾ TUBE with orifice 0 and 9 and all TUB (internal pressure equalisation) cannot be used for biflow operation.

³⁾ For R407C plants, please select valves from the dedicated R407C program

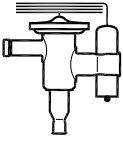
⁴⁾ Capillary tube length 0.8 m

Valves with inch connections have 1/4 in. pressure equalisation.
Valves with mm connections have 6 mm pressure equalisation.

⚠ See next page for R404A/R507 valves

Ordering Angleway

Supplied with bulb strap
Standard valve range



¹⁾ Rated capacity Q_{nom} is based on:
Evaporating temperature
 $t_e = +4.4\text{ }^\circ\text{C}$
Condensing temperature
 $t_c = +38\text{ }^\circ\text{C}$
Refrigerant liquid temperature
 $t_l = +37\text{ }^\circ\text{C}$
Opening superheat
OS = 4 K

²⁾ TUBE with orifice 0 and 9 and all TUB (internal pressure equalisation) cannot be used for biflow operation.

³⁾ Capillary tube length 0.8 m

Range N = $\square 40 \rightarrow +10\text{ }^\circ\text{C}$

R404A/R507

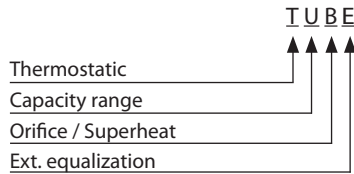
Refrigerant	Type	Orifice no. ²⁾	Rated capacity Q_{nom} ¹⁾		Pressure equalisation	Connection Inlet x Outlet			
			kW	TR		in.	Code no.	mm	Code no.
R404A R507	TUB	1	0.71	0.20	int.	1/4 x 1/2	068U2094	6 x 12	068U2076
	TUB	2	0.87	0.25	int.	1/4 x 1/2	068U2095	6 x 12	068U2077
	TUB	3	1.1	0.32	int.	1/4 x 1/2	068U2096	6 x 12	068U2078
	TUB	4	2.0	0.57	int.	1/4 x 1/2	068U2097	6 x 12	068U2079
	TUB	5	2.7	0.76	int.	1/4 x 1/2	068U2098	6 x 12	068U2080
	TUB	6	4.2	1.2	int.	1/4 x 1/2	068U2099	-	-
	TUBE	1	0.71	0.20	ext.	1/4 x 1/2	068U2103	6 x 12	068U2085
	TUBE	2	0.87	0.25	ext.	1/4 x 1/2	068U2104	6 x 12	068U2086
	TUBE	3	1.1	0.32	ext.	1/4 x 1/2	068U2105	6 x 12	068U2087
	TUBE	4	2.0	0.57	ext.	1/4 x 1/2	068U2106	6 x 12	068U2088
	TUBE	5	2.7	0.76	ext.	1/4 x 1/2	068U2107	6 x 12	068U2089
	TUBE	6	4.2	1.2	ext.	1/4 x 1/2	068U2108	6 x 12	068U2090
	TUBE	7	5.6	1.6	ext.	3/8 x 1/2	068U2109	10 x 12	068U2091
	TUBE	8	8.0	2.3	ext.	3/8 x 1/2	068U2110	10 x 12	068U2092
	TUBE	9	11.3	3.2	ext.	3/8 x 1/2	068U2111	10 x 12	068U2093

Valves with inch connections have 1/4 in. pressure equalisation.
Valves with mm connections have 6 mm pressure equalisation.

When the subcooling $\square 4\text{ K}$ then:
Plant capacity / Factor = Table value

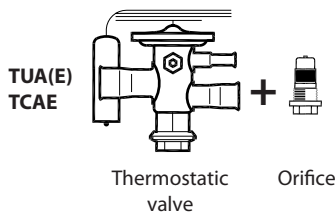
Example:
Refrigerant = R134a
 $Q_{nom} = 8\text{ kW}$
 $t_e = -10\text{ }^\circ\text{C}$
 $t_c = 55\text{ }^\circ\text{C}$
 $\Delta t_{sub} = 25\text{ K}$

Selection:
 $8\text{ kW} / 1.25 = 6.4\text{ kW} \rightarrow \text{TU, Orifice 09}$

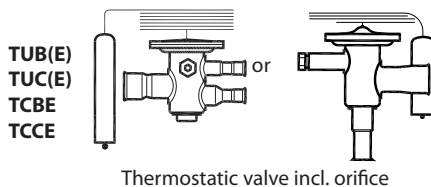


	Orifice / Superheat	
	Interchangeable	Adjustable
A	Yes	YES
B	NO	YES
C	NO	NO

N = $-40\text{ }^\circ\text{C} \rightarrow +10\text{ }^\circ\text{C}$
NM = $-40\text{ }^\circ\text{C} \rightarrow -5\text{ }^\circ\text{C}$ with MOP
NL = $-40\text{ }^\circ\text{C} \rightarrow -15\text{ }^\circ\text{C}$ with MOP
B = $-60\text{ }^\circ\text{C} \rightarrow -25\text{ }^\circ\text{C}$ with MOP



⚠ TUA/E can be used as a service replacement for TUB/TUBE valves.
Orifice capacity is the same.



Valve types TUB(E)/TUC(E) and TCBE/TCCE can be replaced by TUA(E) and TCAE types

Capacities - TUB/TUBE extended capacity tables

Capacity in kW, range N -40 °C to +10 °C. Opening superheat sh= 4.4 K

Valve type/ Orifice	Cond. temp. ³⁾ [°C]	R134a					R404A/R507					R407C					R22					R410A				
		Capacity in [kW]					Capacity in [kW]					Capacity in [kW]					Capacity in [kW]					Capacity in [kW]				
		Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]				
		-30	-10	-5	0	5	-40	-35	-30	-10	0	-10	-5	0	5	10	-35	-30	0	5	-10	-5	0	5	10	
TU Orif. 0X	25	0.14	0.23	0.25	0.27	0.28	0.14	0.16	0.19	0.30	0.34	0.39	0.42	0.45	0.46	0.47	0.21	0.24	0.41	0.41	0.62	0.65	0.65	0.64	0.59	
TU Orif. 0	25	0.18	0.29	0.32	0.35	0.36	0.17	0.20	0.24	0.39	0.44	0.49	0.54	0.58	0.60	0.62	0.27	0.30	0.53	0.54	0.81	0.86	0.87	0.86	0.80	
TU Orif. 1	25	0.26	0.43	0.47	0.51	0.51	0.26	0.30	0.35	0.57	0.64	0.71	0.78	0.83	0.87	0.88	0.39	0.45	0.77	0.78	1.1	1.2	1.1	1.2	1.1	
TU Orif. 2	25	0.29	0.49	0.54	0.59	0.62	0.28	0.33	0.39	0.66	0.77	0.82	0.91	0.98	1.0	1.1	0.43	0.50	0.91	0.94	1.3	1.4	1.5	1.5	1.4	
TU Orif. 3	25	0.40	0.66	0.72	0.78	0.82	0.39	0.45	0.53	0.87	1.0	1.1	1.2	1.1	1.3	1.4	0.59	0.68	1.2	1.2	1.7	1.8	1.9	1.9	1.8	
TU Orif. 4	25	0.62	1.1	1.2	1.3	1.4	0.61	0.72	0.84	1.5	1.8	1.8	2.0	2.2	2.4	2.5	0.93	1.1	2.1	2.3	2.9	3.2	3.4	3.6	3.5	
TU Orif. 5	25	0.84	1.4	1.6	1.7	1.9	0.81	0.96	1.1	2.0	2.4	2.4	2.7	2.9	3.2	3.3	1.3	1.4	2.8	2.9	3.9	4.3	4.6	4.7	4.6	
TU Orif. 6	25	1.3	2.2	2.5	2.7	2.9	1.3	1.5	1.8	3.1	3.7	3.8	4.2	4.6	5.0	5.2	1.9	2.2	4.3	4.5	6.1	6.7	7.2	7.5	7.4	
TU Orif. 7	25	1.7	2.9	3.3	3.6	3.9	1.7	2.0	2.3	4.1	4.9	5.0	5.5	6.1	6.6	6.9	2.6	3.0	5.7	6.0	8.1	8.9	9.5	9.8	9.6	
TU Orif. 8	25	2.6	4.7	4.9	5.3	5.7	2.5	2.9	3.4	6.0	7.1	7.4	8.2	8.9	9.5	9.9	3.8	4.4	8.3	8.7	11.8	12.8	13.6	13.9	13.3	
TU Orif. 9	25	3.6	6.0	6.7	7.4	7.9	3.3	3.9	4.6	8.2	10.0	10.0	11.1	12.3	13.4	14.2	5.1	5.8	11.6	12.3	16.3	18.1	19.6	20.5	20.1	
TU Orif. 0X	35	0.15	0.25	0.28	0.30	0.33	0.13	0.16	0.18	0.31	0.36	0.40	0.44	0.48	0.52	0.54	0.22	0.25	0.46	0.49	0.65	0.70	0.73	0.75	0.74	
TU Orif. 0	35	0.18	0.32	0.35	0.39	0.42	0.16	0.19	0.23	0.40	0.48	0.52	0.57	0.63	0.67	0.71	0.28	0.32	0.60	0.63	0.86	0.93	0.98	1.0	1.0	
TU Orif. 1	35	0.27	0.46	0.52	0.57	0.62	0.24	0.29	0.34	0.58	0.70	0.74	0.82	0.90	0.96	1.0	0.40	0.46	0.88	0.93	1.1	1.2	1.3	1.4	1.4	
TU Orif. 2	35	0.30	0.53	0.60	0.66	0.73	0.27	0.32	0.38	0.68	0.84	0.85	0.96	1.1	1.2	1.2	0.45	0.52	1.0	1.1	1.4	1.5	1.6	1.7	1.8	
TU Orif. 3	35	0.41	0.71	0.79	0.88	0.96	0.36	0.43	0.51	0.90	1.1	1.1	1.3	1.4	1.5	1.6	0.61	0.70	1.4	1.4	1.8	1.9	2.1	2.2	2.2	
TU Orif. 4	35	0.65	1.2	1.3	1.5	1.6	0.57	0.68	0.81	1.5	1.9	1.9	2.1	2.4	2.6	2.9	0.97	1.1	2.3	2.5	3.1	3.5	3.8	4.2	4.3	
TU Orif. 5	35	0.87	1.5	1.8	2.0	2.2	0.77	0.92	1.1	2.0	2.6	2.5	2.8	3.2	3.5	3.8	1.3	1.5	3.1	3.4	4.1	4.6	5.1	5.5	5.7	
TU Orif. 6	35	1.4	2.4	2.7	3.1	3.4	1.2	1.4	1.7	3.1	4.0	3.9	4.4	4.9	5.5	6.0	2.0	2.3	4.9	5.3	6.4	7.3	8.1	8.8	9.2	
TU Orif. 7	35	1.8	3.2	3.6	4.1	4.5	1.6	1.9	2.2	4.2	5.3	5.2	5.8	6.5	7.2	7.9	2.7	3.1	6.5	7.0	8.5	9.6	10.6	11.5	11.9	
TU Orif. 8	35	2.7	4.7	5.3	6.0	6.6	2.3	2.8	3.3	6.1	7.7	7.6	8.6	9.6	10.5	11.4	4.0	4.6	9.4	10.2	12.4	13.8	15.2	16.2	16.6	
TU Orif. 9	35	3.7	6.4	7.3	8.2	9.2	3.1	3.7	4.4	8.3	10.7	10.2	11.6	13.1	14.6	16.1	5.3	6.1	13.0	14.3	16.9	19.3	21.7	23.8	25.1	
TU Orif. 0X	45	0.15	0.26	0.29	0.32	0.36	0.12	0.14	0.17	0.29	0.36	0.40	0.45	0.50	0.54	0.58	0.22	0.25	0.49	0.53	0.65	0.71	0.76	0.79	0.80	
TU Orif. 0	45	0.18	0.33	0.37	0.41	0.46	0.15	0.18	0.21	0.38	0.47	0.52	0.58	0.64	0.70	0.76	0.28	0.32	0.64	0.69	0.86	0.94	1.0	1.1	1.1	
TU Orif. 1	45	0.27	0.48	0.54	0.61	0.67	0.22	0.26	0.31	0.56	0.70	0.74	0.82	0.91	1.0	1.1	0.41	0.47	0.94	1.0	1.1	1.3	1.4	1.4	1.5	
TU Orif. 2	45	0.30	0.54	0.62	0.70	0.79	0.24	0.29	0.34	0.65	0.84	0.85	0.96	1.1	1.2	1.3	0.46	0.53	1.1	1.2	1.4	1.5	1.7	1.8	1.9	
TU Orif. 3	45	0.41	0.73	0.83	0.93	1.0	0.33	0.39	0.46	0.86	1.1	1.1	1.3	1.4	1.6	1.7	0.62	0.72	1.5	1.6	1.8	2.0	2.1	2.3	2.4	
TU Orif. 4	45	0.65	1.2	1.4	1.6	1.8	0.52	0.62	0.74	1.4	1.9	1.9	2.1	2.4	2.7	3.0	0.99	1.1	2.5	2.8	3.1	3.5	4.0	4.4	4.7	
TU Orif. 5	45	0.87	1.6	1.8	2.1	2.4	0.69	0.83	1.0	1.9	2.5	2.5	2.8	3.2	3.6	4.0	1.3	1.5	3.3	3.7	4.1	4.7	5.3	5.8	6.2	
TU Orif. 6	45	1.4	2.5	2.8	3.2	3.7	1.1	1.3	1.5	3.0	4.0	3.9	4.4	5.0	5.6	6.3	2.1	2.4	5.2	5.8	6.4	7.3	8.3	9.2	10.0	
TU Orif. 7	45	1.8	3.3	3.8	4.3	4.9	1.4	1.7	2.0	3.9	5.2	5.1	5.8	6.6	7.4	8.3	2.7	3.2	6.9	7.6	8.4	9.7	10.9	12.1	13.0	
TU Orif. 8	45	2.7	4.8	5.5	6.3	7.1	2.1	2.5	3.0	5.8	7.6	7.5	8.5	9.7	10.8	12.0	4.0	4.6	10.0	11.1	12.3	13.9	15.6	17.1	18.2	
TU Orif. 9	45	3.8	6.6	7.6	8.7	9.8	2.8	3.4	4.0	7.8	10.4	10.0	11.5	13.1	14.8	16.6	5.5	6.3	13.7	15.3	16.6	19.1	21.9	24.8	27.2	
TU Orif. 0X	55	0.14	0.25	0.29	0.33	0.37	0.10	0.12	0.14	0.26	0.33	0.39	0.44	0.49	0.53	0.58	0.22	0.25	0.51	0.55	0.61	0.67	0.72	0.76	0.79	
TU Orif. 0	55	0.18	0.32	0.37	0.42	0.47	0.12	0.15	0.18	0.34	0.43	0.50	0.56	0.63	0.69	0.76	0.28	0.32	0.66	0.72	0.81	0.89	0.97	1.0	1.1	
TU Orif. 1	55	0.27	0.48	0.54	0.62	0.69	0.18	0.22	0.26	0.49	0.63	0.70	0.79	0.88	0.98	1.1	0.41	0.47	0.96	1.1	1.1	1.2	1.3	1.4	1.5	
TU Orif. 2	55	0.30	0.54	0.62	0.71	0.81	0.20	0.25	0.29	0.57	0.76	0.81	0.92	1.1	1.2	1.3	0.46	0.53	1.1	1.3	1.3	1.5	1.6	1.8	1.9	
TU Orif. 3	55	0.40	0.72	0.83	0.95	1.1	0.28	0.33	0.40	0.76	0.98	1.1	1.2	1.4	1.5	1.7	0.60	0.71	1.5	1.6	1.7	1.9	2.0	2.2	2.3	
TU Orif. 4	55	0.64	1.2	1.4	1.6	1.8	0.44	0.53	0.66	1.3	1.7	1.8	2.0	2.3	2.6	3.0	0.99	1.1	2.6	2.9	2.9	3.3	3.8	4.2	4.6	
TU Orif. 5	55	0.86	1.6	1.8	2.1	2.4	0.59	0.71	0.86	1.7	2.3	2.4	2.7	3.1	3.5	4.0	1.3	1.5	3.4	3.8	3.9	4.5	5.0	5.6	6.1	
TU Orif. 6	55	1.4	2.5	2.8	3.3	3.8	0.93	1.1	1.3	2.6	3.6	3.7	4.2	4.8	5.5	6.2	2.1	2.4	5.3	6.0	6.1	6.9	7.9	8.9	9.7	
TU Orif. 7	55	1.8	3.3	3.8	4.3	5.0	1.2	1.5	1.8	3.5	4.7	4.9	5.6	6.4	7.2	8.1	2.8	3.2	7.0	7.9	8.0	9.2	10.4	11.6	12.7	
TU Orif. 8	55	2.6	4.8	5.5	6.4	7.3	1.8	2.2	2.6	5.1	6.9	7.1	8.1	9.3	10.5	11.8	4.0	4.6	10.2	11.4	11.6	13.2	14.9	16.5	17.8	
TU Orif. 9	55	3.8	6.6	7.5	8.7	9.9	2.4	2.9	3.4	6.8	9.3	9.4	10.8	12.4	14.2	16.1	5.5	6.3	13.8	15.6	15.4	17.8	20.4	23.3	25.9	

³⁾ Condensing temperature at bubble point.

Correction factor

Refrigerant	Subcooling [K]										
	2	4	10	15	20	25	30	35	40	45	50
R22	0.98	1	1.06	1.11	1.15	1.20	1.25	1.30	1.35	1.39	1.44
R134a	0.98	1	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54
R404A / R507	0.96	1	1.10	1.20	1.29	1.37	1.46	1.54	1.63	1.70	1.78
R407C	0.97	1	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57
R410A	0.97	1	1.08	1.15	1.21	1.27	1.33	1.39	1.45	1.50	1.56



PHT – Thermostatic expansion valves

PHT thermostatic expansion valves regulate the injection of refrigerant liquid into evaporators. 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 is proportional to the evaporator load should always be kept constant.

Features

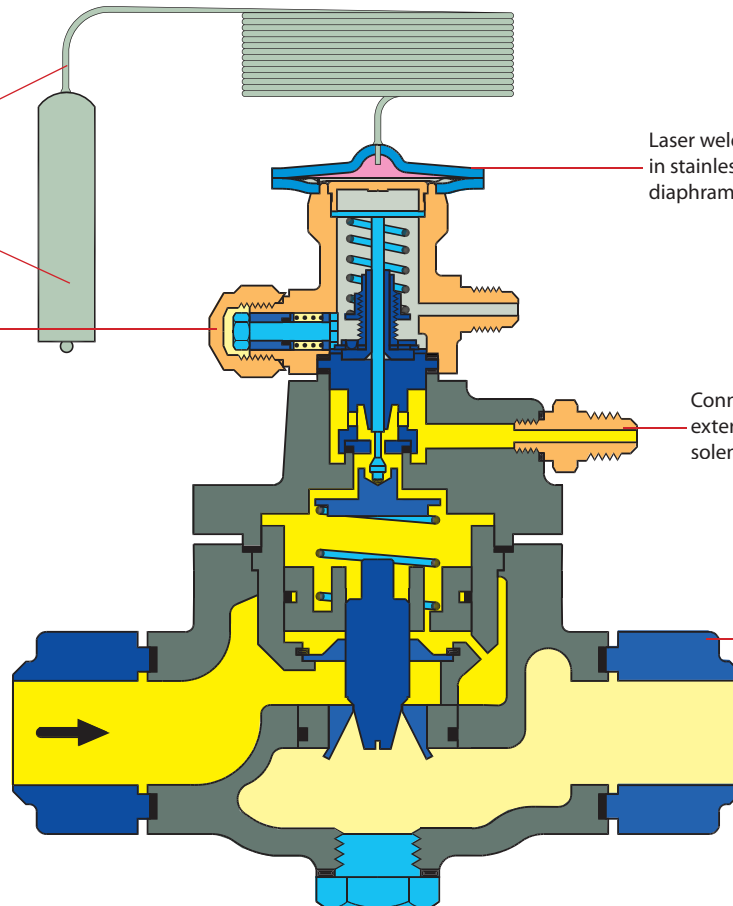
Capillary tube and sensor in stainless steel. Vibration proof due to the strong capillary tube.

Easy adjustment of superheat

Laser welded thermostatic element in stainless steel. Secure, stronger diaphragm and longer lifetime.

Connection for external pilot solenoid valve

Weld or solder flanges
Weld: 1 to 2 in.
Solder: 1 1/8 in (28 mm) to 1 3/8 in. (35 mm)



Applications

- Traditional refrigeration and freezing applications
- Water coolers and air conditioning

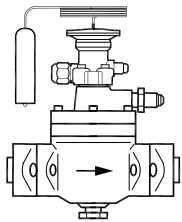
Advantages

- *Interchangeable orifice assembly*
 - easier stocking
 - easy capacity matching
 - better service.
- *Very tight main orifice*
Also used as solenoid valve (not PHT 300)
- *Superheat*
Static superheat SS can be adjusted with setting spindle.

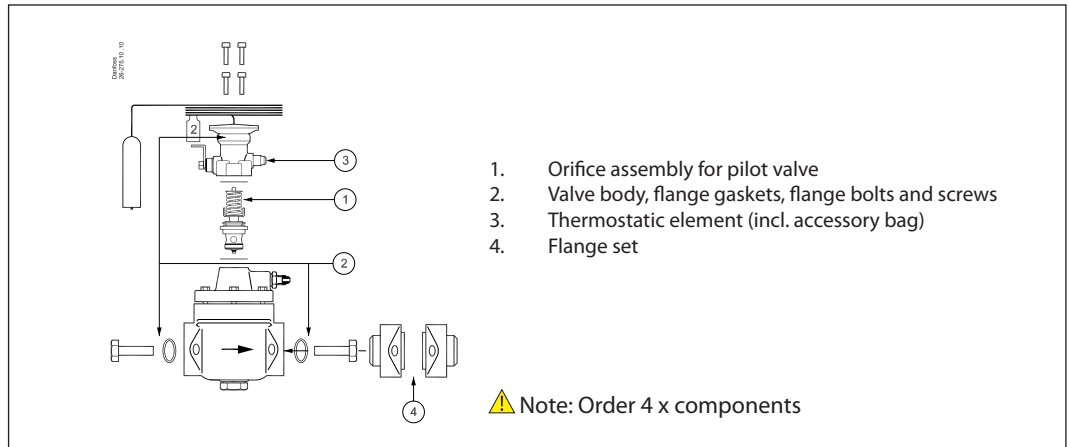
Facts

- *Maximum working pressure*
 - PHT 85 and 125: PS / MWP = 28 bar
 - PHT 300: PS / MWP = 20 bar
- *Rated capacities from 113 to 1944 kW (32 to 554 TR) for R22*
- *Can be supplied with MOP (Max. Operating Pressure)*
Protects the compressor motor against excessive evaporating pressure
- *Range: -40 to +50°C*

Technical data and ordering - PHT valves

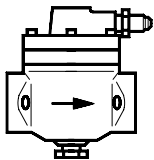


PHT 85
Solder or weld flanges



1. Pilot orifice assembly

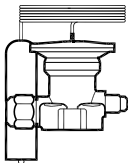
Type	Code no.
PHT	067B2790



2. Valve body, flange gaskets, flange bolts and screws

SI N	R134a		R404A/R507		R407C		R22		Code no.
	kW	TR	kW	TR	kW	TR	kW	TR	
PHT85-1	61.0	17.4	98.0	27.9	118.0	33.6	113.0	32.2	026H1160
PHT85-2	103.0	29.3	152.0	43.3	188.0	53.6	181.0	51.6	026H1161
PHT85-3	159.0	45.3	244.0	69.5	299.0	85.2	288.0	82.1	026H1162
PHT85-4	212.0	60.4	418.0	119.1	498.0	141.9	481.0	137.0	026H1163
PHT125-1	479.0	136.5	647.0	184.3	820.0	233.6	780.0	222.2	026H1164
PHT300-1	676.0	192.6	1005.0	286.3	1237.0	352.4	1199.0	341.6	026H1165
PHT300-2	1154.0	328.8	1583.0	451.0	2002.0	570.4	1944.0	553.8	026H1166

The rated capacity is based on:
 Evaporating temperature $t_e = +4.4\text{ }^\circ\text{C}$
 Condensing temperature $t_c = +38\text{ }^\circ\text{C}$
 Refrigerant temperature ahead of valve $t_i = +37\text{ }^\circ\text{C}$



3. Thermostatic element (incl. accessory bag)

Range	Refrigerant	Code no.	
		3 m capillary tube	5 m capillary tube
-40 to +10°C	R22/R407C	067B3303	067B3304
	R22/R407C, MOP 100 psig	067B3300	067B3306
	R407C	067B3314	067B3341
	R407C, MOP 95 psig	067B3311	
	R134a	067B3310	067B3315
	R134a, MOP 55 psig	067B3316	067B3317
	R404A / R507		067B3319
+10 to +50°C	R134a		067B3318

4. Flange set



Valve flange	Flange type	Weld flanges		Solder flanges			
		in.	Code no.	in.	Code no.	mm	Code no.
PHT 85	2	1	027N1025				
PHT 85	2			1 ^{1/8}	027L1029	28	027L1028
PHT 85	2			1 ^{3/8}	027L1035	35	027L1035
PHT 125	3 A	1 ^{1/4}	027N1032				
PHT 300	4 A	1 ^{1/2}	027N1040				
PHT 300	4 A	2	027N1050				

⚠ Note: Limited codes stocked in Australia

Capacities - PHT extended capacity tables

Capacity in kW, range N -40 °C to +10 °C. Opening superheat sh= 4.4 K

Valve type/ Orifice	Cond. temp. ³⁾ [°C]	R134a					R404A/R507					R407C					R22			
		Capacity in [kW]					Capacity in [kW]					Capacity in [kW]					Capacity in [kW]			
		Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]					Evaporating temp. [°C]			
		-30	-10	-5	0	5	-40	-35	-30	-10	0	-10	-5	0	5	10	-35	-30	0	5
PHT85-1	25	17.7	38.2	43.2	47.6	50.0	34.2	40.4	47.1	76.0	87.0	85.0	94.0	101.0	107.0	111.0	41.7	48.6	90.0	93.0
PHT85-2	25	31.4	67.0	75.0	82.0	86.0	60.0	70.0	81.0	125.0	139.0	143.0	156.0	166.0	174.0	177.0	73.0	84.0	149.0	151.0
PHT85-3	25	46.4	100.0	113.0	124.0	131.0	90.0	105.0	122.0	194.0	221.0	220.0	242.0	261.0	277.0	285.0	110.0	128.0	234.0	240.0
PHT85-4	25	52.0	108.0	127.0	149.0	171.0	97.0	112.0	139.0	301.0	372.0	317.0	371.0	422.0	464.0	492.0	109.0	128.0	377.0	403.0
PHT125-1	25	160.0	321.0	359.0	390.0	410.0	284.0	325.0	372.0	564.0	616.0	654.0	699.0	729.0	738.0	718.0	357.0	407.0	653.0	642.0
PHT300-1	25	223.0	444.0	498.0	546.0	579.0	393.0	456.0	524.0	812.0	924.0	929.0	1018.0	1098.0	1163.0	1202.0	482.0	552.0	993.0	1024.0
PHT300-2	25	410.0	786.0	875.0	950.0	1000.0	695.0	800.0	909.0	1338.0	1483.0	1571.0	1700.0	1810.0	1889.0	1925.0	863.0	979.0	1640.0	1669.0
PHT85-1	35	19.6	42.9	49.4	56.0	61.0	32.8	39.3	46.5	79.0	95.0	91.0	101.0	111.0	121.0	129.0	45.1	53.0	105.0	112.0
PHT85-2	35	34.4	75.0	86.0	96.0	104.0	57.0	68.0	80.0	130.0	151.0	152.0	168.0	181.0	194.0	203.0	79.0	92.0	173.0	181.0
PHT85-3	35	51.0	113.0	130.0	146.0	160.0	87.0	103.0	121.0	201.0	239.0	234.0	260.0	285.0	307.0	327.0	119.0	139.0	271.0	288.0
PHT85-4	35	58.0	125.0	150.0	180.0	215.0	93.0	111.0	140.0	316.0	404.0	341.0	401.0	460.0	514.0	560.0	121.0	144.0	438.0	483.0
PHT125-1	35	173.0	356.0	403.0	447.0	485.0	272.0	316.0	367.0	581.0	657.0	697.0	756.0	803.0	834.0	842.0	379.0	436.0	759.0	772.0
PHT300-1	35	244.0	494.0	561.0	626.0	684.0	381.0	447.0	518.0	836.0	989.0	981.0	1084.0	1184.0	1276.0	1355.0	521.0	598.0	1134.0	1204.0
PHT300-2	35	448.0	871.0	980.0	1082.0	1170.0	677.0	786.0	901.0	1378.0	1581.0	1659.0	1808.0	1944.0	2063.0	2156.0	934.0	1063.0	1865.0	1952.0
PHT85-1	45	20.7	45.8	53.0	61.0	68.0	28.7	35.3	42.7	77.0	96.0	93.0	104.0	115.0	127.0	137.0	47.1	55.0	116.0	125.0
PHT85-2	45	35.8	80.0	92.0	104.0	115.0	51.0	62.0	74.0	127.0	151.0	155.0	172.0	187.0	202.0	214.0	83.0	97.0	188.0	200.0
PHT85-3	45	53.0	120.0	139.0	158.0	176.0	77.0	93.0	111.0	196.0	239.0	238.0	266.0	293.0	320.0	345.0	125.0	146.0	295.0	318.0
PHT85-4	45	61.0	134.0	163.0	199.0	241.0	81.0	99.0	129.0	311.0	406.0	350.0	413.0	476.0	535.0	588.0	129.0	155.0	477.0	532.0
PHT125-1	45	179.0	375.0	428.0	480.0	527.0	240.0	287.0	339.0	565.0	653.0	712.0	782.0	842.0	889.0	918.0	384.0	447.0	837.0	870.0
PHT300-1	45	255.0	523.0	598.0	673.0	746.0	342.0	408.0	480.0	810.0	981.0	994.0	1104.0	1213.0	1317.0	1415.0	548.0	630.0	1223.0	1314.0
PHT300-2	45	468.0	920.0	1041.0	1158.0	1266.0	616.0	725.0	843.0	1339.0	1570.0	1680.0	1838.0	1986.0	2122.0	2240.0	984.0	1121.0	2006.0	2122.0
PHT85-1	55	21.0	47.2	55.0	63.0	72.0	21.9	28.4	35.7	71.0	91.0	91.0	103.0	115.0	127.0	139.0	47.7	56.0	122.0	133.0
PHT85-2	55	35.5	82.0	95.0	108.0	121.0	40.0	51.0	63.0	117.0	143.0	152.0	169.0	186.0	201.0	215.0	84.0	99.0	197.0	212.0
PHT85-3	55	51.0	121.0	142.0	162.0	183.0	59.0	76.0	94.0	179.0	225.0	233.0	261.0	290.0	318.0	346.0	127.0	149.0	308.0	334.0
PHT85-4	55	61.0	137.0	169.0	207.0	253.0	59.0	77.0	107.0	288.0	385.0	345.0	409.0	472.0	533.0	589.0	134.0	162.0	500.0	559.0
PHT125-1	55	176.0	380.0	437.0	492.0	546.0	190.0	237.0	290.0	522.0	615.0	701.0	781.0	852.0	911.0	955.0	372.0	443.0	891.0	939.0
PHT300-1	55	252.0	531.0	611.0	692.0	772.0	275.0	339.0	410.0	738.0	916.0	972.0	1084.0	1195.0	1305.0	1409.0	561.0	647.0	1272.0	1375.0
PHT300-2	55	466.0	933.0	1061.0	1186.0	1305.0	510.0	618.0	734.0	1231.0	1471.0	1641.0	1800.0	1951.0	2091.0	2216.0	1010.0	1152.0	2081.0	2211.0

³⁾ Condensing temperature at bubble point.

Correction factor

Refrigerant	Subcooling [K]										
	2	4	10	15	20	25	30	35	40	45	50
R22	0.98	1	1.06	1.11	1.15	1.2	1.25	1.3	1.35	1.39	1.44
R134a	0.98	1	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54
R404A	0.96	1	1.1	1.2	1.29	1.37	1.46	1.54	1.63	1.7	1.78
R407C	0.97	1	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57

When the subcooling \neq 4 K then:

- Table value \times Factor = Plant capacity
- Plant capacity/Factor = Table value

Example:

Refrigerant = R134a
 $Q_o = 130$ kW
 $t_o = -10$ °C
 $t_c = 45$ °C
 $\Delta t_o = 25$ K

Selection:

130 kW : $1.25 = 104$ kW = PHT 85, Orifice 03 ✓



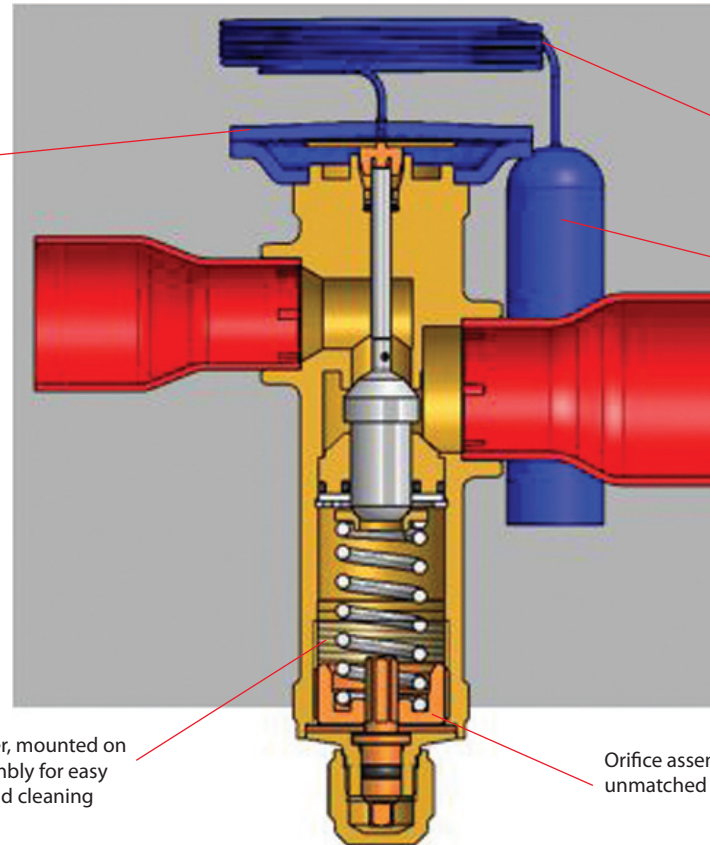
TGE – Thermostatic expansion valve

The function of a thermostatic expansion valve is determined by three fundamental pressures: the bulb pressure, the evaporating pressure and the spring pressure. When the expansion valve regulates, balance is created between bulb pressure on one side of the diaphragm and evaporating pressure plus spring force on the other side. The spring is used to set the superheat.

⚠ Note: replaces TDE and TRE series (fixed orifice valves)

Features

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



Capillary tube in stainless steel

Bulb in stainless steel

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

Separate strainer, mounted on the orifice assembly for easy maintenance and cleaning

Orifice assembly with an unmatched hermetic seal

Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Heat pump systems · Air conditioning units · Liquid coolers · Ice cube machines · Transport refrigeration 	<ul style="list-style-type: none"> · Cylindrical bulb design, with new bulb strap · Biflow with expansion in both directions · Adjustable superheat setting · Stainless Steel power element/capillary tube 	<ul style="list-style-type: none"> · 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. · Only 4 K opening superheat. · Bi-flow function.

Technical data - TGE valves (fixed orifice)

Application

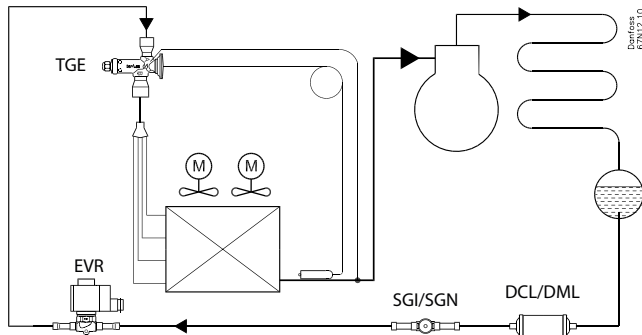


Fig. 2
Traditional refrigeration plant

Fig. 2 is a diagram of a traditional refrigeration plant where TGE is used for flow in one direction only.

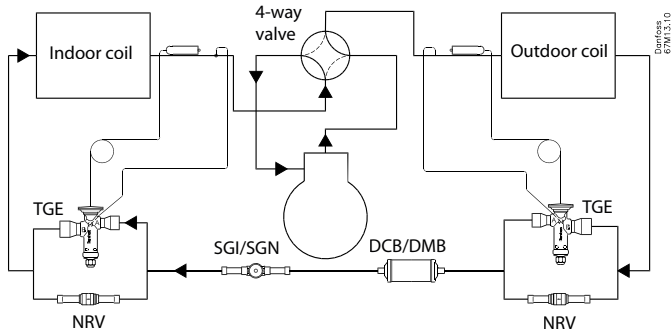


Fig. 3
Conventional system with summer/winter operation

Fig. 3 is a conventional split heat pump system shown in cooling mode. This system has two TGE thermostatic expansion valves with fixed direction flow. An NRV check valve is placed in series with each TGE to allow liquid refrigerant to bypass when flow is opposite the TXV fixed direction.

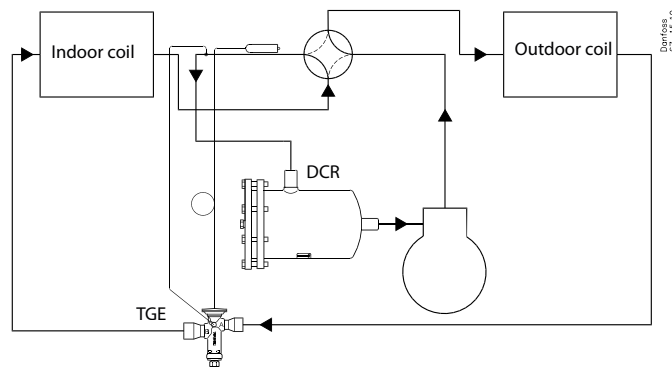


Fig. 4
Simplified heat pump system

Fig. 4 is a heat pump system similar to that in fig. 3 but with a more compact design, where the distance between evaporator and condenser is very short. This system has only one bi-flow TGE valve metering liquid refrigerant effectively in both directions. Changeover is by means of a 4-way valve. A suction filter drier is often placed in suction lines just before the compressor. The normal flow direction of TGE is determined by the primary function, i.e. cooling or heating.

Ordering

The valve and bulb straps are supplied in industrial packs or multi packs:
 Industrial pack, TGE10 / 12 pcs
 Industrial pack, TGE20 / 8 pcs
 Industrial pack, TGE40 / 8 pcs

Multi pack, TGE10 / 12 pcs
 Multi pack, TGE20 / 8 pcs
 Multi pack, TGE40 / 6 pcs

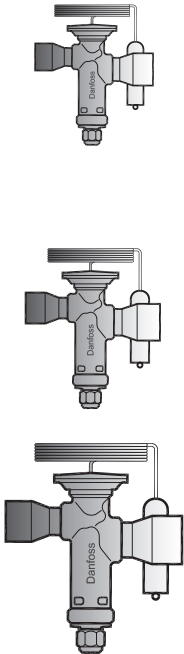
Technical data and ordering - TGE valves (fixed orifice)

R22

Ordering
Standard range

Range N = -40 → +10°C OS = 4 K

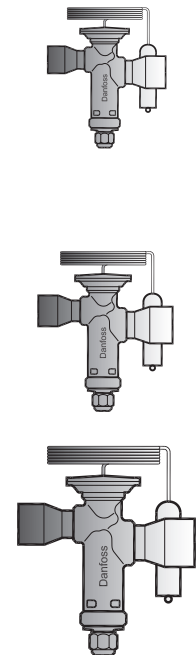
Valve type	Orifice no.	Nominal capacity $Q_{nom.}^{2)}$		Inch version		Designation
		kW	TR	Connection Solder ODF × ODF ¹⁾ in.	Code no. Ordering	Description
TGEX 10	3	10	3	$3/8 \times 5/8$	067N2150	TGEX 3
TGEX 10	3	10	3	$1/2 \times 5/8$	067N2151	TGEX 3
TGEX 10	4	14	4	$1/2 \times 7/8$	067N2152	TGEX 4
TGEX 10	6	20	6	$1/2 \times 5/8$	067N2153	TGEX 6
TGEX 10	6	20	6	$1/2 \times 7/8$	067N2154	TGEX 6
TGEX 10	6	20	6	$5/8 \times 7/8$	067N2155	TGEX 6
TGEX 10	8	27	7.5	$5/8 \times 7/8$	067N2156	TGEX 7.5
TGEX 10	11	38	11	$5/8 \times 7/8$	067N2157	TGEX 11
TGEX 10	11	38	11	$5/8 \times 1 1/8$	067N2158	TGEX 11
TGEX 20	12.5	43	12	$5/8 \times 7/8$	067N2159	TGEX 12
TGEX 20	12.5	43	12	$5/8 \times 1 1/8$	067N2160	TGEX 12
TGEX 20	16	54	15	$5/8 \times 1 1/8$	067N2161	TGEX 15
TGEX 20	16	54	15	$7/8 \times 1 1/8$	067N2162	TGEX 15
TGEX 20	20	63	18	$7/8 \times 1 1/8$	067N2163	TGEX 18
TGEX 20	20	63	18	$7/8 \times 1 3/8$	067N2164	TGEX 18
TGEX 40	26	92	26	$7/8 \times 1 3/8$	067N2165	TGEX 26
TGEX 40	26	92	26	$1 1/8 \times 1 3/8$	067N2166	TGEX 26
TGEX 40	30	104	30	$7/8 \times 1 3/8$	067N2167	TGEX 30
TGEX 40	30	104	30	$1 1/8 \times 1 3/8$	067N2168	TGEX 30
TGEX 40	40	134	38	$1 1/8 \times 1 3/8$	067N2169	TGEX 38



R134a

Range N = -40 → +10°C OS = 4 K

Valve type	Orifice no.	Nominal capacity $Q_{nom.}^{2)}$		Inch version		Designation
		kW	TR	Connection Solder ODF × ODF ¹⁾ in.	Code no. Ordering	Description
TGEN 10	3	6	1.5	$3/8 \times 5/8$	067N5150	TGEN 1.5
TGEN 10	3	6	1.5	$1/2 \times 5/8$	067N5151	TGEN 1.5
TGEN 10	4	8	2.5	$1/2 \times 7/8$	067N5152	TGEN 2.5
TGEN 10	6	12	3.5	$1/2 \times 5/8$	067N5153	TGEN 3.5
TGEN 10	6	12	3.5	$1/2 \times 7/8$	067N5154	TGEN 3.5
TGEN 10	6	12	3.5	$5/8 \times 7/8$	067N5155	TGEN 3.5
TGEN 10	8	17	4.5	$5/8 \times 7/8$	067N5156	TGEN 4.5
TGEN 10	11	24	7	$5/8 \times 7/8$	067N5157	TGEN 7
TGEN 10	11	24	7	$5/8 \times 1 1/8$	067N5158	TGEN 7
TGEN 20	12.5	29	8	$5/8 \times 7/8$	067N5159	TGEN 8
TGEN 20	12.5	29	8	$5/8 \times 1 1/8$	067N5160	TGEN 8
TGEN 20	16	37	10	$5/8 \times 1 1/8$	067N5161	TGEN 10
TGEN 20	16	37	10	$7/8 \times 1 1/8$	067N5162	TGEN 10
TGEN 20	20	44	12	$7/8 \times 1 1/8$	067N5163	TGEN 12
TGEN 20	20	44	12	$7/8 \times 1 3/8$	067N5164	TGEN 12
TGEN 40	26	61	17	$7/8 \times 1 3/8$	067N5165	TGEN 17
TGEN 40	26	61	17	$1 1/8 \times 1 3/8$	067N5166	TGEN 17
TGEN 40	30	70	20	$7/8 \times 1 3/8$	067N5167	TGEN 20
TGEN 40	30	70	20	$1 1/8 \times 1 3/8$	067N5168	TGEN 20
TGEN 40	40	87	25	$1 1/8 \times 1 3/8$	067N5169	TGEN 25



¹⁾ Pressure equalisation = $1/4$ in (6 mm) ODF
²⁾ The nominal capacity is based on: ARI standard

Evaporating temperature, $T_e = 4.4^\circ\text{C}$,
Liquid temperature, $T_l = 37^\circ\text{C}$
Condensing temperature, $T_c = 38^\circ\text{C}$,
Opening surperheat, OS = 4K

⚠ Note: Please see extended capacity tables for detailed product selection

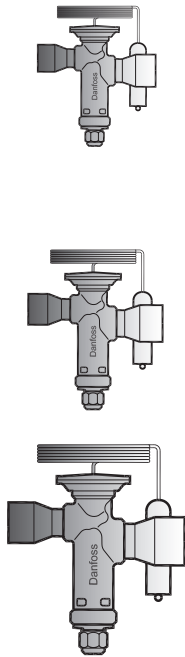
⚠ Note: Cross referencing from old series TDE and TRE valves please see attached table page 32

Technical data and ordering - TGE valves (fixed orifice)

Ordering Standard range (continued)

Range $N = -40 \rightarrow +10^\circ\text{C}$ OS = 4 K

R407C

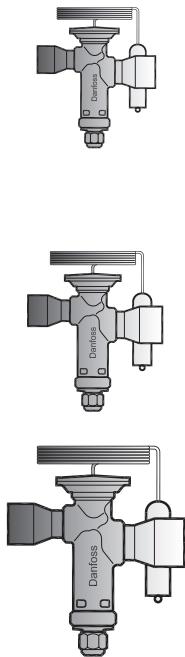


Valve type	Orifice no.	Nominal capacity $Q_{nom.}^{2)}$		Inch version		Designation
		kW	TR	Connection Solder ODF × ODF ¹⁾ in.	Code no. Ordering	Description
TGEZ 10	3	9	2.5	$\frac{3}{8} \times \frac{5}{8}$	067N4150	TGEZ 2.5
TGEZ 10	3	9	2.5	$\frac{1}{2} \times \frac{5}{8}$	067N4151	TGEZ 2.5
TGEZ 10	4	13	3.5	$\frac{1}{2} \times \frac{7}{8}$	067N4152	TGEZ 3.5
TGEZ 10	6	19	5	$\frac{1}{2} \times \frac{5}{8}$	067N4153	TGEZ 5
TGEZ 10	6	19	5	$\frac{1}{2} \times \frac{7}{8}$	067N4154	TGEZ 5
TGEZ 10	6	19	5	$\frac{5}{8} \times \frac{7}{8}$	067N4155	TGEZ 5
TGEZ 10	8	25	7	$\frac{5}{8} \times \frac{7}{8}$	067N4156	TGEZ 7
TGEZ 10	11	36	10	$\frac{5}{8} \times \frac{7}{8}$	067N4157	TGEZ 10
TGEZ 10	11	36	10	$\frac{5}{8} \times 1 \frac{1}{8}$	067N4158	TGEZ 10
TGEZ 20	12.5	42	12	$\frac{5}{8} \times \frac{7}{8}$	067N4159	TGEZ 12
TGEZ 20	12.5	42	12	$\frac{5}{8} \times 1 \frac{1}{8}$	067N4160	TGEZ 12
TGEZ 20	16	53	15	$\frac{5}{8} \times 1 \frac{1}{8}$	067N4161	TGEZ 15
TGEZ 20	16	53	15	$\frac{7}{8} \times 1 \frac{1}{8}$	067N4162	TGEZ 15
TGEZ 20	20	62	18	$\frac{7}{8} \times 1 \frac{1}{8}$	067N4163	TGEZ 18
TGEZ 20	20	62	18	$\frac{7}{8} \times 1 \frac{3}{8}$	067N4164	TGEZ 18
TGEZ 40	26	84	24	$\frac{7}{8} \times 1 \frac{3}{8}$	067N4165	TGEZ 24
TGEZ 40	26	84	24	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N4166	TGEZ 24
TGEZ 40	30	95	27	$\frac{7}{8} \times 1 \frac{3}{8}$	067N4167	TGEZ 27
TGEZ 40	30	95	27	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N4168	TGEZ 27
TGEZ 40	40	121	34	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N4169	TGEZ 34

Ordering Standard range (continued)

Range $N = -40 \rightarrow +10^\circ\text{C}$ OS = 4 K

R410A



Valve type	Orifice no.	Nominal capacity $Q_{nom.}^{2)}$		Inch version		Designation
		kW	TR	Connection Solder ODF × ODF ¹⁾ in.	Code no. Ordering	Description
TGEL 10	3	12	3.5	$\frac{3}{8} \times \frac{5}{8}$	067N3150	TGEL 3.5
TGEL 10	3	12	3.5	$\frac{1}{2} \times \frac{5}{8}$	067N3151	TGEL 3.5
TGEL 10	4	16	4.5	$\frac{1}{2} \times \frac{7}{8}$	067N3152	TGEL 4.5
TGEL 10	6	24	6.5	$\frac{1}{2} \times \frac{5}{8}$	067N3153	TGEL 6.5
TGEL 10	6	24	6.5	$\frac{1}{2} \times \frac{7}{8}$	067N3154	TGEL 6.5
TGEL 10	6	24	6.5	$\frac{5}{8} \times \frac{7}{8}$	067N3155	TGEL 6.5
TGEL 10	8	32	9	$\frac{5}{8} \times \frac{7}{8}$	067N3156	TGEL 9
TGEL 10	11	45	13	$\frac{5}{8} \times \frac{7}{8}$	067N3157	TGEL 13
TGEL 10	11	45	13	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3158	TGEL 13
TGEL 20	12.5	54	15	$\frac{5}{8} \times \frac{7}{8}$	067N3159	TGEL 15
TGEL 20	12.5	54	15	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3160	TGEL 15
TGEL 20	16	68	19	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3161	TGEL 19
TGEL 20	16	68	19	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3162	TGEL 19
TGEL 20	20	79	23	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3163	TGEL 23
TGEL 20	20	79	23	$\frac{7}{8} \times 1 \frac{3}{8}$	067N3164	TGEL 23
TGEL 40	26	110	31	$\frac{7}{8} \times 1 \frac{3}{8}$	067N3165	TGEL 31
TGEL 40	26	110	31	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3166	TGEL 31
TGEL 40	30	125	35	$\frac{7}{8} \times 1 \frac{3}{8}$	067N3167	TGEL 35
TGEL 40	30	125	35	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3168	TGEL 35
TGEL 40	40	161	46	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3169	TGEL 46

¹⁾ Pressure equalisation = $\frac{1}{4}$ in (6 mm) ODF

²⁾ The nominal capacity is based on: ARI standard

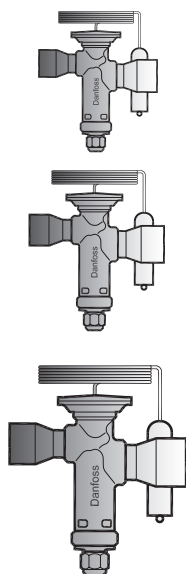
Evaporating temperature, $T_e = 4.4^\circ\text{C}$,
Liquid temperature, $T_l = 37^\circ\text{C}$
Condensing temperature, $T_c = 38^\circ\text{C}$,
Opening surperheat, OS = 4K

Technical data and ordering - TGE valves (fixed orifice)

Ordering Standard range (continued)

Range $N = -40 \rightarrow +10^{\circ}\text{C}$ $OS = 4\text{ K}$

R404A/R507



Valve type	Orifice no.	Nominal capacity $Q_{nom.}^{2)}$		Inch version		Designation
		kW	TR	Connection Solder ODF \times ODF ¹⁾ in.	Code no. Ordering	Description
TGES 10	3	7	2	$3/8 \times 5/8$	067N6170	TGES 2
TGES 10	3	9	2.5	$1/2 \times 7/8$	067N6172	TGES 2.5
TGES 10	6	14	4	$1/2 \times 7/8$	067N6151	TGES 4
TGES 10	6	14	4	$5/8 \times 7/8$	067N6174	TGES 4
TGES 10	8	18	5	$1/2 \times 5/8$	067N6175	TGES 5
TGES 10	8	18	5	$5/8 \times 7/8$	067N6150	TGES 5
TGES 10	11	26	7.5	$5/8 \times 7/8$	067N6154	TGES 7.5
TGES 20	12.5	31	9	$5/8 \times 7/8$	067N6158	TGES 9
TGES 20	16	39	11	$7/8 \times 1 1/8$	067N6155	TGES 11
TGES 20	16	39	11	$5/8 \times 1 1/8$	067N6181	TGES 11
TGES 20	20	45	13	$7/8 \times 1 1/8$	067N6162	TGES 13
TGES 40	26	64	18	$7/8 \times 1 3/8$	067N6161	TGES 18
TGES 40	30	72	21	$7/8 \times 1 3/8$	067N6185	TGES 21
TGES 40	30	72	21	$1 1/8 \times 1 3/8$	067N6186	TGES 21

⚠ Note: Please see extended capacity tables for detailed product selection

⚠ Note: Cross referencing from old series TDE and TRE valves please see attached table page 32

TGE cross reference table

TGE Valves (fixed orifice) "New Replacement Series"					TDE & TRE Valves (fixed orifice) "Obsolete Range"								
TGE Single Pack	Description	Body	Inlet-Outlet	OEM Pack (Qty)	Old Code	Description	Refrigerant	Range	Orif	kW	SH	Inlet	Outlet
067N4156	TGEZ 7	TGE 10	5/8 X 7/8	<	067L1100	TRE10-8Z	R407C	-40 -10 °C	8	25.00 kW	4.00 °C	5/8 in	7/8 in
067N4157	TGEZ 10	TGE 10	5/8 X 7/8	<	067L1101	TRE10-10Z	R407C	-40 -10 °C	11	36.00 kW	4.00 °C	5/8 in	7/8 in
067N4159	TGEZ 12	TGE 20	5/8 X 7/8	<	067L1102	TRE20-12Z	R407C	-40 -10 °C	12.5	42.00 kW	4.00 °C	5/8 in	7/8 in
067N5156	TGEN 4.5	TGE 10	5/8 X 7/8	<	067L1103	TRE10-5N	R134a	-40 -10 °C	8	17.00 kW	4.00 °C	5/8 in	7/8 in
067N4157	TGEZ 10	TGE 10	5/8 X 7/8	<	067L1104	TRE20-10Z	R407C	-40 -10 °C	11	36.00 kW	4.00 °C	5/8 in	7/8 in
067N5157	TGEN 7	TGE 10	5/8 X 7/8	<	067L1106	TRE10-7N	R134a	-40 -10 °C	11	24.00 kW	4.00 °C	5/8 in	7/8 in
067N4156	TGEZ 7	TGE 10	5/8 X 7/8	<	067L1112	TRE10-8Z	R407C	-40 -10 °C	8	25.00 kW	4.00 °C	5/8 in	7/8 in
067N2156	TGEX 7.5	TGE 10	5/8 X 7/8	<	067L1121	TRE10-8X	R22	-40 -10 °C	8	27.00 kW	4.00 °C	5/8 in	7/8 in
067N2157	TGEX 11	TGE 10	5/8 X 7/8	<	067L1124	TRE10-10X	R22	-40 -10 °C	11	38.00 kW	4.00 °C	5/8 in	7/8 in
067N3155	TGEL 6.5	TGE 10	5/8 X 7/8	<	067L1129	TREL10-8	R410A	-40 -10 °C	6	24.00 kW	4.00 °C	5/8 in	7/8 in
067N3156	TGEL 9	TGE 10	5/8 X 7/8	<	067L1131	TREL10-10	R410A	-40 -10 °C	8	32.00 kW	4.00 °C	5/8 in	7/8 in
067N3157	TGEL 13	TGE 10	5/8 X 7/8	<	067L1135	TREL10-12.5	R410A	-40 -10 °C	11	45.00 kW	4.00 °C	5/8 in	7/8 in
067N3232	TGEL 15	TGE 20	7/8 X 1 1/8	<	067L1139	TREL10-15	R410A	-40 -10 °C	12.5	54.00 kW	4.00 °C	7/8 in	1 1/8 in
067N5157	TGEN 7	TGE 10	5/8 X 7/8	<	067L1141	TRE20-7N	R134a	-40 -10 °C	11	24.00 kW	4.00 °C	5/8 in	7/8 in
067N5162	TGEN10	TGE 20	7/8 X 1 1/8	<	067L1150	TRE20-11N	R134a	-40 -10 °C	16	37.00 kW	4.00 °C	7/8 in	1 1/8 in
067N5163	TGEN 12	TGE 20	7/8 X 1 1/8	<	067L1153	TRE20-14N	R134a	-40 -10 °C	20	44.00 kW	4.00 °C	7/8 in	1 1/8 in
067N4162	TGEZ 15	TGE 20	7/8 X 1 1/8	<	067L1167	TRE20-15Z	R407C	-40 -10 °C	16	53.00 kW	4.00 °C	7/8 in	1 1/8 in
067N4163	TGEZ 18	TGE 20	7/8 X 1 1/8	<	067L1170	TRE20-20Z	R407C	-40 -10 °C	20	62.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2157	TGEX 11	TGE 10	5/8 X 7/8	<	067L1175	TRE20-10X	R22	-40 -10 °C	11	38.00 kW	4.00 °C	5/8 in	7/8 in
067N2159	TGEX 12	TGE 20	5.8 X 7/8	<	067L1179	TRE20-12.5X	R22	-40 -10 °C	12.5	43.00 kW	4.00 °C	5/8 in	7/8 in
067N2162	TGEX 15	TGE 20	7/8 X 1 1/8	<	067L1184	TRE20-15X	R22	-40 -10 °C	16	54.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2163	TGEX 18	TGE 20	7/8 X 1 1/8	<	067L1187	TRE20-20X	R22	-40 -10 °C	20	63.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2164	TGEX 18	TGE 20	7/8 X 1 3/8	<	067L1188	TRE20-20X	R22	-40 -10 °C	20	63.00 kW	4.00 °C	7/8 in	1 3/8 in
067N3162	TGEL 19	TGE 20	7/8 X 1 1/8	<	067L1194	TREL20-20	R410A	-40 -10 °C	16	68.00 kW	4.00 °C	7/8 in	1 1/8 in
067N3163	TGEL 23	TGE 20	7/8 X 1 1/8	<	067L1197	TREL20-25	R410A	-40 -10 °C	20	79.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2156	TGEX 7.5	TGE 10	5/8 X 7/8	067N2176 (12)	067L2121	TRE10-8X	R22	-40 -10 °C	8	27.00 kW	4.00 °C	5/8 in	7/8 in
067N2157	TGEX 11	TGE 10	5/8 X 7/8	067N2177 (12)	067L2124	TRE10-10X	R22	-40 -10 °C	11	38.00 kW	4.00 °C	5/8 in	7/8 in
067N3155	TGEL 6.5	TGE 10	5/8 X 7/8	067N3175 (12)	067L2129	TREL10-8	R410A	-40 -10 °C	6	24.00 kW	4.00 °C	5/8 in	7/8 in
067N3248	TGEL 9	TGE 10	5/8 X 5/8	<	067L2130	TREL10-10	R410A	-40 -10 °C	8	32.00 kW	4.00 °C	5/8 in	5/8 in
067N3156	TGEL 9	TGE 10	5/8 X 7/8	067N3176 (12)	067L2131	TREL10-10	R410A	-40 -10 °C	8	32.00 kW	4.00 °C	5/8 in	7/8 in
067N3249	TGEL 10	TGE 10	5/8 X 5/8	<	067L2134	TREL10-12.5	R410A	-40 -10 °C	11	45.00 kW	4.00 °C	5/8 in	5/8 in
067N3157	TGEL 13	TGE 10	5/8 X 7/8	067N3177 (12)	067L2135	TREL10-12.5	R410A	-40 -10 °C	11	45.00 kW	4.00 °C	5/8 in	7/8 in
067N4159	TGEZ 12	TGE 20	5/8 X 7/8	067N4179 (8)	067L2162	TRE20-12.5Z	R407C	-40 -10 °C	12.5	42.00 kW	4.00 °C	5/8 in	7/8 in
067N2157	TGEX 11	TGE 10	5/8 X 7/8	067N2177 (12)	067L2175	TRE20-10X	R22	-40 -10 °C	11	38.00 kW	4.00 °C	5/8 in	7/8 in
067N2159	TGEX 12	TGE 20	5/8 X 7/8	067N2179 (8)	067L2179	TRE20-12.5X	R22	-40 -10 °C	12.5	43.00 kW	4.00 °C	5/8 in	7/8 in
067N2162	TGEX 15	TGE 20	7/8 X 1 1/8	067N2182 (8)	067L2184	TRE20-15X	R22	-40 -10 °C	16	54.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2163	TGEX 18	TGE 20	7/8 X 1 1/8	067N2183 (8)	067L2187	TRE20-20X	R22	-40 -10 °C	20	63.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2165	TGEX 26	TGE 40	7/8 X 1 3/8	<	067L3105	TRE40-25X	R22	-40 -10 °C	26	92.00 kW	4.00 °C	7/8 in	1 3/8 in
067N2168	TGEX 30	TGE 40	1 1/8 X 1 3/8	<	067L3109	TRE40-30X	R22	-40 -10 °C	30	104.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N2169	TGEX 38	TGE 40	1 1/8 X 1 3/8	<	067L3112	TRE40-40X	R22	-40 -10 °C	40	134.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N3166	TGEL 31	TGE 40	1 1/8 X 1 3/8	<	067L3120	TRE40-30L	R410A	-40 -10 °C	26	110.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N3168	TGEL 35	TGE 40	1 1/8 X 1 3/8	<	067L3124	TRE40-40L	R410A	-40 -10 °C	30	125.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N3169	TGEL 46	TGE 40	1 1/8 X 1 3/8	<	067L3128	TRE40-55L	R410A	-40 -10 °C	40	161.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N4163	TGEZ 18	TGE 20	7/8 X 1 1/8	<	067L3130	TRE40-20Z	R407C	-40 -10 °C	20	62.00 kW	4.00 °C	7/8 in	1 1/8 in
067N4165	TGEZ 24	TGE 40	7/8 X 1 3/8	<	067L3134	TRE40-25Z	R407C	-40 -10 °C	26	84.00 kW	4.00 °C	7/8 in	1 3/8 in
067N4167	TGEZ 27	TGE 40	7/8 X 1 3/8	<	067L3138	TRE40-30Z	R407C	-40 -10 °C	30	95.00 kW	4.00 °C	7/8 in	1 3/8 in
067N4169	TGEZ 34	TGE 40	1 1/8 X 1 3/8	<	067L3140	TRE40-40Z	R407C	-40 -10 °C	40	121.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N5163	TGEN 12	TGE 20	7/8 X 1 1/8	<	067L3143	TRE40-14N	R134a	-40 -10 °C	20	44.00 kW	4.00 °C	7/8 in	1 1/8 in
067N5165	TGEN 17	TGE 40	7/8 X 1 3/8	<	067L3147	TRE40-16N	R134a	-40 -10 °C	26	61.00 kW	4.00 °C	7/8 in	1 3/8 in
067N5169	TGEN 25	TGE 40	1 1/8 X 1 3/8	<	067L3154	TRE40-25N	R134a	-40 -10 °C	40	87.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N2156	TGEX 7.5	TGE 10	5/8 X 7/8	067N2176 (12)	068H5101	DEX7.5	R22	-40 -10 °C	8	27.00 kW	4.00 °C	5/8 in	7/8 in
067N2159	TGEX 12	TGE 20	5/8 X 7/8	067N2179 (8)	068H5121	DEX12.5	R22	-40 -10 °C	12.5	43.00 kW	4.00 °C	5/8 in	7/8 in
067N2163	TGEX 18	TGE 20	7/8 X 1 1/8	067N2183 (8)	068H5124	DEX19	R22	-40 -10 °C	20	63.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2162	TGEX 15	TGE 20	7/8 X 1 1/8	067N2182 (8)	068H5127	DEX16	R22	-40 -10 °C	16	54.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2156	TGEX 7.5	TGE 10	5/8 X 7/8	067N2176 (12)	068H5128	DEX8	R22	-40 -10 °C	8	27.00 kW	4.00 °C	5/8 in	7/8 in
067N4150	TGEZ 2.5	TGE 10	3/8 X 5/8	<	068H7000	DEX3	R407C	-40 -10 °C	3	9.00 kW	4.00 °C	3/8 in	5/8 in
067N4151	TGEZ 2.5	TGE 10	1/2 X 5/8	<	068H7002	DEX3	R407C	-40 -10 °C	3	9.00 kW	4.00 °C	1/2 in	5/8 in
067N4152	TGEZ 3.5	TGE 10	1/2 X 7/8	<	068H7004	DEX4	R407C	-40 -10 °C	4	13.00 kW	4.00 °C	1/2 in	7/8 in
067N4153	TGEZ 5	TGE 10	1/2 X 5/8	<	068H7006	DEX6	R407C	-40 -10 °C	6	19.00 kW	4.00 °C	1/2 in	5/8 in
067N4155	TGEZ 5	TGE 10	5/8 X 7/8	<	068H7010	DEX6	R407C	-40 -10 °C	6	19.00 kW	4.00 °C	5/8 in	7/8 in
067N4156	TGEZ 7	TGE 10	5/8 X 7/8	<	068H7012	DEX7.5	R407C	-40 -10 °C	8	25.00 kW	4.00 °C	5/8 in	7/8 in
067N4156	TGEZ 7	TGE 10	5/8 X 7/8	<	068H7014	DEX8	R407C	-40 -10 °C	8	25.00 kW	4.00 °C	5/8 in	7/8 in
067N4163	TGEZ 18	TGE 20	7/8 X 1 1/8	<	068H7026	DEX16	R407C	-40 -10 °C	20	62.00 kW	4.00 °C	7/8 in	1 1/8 in
067N4163	TGEZ 18	TGE 20	7/8 X 1 1/8	<	068H7030	DEX20	R407C	-40 -10 °C	20	62.00 kW	4.00 °C	7/8 in	1 1/8 in
067N4165	TGEZ 24	TGE 40	7/8 X 1 3/8	<	068H7032	DEX26	R407C	-40 -10 °C	26	84.00 kW	4.00 °C	7/8 in	1 3/8 in
067N4169	TGEZ 34	TGE 40	1 1/8 X 1 3/8	<	068H7036	DEX30	R407C	-40 -10 °C	40	121.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N4169	TGEZ 34	TGE 40	1 1/8 X 1 3/8	<	068H7038	DEX40	R407C	-40 -10 °C	40	121.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N2150	TGEX 3	TGE 10	3/8 X 5/8	<	068H7050	DEX3	R22	-40 -10 °C	3	10.00 kW	4.00 °C	3/8 in	5/8 in
067N2152	TGEX 4	TGE 10	1/2 X 7/8	<	068H7054	DEX4	R22	-40 -10 °C	4	14.00 kW	4.00 °C	1/2 in	5/8 in
067N2153	TGEX 6	TGE 10	1/2 X 5/8	<	068H7056	DEX6	R22	-40 -10 °C	6	20.00 kW	4.00 °C	1/2 in	7/8 in
067N2154	TGEX 6	TGE 10	1/2 X 7/8	<	068H7058	DEX6	R22	-40 -10 °C	6	20.00 kW	4.00 °C	1/2 in	7/8 in
067N2155	TGEX 6	TGE 10	5/8 X 7/8	<	068H7060	DEX6	R22	-40 -10 °C	6	20.00 kW	4.00 °C	5/8 in	7/8 in
067N2156	TGEX 7.5	TGE 10	5/8 X 7/8	<	068H7062	DEX7.5	R22	-40 -10 °C	8	27.00 kW	4.00 °C	5/8 in	7/8 in
067N2156	TGEX 7.5	TGE 10	5/8 X 7/8	<	068H7064	DEX8	R22	-40 -10 °C	8	27.00 kW	4.00 °C	5/8 in	7/8 in
067N2159	TGEX 12	TGE 20	5/8 X 7/8	<	068H7066	DEX11	R22	-40 -10 °C	12.5	43.00 kW	4.00 °C	5/8 in	7/8 in
067N2159	TGEX 12	TGE 20	5/8 X 7/8	<	068H7070	DEX12.5	R22	-40 -10 °C	12.5	43.00 kW	4.00 °C	5/8 in	7/8 in
067N2163	TGEX 18	TGE 20	7/8 X 1 1/8	<	068H7076	DEX16	R22	-40 -10 °C	20	63.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2163	TGEX 18	TGE 20	7/8 X 1 1/8	<	068H7080	DEX20	R22	-40 -10 °C	20	63.00 kW	4.00 °C	7/8 in	1 1/8 in
067N2165	TGEX 26	TGE 40	7/8 X 1 3/8	<	068H7082	DEX26	R22	-40 -10 °C	26	92.00 kW	4.00 °C	7/8 in	1 3/8 in
067N2169	TGEX 38	TGE 40	1 1/8 X 1 3/8	<	068H7086	DEX30	R22	-40 -10 °C	40	134.00 kW	4.00 °C	1 1/8 in	1 3/8 in
067N2169	TGEX 38	TGE 40	1 1/8 X 1 3/8	<	068H7088	DEX40	R2						

Capacities - TGE valves (fixed orifice)

R22

Capacity in kW. Range N: -40°C to +10°C. Range K: -25°C to +10°C. Opening superheat sh= 4 K

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
25	4.39	5.03	5.68	6.36	7.02	7.65	8.22	8.68	8.97	9.01	8.70	7.90	TGE 10	3
	5.94	6.80	7.70	8.62	9.54	10.40	11.20	11.80	12.20	12.30	11.90	10.80	TGE 10	4
	8.76	10.10	11.40	12.80	14.10	15.40	16.60	17.50	18.10	18.20	17.50	15.90	TGE 10	6
	11.90	13.60	15.50	17.30	19.10	20.80	22.30	23.50	24.20	24.20	23.20	20.90	TGE 10	8
	17.70	20.40	23.10	25.80	28.40	30.60	32.40	33.50	33.80	33.00	31.10	27.70	TGE 10	11
	16.50	19.10	21.90	24.90	28.00	31.10	34.10	36.70	38.70	39.50	38.80	36.00	TGE 20	12.5
	20.70	24.00	27.50	31.30	35.30	39.30	43.20	46.60	49.20	50.50	49.80	46.20	TGE 20	16
	25.60	29.50	33.70	38.10	42.70	47.20	51.50	55.10	57.70	58.60	57.10	52.30	TGE 20	20
	34.50	40.10	46.40	53.10	60.20	67.40	74.50	80.80	85.80	88.40	87.60	81.50	TGE 40	26
	39.20	45.70	52.80	60.40	68.50	76.80	84.80	92.00	97.60	100.00	99.30	92.30	TGE 40	30
47.30	55.00	63.60	73.00	83.10	93.70	104.00	114.00	121.00	124.00	121.00	110.00	TGE 40	40	

35	4.44	5.11	5.81	6.55	7.30	8.06	8.79	9.47	10.00	10.50	10.70	10.60	TGE 10	3
	5.96	6.86	7.82	8.82	9.86	10.90	11.90	12.80	13.60	14.20	14.50	14.40	TGE 10	4
	8.69	10.00	11.40	12.90	14.40	16.00	17.50	18.90	20.00	20.90	21.30	21.00	TGE 10	6
	11.70	13.50	15.40	17.40	19.40	21.40	23.40	25.20	26.70	27.70	28.10	27.60	TGE 10	8
	17.30	20.20	23.20	26.30	29.30	32.20	34.80	36.80	38.20	38.80	38.40	36.90	TGE 10	11
	16.30	18.90	21.70	24.70	28.10	31.50	35.10	38.60	41.80	44.40	46.10	46.50	TGE 20	12.5
	20.20	23.40	27.00	30.90	35.10	39.50	44.10	48.60	52.80	56.30	58.60	59.30	TGE 20	16
	25.00	28.80	33.10	37.60	42.50	47.60	52.80	57.80	62.40	66.00	68.10	68.20	TGE 20	20
	33.00	38.50	44.60	51.30	58.60	66.40	74.50	82.60	90.20	96.80	101.00	103.00	TGE 40	26
	37.40	43.60	50.60	58.30	66.60	75.40	84.60	93.80	102.00	110.00	115.00	117.00	TGE 40	30
45.10	52.60	61.00	70.50	81.10	92.70	105.00	118.00	130.00	139.00	145.00	145.00	TGE 40	40	

45	4.39	5.07	5.79	6.56	7.35	8.18	9.00	9.81	10.60	11.20	11.80	12.10	TGE 10	3
	5.84	6.75	7.73	8.76	9.85	11.00	12.10	13.20	14.30	15.20	15.90	16.40	TGE 10	4
	8.40	9.74	11.20	12.70	14.30	15.90	17.60	19.20	20.80	22.10	23.20	23.80	TGE 10	6
	11.20	13.00	14.90	16.90	19.00	21.20	23.40	25.50	27.50	29.20	30.50	31.20	TGE 10	8
	16.50	19.40	22.50	25.80	29.10	32.40	35.50	38.30	40.50	42.10	42.90	42.70	TGE 10	11
	15.70	18.20	20.90	23.90	27.20	30.70	34.50	38.30	42.10	45.70	48.80	51.20	TGE 20	12.5
	19.30	22.40	25.80	29.50	33.70	38.20	42.90	47.90	52.80	57.50	61.60	64.80	TGE 20	16
	23.80	27.50	31.60	36.00	40.90	46.00	51.50	57.20	62.70	67.90	72.30	75.50	TGE 20	20
	30.80	35.90	41.70	48.10	55.20	62.90	71.10	79.70	88.50	96.90	104.00	110.00	TGE 40	26
	34.80	40.60	47.10	54.40	62.40	71.20	80.50	90.30	100.00	110.00	118.00	125.00	TGE 40	30
41.90	48.90	56.80	65.90	76.20	87.80	101.00	114.00	129.00	143.00	155.00	163.00	TGE 40	40	

55	4.26	4.93	5.64	6.40	7.21	8.05	8.91	9.78	10.60	11.40	12.20	12.70	TGE 10	3
	5.61	6.50	7.46	8.48	9.57	10.70	11.90	13.10	14.20	15.30	16.30	17.10	TGE 10	4
	7.95	9.24	10.60	12.10	13.70	15.40	17.10	18.80	20.50	22.10	23.60	24.70	TGE 10	6
	10.40	12.20	14.00	16.00	18.10	20.30	22.50	24.80	27.00	29.10	30.90	32.20	TGE 10	8
	15.30	18.10	21.20	24.50	27.90	31.40	34.80	38.10	40.90	43.20	44.90	45.70	TGE 10	11
	14.90	17.20	19.70	22.50	25.60	29.00	32.70	36.50	40.50	44.40	48.20	51.50	TGE 20	12.5
	18.20	21.00	24.10	27.60	31.50	35.70	40.30	45.20	50.30	55.40	60.20	64.60	TGE 20	16
	22.30	25.70	29.50	33.60	38.20	43.10	48.40	54.10	59.90	65.70	71.20	76.00	TGE 20	20
	28.30	32.90	38.20	44.00	50.50	57.70	65.50	73.80	82.60	91.50	100.00	108.00	TGE 40	26
	31.70	37.00	42.90	49.60	57.00	65.10	73.90	83.40	93.30	103.00	113.00	122.00	TGE 40	30
38.00	44.30	51.50	59.70	69.20	79.90	92.10	106.00	121.00	136.00	151.00	165.00	TGE 40	40	

Subcooling correction factor 'fsub'

Subcooling [K]	2	4	10	15	20	25	30	35	40	45	50
Correction factor	0.98	1.00	1.07	1.13	1.19	1.25	1.31	1.36	1.42	1.48	1.53

Distributor correction factor (fp)*

Evaporating temp.	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
0	1	1	1	1	1	1	1	1	1	1	1	1
1	0.96	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.93	0.92	0.91	0.89
1.5	0.93	0.93	0.93	0.93	0.92	0.92	0.91	0.91	0.90	0.88	0.86	0.82
2	0.91	0.91	0.90	0.90	0.90	0.89	0.88	0.87	0.86	0.84	0.81	0.76

*calculated at 32°C condensing temperature

Capacities - TGE valves (fixed orifice)

Capacity in kW. Range N: -40°C to +10°C. Range K: -25°C to +10°C. Opening superheat sh= 4 K

R134a

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
25	2.44	2.76	3.10	3.47	3.85	4.24	4.62	4.96	5.23	5.37	5.31	4.92	TGE 10	3
	3.33	3.77	4.24	4.74	5.27	5.81	6.33	6.81	7.18	7.38	7.30	6.77	TGE 10	4
	5.00	5.66	6.37	7.13	7.92	8.73	9.52	10.20	10.80	11.10	11.00	10.10	TGE 10	6
	6.90	7.81	8.78	9.82	10.90	12.00	13.10	14.00	14.70	15.10	14.90	13.70	TGE 10	8
	10.20	11.50	13.00	14.50	16.10	17.60	19.10	20.30	21.20	21.40	20.80	18.80	TGE 10	11
	10.60	12.20	14.00	15.90	17.90	20.10	22.30	24.40	26.10	27.20	27.20	25.60	TGE 20	12.5
	13.40	15.40	17.60	20.10	22.70	25.50	28.40	31.10	33.40	34.90	35.00	32.90	TGE 20	16
	16.60	19.10	21.80	24.70	27.80	31.00	34.20	37.20	39.60	41.00	40.80	37.90	TGE 20	20
	22.10	25.40	29.10	33.20	37.60	42.30	47.20	51.90	56.00	58.70	59.30	56.00	TGE 40	26
	25.20	29.00	33.30	37.90	43.00	48.40	54.00	59.30	64.00	67.10	67.60	63.80	TGE 40	30
30.50	35.00	40.00	45.50	51.60	58.20	65.10	71.80	77.60	81.60	82.00	76.60	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
35	2.46	2.79	3.16	3.56	3.99	4.44	4.92	5.39	5.84	6.22	6.49	6.59	TGE 10	3
	3.34	3.79	4.29	4.84	5.43	6.05	6.70	7.36	7.97	8.51	8.89	9.02	TGE 10	4
	4.96	5.64	6.39	7.21	8.09	9.03	10.00	11.00	11.90	12.70	13.30	13.50	TGE 10	6
	6.79	7.73	8.75	9.87	11.10	12.30	13.60	14.90	16.20	17.20	17.90	18.10	TGE 10	8
	9.95	11.40	12.90	14.60	16.40	18.30	20.20	22.00	23.60	24.80	25.40	25.30	TGE 10	11
	10.50	12.00	13.80	15.80	18.00	20.40	22.90	25.60	28.20	30.50	32.40	33.30	TGE 20	12.5
	13.10	15.10	17.30	19.80	22.60	25.70	29.00	32.40	35.70	38.80	41.30	42.60	TGE 20	16
	16.10	18.60	21.40	24.40	27.70	31.20	35.00	38.80	42.60	45.90	48.40	49.50	TGE 20	20
	21.20	24.40	28.10	32.20	36.80	41.90	47.40	53.20	59.00	64.40	68.80	71.40	TGE 40	26
	24.10	27.80	32.00	36.70	42.00	47.80	54.10	60.70	67.30	73.40	78.40	81.30	TGE 40	30
29.20	33.60	38.60	44.20	50.60	57.70	65.50	73.90	82.50	90.50	96.90	100.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
45	2.41	2.75	3.12	3.53	3.98	4.47	5.00	5.55	6.10	6.64	7.13	7.52	TGE 10	3
	3.25	3.71	4.21	4.77	5.39	6.06	6.78	7.53	8.29	9.04	9.71	10.20	TGE 10	4
	4.78	5.46	6.21	7.05	7.96	8.96	10.00	11.10	12.30	13.40	14.40	15.20	TGE 10	6
	6.48	7.41	8.44	9.57	10.80	12.20	13.60	15.10	16.60	18.10	19.40	20.40	TGE 10	8
	9.44	10.90	12.40	14.20	16.10	18.10	20.30	22.50	24.60	26.60	28.10	29.00	TGE 10	11
	10.00	11.50	13.30	15.20	17.40	19.80	22.50	25.30	28.30	31.30	34.20	36.60	TGE 20	12.5
	12.40	14.30	16.50	18.90	21.70	24.70	28.10	31.80	35.60	39.50	43.30	46.50	TGE 20	16
	15.30	17.60	20.30	23.20	26.50	30.10	34.00	38.20	42.60	47.00	51.10	54.50	TGE 20	20
	19.70	22.80	26.20	30.20	34.70	39.70	45.30	51.40	57.90	64.60	71.00	76.70	TGE 40	26
	22.30	25.80	29.80	34.30	39.40	45.20	51.50	58.50	65.90	73.40	80.70	87.10	TGE 40	30
27.10	31.20	36.00	41.40	47.60	54.70	62.70	71.70	81.50	91.80	102.00	110.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
55	2.31	2.64	3.00	3.41	3.86	4.35	4.89	5.47	6.07	6.69	7.29	7.85	TGE 10	3
	3.09	3.53	4.02	4.57	5.18	5.85	6.59	7.37	8.20	9.05	9.88	10.60	TGE 10	4
	4.48	5.13	5.86	6.67	7.57	8.57	9.65	10.80	12.00	13.30	14.50	15.60	TGE 10	6
	6.00	6.89	7.88	8.98	10.20	11.50	13.00	14.50	16.20	17.80	19.50	20.90	TGE 10	8
	8.68	10.00	11.60	13.30	15.20	17.30	19.50	21.90	24.40	26.70	28.80	30.50	TGE 10	11
	9.41	10.80	12.40	14.20	16.30	18.60	21.10	24.00	27.00	30.20	33.50	36.60	TGE 20	12.5
	11.50	13.30	15.30	17.50	20.10	23.00	26.20	29.80	33.70	37.80	42.00	46.10	TGE 20	16
	14.10	16.30	18.70	21.50	24.60	28.00	31.80	35.90	40.40	45.10	49.90	54.40	TGE 20	20
	17.90	20.70	23.80	27.50	31.60	36.30	41.60	47.40	53.90	60.80	67.90	74.90	TGE 40	26
	20.10	23.30	26.90	31.00	35.70	41.10	47.10	53.80	61.10	68.90	77.00	84.90	TGE 40	30
24.40	28.10	32.40	37.30	43.00	49.60	57.20	66.00	75.90	86.80	98.40	110.00	TGE 40	40	

Subcooling correction factor 'fsub'

Subcooling [K]	2	4	10	15	20	25	30	35	40	45	50
Correction factor	0.97	1.00	1.09	1.16	1.23	1.30	1.37	1.44	1.51	1.58	1.65

Distributor correction factor (fp)*

Evaporating temp.	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
Pressure drop [bar]	0	1	1	1	1	1	1	1	1	1	1	1
	1	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.90	0.89	0.87
	1.5	0.90	0.89	0.89	0.89	0.88	0.88	0.87	0.86	0.84	0.82	0.79
	2	0.86	0.86	0.85	0.85	0.84	0.83	0.82	0.81	0.79	0.76	0.71

*calculated at 32°C condensing temperature

Capacities - TGE valves (fixed orifice)

Capacity in kW. Range N: -40°C to +10°C. Range K: -25°C to +10°C. Opening superheat sh= 4 K

R404A/R507

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
25	3.13	3.57	4.03	4.51	5.00	5.48	5.92	6.28	6.53	6.59	6.41	5.88	TGE 10	3
	4.24	4.84	5.47	6.13	6.80	7.46	8.06	8.57	8.92	9.02	8.77	8.04	TGE 10	4
	6.27	7.16	8.10	9.08	10.10	11.10	12.00	12.70	13.20	13.40	13.00	11.90	TGE 10	6
	8.54	9.74	11.00	12.30	13.70	15.00	16.20	17.10	17.80	17.90	17.30	15.80	TGE 10	8
	12.70	14.50	16.40	18.30	20.20	21.90	23.50	24.60	25.10	24.80	23.50	21.00	TGE 10	11
	12.90	14.90	17.10	19.40	21.90	24.40	26.80	28.90	30.50	31.30	30.80	28.60	TGE 20	12.5
	16.20	18.70	21.40	24.40	27.60	30.80	33.90	36.70	38.90	40.00	39.50	36.70	TGE 20	16
	19.90	22.90	26.10	29.60	33.20	36.80	40.30	43.30	45.40	46.30	45.20	41.50	TGE 20	20
	26.10	30.20	34.80	39.70	44.90	50.40	55.80	60.80	64.80	67.10	66.70	62.40	TGE 40	26
	29.70	34.40	39.60	45.20	51.20	57.40	63.60	69.20	73.80	76.30	75.70	70.70	TGE 40	30
35.70	41.30	47.70	54.70	62.20	70.20	78.20	85.40	91.10	93.80	92.30	84.90	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
35	2.91	3.35	3.83	4.34	4.87	5.43	5.98	6.51	6.97	7.33	7.52	7.50	TGE 10	3
	3.92	4.51	5.16	5.85	6.58	7.34	8.10	8.82	9.47	9.97	10.20	10.20	TGE 10	4
	5.74	6.62	7.57	8.59	9.67	10.80	11.90	13.00	13.90	14.70	15.10	15.00	TGE 10	6
	7.75	8.94	10.20	11.60	13.00	14.50	16.00	17.40	18.60	19.50	20.00	19.80	TGE 10	8
	11.50	13.40	15.30	17.40	19.50	21.60	23.60	25.40	26.80	27.70	27.80	26.90	TGE 10	11
	11.70	13.60	15.70	18.00	20.50	23.20	26.00	28.80	31.40	33.50	35.00	35.30	TGE 20	12.5
	14.50	16.90	19.50	22.50	25.60	29.10	32.70	36.20	39.60	42.50	44.40	45.00	TGE 20	16
	17.80	20.70	23.80	27.20	31.00	34.90	39.00	43.00	46.70	49.70	51.50	51.60	TGE 20	20
	23.10	26.90	31.20	36.00	41.20	46.90	52.90	59.00	64.90	70.00	73.70	75.20	TGE 40	26
	26.20	30.50	35.40	40.80	46.80	53.20	60.10	67.00	73.70	79.50	83.60	85.20	TGE 40	30
31.40	36.70	42.70	49.50	57.10	65.50	74.50	83.80	92.70	100.00	105.00	106.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
45	2.57	2.99	3.44	3.94	4.47	5.04	5.64	6.24	6.83	7.37	7.81	8.10	TGE 10	3
	3.43	4.00	4.61	5.28	6.00	6.78	7.58	8.41	9.22	9.95	10.60	11.00	TGE 10	4
	4.98	5.80	6.70	7.68	8.74	9.87	11.10	12.30	13.50	14.50	15.40	16.00	TGE 10	6
	6.67	7.77	8.97	10.30	11.70	13.20	14.80	16.30	17.90	19.30	20.40	21.10	TGE 10	8
	9.94	11.70	13.50	15.60	17.70	19.90	22.20	24.40	26.40	28.00	29.10	29.30	TGE 10	11
	10.00	11.70	13.60	15.70	18.10	20.70	23.50	26.40	29.40	32.20	34.70	36.60	TGE 20	12.5
	12.30	14.50	16.80	19.50	22.40	25.70	29.20	33.00	36.80	40.50	43.80	46.30	TGE 20	16
	15.10	17.70	20.60	23.70	27.20	30.90	35.00	39.30	43.70	47.80	51.40	54.00	TGE 20	20
	19.40	22.70	26.50	30.80	35.50	40.80	46.60	52.80	59.20	65.60	71.40	76.00	TGE 40	26
	21.90	25.70	30.00	34.80	40.20	46.20	52.80	59.80	67.10	74.30	80.80	86.00	TGE 40	30
26.30	30.90	36.10	42.20	49.10	57.00	65.90	75.60	85.80	95.80	105.00	111.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
55	2.13	2.50	2.91	3.35	3.83	4.36	4.92	5.51	6.11	6.70	7.25	7.72	TGE 10	3
	2.82	3.32	3.86	4.46	5.11	5.82	6.57	7.37	8.19	9.00	9.75	10.40	TGE 10	4
	4.04	4.76	5.55	6.42	7.36	8.39	9.49	10.70	11.80	13.00	14.10	15.00	TGE 10	6
	5.36	6.32	7.37	8.52	9.77	11.10	12.60	14.10	15.70	17.20	18.60	19.70	TGE 10	8
	7.95	9.49	11.20	13.00	15.00	17.10	19.30	21.50	23.70	25.70	27.30	28.40	TGE 10	11
	8.07	9.50	11.10	12.90	14.90	17.10	19.60	22.20	25.00	27.90	30.70	33.30	TGE 20	12.5
	9.86	11.60	13.60	15.80	18.30	21.10	24.20	27.50	31.10	34.80	38.40	41.70	TGE 20	16
	12.10	14.30	16.60	19.30	22.20	25.50	29.10	33.00	37.10	41.40	45.60	49.30	TGE 20	20
	15.20	18.00	21.10	24.60	28.60	33.00	37.90	43.40	49.30	55.40	61.60	67.40	TGE 40	26
	17.10	20.20	23.80	27.70	32.20	37.30	42.90	49.10	55.70	62.70	69.60	76.00	TGE 40	30
20.50	24.20	28.50	33.50	39.30	45.90	53.60	62.30	71.90	82.20	92.40	102.00	TGE 40	40	

Subcooling correction factor 'fsub'

Subcooling [K]	2	4	10	15	20	25	30	35	40	45	50
Correction factor	0.97	1.00	1.10	1.19	1.27	1.35	1.43	1.52	1.60	1.68	1.76

Distributor correction factor (fp)*

Evaporating temp.	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
Pressure drop [bar]	0	1	1	1	1	1	1	1	1	1	1	1
	1	0.96	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.94	0.94	0.92
	1.5	0.94	0.94	0.94	0.94	0.94	0.93	0.93	0.92	0.91	0.90	0.88
	2	0.92	0.92	0.92	0.92	0.91	0.91	0.90	0.89	0.88	0.87	0.84

*calculated at 32°C condensing temperature

Capacities - TGE valves (fixed orifice)

Capacity in kW. Range N: -40°C to +10°C. Range K: -25°C to +10°C. Opening superheat sh= 4 K

R407C

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
25	4.13	4.66	5.24	5.85	6.49	7.13	7.76	8.33	8.80	9.12	9.24	9.07	TGE 10	3
	5.58	6.30	7.09	7.93	8.80	9.69	10.50	11.30	12.00	12.40	12.60	12.40	TGE 10	4
	8.23	9.31	10.50	11.70	13.00	14.30	15.60	16.80	17.80	18.40	18.70	18.30	TGE 10	6
	11.20	12.60	14.20	15.90	17.60	19.40	21.10	22.60	23.90	24.70	24.90	24.30	TGE 10	8
	16.50	18.80	21.20	23.70	26.30	28.80	31.10	32.90	34.20	34.70	34.40	32.90	TGE 10	11
	16.70	19.10	21.80	24.70	27.90	31.20	34.60	37.80	40.70	42.90	44.20	44.00	TGE 20	12.5
	20.80	23.80	27.20	31.00	35.00	39.30	43.60	47.80	51.60	54.60	56.40	56.30	TGE 20	16
	25.70	29.30	33.40	37.80	42.40	47.30	52.20	56.80	60.80	63.80	65.20	64.40	TGE 20	20
	32.80	37.40	42.70	48.50	54.90	61.70	68.80	75.80	82.20	87.50	90.90	91.30	TGE 40	26
	37.30	42.60	48.60	55.20	62.50	70.30	78.30	86.30	93.60	99.60	103.00	104.00	TGE 40	30
45.00	51.30	58.50	66.50	75.50	85.30	95.60	106.00	115.00	123.00	127.00	127.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
35	4.00	4.54	5.14	5.79	6.49	7.21	7.96	8.68	9.36	9.95	10.40	10.70	TGE 10	3
	5.37	6.10	6.91	7.79	8.74	9.73	10.70	11.70	12.70	13.50	14.10	14.50	TGE 10	4
	7.84	8.91	10.10	11.40	12.80	14.30	15.80	17.20	18.60	19.80	20.80	21.30	TGE 10	6
	10.50	12.00	13.60	15.30	17.20	19.20	21.20	23.10	24.90	26.50	27.60	28.20	TGE 10	8
	15.60	17.80	20.30	23.10	26.00	28.90	31.80	34.40	36.60	38.10	38.90	38.90	TGE 10	11
	15.70	18.00	20.60	23.60	26.80	30.30	34.00	37.80	41.50	45.00	47.80	49.90	TGE 20	12.5
	19.40	22.30	25.60	29.30	33.30	37.80	42.50	47.40	52.20	56.70	60.50	63.30	TGE 20	16
	23.90	27.40	31.30	35.70	40.50	45.60	51.00	56.50	61.90	66.70	70.70	73.30	TGE 20	20
	30.20	34.50	39.50	45.20	51.60	58.60	66.10	74.00	82.00	89.50	96.20	101.00	TGE 40	26
	34.20	39.20	44.90	51.30	58.60	66.50	75.10	84.10	93.10	102.00	109.00	115.00	TGE 40	30
41.30	47.20	54.00	61.90	70.90	81.00	92.10	104.00	116.00	128.00	138.00	145.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
45	3.75	4.27	4.85	5.50	6.20	6.96	7.75	8.56	9.36	10.10	10.80	11.40	TGE 10	3
	4.98	5.68	6.47	7.34	8.29	9.32	10.40	11.50	12.60	13.60	14.60	15.40	TGE 10	4
	7.19	8.21	9.35	10.60	12.00	13.50	15.10	16.70	18.40	19.90	21.20	22.40	TGE 10	6
	9.57	10.90	12.50	14.20	16.00	18.00	20.10	22.30	24.40	26.40	28.10	29.50	TGE 10	8
	14.10	16.20	18.70	21.40	24.40	27.60	30.80	33.90	36.80	39.10	40.80	41.80	TGE 10	11
	14.30	16.40	18.80	21.50	24.60	28.00	31.70	35.60	39.70	43.70	47.40	50.80	TGE 20	12.5
	17.50	20.10	23.10	26.50	30.30	34.60	39.30	44.30	49.40	54.60	59.50	63.80	TGE 20	16
	21.50	24.70	28.30	32.30	36.80	41.80	47.20	53.00	58.80	64.70	70.10	74.80	TGE 20	20
	26.80	30.70	35.20	40.40	46.30	52.90	60.30	68.20	76.50	84.90	93.10	101.00	TGE 40	26
	30.30	34.70	39.80	45.70	52.40	59.90	68.20	77.20	86.60	96.20	105.00	114.00	TGE 40	30
36.60	41.80	48.00	55.10	63.40	73.00	83.90	96.10	109.00	123.00	137.00	149.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]												Valve	Orifice no.
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15		
55	3.39	3.87	4.41	5.01	5.68	6.42	7.20	8.02	8.86	9.69	10.50	11.20	TGE 10	3
	4.46	5.10	5.82	6.64	7.54	8.52	9.59	10.70	11.80	13.00	14.10	15.00	TGE 10	4
	6.35	7.27	8.31	9.48	10.80	12.20	13.80	15.40	17.10	18.70	20.30	21.70	TGE 10	6
	8.36	9.58	11.00	12.50	14.30	16.20	18.20	20.40	22.60	24.70	26.70	28.50	TGE 10	8
	12.20	14.10	16.40	19.00	21.80	25.00	28.30	31.60	34.80	37.70	40.10	41.80	TGE 10	11
	12.60	14.40	16.50	18.90	21.60	24.70	28.10	31.80	35.80	39.80	43.80	47.70	TGE 20	12.5
	15.20	17.50	20.00	23.00	26.40	30.30	34.50	39.20	44.10	49.30	54.40	59.40	TGE 20	16
	18.70	21.40	24.50	28.10	32.10	36.60	41.50	46.90	52.60	58.60	64.40	70.00	TGE 20	20
	22.90	26.20	30.10	34.60	39.80	45.70	52.30	59.50	67.40	75.60	84.00	92.20	TGE 40	26
	25.80	29.50	33.90	39.00	44.90	51.50	59.00	67.30	76.20	85.50	95.00	104.00	TGE 40	30
31.10	35.60	40.80	46.90	54.10	62.50	72.30	83.50	96.10	110.00	124.00	139.00	TGE 40	40	

Subcooling correction factor 'fsub'

Subcooling [K]	2	4	10	15	20	25	30	35	40	45	50
Correction factor	0.97	1.00	1.08	1.15	1.22	1.29	1.36	1.43	1.50	1.57	1.64

Distributor correction factor (fp)*

Evaporating temp.	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
Pressure drop [bar]	0	1	1	1	1	1	1	1	1	1	1	1
	1	0.96	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.94	0.93
	1.5	0.94	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.92	0.91	0.90
	2	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.90	0.89	0.88	0.86

*calculated at 32°C condensing temperature

Capacities - TGE valves (fixed orifice)

Capacity in kW. Range N: -40°C to +10°C. Range K: -25°C to +10°C. Opening superheat sh= 4 K

R410A

Cond. temp. [°C]	Capacity [kW]											Valve	Orifice no.	
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10			15
25	5.63	6.38	7.13	7.89	8.62	9.28	9.82	10.20	10.30	9.93	9.06	7.29	TGE 10	3
	7.63	8.65	9.69	10.70	11.70	12.70	13.40	13.90	14.00	13.60	12.40	9.99	TGE 10	4
	11.30	12.80	14.40	15.90	17.40	18.80	19.90	20.60	20.80	20.20	18.40	14.70	TGE 10	6
	15.40	17.40	19.50	21.60	23.60	25.40	26.80	27.70	27.90	26.90	24.30	19.40	TGE 10	8
	22.90	26.00	29.10	32.10	34.80	37.10	38.60	39.30	38.70	36.60	32.50	25.30	TGE 10	11
	23.10	26.70	30.50	34.40	38.30	42.00	45.30	47.80	48.90	48.00	44.40	36.40	TGE 20	12.5
	28.90	33.40	38.20	43.20	48.30	53.20	57.50	60.80	62.40	61.50	57.00	46.80	TGE 20	16
	35.60	41.00	46.60	52.30	58.00	63.30	67.90	71.20	72.40	70.50	64.30	51.70	TGE 20	20
	47.20	54.50	62.20	70.40	78.80	87.00	94.60	101.00	104.00	103.00	96.00	78.90	TGE 40	26
	53.80	62.10	70.90	80.20	89.80	99.10	108.00	114.00	118.00	117.00	109.00	89.10	TGE 40	30
64.70	74.60	85.50	97.10	109.00	122.00	133.00	141.00	145.00	143.00	131.00	104.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]											Valve	Orifice no.	
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10			15
35	5.58	6.36	7.17	8.02	8.87	9.71	10.50	11.20	11.70	12.00	11.90	11.40	TGE 10	3
	7.50	8.56	9.68	10.80	12.00	13.20	14.30	15.20	16.00	16.40	16.30	15.60	TGE 10	4
	11.00	12.60	14.20	15.90	17.60	19.40	21.00	22.40	23.50	24.00	23.90	22.80	TGE 10	6
	14.80	17.00	19.20	21.40	23.70	26.00	28.10	29.90	31.30	31.90	31.60	30.00	TGE 10	8
	22.10	25.40	28.80	32.20	35.60	38.70	41.40	43.40	44.50	44.50	43.00	39.80	TGE 10	11
	22.10	25.60	29.40	33.50	37.80	42.20	46.50	50.50	53.80	56.00	56.50	54.70	TGE 20	12.5
	27.40	31.90	36.70	41.80	47.30	52.90	58.50	63.70	68.10	71.10	72.00	69.90	TGE 20	16
	33.70	39.00	44.70	50.70	56.90	63.20	69.40	75.00	79.70	82.50	82.60	79.00	TGE 20	20
	44.10	51.20	58.80	67.10	76.00	85.30	94.60	104.00	111.00	117.00	119.00	117.00	TGE 40	26
	50.10	58.10	66.80	76.30	86.30	96.90	107.00	118.00	126.00	133.00	135.00	132.00	TGE 40	30
60.30	69.80	80.50	92.50	106.00	120.00	134.00	148.00	159.00	167.00	168.00	161.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]											Valve	Orifice no.	
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10			15
45	5.33	6.11	6.93	7.80	8.70	9.62	10.50	11.40	12.20	12.90	13.40	13.50	TGE 10	3
	7.11	8.16	9.28	10.50	11.70	12.90	14.20	15.40	16.60	17.50	18.10	18.30	TGE 10	4
	10.30	11.80	13.50	15.20	17.00	18.90	20.70	22.50	24.20	25.50	26.40	26.60	TGE 10	6
	13.80	15.80	18.00	20.30	22.70	25.20	27.60	29.90	32.00	33.70	34.70	34.90	TGE 10	8
	20.50	23.80	27.30	30.90	34.60	38.20	41.50	44.50	46.90	48.30	48.60	47.50	TGE 10	11
	20.40	23.70	27.30	31.20	35.40	39.90	44.50	49.20	53.60	57.60	60.60	62.10	TGE 20	12.5
	25.10	29.20	33.70	38.60	43.90	49.60	55.50	61.40	67.20	72.40	76.40	78.70	TGE 20	16
	30.80	35.80	41.20	46.90	53.00	59.40	66.10	72.90	79.30	85.00	89.20	90.90	TGE 20	20
	39.80	46.20	53.30	61.10	69.60	78.80	88.50	98.40	108.00	117.00	125.00	129.00	TGE 40	26
	45.00	52.30	60.40	69.20	78.90	89.20	100.00	111.00	123.00	133.00	141.00	146.00	TGE 40	30
54.10	62.90	72.70	83.90	96.50	110.00	126.00	142.00	158.00	172.00	183.00	187.00	TGE 40	40	

Cond. temp. [°C]	Capacity [kW]											Valve	Orifice no.	
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10			15
55	4.92	5.66	6.44	7.28	8.15	9.06	10.00	10.90	11.90	12.70	13.40	14.00	TGE 10	3
	6.51	7.50	8.55	9.67	10.90	12.10	13.40	14.70	15.90	17.10	18.10	18.80	TGE 10	4
	9.29	10.70	12.30	13.90	15.60	17.40	19.30	21.20	23.00	24.70	26.10	27.20	TGE 10	6
	12.30	14.20	16.30	18.40	20.70	23.10	25.50	28.00	30.30	32.50	34.30	35.50	TGE 10	8
	18.20	21.40	24.70	28.30	31.90	35.60	39.20	42.70	45.70	48.10	49.50	49.90	TGE 10	11
	18.30	21.20	24.40	27.90	31.70	35.80	40.10	44.60	49.20	53.70	57.80	61.10	TGE 20	12.5
	22.30	25.90	29.90	34.20	38.90	44.10	49.50	55.30	61.20	67.00	72.30	76.70	TGE 20	16
	27.30	31.70	36.50	41.60	47.10	53.00	59.30	65.90	72.70	79.30	85.40	90.40	TGE 20	20
	34.60	40.30	46.50	53.30	60.80	69.00	77.90	87.30	97.10	107.00	116.00	124.00	TGE 40	26
	39.00	45.40	52.40	60.20	68.70	78.00	88.00	98.70	110.00	121.00	131.00	140.00	TGE 40	30
46.90	54.40	62.90	72.70	83.70	96.30	110.00	126.00	143.00	160.00	176.00	188.00	TGE 40	40	

Subcooling correction factor 'fsub'

Subcooling [K]	2	4	10	15	20	25	30	35	40	45	50
Correction factor	0.97	1.00	1.09	1.16	1.23	1.30	1.37	1.45	1.52	1.59	1.66

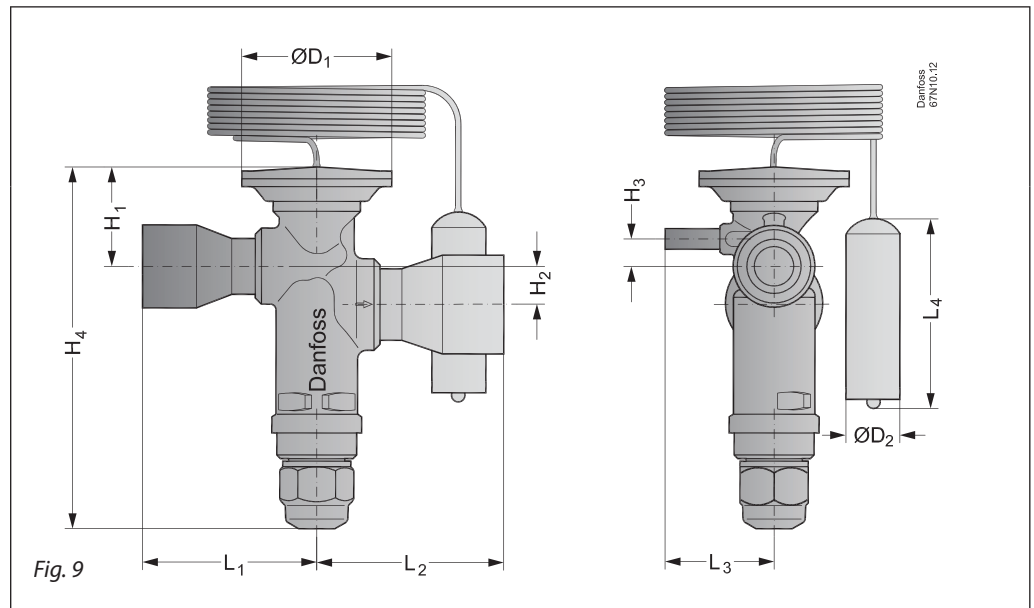
Distributor correction factor (fp)*

Evaporating temp.	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
Pressure drop [bar]	0	1	1	1	1	1	1	1	1	1	1	2
	1	0,97	0,97	0,97	0,97	0,97	0,97	0,96	0,96	0,95	0,94	0,93
	1,5	0,96	0,96	0,96	0,95	0,95	0,95	0,95	0,94	0,93	0,93	0,91
	2	0,94	0,94	0,94	0,94	0,93	0,93	0,93	0,92	0,91	0,90	0,88

*calculated at 32°C condensing temperature

Technical Data Dimensions - TGE valves (fixed orifice)

Dimensions and weights



Type	Connection inlet × outlet ODF solder		Capillary tube length m	H ₁	H ₂	H ₃	H ₄	L ₁	L ₂	L ₃	L ₄	ØD ₁	ØD ₂	Weight
	in.	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
TGE 10	3/8 × 5/8	10 × 16	1.5	28.5	7.5	5	93	41.5	45.5	37.5	70	45	14.5	0.37
	1/2 × 5/8	12 × 16							59.5					
	1/2 × 7/8	12 × 22							45.5					
	5/8 × 5/8								59.5					
	5/8 × 7/8	16 × 22												
TGE 20	5/8 × 7/8	16 × 22	1.5	32	9	8	117	48	62	40	78	53	19.2	0.57
	7/8 × 7/8							62						
	5/8 × 1 1/8	16 × 28						48	66					
	7/8 × 1 1/8	22 × 28						62						
	7/8 × 1 3/8													
TGE 40	7/8 × 1 3/8	22 × 35	3	39	15	11	148		74.5	43.5	78	60	19.2	0.93
	1 1/8 × 1 1/8							69.5	74.5					
	1 1/8 × 1 3/8	28 × 35												

Type	Connection inlet × outlet ODF solder		Capillary tube length ft	H ₁	H ₂	H ₃	H ₄	L ₁	L ₂	L ₃	L ₄	ØD ₁	ØD ₂	Weight
	in.	mm		in	in	in	in	in	in	in	in	in	in	in
TGE 10	3/8 × 5/8	10 × 16	4.92	1.12	0.30	0.20	3.66	1.63	1.79	1.48	2.76	1.77	0.57	0.81
	1/2 × 5/8	12 × 16							2.34					
	1/2 × 7/8	12 × 22							1.79					
	5/8 × 5/8								2.34					
	5/8 × 7/8	16 × 22												
TGE 20	5/8 × 7/8	16 × 22	4.92	1.26	0.35	0.31	4.61	1.89	2.44	1.57	3.07	2.09	0.76	1.27
	7/8 × 7/8							2.44						
	5/8 × 1 1/8	16 × 28						1.89	2.60					
	7/8 × 1 1/8	22 × 28						2.44						
	7/8 × 1 3/8													
TGE 40	7/8 × 1 3/8	22 × 35	9.84	1.54	0.59	0.43	5.83	2.58	2.93	1.71	3.07	2.36	0.76	2.05
	1 1/8 × 1 1/8							2.74	2.93					
	1 1/8 × 1 3/8	28 × 35												



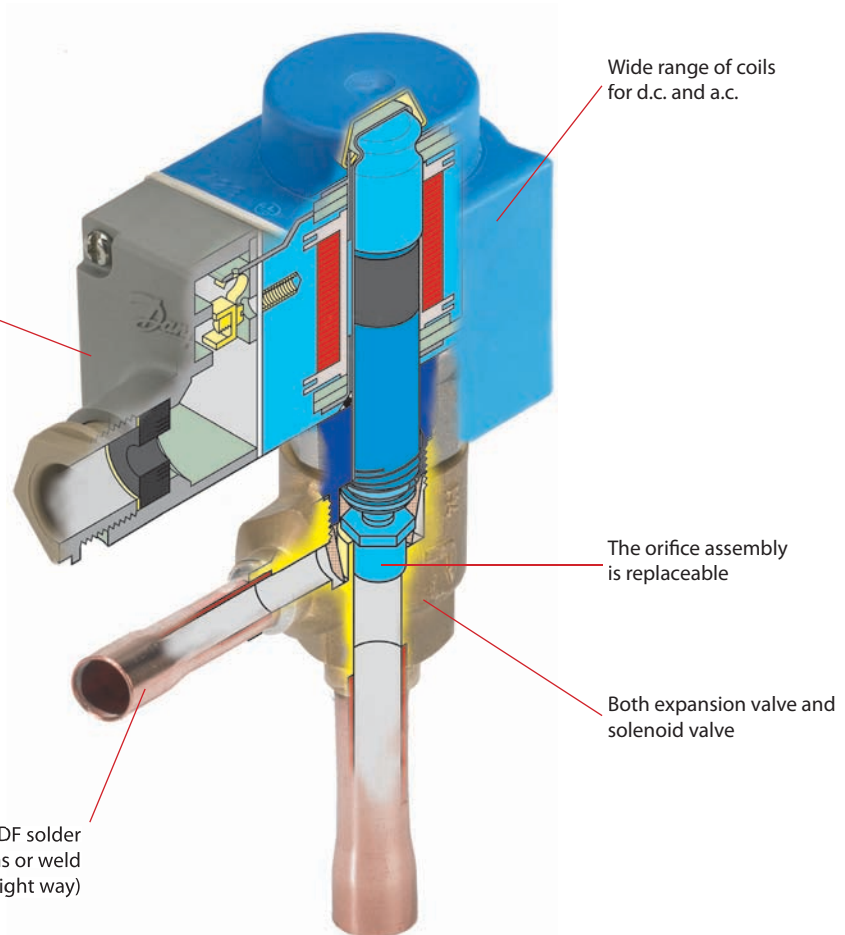
AKV – Electronically operated expansion valves

AKV are electrically operated expansion valves designed for refrigerating plant. The AKV valves are normally operated by a controller from the Danfoss ADAP-KOOL® range. The valves are operated in pulse-width modulation. This means that the valve is either completely open or completely closed.

Features

Available with terminal box, cable or DIN plug

Available with ODF solder connections or weld (AKV 15 and 20 – straight way)



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Cold rooms Water chillers 	<ul style="list-style-type: none"> The AKV valves are supplied as a part programme, as follows: <ul style="list-style-type: none"> Separate valve incl. exchangeable orifice Separate coil The valve requires no adjustment 	<ul style="list-style-type: none"> The AKV 10 valves cover a capacity range from 0.6 kW to 14 kW (404A/ R507) and are divided into 7 capacity ranges. The AKV 15 valves cover a capacity range from 14 kW to 85 kW (404A/ R507) and are divided into 4 capacity ranges. The AKV 20 valves cover a capacity range from 56 kW to 530 kW (404A/ R507) and are divided into 5 capacity ranges. The AKV valves can be used for HCFC, HFC and R744 (up to the stated max. working pressure) refrigerants.

Technical data and ordering - AKV valves

AKV 10

Valve type	Rated capacity kW ¹⁾				k _v value m ³ /h	Connections			
	R22/ R407C	R134a	R404A/R507	R407C		Solder ODF			
						Inlet × outlet in.	Code no.	Inlet × outlet mm	Code no.
AKV 10-1	1.0	0.9	0.8	1.1	0.010	3/8" × 1/2"	068F1161	10 × 12	068F1162
AKV 10-2	1.6	1.4	1.3	1.7	0.017	3/8" × 1/2"	068F1164	10 × 12	068F1165
AKV 10-3	2.6	2.1	2.0	2.5	0.025	3/8" × 1/2"	068F1167	10 × 12	068F1168
AKV 10-4	4.1	3.4	3.1	4.0	0.046	3/8" × 1/2"	068F1170	10 × 12	068F1171
AKV 10-5	6.4	5.3	4.9	6.4	0.064	3/8" × 1/2"	068F1173	10 × 12	068F1174
AKV 10-6	10.2	8.5	7.8	10.1	0.114	3/8" × 1/2"	068F1176	10 × 12	068F1177
AKV 10-7	16.3	13.5	12.5	17.0	0.162	1/2" × 3/4"	068F1179	12 × 16	068F1180

AKV 15

AKV 15-1	25.5	21.2	19.6	25.2	0.25	3/4" × 3/4"	068F5000	18 × 18	068F5001
AKV 15-2	40.8	33.8	31.4	40.4	0.40	3/4" × 3/4"	068F5005	18 × 18	068F5006
AKV 15-3	64.3	53.3	49.4	63.7	0.63	1" × 1"	068F5010	22 × 22	068F5010
AKV 15-4	102	84.6	78.3	101	1.0	1 1/8" × 1 1/8"	068F5015	28 × 28	068F5016

AKV 20

Valve type	Rated capacity kW ¹⁾				k _v value m ³ /h	Connections					
	R22/ R407C	R134a	R404A/R507	R407C		Solder ODF			Weld		
						Inlet × outlet in.	Code no.	Inlet × outlet mm	Code no.	Inlet × outlet in.	Code no.
AKV 20-1	102	84.6	78.3	101	1.0	1 3/8" × 1 3/8"	042H2020	35 × 35	042H2020	1 1/2" × 1 1/2"	042H2021
AKV 20-2	163	135	125	170	1.6	1 3/8" × 1 3/8"	042H2022	35 × 35	042H2022	1 1/2" × 1 1/2"	042H2023
AKV 20-3	255	212	196	252	2.5	1 7/8" × 1 7/8"	042H2024	42 × 42	042H2025	1 7/8" × 1 7/8"	042H2026
AKV 20-4	408	338	314	404	4.0	2 1/8" × 2 1/8"	042H2027	54 × 54	042H2027	1 1/2" × 1 1/2"	042H2028
AKV 20-5	643	533	494	637	6.3	2 1/8" × 2 1/8"	042H2029	54 × 54	042H2029	2 × 2	042H2030

¹⁾ Rated capacities are based on:

Condensing temperature	t _c = 32°C
Liquid temperature	t _l = 28°C
Evaporating temperature	t _e = 5°C

Technical data

Valve type	AKV 10	AKV 15	AKV 20
Tolerance of coil voltage	+10 / -15%	+10 / -15%	+10 / -15%
Enclosure to IEC 529	Max. IP67	Max. IP67	Max. IP67
Working principle (Pulse-width modulation)	PWM	PWM	PWM
Recommended period of time	6 Seconds	6 Seconds	6 Seconds
Capacity (404A/R507)	0.6 to 14 kW	14 to 85 kW	56 to 530 kW
Regulation range (Capacity range)	10 to 100%	10 to 100%	10 to 100%
Connection	Solder	Solder	Solder or weld
Evaporating temperature	-50 to 60°C	- 50 to 60°C	- 40 to 60°C
Ambient temperature	- 50 to 50°C	- 40 to 50°C	- 40 to 50°C
Leak of valve seat	<0.02% of k _v -value	<0.02% of k _v -value	<0.02% of k _v -value
MOPD	18 bar	22 bar	18 bar
Filter, replaceable	Internal 100 µm	External 100 µm	External 100 µm
Max. working pressure	AKV 10-1 to 6 PS=52 bar g AKV 10-7 PS=42 bar g	AKV 15-1,2,3 PS 42 bar g AKV 15-4 PS 28 bar g	28 bar g

⚠ Coils sold separately. See next page for coil selection.

⚠ Stand alone single valve controller see EKC315A.

Technical data and ordering

Ordering

Coils for AKV valves

AKV	AKV	AKV	AKV	AKV	AKV
10-1	10-6	10-7	15-1	20-1	20-4 20-5
10-2			15-2	20-2	
10-3			15-3	20-3	
10-4			15-4		
10-5					

D.C. coils	Code no.						
220 V d.c. 20 W, standard with terminal box	018F6851	+	+	+	+	+	+
100 V d.c. 18 W, special with terminal box with DIN plugs	018F6780	+	+	+	+	+	+
230 V d.c. 18 W, special with terminal box with DIN plugs	018F6781 ¹⁾ 018F6991 ¹⁾	+	+	+	+	+	+
230 V d.c. 18 W, special with 2.5 m cable	018F6288 ¹⁾	+	+	+	+	+	+
with 4.0 m cable	018F6278 ¹⁾						
with 8.0 m cable	018F6279 ¹⁾						

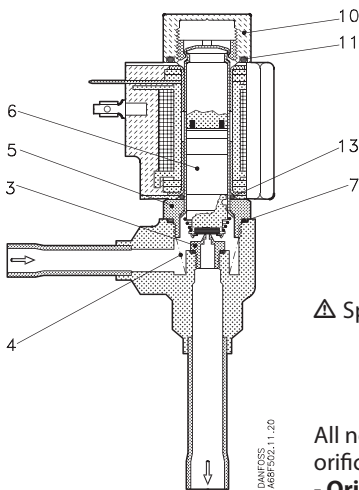
¹⁾Recommended for commercial refrigeration plant

A.C. coils	Code no.						
240 V a.c. 10 W, 50 Hz with terminal box with DIN plugs	018F6702 018F6177	+	+	-	+	-	-
240 V a.c. 10 W, 60 Hz with terminal box with DIN plugs	018F6713 018F6188	+	+	-	+	-	-
240 V a.c. 12 W, 50 Hz with terminal box	018F6802	+	+	+	+	+	-
230 V a.c. 10 W, 50 Hz with terminal box with DIN-plugs	018F6701 018F6176	+	+	-	+	-	-
230 V a.c. 10 W, 60 Hz with terminal box with DIN-plugs	018F6714 018F6189	+	+	-	+	-	-
230 V a.c. 10 W, 50/60 Hz with terminal box with DIN-plugs	018F6732 018F6193	+	+	-	+	-	-
230 V a.c. 12 W, 50 Hz with terminal box	018F6801	+	+	-	+	+	-
230 V a.c. 12 W, 60 Hz with terminal box	018F6814	+	+	-	+	+	-
115 V a.c. 10 W, 50 Hz with terminal box with DIN-plugs	018F6711 018F6186	+	+	-	+	-	-
115 V a.c. 10 W, 60 Hz with terminal box with DIN-plugs	018F6710 018F6185	+	+	-	+	-	-
110 V a.c. 12 W, 50 Hz with terminal box	018F6811	+	+	-	+	+	-
110 V a.c. 12 W, 60 Hz with terminal box	018F6813	+	+	-	+	+	-
110 V a.c. 20 W, 50 Hz with terminal box	018Z6904	+	+	+	+	+	+
24 V a.c. 10 W, 50 Hz with terminal box with DIN-plugs	018F6707 018F6182	+	-	-	+	-	-
24 V a.c. 10 W, 60 Hz with terminal box with DIN-plugs	018F6715 018F6190	-	-	-	+	-	-
24 V a.c. 12 W, 50 Hz with terminal box	018F6807	+	-	-	+	+	+
24 V a.c. 12 W, 60 Hz with terminal box	018F6815	+	-	-	+	+	+
24 V a.c. 20 W, 50 Hz with terminal box	018F6901	+	+	+	+	+	+
24 V a.c. 20 W, 60 Hz with terminal box	018F6902	+	+	+	+	+	+

⚠ Recommend standard coil with terminal box (higher IP rating).

Spare Parts & Accessories - AKV

AKV 10



Service kit	Orifice no.	Content	NEW code no.
1	0	4 orifices 4 gaskets	068F5283
	1		
	2		
	3		
2	4	3 orifices 3 gaskets	068F5284
	5		
	6		
3	7	2 orifices 2 gaskets	068F5285
	8		

OLD code no. AKV 10	OLD code no. AKVH 10
NONE	068F0722
068F0506	068F0723
068F0507	068F0724
068F0508	068F0725
068F0509	068F0726
068F0510	068F0727
068F0511	068F0728
068F0512	NONE
068F0513	NONE

⚠ Spare part codes changed on AKV10 range

All new kits will contain **metal gaskets** and

orifices in the following combinations:

- Orifice 0+1+2+3 (AKV 10 / AKVH 10)
- Orifice 4+5+6 (AKV 10 / AKVH 10)
- Orifice 7+8 (AKV 10)

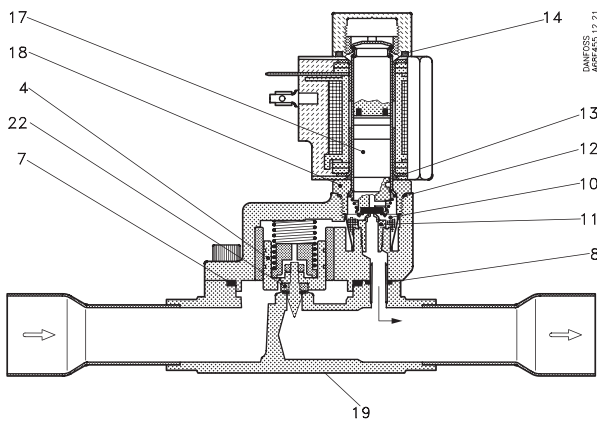
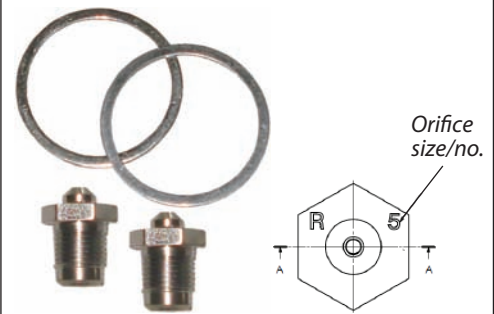
How to identify the orifice size/no.?

The Orifice size/no. is stamped in the orifice flange (e.g. size 5 = 5).

Nuts, o-rings and snap fastener related to the UL kits have been removed from the service kits as those parts are no longer needed in the market.

EXAMPLE

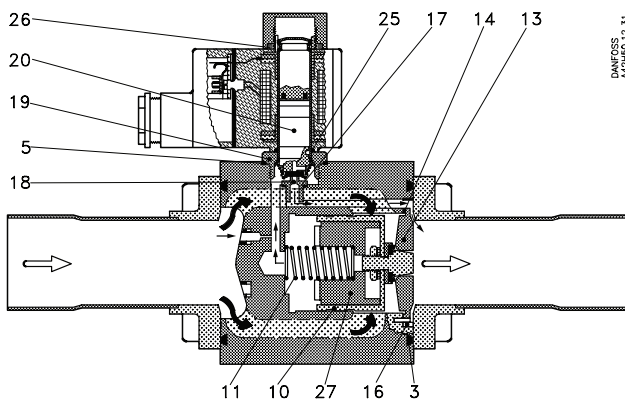
The content of the new service kit no. 3 (code number 068F5285)



AKV 15

Description	Quantity	Code no.
Piston Kit, AKV 15 - 1		068F5265
Piston Kit, AKV 15 - 2		068F5266
Piston Kit, AKV 15 - 3		068F5267
Piston Kit, AKV 15 - 4		068F5268
pos. 4 Piston assembly	1	
7 Square gasket	1	
8 O-ring	1	
19 Label	2	
Armature Set		068F5045
pos. 17 Armature	1	
18 Armature tube assembly	1	
12 Alu gasket	1	
Filter		068F0540
pos. 10 Filter	10	
12 Alu gasket	10	
Gasket set		068F5263
pos. 8 O-ring	10	
13 O-ring	10	
14 O-ring	10	
12 Cu/Tn gasket	10	
7 Square gasket	10	
Gasket		068F0549
pos. 12 Cu/Tn gasket	25	

Spare Parts & Accessories - AKV 20

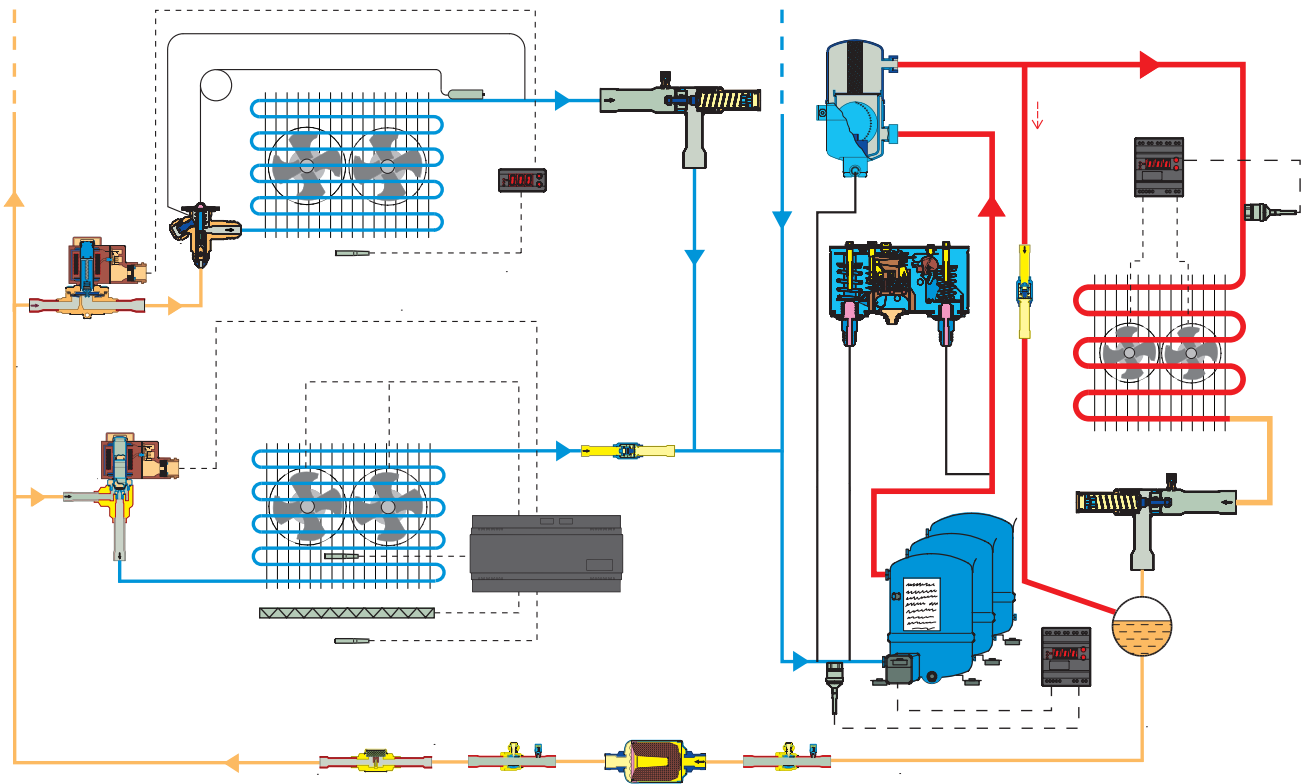


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AKV 20

Description	Quantity	Code no.
Piston Kit, AKV 20 - 0.6		042H2039
Piston Kit, AKV 20 - 1		042H2040
Piston Kit, AKV 20 - 2		042H2041
Piston Kit, AKV 20 - 3		042H2042
Piston Kit, AKV 20 - 4		042H2043
Piston Kit, AKV 20 - 5		042H2044
pos. 10 Piston assembly	1	
11 Spring	1	
27 Insert	1	
14 O-ring	1	
3 O-ring	2	
Orifice kit		
for AKV 20 - 0.6, AKV 20 - 1, AKV 20 - 2, AKV 20 - 3		068F5270
pos. 13 Main orifice, dia. 8mm	1	
18 Pilot orifice, dia. 1.2mm	1	
16 Pin	1	
3 O-ring	2	
14 O-ring	1	
5 Alu gasket	2	
17 Alu gasket	1	
Orifice kit		
for AKV 20 - 4, AKV 20 - 5		068F5271
pos. 13 Main orifice, dia. 14mm	1	
18 Pilot orifice, dia. 2.4mm	1	
16 Pin	1	
3 O-ring	2	
14 O-ring	1	
5 Alu gasket	2	
17 Alu gasket	1	
Gasket Set		42H0160
pos. 3 O-ring	2	
14 O-ring	1	
16 Pin	1	
25 O-ring	1	
26 O-ring	1	
5 Alu gasket	2	
17 Alu gasket	1	
Armature set		068F5045
pos. 20 Armature		
19 Armature tube assembly	1	
5 Alu gasket	1	
Gasket		068F0549
pos. 5 Cu/Tn gasket	25	

Application example - AKV valves (electronic expansion)





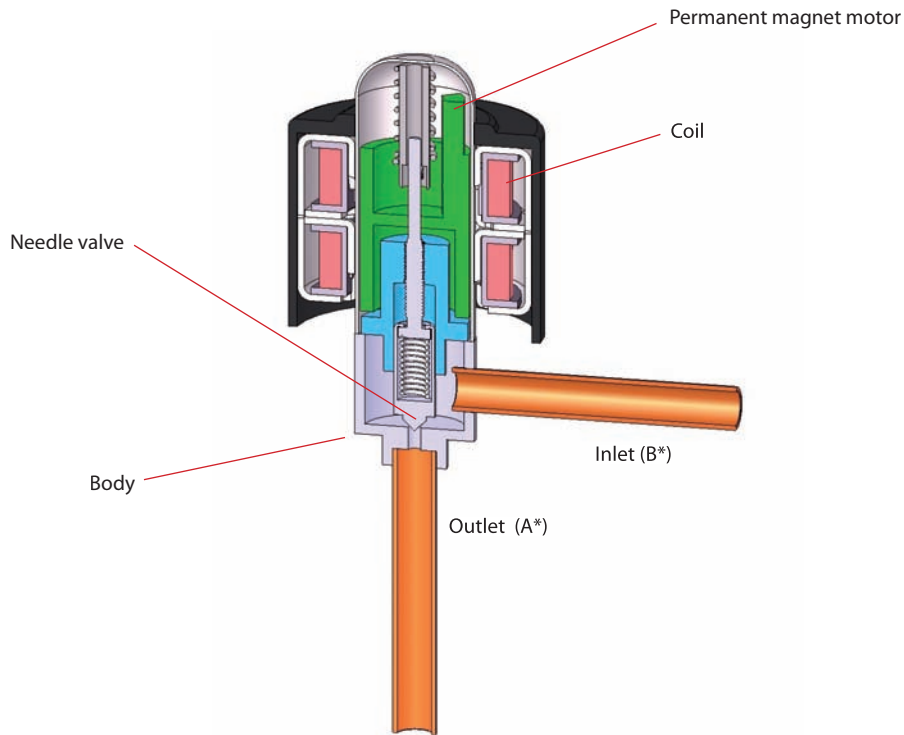
⚠ OEM product only

ETS 6 – Electronic expansion valves

Compact and lightweight, the current range are available with different capacities, and can be used with all common refrigerants (e.g R410A, R407C, R404A, R134a, R22). Bi-flow operation is also possible for reversible system such as heat pumps.

The valve design uses uni-polar drives, and different control solutions exist that are compatible with uni-polar drives.

Features



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

Applications	Advantages	Facts
<ul style="list-style-type: none"> · Heat Pumps · Modular Air Cooled Chillers · VRF, Multi Split · Inverter Mini Split · Bus air conditioning · IT cooling 	<ul style="list-style-type: none"> · Precision flow control with high resolution · Proven know-how and high reliability · Power saving design that enables energy efficiency. · Compact & lightweight hermetic design with removable coil · Bi-flow operation for reversible systems 	<ul style="list-style-type: none"> · ETS 6 are designed for HFC/HCFC conditions including R410A, providing 47 bar (670 psig) working pressure. · EIM 336, EKD 316 and MCX are examples of Danfoss controllers with drivers matching the ETS 6 needs. · For manual operation and service of ETS 6 valves an AST-g service driver is available.

⚠ OEM product only

Technical data

Maximum working pressure	47 bar (670 psig), 48 bar (680 psig) in abnormal condition
Compatible refrigerants	HFC, HCFC (e.g. R22, R134a, R404A, R407C, R410A, R507)
Refrigerant oil	All mineral oils and ester oils (to lubricate ETS 6 valve)
Ambient temperature	-30°C to 60°C (-22 °F to 140° F)
Fluid Temperature	-30°C to 70°C (-22 °F to 158° F)
Durability	Tested for 60 Million total pulses supplies 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 closing.
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 to 480 pulses, no holding power required (NOTE: do not apply more than 520 pulses)
Full motion transit time	e.g. 16 sec @ 30 pps, 6 sec @ 80 pps
Installation position	With coil on the upper side and the valve/coil assembly within ±15° of the vertical axis
Liquid line solenoid valve	If using a liquid line solenoid valve, it must be installed in such a way that it does not create liquid hammering in ETS 6 valve
Max. coil winding temperature	115°C (239° F)

Technical specifications and ordering



Valve Specifications

Model No.	Single pack Code no.	I-pack Code no. (100 units per box)	Orifice [mm]	Nominal Capacity [kW]					Connection (solder)		Valve tube configuration	MWP [bar]	MOPD [bar]	Max. Reverse Pressure [bar]	Flow direction characteristic
				R22	R134a	R404A/R507	R407C	R410A	A [mm]	B [mm]					
ETS 6 - 10	034G5005	034G5000	1	2.6	2	1.8	2.7	3.1	7.94	7.94	90°	47	35	35	Bi-flow
ETS 6 - 14	034G5015	034G5010	1.4	5.8	4.5	4.1	5.9	6.8	7.94	7.94	90°	47	35	20	Bi-flow
ETS 6 - 18	034G5026	034G5024	1.8	10.3	8.1	7.3	10.6	12.1	6.35	6.35	90°	47	35	28	Bi-flow
ETS 6 - 25	034G5035	034G5030	2.5	19.6	15.3	13.8	20.1	23	7.94	7.94	90°	47	35	22	Bi-flow
ETS 6 - 32	034G5055	034G5050	3.2	28.8	22.5	20.3	29.6	33.9	7.94	7.94	90°	47	28	12*	Bi-flow

Nominal Capacity based on:

CT=38°C, ET=5°C, SC=0°C, SH=0°C

*Please contact Danfoss if higher maximum reverse pressure valve is required.



Coil Specifications

Model No.	Single pack Code no.	I-pack Code no. (100 units per box)	Relevant valve model	Voltage (current)	Cable length [m]	Protective cable tube length [m]	Enclosure	Insulation	Connector
								class	
ETS 6 Coil	034G5105	034G5100	Coil for ETS 6 valves	12 VDC (0.26A/phase)	0.7	0.6	IP66	Class E (UL Class 105 (A))	JST XHP-6
ETS 6 Coil	034G5115	034G5110	Coil for ETS 6 valves	12 VDC (0.26A/phase)	0.7	0.6	IP66	Class E (UL Class 105 (A))	JST XHP-5

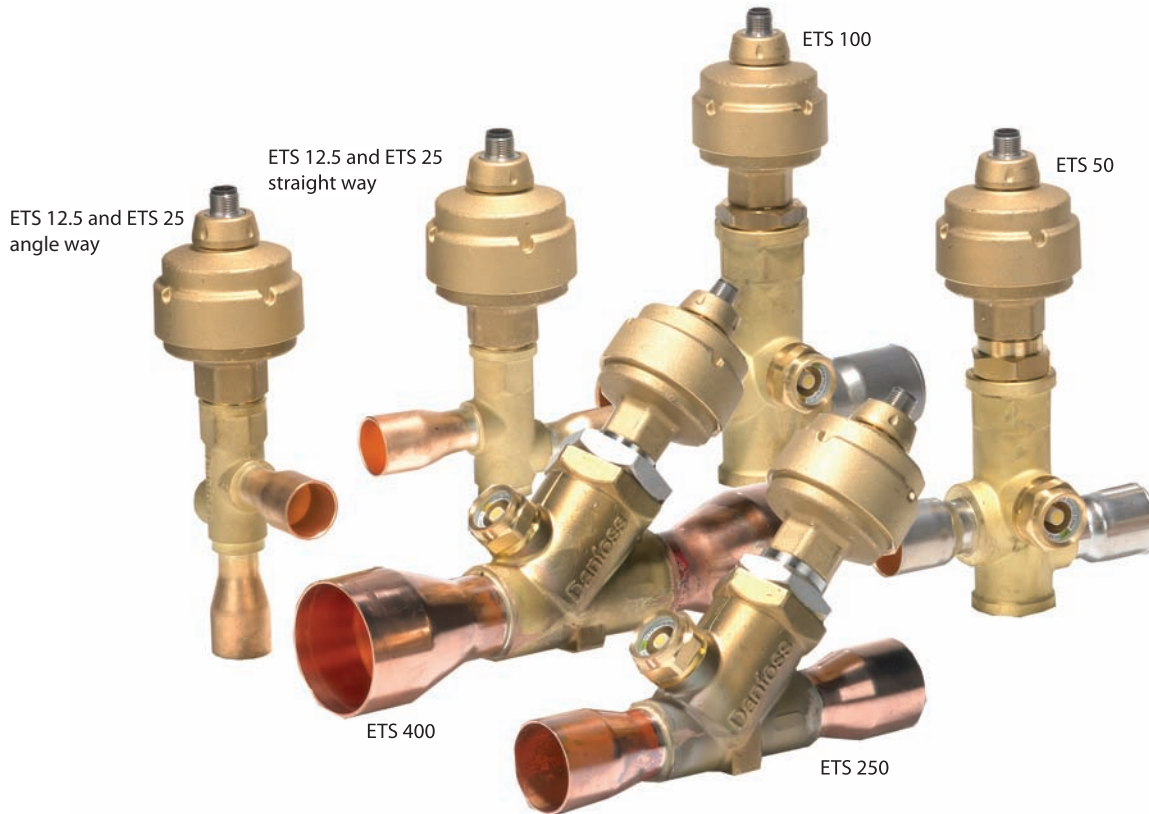
Please contact Danfoss for longer cable length

⚠ Contact local Danfoss electronics specialist for further details



ETS 12.5 - 400 – Electronic expansion valves

ETS is a series of electrically operated 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-off function in both flow directions. The ETS needs a current or voltage driver as partner to be operated.



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Heat pumps · Refrigeration · Air conditioning · Chillers 	<ul style="list-style-type: none"> · Precise positioning for optimal control of liquid injection. · Balanced design (ETS 12.5 to 400) providing bi-flow operation as well as solenoid tight shut-off function in both flow directions. · Lower energy consumption · ETS 50 & ETS 100 feature improved process and productivity due to waterless brazing i.e soldering without wet cloth for cooling. · ETS 50 to 400 are all designed with built-in sight glass with moisture indicator. · Internal and external corrosion resistant design 	<ul style="list-style-type: none"> · ETS valves are compatible with wide range of all common refrigerants, HFC, HCFC. · ETS 12.5, ETS25, ETS 50, ETS100 provides working pressure of 45.5 bar (660 psig) and ETS 250, ETS 400 provides 34 bar (493 psig). · EKC316A, 312 and EKD316 are examples of Danfoss controllers with drivers matching the ETS needs. · Equipped with M12 connector for cable connection (cable and connector assemblies as accessories) · For manual operation and service of ETS valves an AST-g service driver is available.

Technical data - ETS valves

Technical data

Compatible refrigerants	HFC, HCFC (e.g. R410A, R407C, R404A, R134a, R22)
Refrigerant oil	All mineral oils and ester oils
Comply with P.E.D.	Yes
MOPD	33 bar (478.6 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°C to 65°C (-40°F to 149°F)
Ambient temperature	-40°C to 60°C (-40°F to 140°F)
Material of Construction	ETS 50, 100: Body and AST enclosure in brass, connections in bi-metal (stainless steel/copper) ETS 12.5, 250, 400: Body and AST enclosure in brass, connections in copper

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 ration 8.5:1. (38/13) ² :1
Nominal voltage	(Constant voltage drive) 12 V dc -4% +15%, 150 steps/sec.
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, 25, 50: 2625 [+160 / -0] steps ETS 100: 3530 [+160 / -0] steps ETS 250 and 400: 3810 [+160 / -0] steps
Full travel time	ETS 12.5, 25, 50: 17 / 8.5 sec. (voltage / current) ETS 100: 23 / 11.5 sec. (voltage / current) ETS 250 and 400: 25.4 / 12.7 sec. (voltage / current)
Lifting height	ETS 12.5, 25, 50: 13 mm (0.5 in.) ETS 100: 16 mm (0.6 in.) ETS 250-400: 17.2 mm (0.7 in.)
Reference position	Overdriving against the full close position
Electrical connection	M12 connector

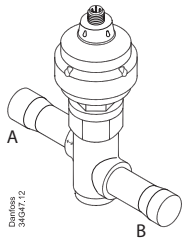


NOTE:

Full life time of ETS can only be ensured if oil is present in the system. In oil-free systems, life time of the ETS cannot be guaranteed.

Ordering - ETS valves

ETS 12.5, 25 Valve incl. actuator

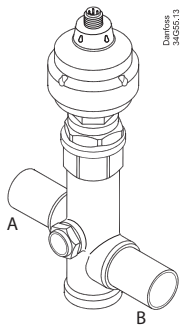


Type	Rated capacity ¹⁾									
	R410A		R407C		R22		R134a		R404A	
	kW	TR	kW	TR	kW	TR	kW	TR	kW	TR
ETS 12.5	70	20	63	18	57	16	45	13	43	12
ETS 25	144	41	129	37	117	34	93	27	88	25

Connection			
ODF × ODF (A × B)		Code no.	
in.	mm	Straight way Single Pack	Angle way Single Pack
1/2 × 1/2	-	034G4209	034G4213
-	12 × 12	034G4208	034G4212
5/8 × 5/8	16 × 16	034G4210	034G4214
7/8 × 7/8	22 × 22	034G4211	034G4215
1/2 × 1/2	-	034G4201	034G4205
-	12 × 12	034G4200	034G4204
5/8 × 5/8	16 × 16	034G4202	034G4206
7/8 × 7/8	22 × 22	034G4203	034G4207

ETS 12.5 and ETS 25 do not feature sight glass

ETS 50, 100 Valve incl. actuator

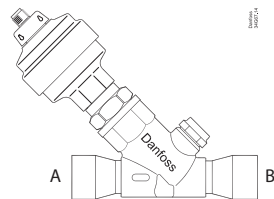


Type	Rated capacity ¹⁾									
	R410A		R407C		R22		R134a		R404A	
	kW	TR	kW	TR	kW	TR	kW	TR	kW	TR
ETS 50	262.3	75.7	240.5	69.1	215	62	170	48.9	161.4	46.3
ETS 100	488.4	140.9	447.8	128.7	400.4	115.4	316.5	91.2	300.5	86.6

Connection		
ODF × ODF (A × B)		Code no.
in.	mm	Single pack
7/8 × 7/8	22 × 22	034G1708
7/8 × 1 1/8	22 × 28	034G1705
1 1/8 × 1 1/8	28 × 28	034G1706
1 1/8 × 1 3/8	28 × 35	034G1704
1 1/8 × 1 1/8	28 × 28	034G0507
1 1/8 × 1 3/8	28 × 35	034G0501
1 3/8 × 1 3/8	35 × 35	034G0508
1 5/8 × 1 5/8	-	034G0505

ETS 50 and ETS 100 have integrated sight glass

ETS 250, 400 Valve incl. actuator



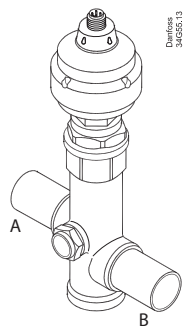
Type	Rated capacity ¹⁾									
	R410A		R407C		R22		R134a		R404A	
	kW	TR	kW	TR	kW	TR	kW	TR	kW	TR
ETS 250	-	-	1212	349	1106	319	874	252	828	239
ETS 400	-	-	1933	556	1764	509	1394	402	1320	381

Connection		
ODF × ODF (A × B)		Code no.
in.	mm	Single pack
1 1/8 × 1 1/8	28 × 28	034G2600
1 3/8 × 1 3/8	35 × 35	034G2601
1 5/8 × 1 5/8	-	034G2602
1 5/8 × 1 5/8	-	034G3500
2 1/8 × 2 1/8	54 × 54	034G3501

ETS 250 and ETS 400 have integrated sight glass

¹⁾ The Rated capacity is based on:
 Evaporating temperature t_e: 5°C (40°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 for CO₂ Applications



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

ETS 50 and ETS 100 have integrated sight glass

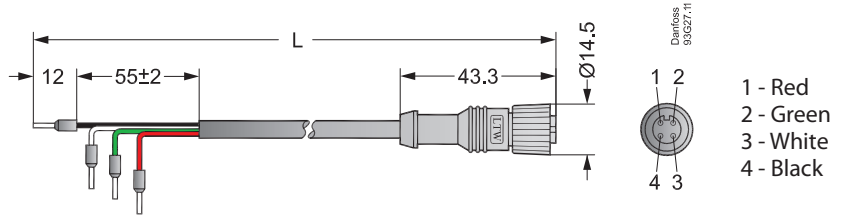
ETS for CO₂ can be used for expansion as well as gas bypass.

ETS for CO₂ Applications (MWP 45.5 bar / 660 psig).

Note: Cable sold separately (see next page).

Accessories - ETS valves

M12 Female Connector Cable



Cable quality	Temperature range	Cable length (L)		Design	Code no.	
					Single pack	Industrial pack (20 pcs)
Jacket: PVC	-50 / +80°C	2 m	6.6 ft	M12 actuator connector to 4 flying wires for driver connection	034G2201	034G2330
		8 m	26.2 ft		034G2200	034G2323
Jacket: CPE	-40 / +80°C	2 m	6.6 ft		034G2202	034G2331

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 mm \times (22 AWG))	5.0 mm	PU (polyurethane)	UL VW-1
CPE cables	CPE	Gray	Yes	EPR	4 wires (0.5mm \times (20 AWG))	6.3 mm	PU (polyurethane)	Resistant to gear oil, diesel oil, ethylene glycol, propylene glycol

⚠ Note: CPE cables are recommended for outdoor application.

⚠ Note: Standard cable stocked in Australia **034G2323** code is set up as a single purchase item(not 20pcs).

ETS Old code cross reference

Old Codes	New Codes
034G1000 ETS50B	034G1708 + 034G2323
034G1003 ETS50B	034G1706 + 034G2323
034G1004 ETS50B	034G1704 + 034G2323
034G0003 ETS100B	034G0508 + 034G2323
034G0000 ETS100B	034G0507 + 034G2323
034G0005 ETS100B	034G0505 + 034G2323
034G2001 ETS250	034G2601 + 034G2323
034G2002 ETS250	034G2602 + 034G2323
034G3501 ETS400	034G3501 + 034G2323
CO2: 034G4020 ETS12.5	034G4220 + 034G2323



CCM – Electrically operated valves for CO₂

The CCM is an electrically operated valve designed specifically for operation in CO₂ systems. The valve is capable of functioning 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.

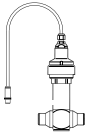


Advantages and features

- Up to 90 bar (1305 psi) working pressure to accommodate CO₂ system pressures during standstill conditions.
- Precise positioning for optimal control of intermediate pressures in transcritical CO₂ systems or liquid injection in heat exchangers.
- Possibility of bi-flow operation
- MOPD up to 50 bar (725 psi)
- 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.

⚠ Refer to Danfoss supermarket electronics specialist for further details.


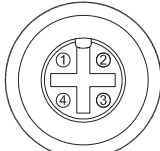
Technical data - CCM



Parameter	CCM
Compatibility	R744
MOPD	50 bar (725 psi)
Max. working pressure (PS/MWP)	90 bar (1305 psi)
Refrigerant temperature range	-40°C to 40°C (-40°F to 104°F)
Ambient temperature	-40°C to 60°C (-40°F to 140°F)
Total stroke	13 mm / 16 mm (0.5 in. / 0.6 in.)
Motor enclosure	IP67

Electrical data

Parameter	CCM
Stepper motor type	Bi-polar - permanent magnet
Step mode	2 phase full step
Phase resistance	52Ω ±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%, 150 steps/sec.
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	CCM 10, 20, 30 2625 [+160 / -0] steps CCM 40 3530 [+160 / -0] steps
Full travel time	CCM 10, 20, 30 17 / 8.5 sec. (voltage / current) CCM 40 23 / 11.5 sec. (voltage / current)
Lifting height	CCM 10, 20, 30 13 mm (0.5 in.) CCM 40 16 mm (0.6 in.)
Reference position	Overdriving against the full close position
Electrical connection	4 wire 0.5 mm ² (0.02 in ²), 0.3 m (1 ft) long cable

Stepper motor switch sequence:			
CCM	Connector		
	4	Black	4
	3	White	3
	2	Green	2
	1	Red	1
	Connection 1	Wire Color	Connection 2
		Pin Out	
			

Stepper motor switch sequence:

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

Ordering

Valve incl. actuator Single pack

Type	Connections (Combi)		Code nos single pack
	Weld ¹⁾ [in]	Solder ODF × ODF [in]	
CCM 10	1/2 × 1/2	5/8 × 5/8	027H7188
CCM 20	3/4 × 3/4	7/8 × 7/8	027H7187
CCM 30	1 × 1	1 1/8 × 1 1/8	027H7186
CCM 40	1 × 1	1 1/8 × 1 1/8	027H7185

¹⁾ OD according to EN 10220



CCMT – Electrically operated valves for transcritical and subcritical CO₂ applications

The CCMT is an electrically operated valve designed specifically for operation in CO₂ systems. The valve is capable of functioning either as an expansion valve, as a pressure regulator for the gascooler or as a gas bypass valve with back-pressure regulation in transcritical or subcritical applications.



Advantages and features

- Designed for high pressure CO₂ systems with maximum working pressure of 140 bar / 2030 psig.

Applicable to other common refrigerants as well. The CCMT is not applicable for flammable refrigerants and ammonia.

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 solder 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 driver.
- For manual operation and service of the CCMT an AST-g service driver is available.
- Low weight and compact design.
- Easy to service. Insert easily taken out by removing top part.


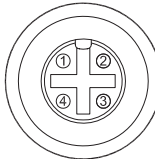
⚠ Refer to Danfoss supermarket electronics specialist for further details.

Technical data - CCMT

Parameter	CCMT
Compatibility	R744
MOPD	90 bar (1305 psi)
Max. working pressure (PS/MWP)	140 bar (2030 psi)
Refrigerant temperature range	-40°C to 60°C (-40°F to 140°F)
Ambient temperature	-40°C to 60°C (-40°F to 140°F)
Total stroke	4.8 mm (0.2 in.)
Motor enclosure	IP 67

Electrical data

Parameter	CCMT
Stepper motor type	Bi-polar - permanent magnet
Step mode	2 phase full step
Phase resistance	52Ω ±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%, 150 steps/sec.
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	max. 150 steps/sec. (constant voltage drive) max. 300 steps/sec. (chopper current drive)
Total steps	CCMT 2, 4 & 8: 1100 [+80 / - 0] steps
Full travel time	CCMT 2, 4 & 8: 5 sec. at 220 steps/sec.
Reference position	Overdriving against the full close position
Electrical connection	4 wire 0.5 mm ² (0.02 in ²), 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	
↑ CLOSING ↑	1	+	-	+	-	↓ OPENING ↓
	2	+	-	-	+	
	3	-	+	-	+	
	4	-	+	+	-	
	1	+	-	+	-	

Ordering

Valve incl. actuator

Type	Connections (Combi)		k _v value	Code no.
	Weld ¹⁾ [in]	Solder ODF × ODF [in]		
CCMT 2	1/2 × 1/2	5/8 × 5/8	0.17	027H7200
CCMT 4			0.45	027H7201
CCMT 8			0.8	027H7202

¹⁾OD according to EN 10220

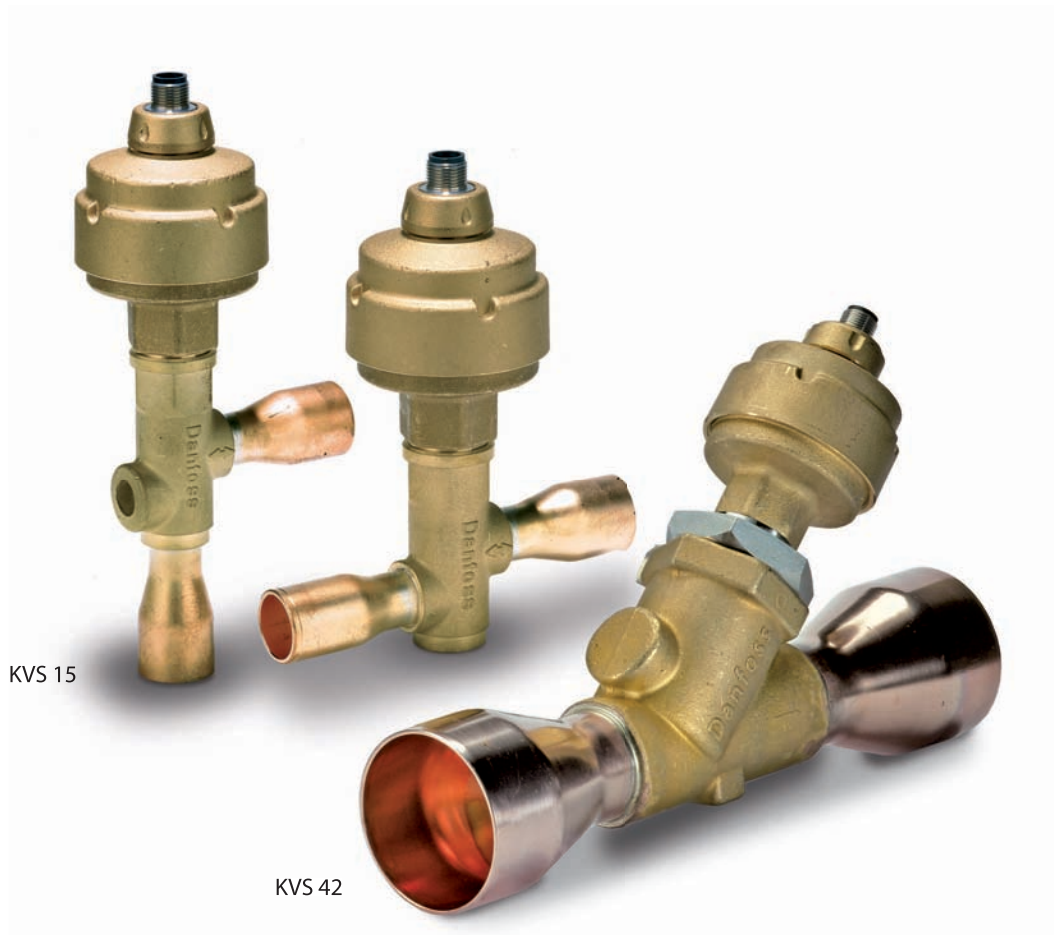
⚠ Not currently stocked in Australia.



KVS – Electrically operated suction modulating control valves

KVS is a series of electrically operated suction modulating control valves for AC 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 $\pm 0.5K$ 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 (478 psi).



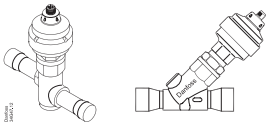
KVS 15

KVS 42

Applications	Advantages	Facts
<ul style="list-style-type: none"> · Refrigeration · Air conditioning · AC transport · Supermarket 	<ul style="list-style-type: none"> · Biflow · High resolution for precise control. · Low power consumption. · Corrosion resistant design external as well as internal. · Solenoid tight shut off. 	<ul style="list-style-type: none"> · KVS is designed for all common refrigerants HFC, HCFC. · Balanced port design (KVS 42). · For manual operation and service of KVS valves an AST-g service driver is available. · Cable and connector assemblies as accessories.

 Note: Refer to EKC 368 for stand-alone controller.

Technical data - KVS

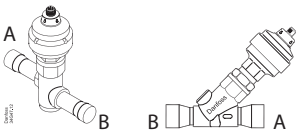


Parameter	KVS 15	KVS 42
Compatible refrigerants	HFC, HCFC (e.g. R410A, R407C, R404A, R134a, R22)	HFC, HCFC (e.g. R410A, R407C, R404A, R134a, R22)
Refrigerant oil	All mineral and ester oils	All mineral and ester oils
CE marking	No	Yes
MOPD	33 bar (478.6 psig)	33 bar (478 psig)
Max. working pressure	45.5 bar (660 psig)	34 bar (493 psig)
Refrigerant temperature range	-40°C to 65°C (-40°F to 149°F)	-40 to +65°C (-40 to +149°F)
Ambient temperature	-40°C to 60°C (-40°F to 140°F)	-40 to +60°C (-40 to +140°F)
Total stroke	13 mm (0.5 in)	17.2 mm (0.68 in.)
Motor enclosure	IP 67	IP 67
Material of Construction	Body and AST Encloser: Brass; Connector: Copper	Body and AST Encloser: Brass; Connector: Copper

Electrical data

Parameter	KVS 15 & 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%, (Using chopper drive) 100 mA RMS -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/sec. (constant voltage drive) 0-300 steps/sec. 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 sec. (voltage / current) KVS 42: 25.4 / 12.7 sec. (voltage / current)
Lifting height	KVS 15: 13 mm (0.5 in.) KVS 42: 17.2 mm (0.68 in.)
Reference position	Overdriving against the full close position
Electrical connection	M12 connector

Specifications and Ordering



KVS valves in single pack

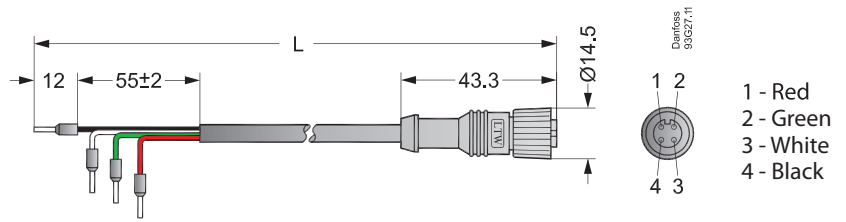
Type	Rated capacity ¹⁾						KVS valve		
	R22		R134a		R404A/R507		Connection A × B		Code no. single pack
	kW	TR	kW	TR	kW	TR	mm	in.	
KVS 15	5.15	1.31	3.78	0.94	4.58	1.07	16	⅝	034G4252
							22	7/8	034G4253
							22	7/8	034G2858
KVS 42	40.4	11.4	29.3	8.3	35.3	10.0	28	1 1/8	034G2850
							35	1 3/8	034G2851
							-	1 3/8	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) and pressure drop across valve Δp = 0.2 bar (2.9 psig).

⚠ Note: Cable sold separately (see next page).

Accessories - KVS

M12 Female Connector Cable



Cable quality	Temperature range	Cable length (L)		Design	Code no.	
					Single pack	Industrial pack (20 pcs)
Jacket: PVC	-50 / +80°C	2 m	6.6 ft	M12, 4 pins to actuator and flying wires for driver connection	034G2201	034G2330
		8 m	26.2 ft		034G2200	034G2323
Jacket: CPE	-40 / +80°C	2 m	6.6 ft		034G2202	034G2331

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 mm ² (22 AWG))	5.0 mm	PU (polyurethane)	UL VW-1
CPE cables	CPE	Gray	Yes	EPR	4 wires (0.5 mm ² (20 AWG))	6.3 mm	PU (polyurethane)	Resistant to gear oil, diesel oil, ethylene glycol, propylene glycol

⚠ Note: CPE cables are recommended for outdoor application.

⚠ Note: Standard cable stocked in Australia **034G2323** code is set up as a single purchase item (not 20pcs).

Notes

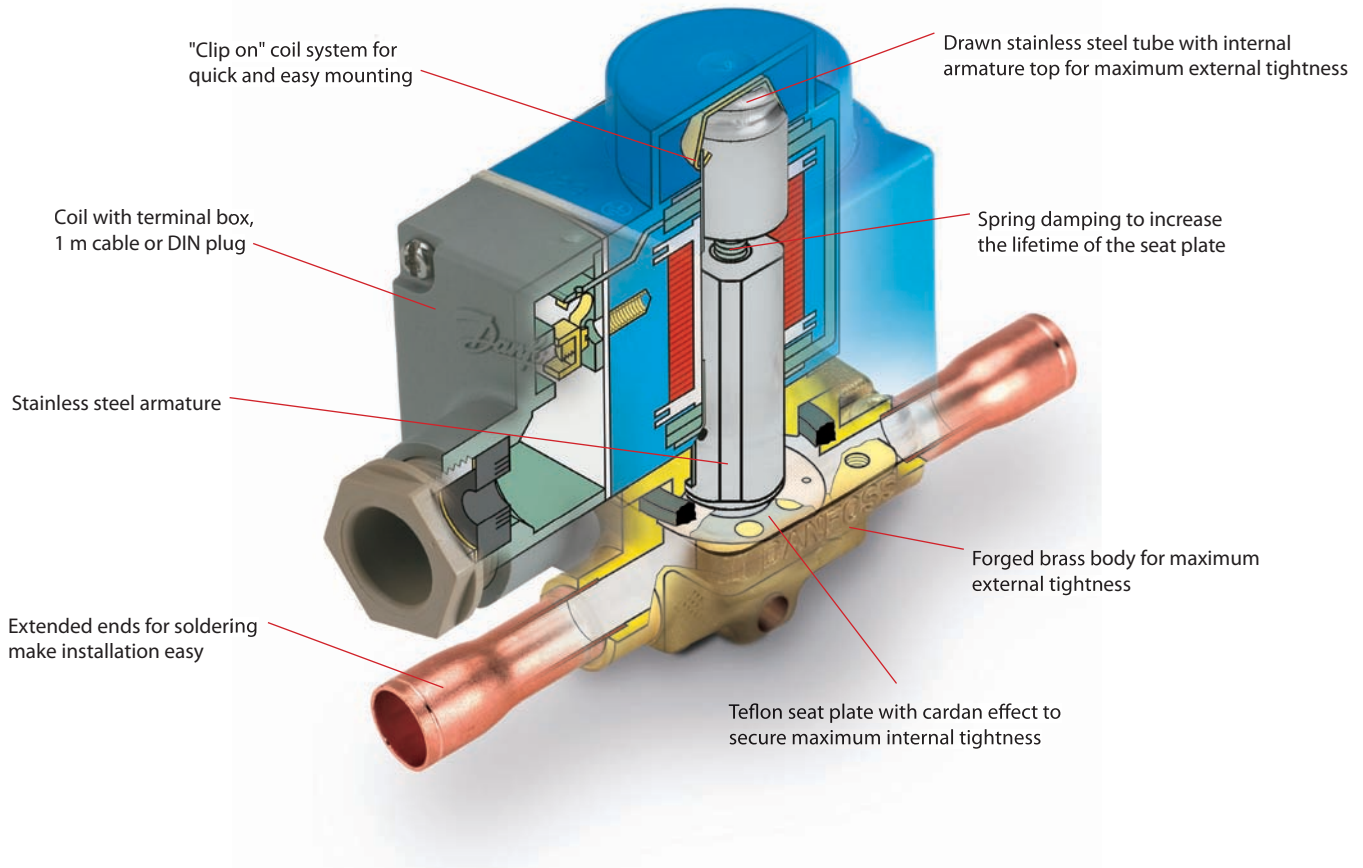
A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



EVR/EVRH - Solenoid valves and coils

EVR 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, including high-pressure refrigerants such as R410A (EVRH). The valves can be delivered as normally open and normally closed valves as well as with or without manual operation.

Features



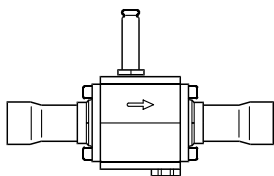
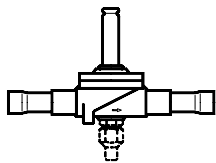
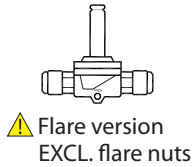
Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Heat pump systems · Air conditioning units · Liquid coolers · Transport refrigeration 	<ul style="list-style-type: none"> · Complete programme of valves and coils for every application. · Wide range of coils for a.c. and d.c. · 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. 	<ul style="list-style-type: none"> · Can be used for all fluorinated refrigerants (CFC, HCFC and HFC). · Temperature range: -40 to 105°C · Max. working pressure (MWP) 32 bar (EVR 2-6, 45.2 bar / EVR 10, 35 bar / EVR 15-40, 32 bar / EVRH 10-20, 45.2). · MOPD up to 25 bar with 12 W a.c. coil. · 100% test of functionality, internal/external leakage and electrical characteristics.

⚠ Note: Old series 018Z coils replaced by 018F series.

Technical data and ordering - EVR/H (normally closed)

Separate valve bodies, normally closed (NC)

Type	Required coil type	Connection		Code no. Valve body without coil					Max. working pressure bar	k _v value ¹⁾	
		in.	mm	Flare		Solder ODF					
				in./mm	in.	mm	With manual operation	Without manual operation			
EVR 2	a.c.	¼	6	032F8056	032F1201	032F1202			45.2	0.16	
EVR 3	a.c./d.c.	¼	6	032F8107	032F1206	032F1207			45.2	0.27	
EVR 6		¾	10	032F8116	032F1204	032F1208					
EVR 10		¾	10	032F8072	032F1212	032F1213			45.2	0.8	
EVR 15		½	12	032F8079	032F1209	032F1236					
EVR 20		½	12	032F8095	032F1217	032F1218			35	1.9	
EVR 25		⅝	16	032F8098	032F1214	032F1214					
EVR 32		⅝	16	032F8101	032F1228	032F1228					
EVR 40		⅝	16	032F8100			032F1227		32	2.6	
EVR 20		a.c.	7/8	22		032F1225	032F1225				
EVR 20		d.c.	7/8	22		032F1240	032F1240				
EVR 22	a.c.	1 1/8	28		032F1244	032F1245			32	5.0	
EVR 25	a.c.	7/8	22		032F1264	032F1264					
EVR 25	a.c.	1 3/8	35		032F3267	032F3267			32	6.0	
EVR 32	a.c./d.c.	1 1/8	28				032F2200	032F2201			
EVR 40	a.c./d.c.	1 3/8	35				032F2205	032F2206	32	10.0	
EVR 25	a.c./d.c.	1 3/8	35				032F2207	032F2208			
EVR 32	a.c./d.c.	1 3/8	35				042H1105	042H1106			
EVR 40	a.c./d.c.	1 5/8	42				042H1103	042H1104	32	16.0	
EVR 25	a.c./d.c.	1 5/8	42				042H1107	042H1108			
EVR 40	a.c./d.c.	1 5/8	42				042H1109	042H1110			
EVR 25	a.c./d.c.	2 1/8	54				042H1113	042H1114	32	25.0	
EVR 40	a.c./d.c.	2 1/8	54				042H1111	042H1112			
EVRH 10	a.c.	½	12		032G1054	032G1055				1.9	
EVRH 15	a.c.	⅝	16		032G1056	032G1056			45.2	2.6	
EVRH 20	a.c.	7/8	22		032G1057	032G1057				5.0	
EVRH 20	d.c.	7/8	22		032G1058	032G1058				5.0	



Mounting bracket

Mounting bracket	For mounting EVR 2, 3, 6 and 10	032F0197
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Coils - alternating current a.c. ⚠ Note: Common 240V coil 018F6702

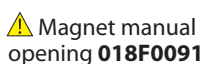
Type	Voltage V	Frequency Hz	Code no.				Appendix no.	Power consumption
			With 1 m 3-core cable IP67	With terminal box IP67	With DIN plugs and protective cap IP20	With DIN plugs		
EVR 2 → 40 (NC)	12	50	018F6256	018F6706	018F6181		15	Holding: 10 W 21 VA Inrush: 44 VA
	24	50	018F6257	018F6707	018F6182	018F7358	16	
	42	50	018F6258	018F6708	018F6183		17	
	48	50	018F6259	018F6709	018F6184		18	
	115	50	018F6261	018F6711	018F6186	018F7361	22	
	220-230	50	018F6251	018F6701	018F6176	018F7351	31	
	240	50	018F6252	018F6702	018F6177	018F7352	33	
	380-400	50	018F6253	018F6703	018F6178		37	
	420	50	018F6254	018F6704	018F6179		38	
	24	60	018F6265	018F6715	018F6190		14	
	115	60	018F6260	018F6710	018F6185		20	
	220	60	018F6264	018F6714	018F6189		29	
	240	60	018F6263	018F6713	018F6188		30	
	110	50/60	018F6280	018F6730	018F6192	018F7360	21	
	220-230	50/60	018F6282	018F6732	018F6193	018F7363	32	

⚠ For D.C and 12watt coils see page 66-67

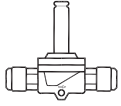
Terminal box with LED light indicator

Terminal box	With built-in light emitting indicator diode for solenoid valves	018Z0089
DIN socket		042N0156

¹⁾ The k_v value is the water flow in m³/h at a pressure drop across valve of 1 bar, ρ = 1000 kg/m³.

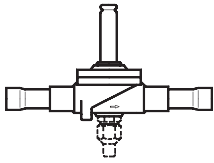


Technical data and ordering - EVR (normally open)



Separate valve bodies, normally open (NO) ³⁾

Type	Required coil type	Connection		Code no.			
				Valve body without coil ³⁾		Solder ODF	
		in.	mm	in.	mm	in.	mm
EVR 6	a.c./d.c.	3/8	10	032F8085	032F8085	032F1290	032F1295
EVR 10		1/2	12	032F8090	032F8090	032F1291	032F1296
EVR 15		5/8	16	032F8099	032F8099	032F1299	032F1299
		7/8	22			032F3270	032F3270
EVR 20		7/8	22			032F1260	032F1260
EVR 22	a.c.	1 1/8	28			032F1269	032F1279
		1 3/8	35			032F3268	032F3268



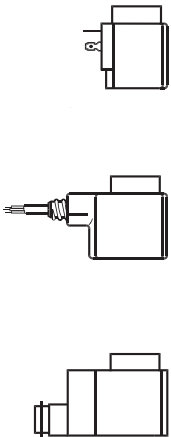
⚠ Note: Valves closed when coil is energized
open when coil is de-energized.

Mounting bracket

Mounting bracket	For mounting EVR 2, 3, 6 and 10	032F0197
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Coils - alternating current a.c

Type	Voltage V	Frequency Hz	Code no.				Appendix no.	Power consumption
			With 1 m 3-core cable IP67	With terminal box IP67	With DIN plugs and protective cap IP20	With DIN plugs		
EVR 2 → 40 (NC)	12	50	018F6256	018F6706	018F6181		15	Holding: 10 W 21 VA Inrush: 44 VA
	24	50	018F6257	018F6707	018F6182	018F7358	16	
	42	50	018F6258	018F6708	018F6183		17	
	48	50	018F6259	018F6709	018F6184		18	
	115	50	018F6261	018F6711	018F6186	018F7361	22	
	220-230	50	018F6251	018F6701	018F6176	018F7351	31	
	240	50	018F6252	018F6702	018F6177	018F7352	33	
	380-400	50	018F6253	018F6703	018F6178		37	
	420	50	018F6254	018F6704	018F6179		38	
	24	60	018F6265	018F6715	018F6190		14	
	115	60	018F6260	018F6710	018F6185		20	
	220	60	018F6264	018F6714	018F6189		29	
	240	60	018F6263	018F6713	018F6188		30	
	110	50/60	018F6280	018F6730	018F6192	018F7360	21	
	220-230	50/60	018F6282	018F6732	018F6193	018F7363	32	



Terminal box with LED light indicator

Terminal box	With built-in light emitting indicator diode for solenoid valves	018Z0089
DIN socket		042N0156

¹⁾ The k_v value is the water flow in m³/h at a pressure drop across valve of 1 bar, $\rho = 1000 \text{ kg/m}^3$.

⚠ For D.C and 12watt coils see page 66-67.

Notes - EVR

1. Standard 240 volt coil with terminal box 018F6702.
2. 018'Z' type replaced by 018'F' coil series. (clip on)
3. Magnet service tool code: 018F0091.
4. Label on blue section of the coil is the IP20 code. eg: 240V 10watt coil 018F6177
when terminal box added to increase to IP67 the service replacement code is 018F6702.
5. Standard armature tube on Danfoss solenoids has a diameter of 13.5mm.
6. Ex - Demko (Eexm11T4) zone 1 directive 94/9/EC ATE x 100A coils are available as a special order.
Must purchase coil + NC kit(018Z0090)
 - 24V a.c : 018Z6595 + 018Z0090
 - 24V d.c : 018Z6596 + 018Z0090
 - 24V a.c : 018Z6591 + 018Z0090

 Note: All Danfoss solenoids sold without coils.

EVRS/EVRST – Solenoid valves and coils

EVRS and EVRST are valves made of stainless steel. EVRS 3 is direct operated. EVRS 10, 15 and 20 are servo operated. EVRST 10,15 and 20 are forced servo operated valves used in liquid, suction, hot gas and oil return lines with ammonia or fluorinated refrigerants.

⚠ Stainless steel.



Advantages and features

- Stainless steel valve body and connections
- Max. working pressure 50 barg (suitable for CO₂ subcritical).
- Used for ammonia and all fluorinated refrigerants
- MOPD up to 38 bar with 20 watt a.c. coil
- Wide choice of a.c. and d.c. coils
- Designed for temperatures of media up to 105°C
- Manual stem on EVRS and EVRST 10, EVRST 15 and EVRST 20

Technical data and ordering - EVRS/EVRST (stainless steel)

Technical data

Refrigerants

R717 (NH₃), R22, R134a, R404A; R744; R410A etc.

Temperature of medium

-40 → +105°C for 10 or 12 watt coil. Max. 130°C during defrosting.

-40 → +80°C for 20 watt coil.

Ambient temperature and enclosure for coil: See "Coils for solenoid valves", lit.no. DKRCC.PD.BS0.A4

Type	Opening differential pressure Δp bar					k _v value ²⁾ m ³ /h	Max. working pressure Ps
	Min.	Max. (MOPD) liquid ¹⁾					
		10 W a.c.	12 W a.c.	20 W a.c.	20 W d.c.		
EVRS 3	0.0	21	25	38	14	0.23	50 barg
EVRS 10	0.05	21	25	38	18	1.5	
EVRST 10	0.0	14	21	38	16	1.5	
EVRS 15	0.05	21	25	38	18	2.7	
EVRST 15	0.0	14	21	38	18	2.7	
EVRS 20	0.05	21	25	38	13	4.5	28 barg for R717, HCFC, HFC, R744 ³⁾ 50 barg only for R744, R410A ⁴⁾
EVRST 20	0.0	14	21	38	13	4.5	

¹⁾ MOPD for media in gas form is approx. 1 bar greater.

²⁾ The k_v value is the water flow in m³/h at a pressure drop in the valve of 1 bar, ρ = 1000 kg/m³.

³⁾ All refrigerants in group I according to Pressure Equipment Directive PED 97/23/CE article 9 section 2.1

Group I comprises fluids defined as:

- explosive
- extremely flammable
- highly flammable
- flammable (where the maximum allowable temperature is above flashpoint)
- very toxic
- toxic
- oxidizing

⁴⁾ Only for refrigerants in group 2 according to Pressure Equipment Directive PED 97/23/CE article 9 section 2.2

Group 2 comprises all other fluids not referred to in 2.1

Type	Rated capacity ¹⁾ kW														
	Liquid					Suction vapour					Hot gas				
	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

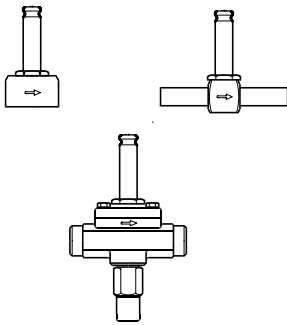
¹⁾ Rated liquid and suction vapour capacity is based on evaporating temperature t_e = -10°C, liquid temperature ahead of valve t_i = +25°C, and pressure drop across valve Δp = 0.15 bar.

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.

Type	R 744 Rated capacity kW ²⁾	
	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

²⁾ Rated liquid and suction vapour capacity is based on evaporating temperature t_e = -40°C, liquid temperature ahead of the valve t_i = -8°C and pressure drop across the valve Δp = 0.15 bar

Code numbers - EVRS/EVRST



Separate valve bodies

Type	Max. working pressure Ps barg	Connection		Code no.	
		Weld in.	Pipe thread ISO 228/1	With manual stem	Without manual stem
EVRS 3	50	3/8			032F3080
EVRS 3	50		G 1/4		032F3081
EVRS 10	50	1/2		032F3082	
EVRST 10	50	1/2		032F3083	
EVRS 15	50	3/4		032F3084	
EVRST 15	50	3/4		032F3085	
EVRS 20	28	1		032F3086	
EVRST 20	28	1		032F2237	
EVRS 20	50	1		032F5437	
EVRST 20	50	1		032F5438	

Coils See "Coils for solenoid valves", lit.no. DKRCC.PD.B50.A4.

⚠ Limited codes and stock currently in Australia.

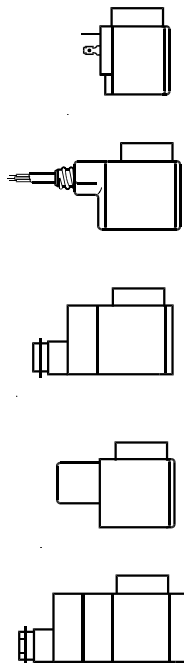
Solenoid coil extended listing a.c - d.c and larger wattage

Clip-on coils

Valve type	Voltage V	Frequency Hz	Code no.				Appendix no.)*	Power consumption
			With 1 m 3-core cable IP67	With terminal box IP67	With DIN plugs and protect. cap IP20	With DIN plugs**)		

Alternating current a.c.

EVR 2 → 40 (NC) EVR 6 → 22 (NO) EVRH 4 → 40 EVRC EVRA EVRAT EVRS / EVRST EVM (NC)	12	50	018F6256	018F6706	018F6181		15	Holding: 10 W 21 VA Inrush: 44 VA
	24	50	018F6257	018F6707	018F6182	018F7358	16	
	42	50	018F6258	018F6708	018F6183		17	
	48	50	018F6259	018F6709	018F6184		18	
	115	50	018F6261	018F6711	018F6186	018F7361	22	
	220-230	50	018F6251	018F6701	018F6176	018F7351	31	
	240	50	018F6252	018F6702	018F6177	018F7352	33	
	380-400	50	018F6253	018F6703	018F6178		37	
	420	50	018F6254	018F6704	018F6179		38	
	24	60	018F6265	018F6715	018F6190		14	
	115	60	018F6260	018F6710	018F6185		20	
	220	60	018F6264	018F6714	018F6189		29	
	240	60	018F6263	018F6713	018F6188		30	
	110	50/60	018F6280	018F6730	018F6192	018F7360	21	
220-230	50/60	018F6282	018F6732	018F6193	018F7363	32		



Direct current d.c.

Coil type I

EVR 2 → 15 (NC) EVR 25 → 40 (NC/NO) EVR 6 → 15 (NO) EVRC 10 → 15 EVRA 3 → 15 (NC) EVRA 25 → 40 (NC) EVRAT 10 → 15 (NC) EVRS / EVRST 3 → 15 EVM (NC/NO)	12			018F6856		01	20 W
	24			018F6857		02	
	48			018F6859		04	
	110			018F6860		06	
	115			018F6861		07	
	220			018F6851		09	

Direct current d.c.

Coil type II

EVR 20 → 22 (NC/NO) EVRC 20 EVRA 20 EVRAT 20 EVRST 20	12			018F6886		01	20 W
	24			018F6887		02	
	48			018F6889		04	
	110			018F6890		06	
	220			018F6881		09	

See "Opening differential pressure" under "Technical data" for the valve concerned.

*) Indicates voltage and frequency

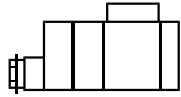
**) Can only be used with DIN socket

***) 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.

Code numbers

Special coils

Valve type	Voltage	Frequency	Code no.	Appendix no. Indicates voltage and frequency	Power consumption
	V	Hz	With terminal box IP67		



Alternating current a.c.

EVRS / EVRST	24	50	018F6807	16	Holding: 12 W 26 VA Inrush: 55 VA
	42	50	018F6808	17	
	48	50	018F6809	18	
	110	50	018F6811	22	
	220-230	50	018F6801	31	
	240	50	018F6802	33	
	380-400	50	018F6803	37	
	24	60	018F6815	14	
	110	60	018F6813	20	
	220	60	018F6814	29	

Alternating current a.c.

EVR/EVRST	24	50	018F6901	Holding: 20 W 45VA Inrush: 65VA
	24	60	018F6902	
	230	50	018F6905	

Recommended use for EVRH with high MOPD (38 bar)

⚠ Note:

Clip on coils 018'F' series replace old series 018'Z'.
018'Z' (old series) included removable top locking cap.
Standard armature tube diameter 13.5mm.

⚠ Special Note: "coils"

Code number printed on the side of the coil is the IP20 designation, however for service replacement select standard IP67 (with terminal box).
e.g. 018F6177 (printed coil) = 240V coil without terminal box replaced with 081F6702

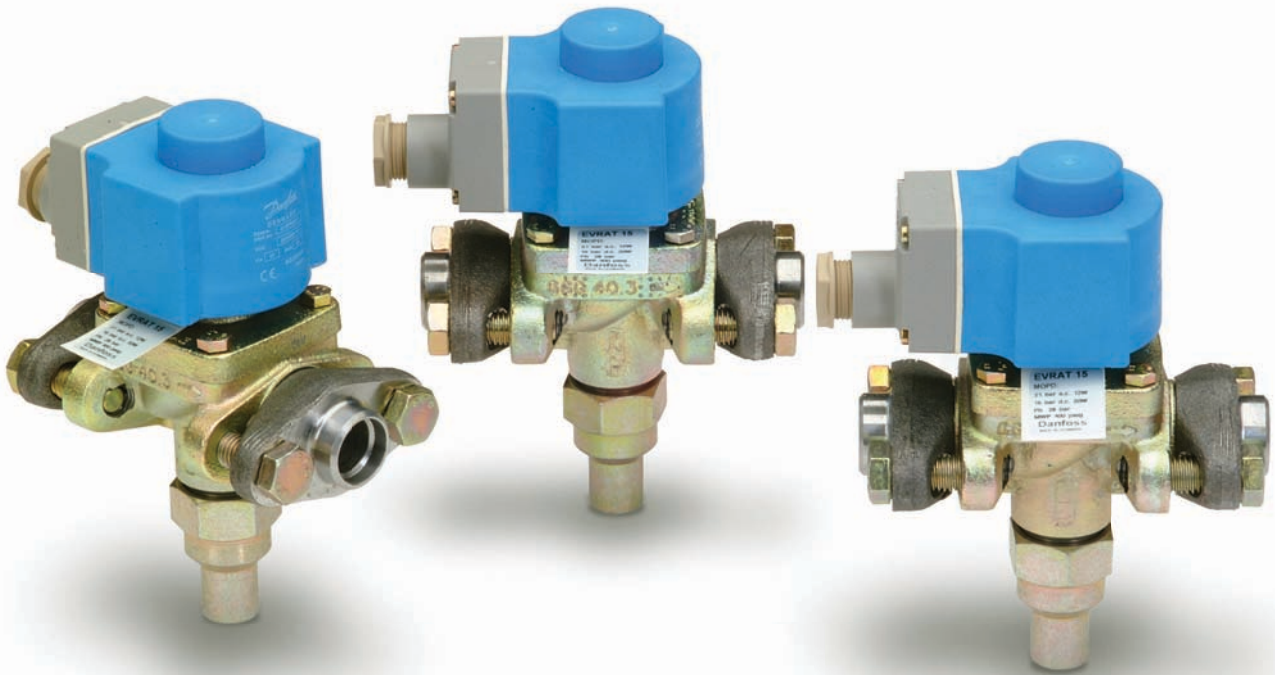
⚠ Magnet (manual valve) opening tool code: 018F0091.



EVRA/EVRAT – Solenoid valves/coils

EVRA is a direct or servo operated solenoid valve for liquid, suction and hot gas lines with ammonia or fluorinated refrigerants. EVRA valves can be supplied as complete valves or as components, i.e. valve body, flanges and coils. EVRAT has capacities similar to the EVRA but has the advantage of no opening pressure differential is needed – it will open – and stay open, also when there is no flow through that valve.

⚠ Industrial refrigeration.



Advantages and features

- EVRA and EVRAT valves can be used for all non-flammable refrigerants, including R 717, and non-corrosive gases/liquids – assuming seals of correct material are used
- EVRA and EVRAT valves uses a teflon gasket which ensures a very high tightness across valve seat
- EVRA valves has a low pressure drop
- EVRAT valves has a minimal opening differential pressure of 0 (zero)
- The EVRA and EVRAT valves offers a wide range of flange connection dimensions in accordance with standards: DIN ANSI, SOC, SA and FPT
- The 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 and 40

⚠ Note: Only EVRA'T' from 10-20 is stocked in Australia.

⚠ Note: Please refer to Industrial Refrigeration supplement for detailed stock listing.

Connections

There is a wide range of connection possibilities with EVRA 3 to 25 and EVRAT 10-20:

- Butt welding DIN (2448)
- Butt welding ANSI
(3/8 - 1½ in. B36.10 schedule 80, 2 in. B36.10 schedule 40)
- Socket welding ANSI (B 16.11)
- Solder connection DIN (2856)
- Solder connection ANSI (B 16.22)
- FPT internal thread, NPT (ANSI/ASME B 1.20.1)

EVRA 32 and 40 are supplied with integrated flanges for either:

- Welding DIN (2448) or
- Welding ANSI (B 36.10)

Technical data and code numbers - EVRA/EVRAT

Technical data

Type	Opening differential pressure with standard coil Δp bar				Temperature of medium °C	Max. working pressure PB bar	kv-value m ³ /h
	Min.	Max. (= MOPD) liquid ²⁾					
		10 W a.c.	12 W a.c.	20 W d.c.			
EVRA 3	0.00	21	25	14	-40 → 105	42	0.23
EVRA 10	0.05	21	25	18			1.5
EVRAT 10	0.00	14	21	16			1.5
EVRA 15	0.05	21	25	18			2.7
EVRAT 15	0.00	14	21	16			2.7
EVRA 20	0.05	21	25	13			4.5
EVRAT 20	0.00	14	21	13			4.5
EVRA 25	0.20	21	25	14			10.0
EVRA 32	0.20	21	25	14			16.0
EVRA 40	0.20	21	25	14			25.0

¹⁾ The kv value is the water flow in m³/h at a pressure drop across valve of 1 bar, $\rho = 1000 \text{ kg/m}^3$.

²⁾ MOPD for media in gas form is approx. 1 bar greater.

Code numbers

Separate valve bodies

	Type	Connection	Required coil type	Code no.
Valves with manual operation	EVRA 10	See table <i>Flange set</i>	a.c. / d.c.	032F6210
	EVRAT 10		a.c. / d.c.	032F6214
	EVRA 15		a.c. / d.c.	032F6215
	EVRAT 15		a.c. / d.c.	032F6216
	EVRA 20		a.c.	032F6220
	EVRA 20		d.c.	032F6221
	EVRAT 20		a.c. / d.c.	032F6219
	EVRA 25		a.c. / d.c.	032F6225
Valves without manual operation	EVRA 3	See table <i>Flange set</i>	a.c. / d.c.	032F3050
	EVRA 10		a.c. / d.c.	032F6211
	EVRA 25		a.c. / d.c.	032F6226

Separate valve bodies with butt weld connections

	Type	Size	Butt weld connection	
			DIN	ANSI
			Code no.	Code no.
Valves with manual operation	EVRA 32	1 ¼ in.	042H1126	042H1140
	EVRA 32	1 ½ in.	042H1131	042H1141
	EVRA 40	1 ½ in.	042H1128	042H1142
	EVRA 40	2 in.	042H1132	042H1143

Flange sets

		Connection		Code no.
		mm	in.	
		EVRA 3, 10 and 15 EVRAT 10 and 15	Butt welding DIN (2448), Tongue flange sets	
15	½			027N1115
Butt welding ANSI B 36.10, Tongue flange sets	20		¾	027N1120
	10		¾	027N2020
	15		½	027N2021
Socket welding ANSI (B 16.11), Tongue flange sets	20		¾	027N2022
	10		¾	027N2010
Solder DIN (2856), Tongue flange sets	15		½	027N2011
	16			027L1116
Solder ANSI B 16.22, Tongue flange sets	22			027L1122
		5/8	027L1117	
FPT internal thread, NPT (ANSI / ASME B 1.20.1), Tongue flange sets		7/8	027L1123	
	10	¾	027G1005	
EVRA 20 and 25 EVRAT 20	Butt welding DIN (2448), Tongue flange sets	15	½	027G1006
		20	¾	027N1220
	Butt welding ANSI B 36.10, Tongue flange sets	25	1	027N1225
		32	1¼	027N1230
	Socket welding ANSI (B 16.11), Tongue flange sets	20	¾	027N3031
		25	1	027N3032
		32	1¼	027N3033
	Soldering DIN (2856), Tongue flange sets	20	¾	027N2001
		25	1	027N2002
	Soldering ANSI B 16.22, Tongue flange sets	22		027N1222
		28		027N1228
	FPT internal thread, NPT (ANSI / ASME B 1.20.1), Tongue flange sets		7/8	027N1223
			1 1/8	027N1229
		20	¾	027G1001
	25	1	027G1002	

Code numbers

Clip-on coils

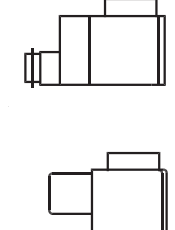
Valve type	Voltage V	Frequency Hz	Code no.				Appendix no.*)	Power consumption
			With 1 m 3-core cable IP67	With terminal box IP67	With DIN plugs and protect. cap IP20	With DIN plugs**)		

Alternating current a.c.

 EVR 2 → 40 (NC) EVR 6 → 22 (NO) EVRH 4 → 40 EVRC EVRA EVRAT EVRS / EVRST EVM (NC)	12	50	018F6256	018F6706	018F6181		15	Holding: 10 W 21 VA Inrush: 44 VA
	24	50	018F6257	018F6707	018F6182	018F7358	16	
	42	50	018F6258	018F6708	018F6183		17	
	48	50	018F6259	018F6709	018F6184		18	
	115	50	018F6261	018F6711	018F6186	018F7361	22	
	220-230	50	018F6251	018F6701	018F6176	018F7351	31	
	240	50	018F6252	018F6702	018F6177	018F7352	33	
	380-400	50	018F6253	018F6703	018F6178		37	
	420	50	018F6254	018F6704	018F6179		38	
	24	60	018F6265	018F6715	018F6190		14	
	115	60	018F6260	018F6710	018F6185		20	
	220	60	018F6264	018F6714	018F6189		29	
	240	60	018F6263	018F6713	018F6188		30	
	110	50/60	018F6280	018F6730	018F6192	018F7360	21	
220-230	50/60	018F6282	018F6732	018F6193	018F7363	32		

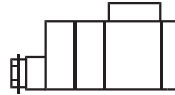
Direct current d.c.

Coil type I

 EVR 2 → 15 (NC) EVR 25 → 40 (NC/NO) EVR 6 → 15 (NO) EVRC 10 → 15 EVRA 3 → 15 (NC) EVRA 25 → 40 (NC) EVRAT 10 → 15 (NC) EVRS / EVRST 3 → 15 EVM (NC/NO)	12			018F6856			01	20 W	
	24			018F6857			02		
	48				018F6859				04
	110				018F6860				06
	115				018F6861				07
	220				018F6851				09

Direct current d.c.

Coil type II

 EVR 20 → 22 (NC/NO) EVRC 20 EVRA 20 EVRAT 20 EVRST 20	12			018F6886			01	20 W	
	24			018F6887			02		
	48				018F6889				04
	110				018F6890				06
	220				018F6881				09

See "Opening differential pressure" under "Technical data" for the valve concerned.

*) Indicates voltage and frequency

**) Can only be used with DIN socket

***) 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.

Notes

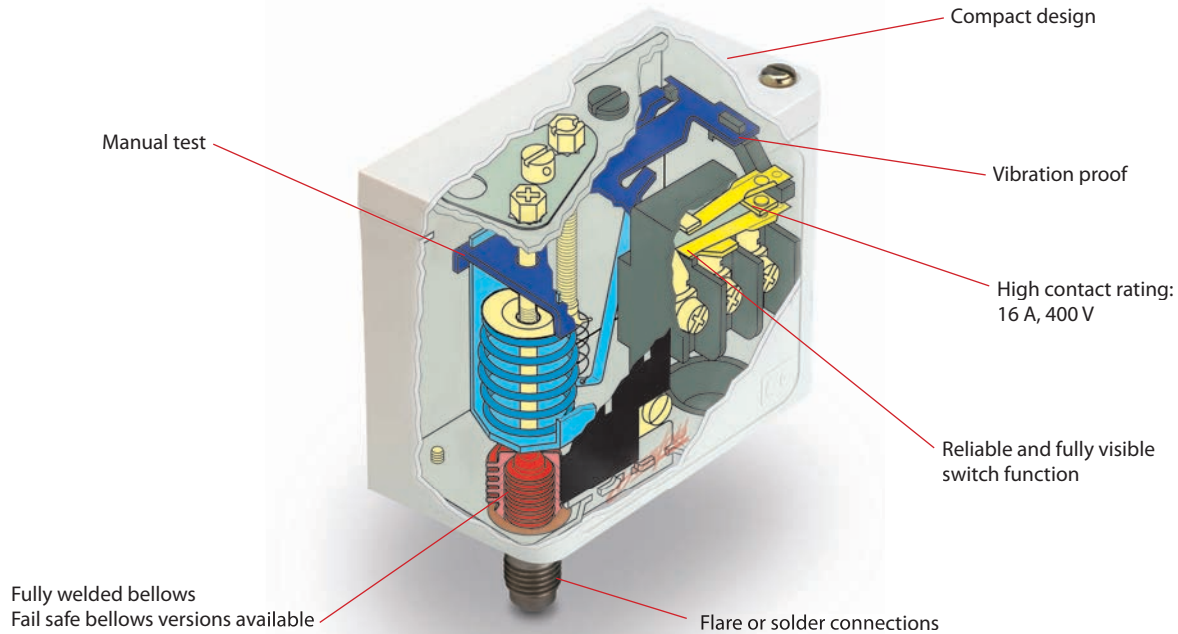
A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



KP – Pressure controls and temperature controls

KP pressure controls 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. KP temperature controls with adsorption charge are the optimum choice for frost protection of chillers. The enhanced contact system for 16 A makes it possible to operate electrical motors up to 2 kW directly, without the use of contactors.

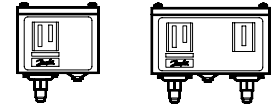
Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Heat pump systems · Air conditioning units · Liquid coolers · Transport refrigeration 	<ul style="list-style-type: none"> · 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. · Easy functional check with manual test function of contact system (no tools). · Easy to install electrical connection which also facilitates rack mounting. 	<ul style="list-style-type: none"> · Can be used for all fluorinated refrigerants. The KP-A types can be used for ammonia. · Pressure controls available with flare, solder or capillary tube connections. · Temperature controls available with capillary sensor, air sensor or cylindrical pocket sensor. · IP30 and IP44 enclosures available.

⚠ Note: Mounting screws only supplied with brackets, see accessories.

Technical data and ordering - KP pressure & temp controls



Pressure controls for fluorinated refrigerants

Pressure	Type	Low pressure (LP)		High pressure (HP)		Reset		Contact system	Code no.		
		Regulating range [bar]	Differential Δp [bar]	Regulating range [bar]	Differential Δp [bar]	Low pressure LP	High pressure HP		1/4 in. 6 mm flare	1/4 in. ODF solder	6 mm ODF solder
Low	KP 1	-0.2 - 7.5	0.7 - 4	-	-	Aut.	-	SPDT	060-110166³⁾	060-111266 ³⁾	060-111066 ³⁾
Low	KP 1	-0.2 - 7.5	0.7 - 4	-	-	Aut.	-		060-114166 ¹⁾³⁾	-	-
Low	KP 1	-0.9 - 7	0.7	-	-	Man.	-		060-110366	060-111166	060-110966
Low	KP 2	-0.2 - 5	0.4 - 1.5	-	-	Aut.	-		060-112066 ³⁾	-	060-112366 ³⁾
High	KP 5	-	-	8 - 32	1.8 - 6.0	-	Aut.	-	060-117166³⁾	060-117966³⁾	060-117766 ³⁾
High	KP 5	-	-	8 - 32	3	-	Man.		060-117366	060-118066	060-117866
Dual	KP 15	-0.2 - 7.5	0.7 - 4	8 - 32	4	Aut.	Aut.	SPDT + LP signal	060-124166³⁾	060-125466 ³⁾	-
Dual	KP 15	-0.2 - 7.5	0.7 - 4	8 - 32	4	Aut.	Man.		060-124366	-	-
Dual	KP 15	-0.2 - 7.5	0.7 - 4	8 - 32	4	Aut.	Man.		060-114866 ¹⁾	-	-
Dual	KP 15	-0.9 - 7	0.7	8 - 32	4	Man.	Man.		060-124566	-	-
Dual	KP 15	-0.9 - 7	0.7	8 - 32	4	Conv. ²⁾	Conv. ²⁾	-	060-126166	-	-
Dual	KP 15	-0.2 - 7.5	0.7 - 4	8 - 32	4	Aut.	Aut.		060-126566³⁾	060-129966³⁾	-
Dual	KP 15	-0.2 - 7.5	0.7 - 4	8 - 32	4	Aut.	Man.	SPDT + LP and HP signal	060-126466	060-128466	-
Dual	KP 15	-0.2 - 7.5	0.7 - 4	8 - 32	4	Conv. ²⁾	Conv. ²⁾		060-115466³⁾	060-001066 ³⁾	-
Dual	KP 15	-0.9 - 7	0.7	8 - 32	4	Conv. ²⁾	Conv. ²⁾	HP signal	060-122066	-	-

For fluorinated refrigerants and R 717 (NH₃)

Pressure	Type	Low pressure (LP)		High pressure (HP)		Reset LP/HP	Contact system	Code no.	
		Regulating range bar	Differential Δp bar	Regulating range bar	Differential Δp bar			M10 × 0.75	1 m cap. tube with M10 × 0.75
Low	KP 1A	-0.2 → 7.5	0.7 → 4.0	-	-	Aut.	SPDT	060-116266	060-116066³⁾
Low	KP 1A	-0.9 → 7.0	Fixed 0.7	-	-	Man.		-	060-116166
High	KP 5A	-	-	8 → 32	1.8 → 6.0	Aut.		-	060-123066³⁾
High	KP 5A	-	-	8 → 32	Fixed 3	Man.		060-115366	060-123166
Dual	KP 15A	-0.2 → 7.5	0.7 → 4.0	8 → 32	Fixed 4	Aut./Aut.	SPDT + LP and HP signal	060-129566	060-129366³⁾
Dual	KP 15A	-0.2 → 7.5	0.7 → 4.0	8 → 32	Fixed 4	Aut./Man.		060-129666	060-129466
Dual	KP 15A	-0.9 → 7.0	Fixed 0.7	8 → 32	Fixed 4	Conv./Conv. ²⁾	SPDT LP signal	-	060-128366
High	KP 7ABS	-	-	8 → 32	Fixed 4	Man./Man.	SPST	-	060-120566

- 1) Pressure controls with gold-plated contacts
- 2) Convertible reset: optional automatic or manual reset
- 3) Enclosure IP44

Temperature controls - Thermostats

Charge	Type	Sensor type	Setting - range [°C]	Differential Δt		Reset	Max. Sensor temp. [°C]	Capillary-tube length [m]	Code no.	
				Lowest temperature [°C]	Highest temperature [°C]					
A	Vapour ¹⁾	KP 61	A	-30 - 15	5.5 - 23	1.5 - 7	aut.	120	2	060L110066
		KP 61	A	-30 - 15	5.5 - 23	1.5 - 7	aut.	120	5	060L110166
		KP 61	B	-30 - 13	4.5 - 23	1.2 - 7	aut.	120	2	060L110266
		KP 61	B	-30 - 15	5.5 - 23	1.5 - 7	aut.	120	2	060L110366 ³⁾
		KP 61	B	-30 - 15	5.5 - 23	1.5 - 7	aut.	120	2	060L112866^{3) 4)}
		KP 61	A	-30 - 15	6	2	min.	120	5	060L110466
		KP 61	B	-30 - 15	6	2	min.	120	2	060L110566
		KP 62	C1	-30 - 15	6 - 23	1.5 - 7	aut.	120	-	060L110666
		KP 63	A	-50 - -10	10 - 70	2.7 - 8	aut.	120	2	060L110766
		KP 63	B	-50 - -10	10 - 70	2.7 - 8	aut.	120	2	060L110866
		KP 68	C1	-5 - 35	4.5 - 25	1.8 - 7	aut.	120	-	060L111166
		C	Adsorb-tion ²⁾	KP 69	B	-5 - 35	4.5 - 25	1.8 - 7	aut.	120
KP 62	C2			-30 - 15	5 - 20	2 - 8	aut.	80	-	060L111066^{3) 4)}
KP 71	E2			-5 - 20	3 - 10	2.2 - 9	aut.	80	2	060L111366
KP 71	E2			-5 - 20	3	3	min.	80	2	060L111566
KP 73	E1			-25 - 15	12 - 70	8 - 25	aut.	80	2	060L111766
KP 73	D1			-25 - 15	4 - 10	3.5 - 9	aut.	80	2	060L111866 ³⁾
KP 73	D1			-25 - 15	3.5	3.5	min.	80	2	060L113866
KP 73	D2			-20 - 15	4 - 15	2 - 13	aut.	55	3	060L114066
KP 73	D1			-25 - 15	3.5 - 20	3.25 - 18	aut.	80	2	060L114366
KP 75	F			0 - 35	3.5 - 16	2.5 - 12	aut.	110	2	060L112066
KP 75	E2			0 - 35	3.5 - 16	2.5 - 12	aut.	110	2	060L113766
D	E			KP 77	E3	20 - 60	3.5 - 10	3.5 - 10	aut.	130
		KP 77	E3	20 - 60	3.5 - 10	3.5 - 10	aut.	130	3	060L112266
		KP 77	E2	20 - 60	3.5 - 10	3.5 - 10	aut.	130	5	060L116866
		KP 79	E3	50 - 100	5 - 15	5 - 15	aut.	150	2	060L112666
		KP 81	E3	80 - 150	7 - 20	7 - 20	aut.	200	2	060L112566
		KP 81	E3	80 - 150	9	9	max.	200	2	060L115566
F	F	KP 98	E2	OIL: 60 - 120	OIL: 14	OIL: 14	max.	150	1	060L113166
		KP 98	E2	HT: 100 - 180	HT: 25	HT: 25	max.	250	2	

- 1) Sensor must always be placed colder than the temperature control housing and capillary tube. The temperature control will then regulate independent of ambient temperature.
- 2) Sensor can be placed warmer or colder than temperature control 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.

KP accessories and special controls

Mounting brackets

Type - Description	Code no.
Wall bracket - flat	060 - 105566
Angle bracket	060 - 105666

⚠ Note: bracket includes mounting screws.

Capillary (inc 1/4" flare nuts)

Type - Description	Code no.
1 metre capillary with flare nuts	060 - 019166

IP55 Enclosure

Type - Description	Code no.
Single for KP1, KP5, KPR5	060 - 033066
Double for KP15, KP17	060 - 035066

OEM KP Controls (including capillary and bracket)

Type - Description	Code no.
KP1 Auto incl. capillary and angle bracket	060 - 110566
KP5 Auto incl. capillary and angle bracket	060 - 001866
KP15 A/Auto incl. capillary and angle bracket	060 - 119966
KP15 A/Auto incl. capillary and angle bracket	060 - 000766

KPR5 HP Control (condensor fan control)

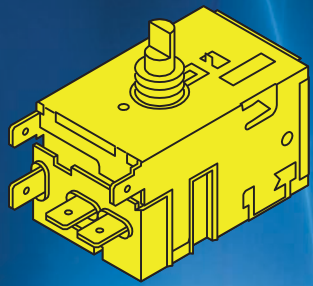
Type - Description	Code no.
KPR5 Auto 1/4 flare	060 - 117466

KP6 8>42 bar range (Co2 and R410A)

Type - Description	Code no.
KP6W Auto 1/4 flare 8 – 42 bar	060 - 519066
KP6B Man 1/4 flare 8 – 42 bar	060 - 519166

IP55 Enclosure for KP Controls





Service Thermostats



The Wholesaler

- Bar coded
- Logical numbering systems
- Easy stock control

The Installer

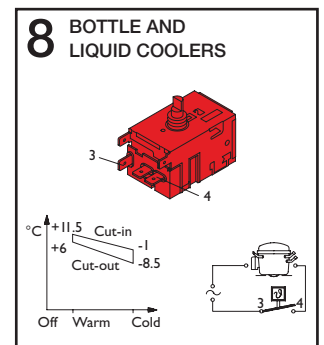
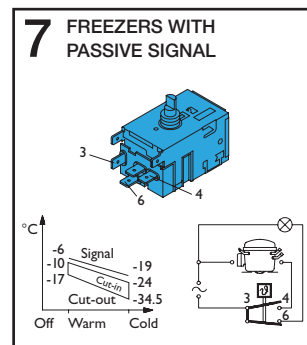
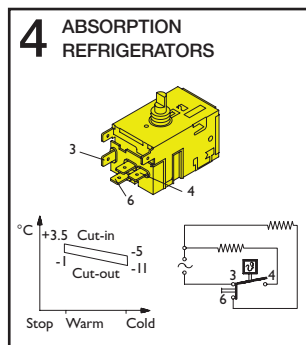
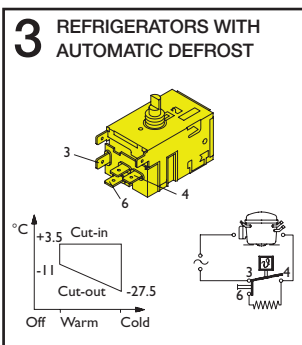
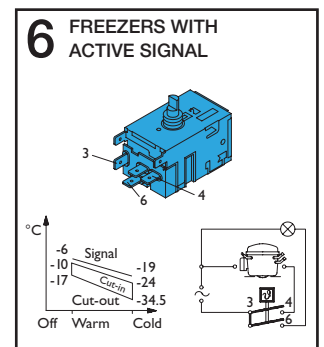
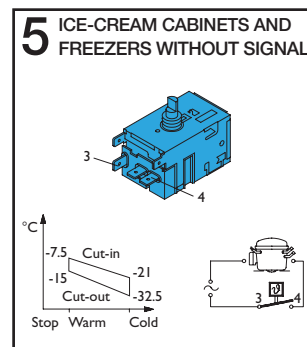
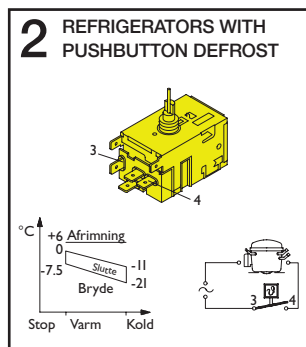
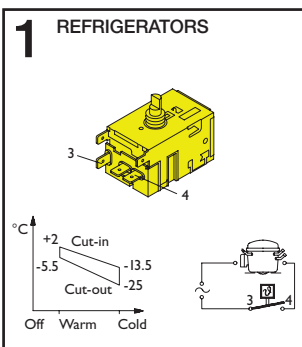
- Only 8 different kits.
- Satisfies most applications.
- Contains all necessary mounting accessories.
- No time wasted.
- All marked with kit number (1-8).
- All colour coded by application.
- NEW ADAPTOR fits both 6.3 mm and 4.8 mm.

End User

- Materials designed for recycling.
- No CFC.
- Environmentally friendly.

Service Thermostats Conversion Table

090B0 077B0	M2 N2 A01	9530 9533	TF57N/c TF576N FS1	3ART49R 3ART5	A10/VC1 A50/VK1 K50	RC31 RC-1	T5 TB05	TF7	A-1-270	ARB/ATB	PFN	1 077B7001
090B4	S2				F50/VP4 K60	RC-0T4	TB04	TF8	A-3-8000	CRB	PFR	2 077B7002
090B6 077B6 090B62 077B62 077B64	C2 C3 C19 C28	9351 9536	TF57 TF576K FS3	3ART6 3ART29	A59/VT9 K59/VK9	RC35 RC-2 RC-9	T6 TB06 T8 TB08	TF6	A-2-3600	DRB	PFC	3 077B7003
090B12 077B02	A11	9535	TF57N/a T576N FS4	ART32	A13/VA2 K57	RC-6	TB58					4 077B7004
090B0 077B0 090B5 077B045	M2 N2	9330 9533	TF57N/e TF57N/d FS5	3ART49R 3ART5 3ART21	A10/VF3 A50 K50	RC31 RC34-1 RC-5	T5 TB05 T0 TB00				PFN	5 077B7005
090B10 077B20	L3C L3A		TF57S/a FS6	3ART32 3ART7	A54/VS5 A63 K54 K59	RC5	T7 TB71 TB07		A-7-8400			6 077B7006
090B10 077B30	L3C L3A		TF57S/a	3ART32 3ART7	A54/VR6 A63 K54 K59	RC5	T7 TB71 TB07		A-7-8400			7 077B7007
090B0 077B0			FS8		VB7							8 077B7008



⚠ Bottle cabinet service thermostat +5/-5.2 +5/-12 **077B6138SP**
(constant cut-in +5°C 1 metre capillary).

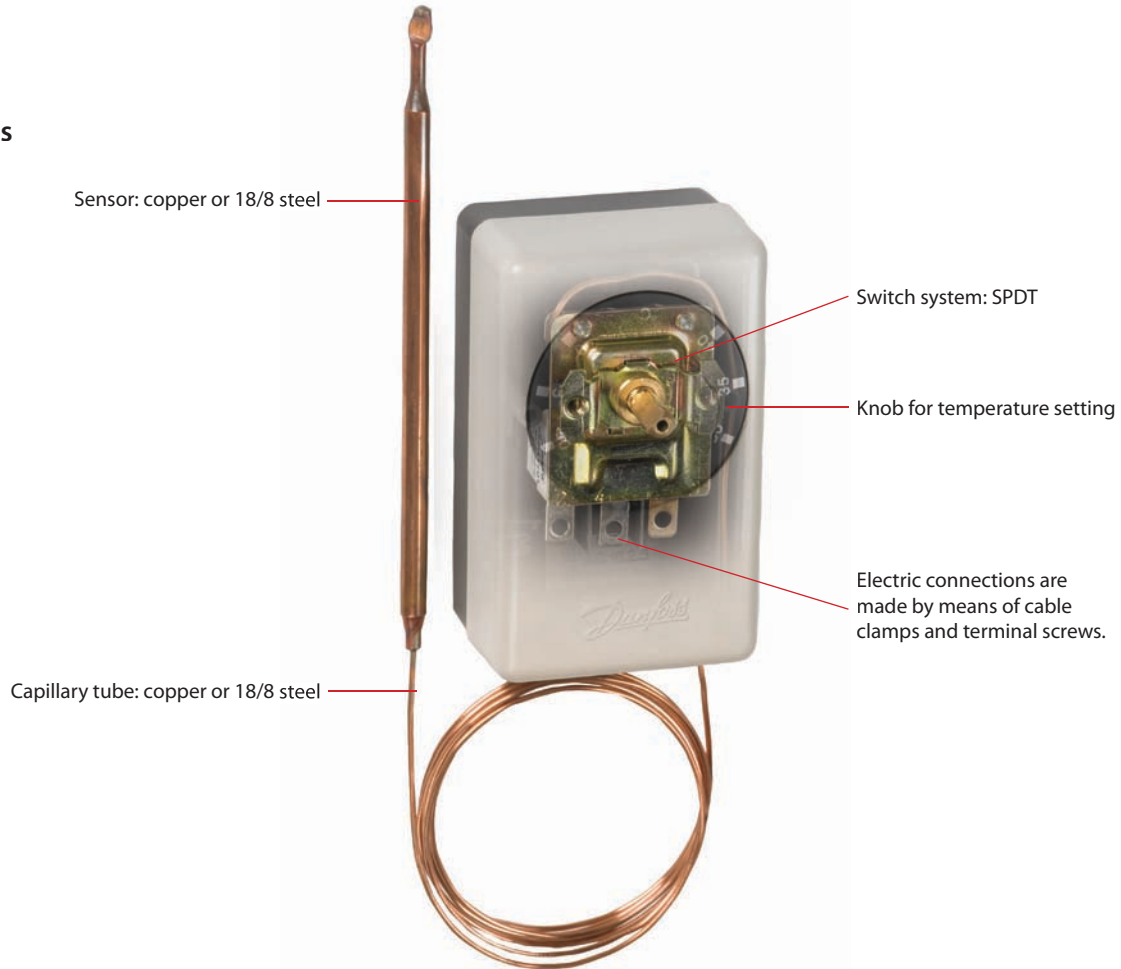


UT – Temperature controls

The UT temperature control is a temperature controlled electric switch with stainless steel 18/8 or copper capillary and sensor.

The temperature can be set easily and accurately using the large knob on the front of the temperature control. The temperature must be set to correspond to the required mean temperature.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Cold rooms · Beverage coolers · Ice cream makers · Milk coolers · Air-conditioning plant · Heat recovery systems 	<ul style="list-style-type: none"> · 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 	<ul style="list-style-type: none"> · 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: <ul style="list-style-type: none"> - AC 1: 10 A, 250/380 V - AC 15: 2.5 A, 250/380 V

Technical data and ordering UT - Temperature controls

Version	Type	Range [°C]	Differential [°C]	Reset	Max. sensor temperature [°C]	Capillary tube length [m]	Qty. [pcs]	Code no.	
								Copper	18/8 steel
Wall mounting	UT 72	-30 - 30	2.3	aut.	60	1.5	1	060H1101	060H1106
	UT 72	-30 - 30	2.3	aut.	60	1.5	1	060H1103 ¹⁾	-
	UT 72	-30 - 30	2.3	aut.	60	1.5	20	060H1104	-
	UT 72	-30 - 30	2.3	aut.	60	3.0	1	060H1105	-
	UT 73	0 - 40	2.3	aut.	90	1.5	1	060H1102	-
Panel mounting	UT 72	-30 - 30	2.3	aut.	60	1.5	48	060H1201	-
	UT 72	-30 - 30	2.3	aut.	60	3.0	48	060H1205	-
	UT 73	0 - 40	2.3	aut.	90	1.5	48	060H1202	-

¹⁾ Incl. bulb clamps

Accessories

	Industrial pack Qty. [pcs]	UT 72	UT 73
Setting knob	48	060-1067	060-1096
Bulb clamp	36	060-1090	060-1090

⚠ Stainless steel capillary/sensor version recommended for fresh food applications.

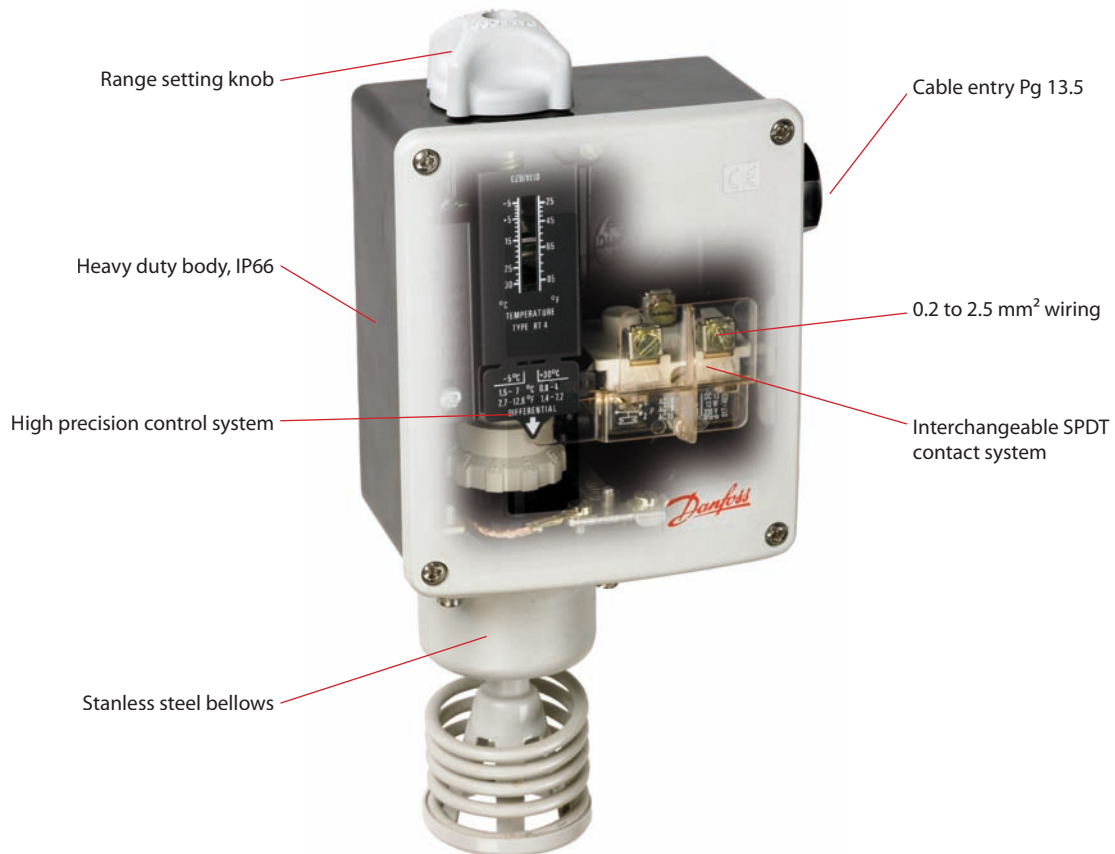
⚠ Differential fixed @ 2.3°C.



RT – Pressure controls and temperature controls

The RT series includes temperature controls and pressure controls for general applications within industrial and marine refrigeration. An RT temperature controls is fitted with a single-pole changeover switch. The position of the contacts depends on the sensor temperature and the set scale value. An RT pressure control contains a pressure operated single-pole changeover contact, the position of which depends on the pressure in the inlet connection and the set scale value.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> General applications within industrial and marine refrigeration 	<ul style="list-style-type: none"> Wide regulating range Suitable for alternating and direct current Interchangeable contact system Special versions with gold plated contact surfaces for PLC applications Versions for neutral zone regulation Waterproof versions, enclosure IP66 High stability and accuracy Long operating life time 	<ul style="list-style-type: none"> Enclosure: IP66 to EN 60529 / IEC 60529, except for versions with ext. reset which are to IP54 Insulation 400 V Ambient temperature: -50 - 70 °C for housing Cable connection: Pg 13.5. Cable diameter: 6 → 14 mm. Pressure controls for fluorinated refrigerants and R717 (NH₃)

⚠ Note: Vapour charge - Bulb must always be colder than housing.
 Absorption charge - Bulb can be warmer or colder than housing.
 Partial charge - Bulb must be warmer than housing.

Technical data and ordering: RT temperature controls

Charge type	Type	Sensortype	Regulation range [°C]	Differential Δt		Reset	Max. sensor temp. [°C]	Capillary tube length [m]	Code no.
				Lowest temp. setting [°C]	Highest temp. setting [°C]				
State Vapour ¹⁾	RT 10	A	-60 -- -25	1.7 - 7	1 - 3	aut.	150	2	017-507766
	RT 9	A	-45 -- -15	2.2 - 10	1 - 4.5	aut.	150	2	017-506666
	RT 3	A	-25 -- +15	2.8 - 10	1 - 4	aut.	150	2	017-501466
	RT 17	B	-50 -- -15	2.2 - 7	1.5 - 5	aut.	100	-	017-511766
	RT 11	B	-30 - 0	1.5 - 6	1 - 3	aut.	66	-	017-508366
	RT 4	B	-5 -- +30	1.5 - 7	1.2 - 4	aut.	75	-	017-503666 017-503766 ⁴⁾
Adsorption ²⁾	RT 2	A	-25 -- +15	5 - 18	6 - 20	aut.	150	2	017-500866
	RT 8	A	-20 -- +12	1.5 - 7	1.5 - 7	aut.	145	2	017-506366
	RT 12	A	-5 -- +10	1 - 3.5	1 - 3	aut.	65	2	017-508966
	RT 23	A	+5 -- +22	1.1 - 3	1 - 3	aut.	85	2	017-527866
	RT 15	A	+8 -- +32	1.6 - 8	1.6 - 8	aut.	150	2	017-511566
	RT 24	A	+15 -- +34	1.4 - 4	1.4 - 3.5	aut.	105	2	017-528566
	RT 140	C	+15 -- +45	1.8 - 8	2.5 - 11	aut.	240	2	017-523666
	RT 102	D	+25 -- +90	2.4 - 10	3.5 - 20	aut.	300	2	017-514766
	RT 34	B	-25 -- +15	2 - 10	2 - 12	aut.	100	-	017-511866
	RT 7	A	-25 -- +15	2 - 10	2.5 - 14	aut.	150	2	017-505366
	RT 14	A	-5 -- +30	2 - 8	2 - 10	aut.	150	2	017-509966
	RT 101	A	+25 -- +90	2.4 - 10	3.5 - 20	aut.	300	2	017-500366
Partial ³⁾	RT 107	A	+70 - 150	6 - 25	1.8 - 8	aut.	215	2	017-513566

¹⁾ The sensor must be located colder than temperature control housing and capillary tube.

²⁾ The sensor can be located warmer or colder than temperature control housing.

³⁾ The sensor must be located warmer than temperature control housing and capillary tube.

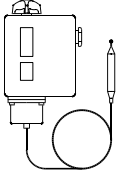
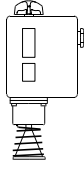
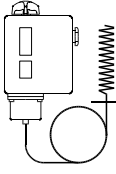
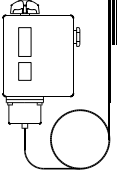
⁴⁾ With built-in heating coil - reduces the thermal differential.

⚠ Note: Unsure of location always use adsorption charge.

Temperature controls with adjustable neutral zone

Charge	Type	Sensor type	Regulation range [°C]	Differential [°C]	Differential Δt		Max. sensor temp. [°C]	Capillary tube length [m]	Code no.
					Lowest temp. setting [°C]	Highest temp. setting [°C]			
Vapour	RT 16L	B	0 - +38	1.5 / 0.7	1.5 - 5	0.7 - 1.9	100	-	017L002466
Adsorption	RT 8L	A	-20 -- +12	1.5	1.5 - 4.4	1.5 - 4.9	145	2	017L003066
	RT 14L	A	-5 -- +30	1.5	1.5 - 5	1.5 - 5	150	2	017L003466
	RT 140L	C	+15 -- +45	1.8 / 2	1.8 - 4.5	2.0 - 5	240	2	017L003166
	RT 101L	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

Overview RT temperature controls

-50 0 +50 +100 +150 +200 +250 +300 °C								Range °C	Type
								-60 → -25	RT 10
								-45 → -15	RT 9
								-30 → 0	RT 13
								-25 → +15	RT 3
								-25 → +15	RT 2, 7
								-20 → +12	RT 8
								-5 → +10	RT 12
								-5 → +30	RT 14
								+5 → +22	RT 23
								+8 → +32	RT 15
								+15 → +34	RT 24
								+15 → +45	RT 140
								+25 → +90	RT 101, 102
								+70 → +150	RT 107
								-50 → -15	RT 17
								-30 → 0	RT 11
								-5 → +30	RT 4
								-25 → +15	RT 34
								-20 → +12	RT 8L
								-5 → +30	RT 14L
								+15 → +45	RT 140L
								0 → +38	RT 16L
								-30 → +40	RT 270
-50 0 +50 +100 +150 +200 +250 +300 °C									

Technical data and ordering: RT pressure controls

Safety pressure controls with EN 12263 / DIN 32733 appr. and CE marked according to PED, Pressure Equipment Directive

Pressure	Type	Regulation range [bar]	Differential (fixed) Δp [bar]	Reset	Max. working pressure [bar]	Max. test pressure [bar]	Code no.			
							Connection			
							1/4 in. 6 mm flare	cutting ring \varnothing 6 mm	G 3/8 A ¹⁾ + weld nipple \varnothing 6.5/10 mm	G 1/2 A ¹⁾
High	RT 36B ²⁾	0 – 2.5	0.2	man.	22	25	017-525866	-	-	-
	RT 36S ²⁾	0 – 2.5	0.2	man.	22	25	017-525966	-	-	-
High	RT 6W ²⁾	5 – 25	3	aut.	34	38	017-503166	-	-	-
	RT 6B ²⁾	10 – 28	1	man.	34	38	017-503466	-	-	-
	RT 6S ²⁾	10 – 28	1	man.	34	38	017-507566	-	-	-
High	RT30AW ³⁾	1 – 10	0.8	aut.	22	25	-	-	-	017-518766
	RT30AB ³⁾	1 – 10	0.4	man.	22	25	-	-	-	017-518866
	RT30AS ³⁾	1 – 10	0.4	man.	22	25	-	-	-	017-518966
High	RT6AW ³⁾	5 – 25	3	aut.	34	38	-	017-513166	017-503266	-
	RT6AB ³⁾	10 – 28	1.5	man.	34	38	-	017-513366	017-503566	-
	RT6AS ³⁾	10 – 28	1.5	man.	34	38	-	017-514666	017-507666	-

¹⁾ G ext. thread, ISO 228-1.

²⁾ Pressure controls for fluorinated refrigerants.

³⁾ Pressure controls for R 717 (NH₃) and fluorinated refrigerants.

 Note: Currently limited listing of RT6, RT30 and RT36 in Australia.

Technical data and ordering: RT pressure controls

Pressure controls for fluorinated refrigerants

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

¹⁾ G ext. thread, ISO 228-1.

Safety – Pressure controls for R717 (NH₃) and fluorinated refrigerants

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

¹⁾ G ext. thread, ISO 228-1.

Pressure controls with adjustable neutral zone for R717 (NH₃) and fluorinated refrigerants

Pressure	Type	Regulation range [bar]	Differential Δp [bar]	Neutral zone Δp [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Code no.	
							Connection	
							cutting ring Ø 6 mm	G 3/8 A ¹⁾ + weld nipple Ø 6.5/10 mm
Low	RT 1AL ²⁾	-0.8 – 5	0.2	0.2 – 0.9	22	25	017L001666	017L003366
	RT 200L ³⁾	0.2 – 6	0.25	0.25 – 0.7	22	25	-	017L003266
High	RT 5AL ²⁾	4 – 17	0.35	0.35 – 1.4	22	25	017L001766 ⁴⁾	017L004066⁴⁾
	RT 117L ³⁾	10 – 30	1	1 – 3	42	47	-	017L004266 ⁴⁾

¹⁾ G ext. thread, ISO 228-1.

²⁾ Pressure controls for R 717 (NH₃) and fluorinated refrigerants.

³⁾ Pressure controls for fluorinated refrigerants.

⁴⁾ Without nipple.

Differential pressure controls for R 717(NH₃) and fluorinated refrigerants

Type	Regulation range [bar]	Differential Δp [bar]	Operating range for LP bellows [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Code no.	
						Connection	
						cutting ring Ø 6 mm	G 3/8 A ¹⁾ + weld nipple Ø 6.5/10 mm
RT 260A	0.5 – 4	0.3	-1 – 18	22	25	017D001466	017D002166
	0.5 – 4	0.3	-1 – 18	22	25	-	017D002266 ²⁾
	0.5 – 6	0.5	-1 – 36	42	47	017D001566	017D002366
	1.5 – 11	0.5	-1 – 31	42	47	017D001666	017D002466
RT 252A	0.1 – 1.5	0.1	-1 – 9	22	13	017D001366	017D002566
RT 265 ³⁾	1 – 6	0.5	-1 – 36	42	47	-	017D007266

¹⁾ G ext. thread, ISO 228-1.

²⁾ Man. reset.

³⁾ Filter monitor: Alarm $\Delta p = 0.8$ bar, cut-out $\Delta p = 1$ bar (factory setting).

Differential pressure controls with adjustable neutral zone for R 717(NH₃) and fluorinated refrigerants

Type	Regulation range [bar]	Differential Δp [bar]	Neutral zone [bar]	Operating range for LP bellows [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Code no.	
							Connection	
							G 1/2 A ¹⁾ + weld nipple Ø 6.5/10 mm	
RT 262 AL	0.1 – 1.5	0.1	-1 – 0.33	-1 – 9	11	13	017D004366²⁾	

¹⁾ G ext. thread, ISO 228-1.

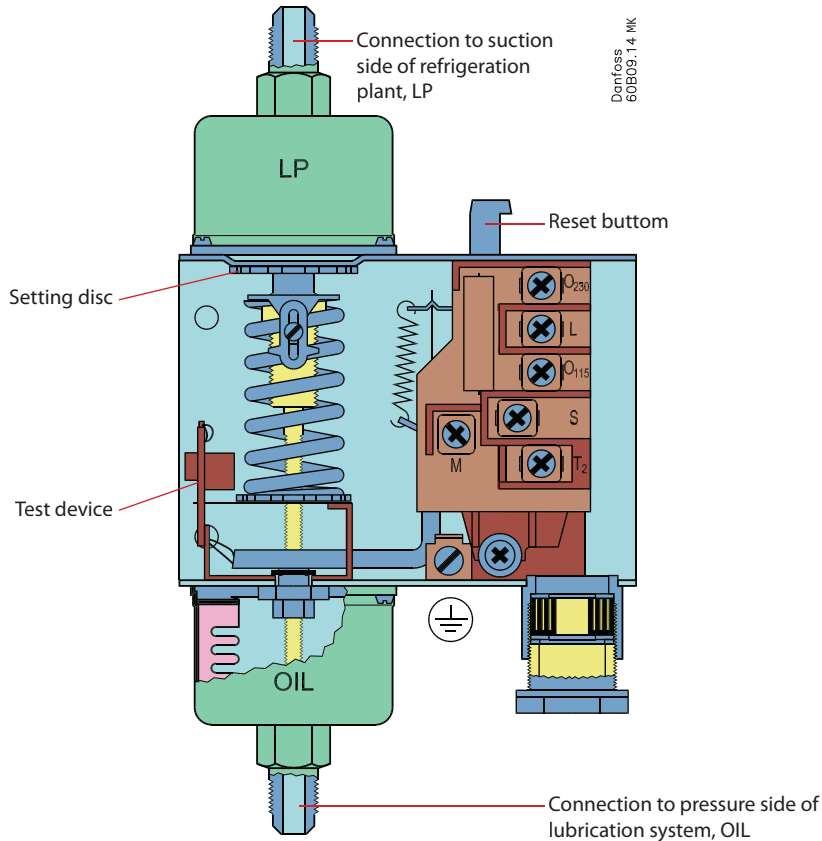
²⁾ Differential pressure control for R 717 (NH₃) and fluorinated refrigerants.



MP – Differential pressure controls

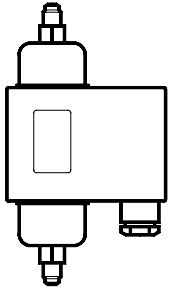
MP 54 and MP 55 oil differential pressure controls are used as safety switches to protect refrigeration compressors against low lubricating oil pressure. If the oil pressure fails the oil differential pressure control stops the compressor after a certain time period. MP 54 and 55 are used in refrigerating systems using fluorinated refrigerants. MP 55A is used in refrigerating systems with R717 (NH₃). MP 55A can also be used in systems with fluorinated refrigerant. MP 54 has a fixed differential pressure setting. It also incorporates a thermal time relay with a fixed release time setting. MP 55 and 55A have adjustable differential pressure and are available both with and without thermal time relay.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Deep freeze, refrigeration and air conditioning plant 	<ul style="list-style-type: none"> Suitable for both alternating and direct current Small contact differential Can be used for all normal fluorinated refrigerants 	<ul style="list-style-type: none"> Meets the requirements of EN 60947 Wide regulating range Screwed cable entry for cables from 6 to 14 mm diameter Electrical connection at the front of the unit Small contact differential

Technical data and ordering - MP oil safety



For fluorinated refrigerants

Type	Differential Δp [bar]	Switch differential max. Δp [bar]	Operation range, LP side [bar]	Time relay release time [s]	Contact load	Code no.	
						Connection	
						1/4 in. 6 mm flare	1 m cap.tube 1/4 in. ODF solder
MP 54	0.65	0.2	-1 - 12	0 ²⁾	B	060B029766	-
	0.65	0.2	-1 - 12	45	A	060B016666	-
	0.9	0.2	-1 - 12	60	A	060B016766	-
	0.65	0.2	-1 - 12	90	A	060B016866	-
	0.65	0.2	-1 - 12	120	A	060B016966	-
MP 55	0.3 - 4.5	0.2	-1 - 12	45	A	060B017066	060B013366
	0.3 - 4.5	0.2	-1 - 12	60	A	060B017166	-
	0.3 - 4.5	0.2	-1 - 12	60	A	060B017866 ¹⁾	-
	0.3 - 4.5	0.2	-1 - 12	90	A	060B017266	-
	0.3 - 4.5	0.2	-1 - 12	120	A	060B017366	060B013666
	0.3 - 4.5	0.2	-1 - 12	0 ²⁾	B	060B029966	-

⚠ Note: B - No timer.

For fluorinated refrigerants and R717 (NH₃)

Type	Differential Δp [bar]	Switch differential max. Δp [bar]	Operation range, LP side [bar]	Time relay release time [s]	Contact load	Code no.	
						Connection	
						∅ 6,5 / ∅ 10 mm weld nipple	Cutting ring 6 mm
MP 55A	0.3 - 4.5	0.2	-1 - 12	45	A	060B017466	060B018266
	0.3 - 4.5	0.2	-1 - 12	60	A	060B017566	060B018366
	0.3 - 4.5	0.2	-1 - 12	60	A	060B017966 ¹⁾	-
	0.3 - 4.5	0.2	-1 - 12	90	A	060B017666	060B018466
	0.3 - 4.5	0.2	-1 - 12	120	A	060B017766	-
	0.3 - 4.5	0.2	-1 → 12	0 ²⁾	B	060B029866²⁾	060B029666

¹⁾ With operational light that remains on during normal operation.

Note: If the operational light goes out, the compressor should not run longer than the release time.

²⁾ Versions without time relay are for applications where an external time relay is required - perhaps with a different release time than the one specified.

Contact loads

Type A:

On time relay output contacts M-S:

AC15: 2 A, 250 V

DC13: 0,2 A, 250 V

Type B without time relay:

AC15: 0,1 A, 250 V

DC13: 12 W, 125 V

⚠ Note:

MP54 (**060B029766**) can be replaced with 060B029966
- Technician will need to adjust differential to 0.65 bar.

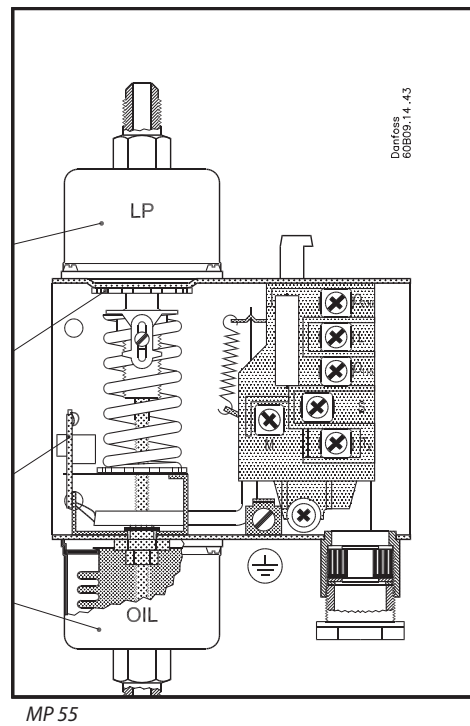
MP54 (**060B029766**) can be replaced with 060B017166
- Technician will need to adjust differential to 0.90 bar.

MP55 (**060B017866**) can be replaced with 060B017166
- only difference is indicator light.

⚠ Note: Electrical diagram - see overpage.

Technical data - electrical diagram

Design



1. Connection to pressure side of lubrication system, OIL
2. Connection to suction side of refrigeration plant, LP
3. Setting disc
4. Reset button
5. Test device

The operation of the pressure control is conditional only on the differential pressure, i.e. the difference in pressure between the two counteracting bellows, whereas it is independent of the absolute pressure acting on both bellows. The MP 55 and 55A can be set for different differential pressures by the setting disc (3). The set differential pressure can be read from the internal scale. The MP 54 has a fixed differential and has no pressure setting disc. The factory-set differential pressure is stamped on the front plate of the control.

Terminology

Differential range

The pressure difference between LP and OIL connections within which the control can be set to operate.

Scale reading

The differential between the oil pump pressure and the pressure in the crankcase that exists at the moment the contact system cuts in current to the time relay on falling oil pressure.

Operating range

The pressure range on the LP connection within which the control can operate.

Contact differential

The pressure rise above the set differential pressure (scale reading) necessary to cut off current to the time relay.

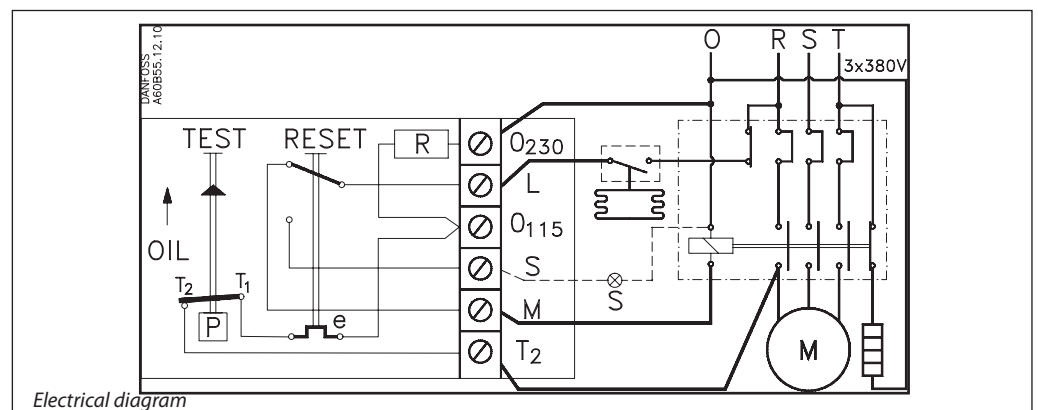
Release time

The period for which the differential pressure control allows the compressor to run with too low an oil pressure during start-up and operation.

Function

If there is no oil pressure on starting, or if the oil pressure falls below the set pressure during operation, the compressor will stop after the release time has elapsed. The electrical circuit is divided into two completely separate circuits, a safety circuit and an operational circuit.

The timer (e) in the safety circuit is activated when the effective lubricating oil pressure, *the oil differential pressure* (the difference between the oil pump pressure and suction pressure), is lower than the set value. The timer is deactivated when the oil differential pressure is more than the set value plus the contact differential.



Notes

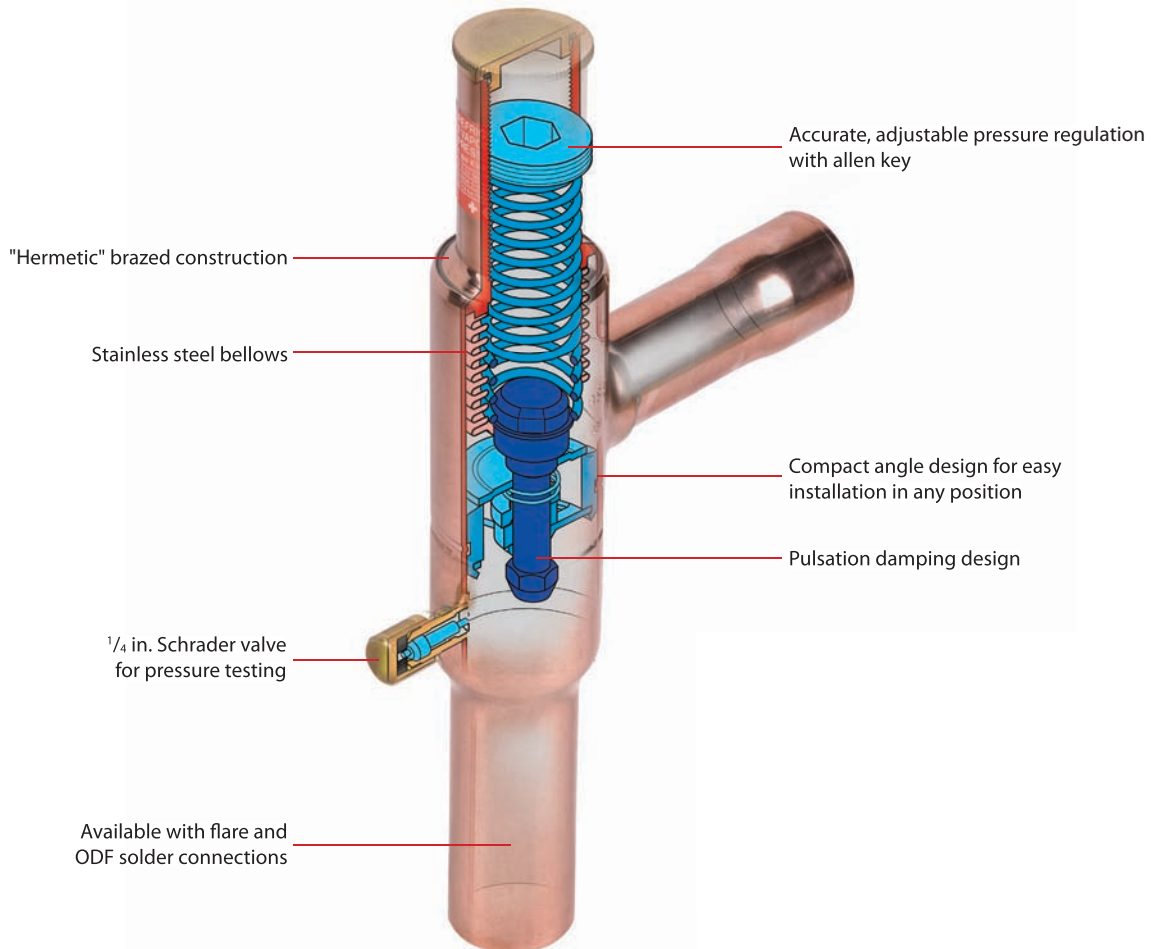
A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



KVP – Evaporator pressure regulators

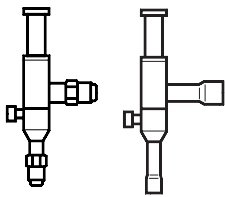
The KVP is mounted in the suction line after the evaporator and is maintaining a constant evaporating pressure and thereby a constant surface temperature on the evaporator. The regulation is modulating. By throttling in the suction line, the amount of refrigerant gas is matched to the evaporator load.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Air conditioning units · Transport refrigeration 	<ul style="list-style-type: none"> · 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. 	<ul style="list-style-type: none"> · Wide capacity and operating range · Regulation range: 0 to 5.5 bar · For use with HCFC and HFC refrigerants · Maximum working pressure PS = 18 bar

Technical data and ordering - KVP evaporator pressure regulators



Evaporator pressure regulator

Type	Rated capacity in kW ¹⁾				Flare connection ^{2) 3)}		Code no. ⁴⁾	Solder, ODF connection ³⁾		Code no.
	R22	R134a	R404A/R507	R407C	in.	mm		in.	mm	
KVP 12	4.0	2.8	3.6	3.7	1/2	12	034L0021	1/2	-	034L0023
					-	-		Ø	12	
KVP 15	4.0	2.8	3.6	3.7	3/8	16	034L0022	3/8	16	034L0029
KVP 22	4.0	2.8	3.6	3.7	-	-	-	7/8	22	034L0025
KVP 28	8.6	6.1	7.7	7.9	-	-	-	1 1/8	-	034L0026
					-	-		-	28	
KVP 35	8.6	6.1	7.7	7.9	-	-	-	1 3/8	35	034L0032

¹⁾ Rated capacity is the capacity of the regulator at

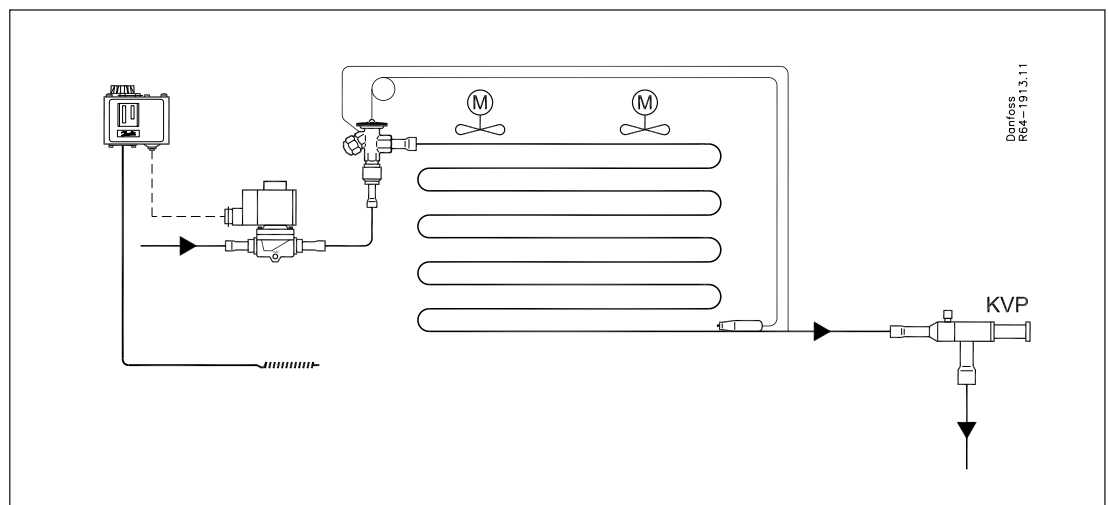
- Evaporating temperature $t_e = -10\text{ }^\circ\text{C}$,
- Condensing temperature $t_c = +25\text{ }^\circ\text{C}$
- Pressure drop in regulator $\Delta p = 0.2\text{ bar}$, offset = 0.6 bar

²⁾ Supplied without flare nuts. Separate flare nuts can be supplied:

- 1/2 in./12 mm, code no. **011L1103**, 3/8 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.



Danfoss
R64-1913.11

⚠ Note:

For electronic evaporator control refer to KVS and EC368

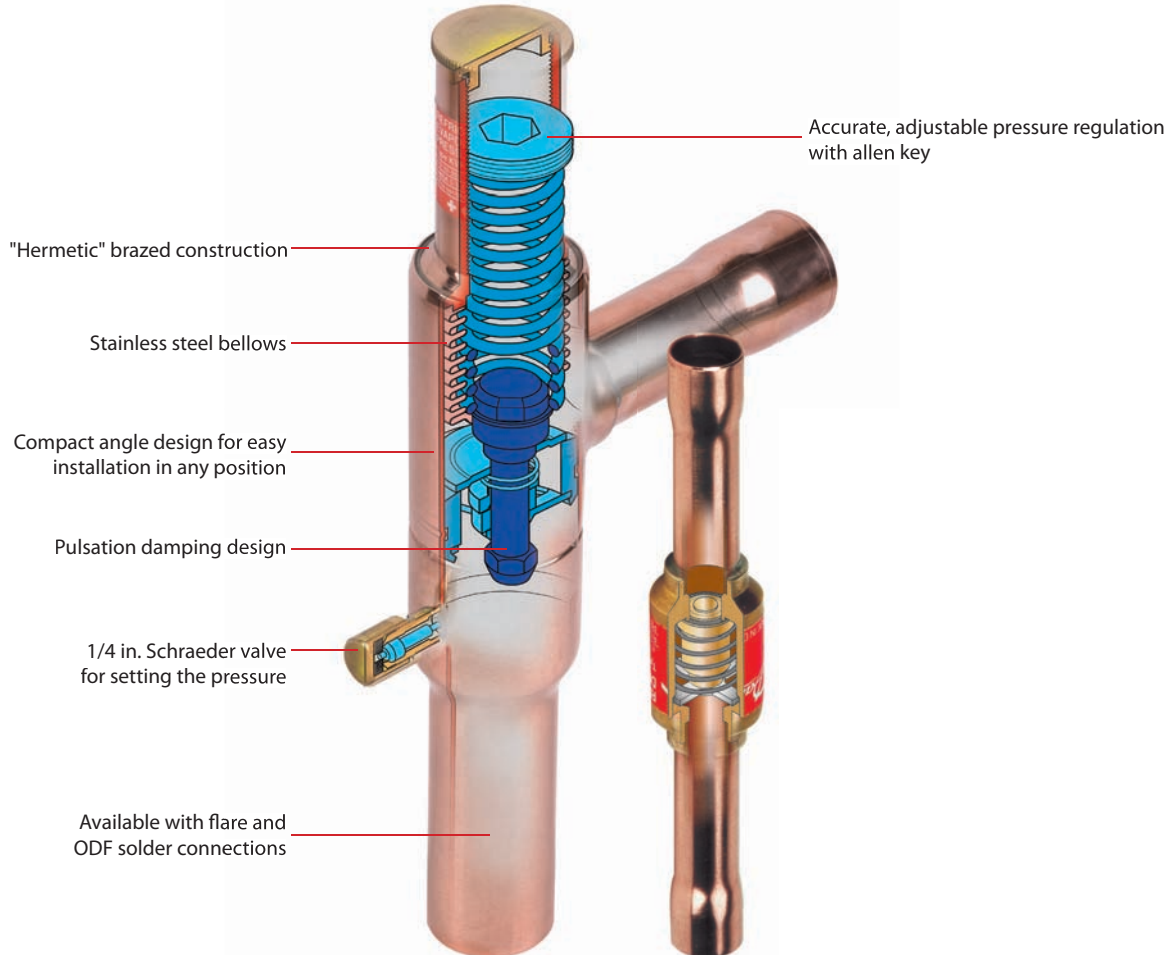
⚠ Replacement (spare part) top adjustment cap KVP12-22: 034L0201 KVP28-35:034L0202.



KVR/NRD – Condensing pressure regulators

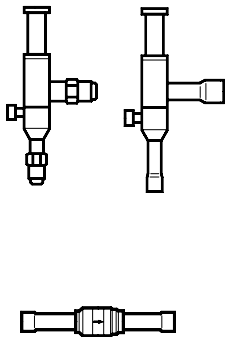
Regulator system KVR and NRD is used to maintain a constant and sufficiently high condenser and receiver pressure in refrigeration and air conditioning plant with air-cooled condensers. KVR can also be used together with receiver pressure regulator type KVD.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Air conditioning units · Transport refrigeration 	<ul style="list-style-type: none"> · The valves 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 always follows the actual pressure in the system · Reliable design 	<ul style="list-style-type: none"> · Wide capacity and operating range · Regulation range: 5 to 17.5 bar · For use with HCFC and HFC refrigerants · Maximum working pressure PS = 28 bar

Technical data and ordering - KVR/NRD



Condensing pressure regulator

Type	Evaporator capacity								Flare connection ^{2) 3)}		Code no. ⁴⁾	Solder, ODF connection ³⁾		Code no.
	Rated liquid capacity in kW ¹⁾				Rated hot gas capacity in kW ¹⁾				in.	mm		in.	mm	
	R22	R134a	R404A/R507	R407C	R22	R134a	R404A/R507	R407C						
KVR 12	50.4	47.3	36.6	54.4	13.2	11.6	12.0	14.3	½	12	034L0091	½	-	034L0093
KVR 15									-	-	-	-	034L0096	
KVR 22									⅝	16	034L0092	⅝	16	034L0097
KVR 28	129	121	93.7	139.3	34.9	30.6	34.9	37.7	-	-	-	⅞	22	034L0094
KVR 35									-	-	-	-	28	034L0099
NRD									-	-	-	-	1⅝	35
												½	-	020-1132
												-	12	020-1136

¹⁾ Rated capacity is the capacity of the regulator at

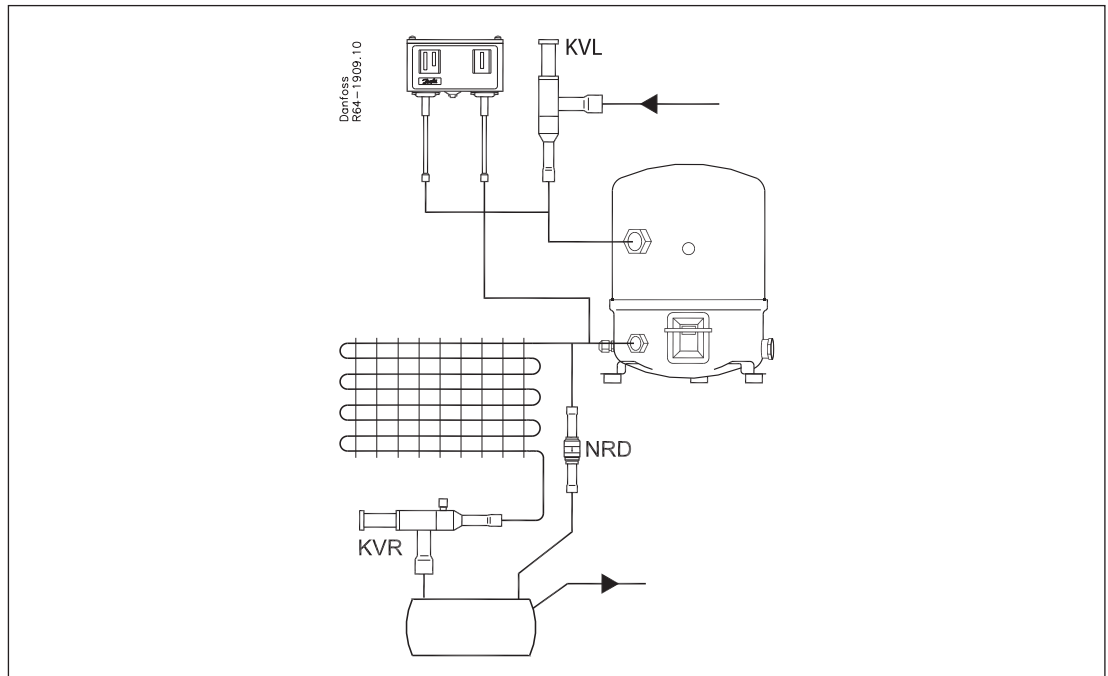
- Evaporating temperature $t_e = -10\text{ °C}$,
- Condensing temperature $t_c = +30\text{ °C}$
- Pressure drop in regulator $\Delta p =$
 - liquid line $\Delta p = 0,2\text{ bar}$
 - hotgas line $\Delta p = 0,4\text{ bar}$
 - offset = 3 bar

²⁾ Supplied without flare nuts. Separate flare nuts can be supplied:

- ½ in./12 mm, code no. **011L1103**, ⅝ 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.

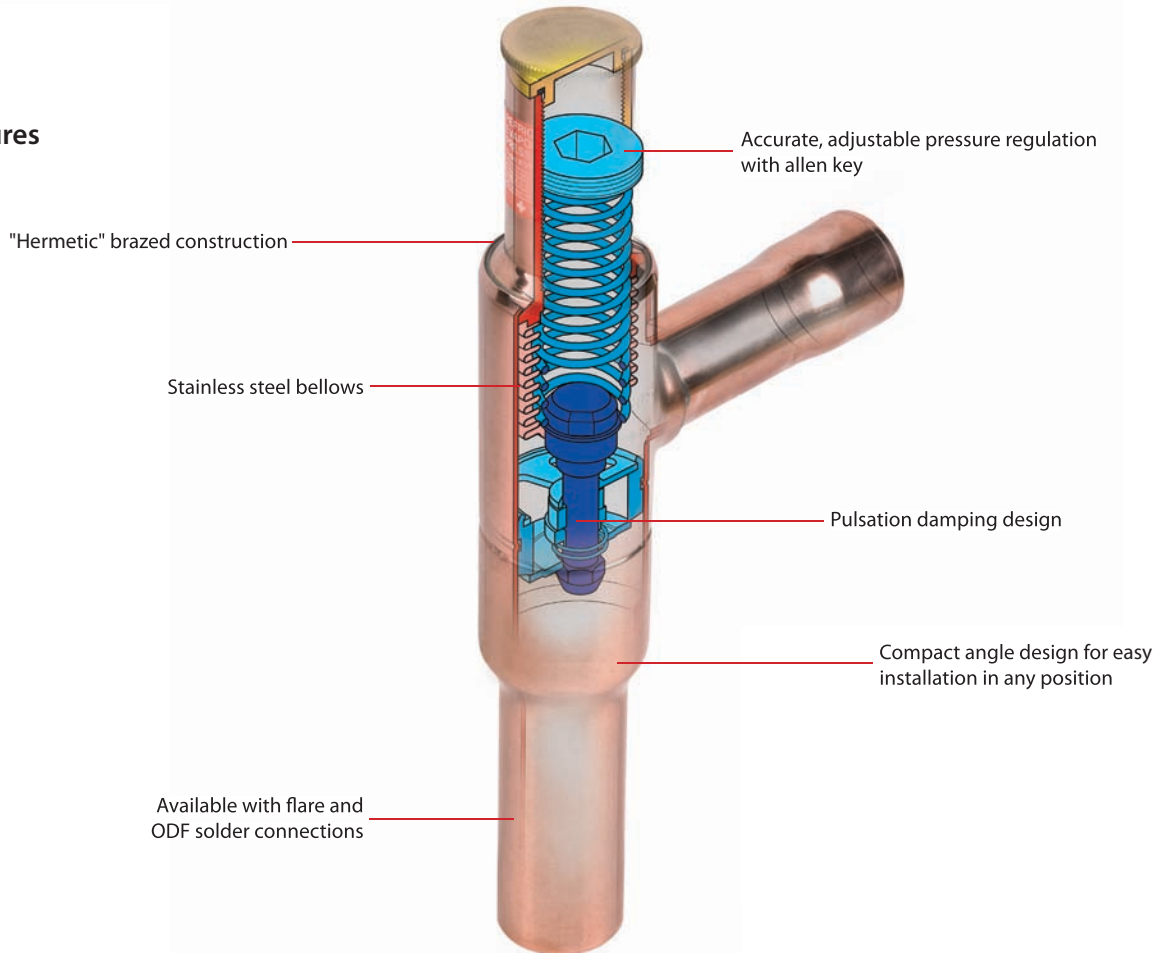




KVL – Crankcase pressure regulators

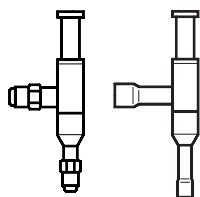
Crankcase pressure regulator type KVL is fitted into the suction line ahead of the compressor. The KVL protects the compressor motor against overload during start-up after long standstill periods or after defrost periods (high pressure in evaporator).

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Air conditioning units · Transport refrigeration 	<ul style="list-style-type: none"> · 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 	<ul style="list-style-type: none"> · Wide capacity and operating range · Regulation range: 0.2 to 6 bar · For use with HCFC and HFC refrigerants · Maximum working pressure PS = 18 bar

Technical data and ordering - KVL crankcase pressure regulators



Crankcase pressure regulator

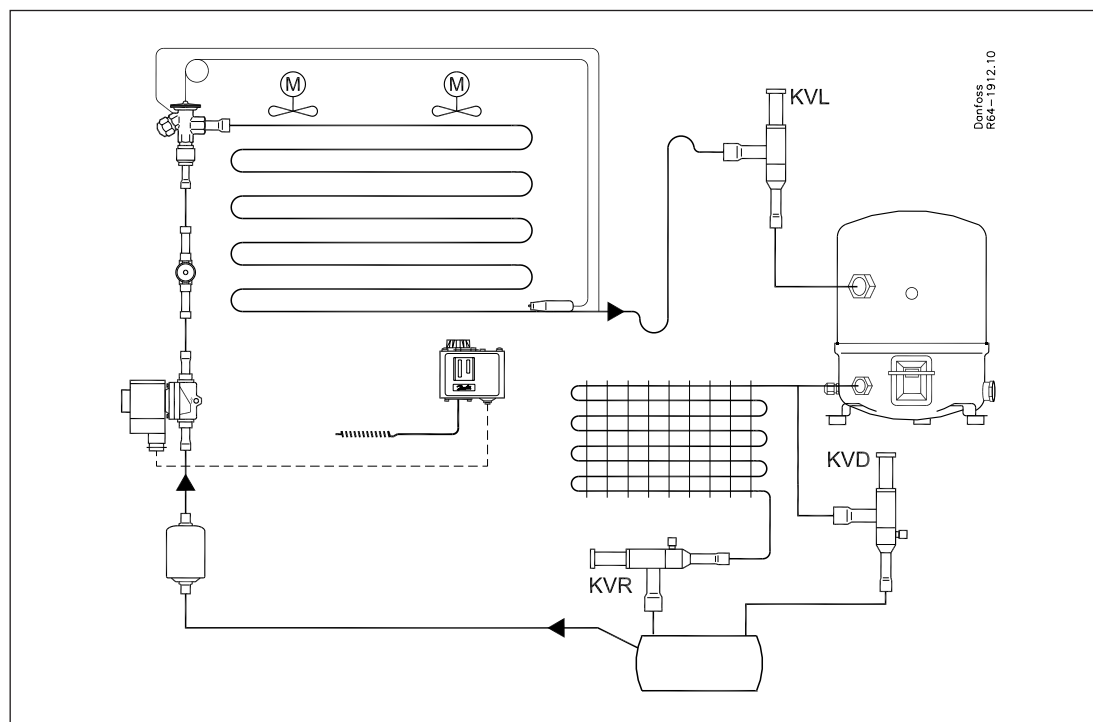
Type	Rated capacity in kW ¹⁾				Flare connection ^{2) 3)}		Code no.	Solder, ODF connection ³⁾		Code no.
	R22	R134a	R404A/R507	R407C	in.	mm		in.	mm	
KVL 12	7.1	5.3	6.3	6.4	1/2	12	034L0041	1/2	-	034L0043
					3/8	-		3/8	12	
KVL 15	7.1	5.3	6.3	6.5	5/8	16	034L0042	5/8	16	034L0049
KVL 22	7.1	5.3	6.3	6.5	-	-	-	7/8	22	034L0045
KVL 28	17.8	13.2	15.9	16.4	-	-	-	1 1/8	-	034L0046
					-	-	-	3/4	28	
KVL 35	17.8	13.2	15.9	16.4	-	-	-	1 3/8	35	034L0052

¹⁾ Rated capacity is the capacity of the regulator at

- Evaporating temperature $t_e = -10\text{ }^\circ\text{C}$,
- Condensing temperature $t_c = +25\text{ }^\circ\text{C}$
- Pressure drop in regulator $\Delta p = 0.2\text{ bar}$

²⁾ Supplied without flare nuts. Separate flare nuts can be supplied:
 1/2 in./12 mm, code no. **011L1103**, 3/8 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.

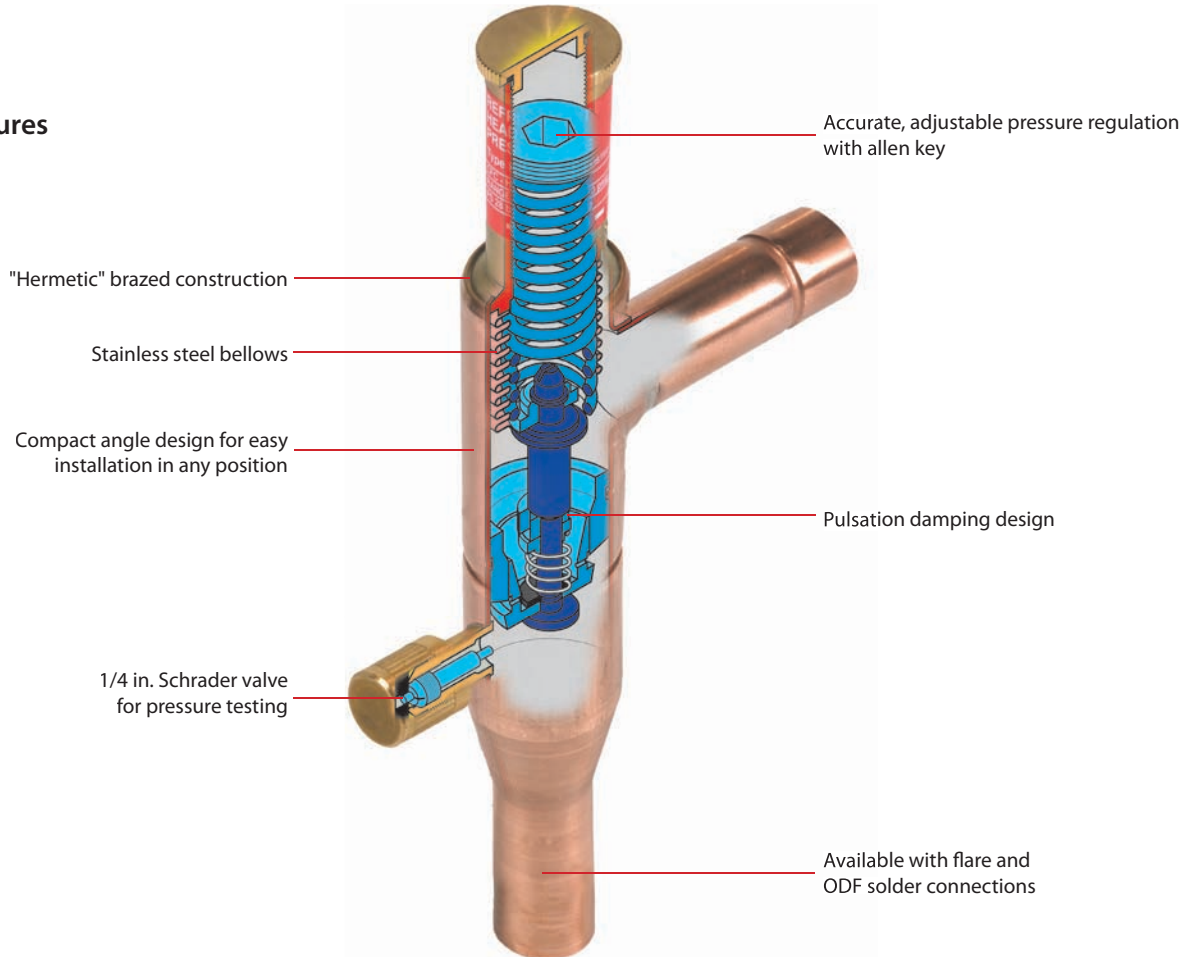




KVD – Receiver pressure regulators

KVD is a modulating pressure regulator. It opens on falling receiver pressure and bypasses hot gas to maintain the receiver pressure at the regulator setting (adjustable). 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.

Features



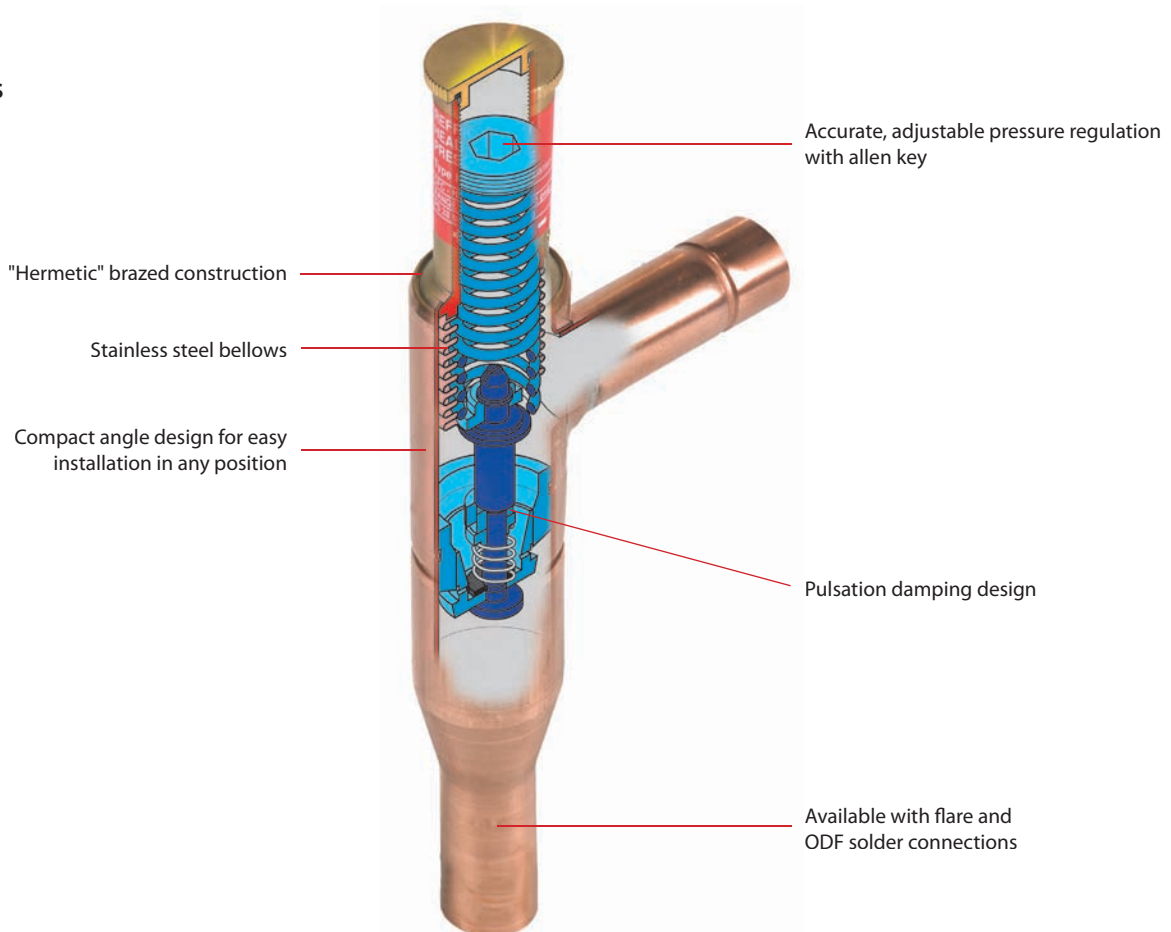
Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Air conditioning units · Commercial refrigeration 	<ul style="list-style-type: none"> · The regulator is equipped with an effective damping device against pulsations which can normally arise in a refrigeration 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. 	<ul style="list-style-type: none"> · Wide capacity and operating range · Regulation range: 3 to 20 bar · Max. working pressure PS = 28 bar · Can be used as a relief valve from high pressure to suction side · For use with HCFC and HFC refrigerants



KVC – Capacity regulators (hot gas bypass)

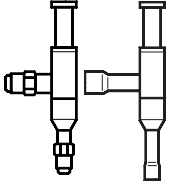
KVC is a capacity regulator used for the adaption of the compressor capacity to the actual evaporator load. Placed in a bypass between high- and low pressure sides of the refrigeration system, KVC imposes a lower limit on the compressor suction pressure by supplying the low pressure side with replacement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

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Air conditioning units · Transport refrigeration · Commercial refrigeration · Compressed air driers 	<ul style="list-style-type: none"> · 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 	<ul style="list-style-type: none"> · Wide capacity and operating range · Regulation range: 0.2 to 6 bar · Maximum working pressure PS = 28 bar · For use with HCFC and HFC refrigerants · Medium temperature: -45 up to 130 °C

Technical data and ordering - KVC capacity regulators (hot gas bypass)



Capacity regulators

Type	Rated capacity in kW ⁴⁾				Flare connection ^{1) 2)}		Code no.	Solder connection ²⁾		Code no.
	R22	R134a	R404A/R507	R407C	in.	mm		in.	mm	
KVC 12 ³⁾	7.6	4.8	6.9	8.4	½	12	034L0141	½	-	034L0143
					☒	-		☒	12	
KVC 15 ³⁾	14.9	9.4	13.6	16.4	☒	16	034L0142	☒	16	034L0147
KVC 22 ³⁾	19.1	12.0	17.4	21.0	☒	-	-	⅞	22	034L0144

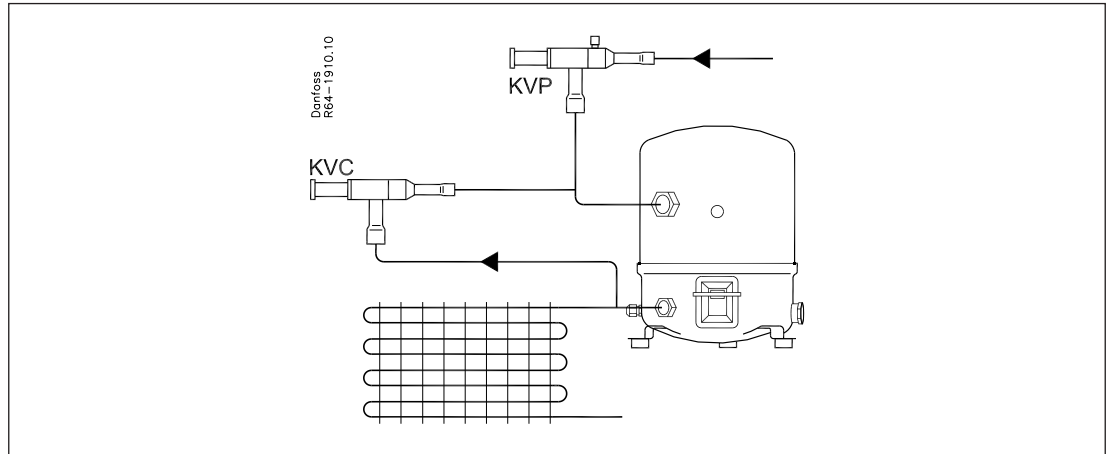
¹⁾ Supplied without flare nuts. Separate flare nuts can be supplied:
 ½ in./12 mm, code no. **011L1103**, ⅞ in./16 mm, code no. **011L1167**.

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 $t_e = -10\text{ °C}$,
 - Condensing temperature $t_c = +25\text{ °C}$



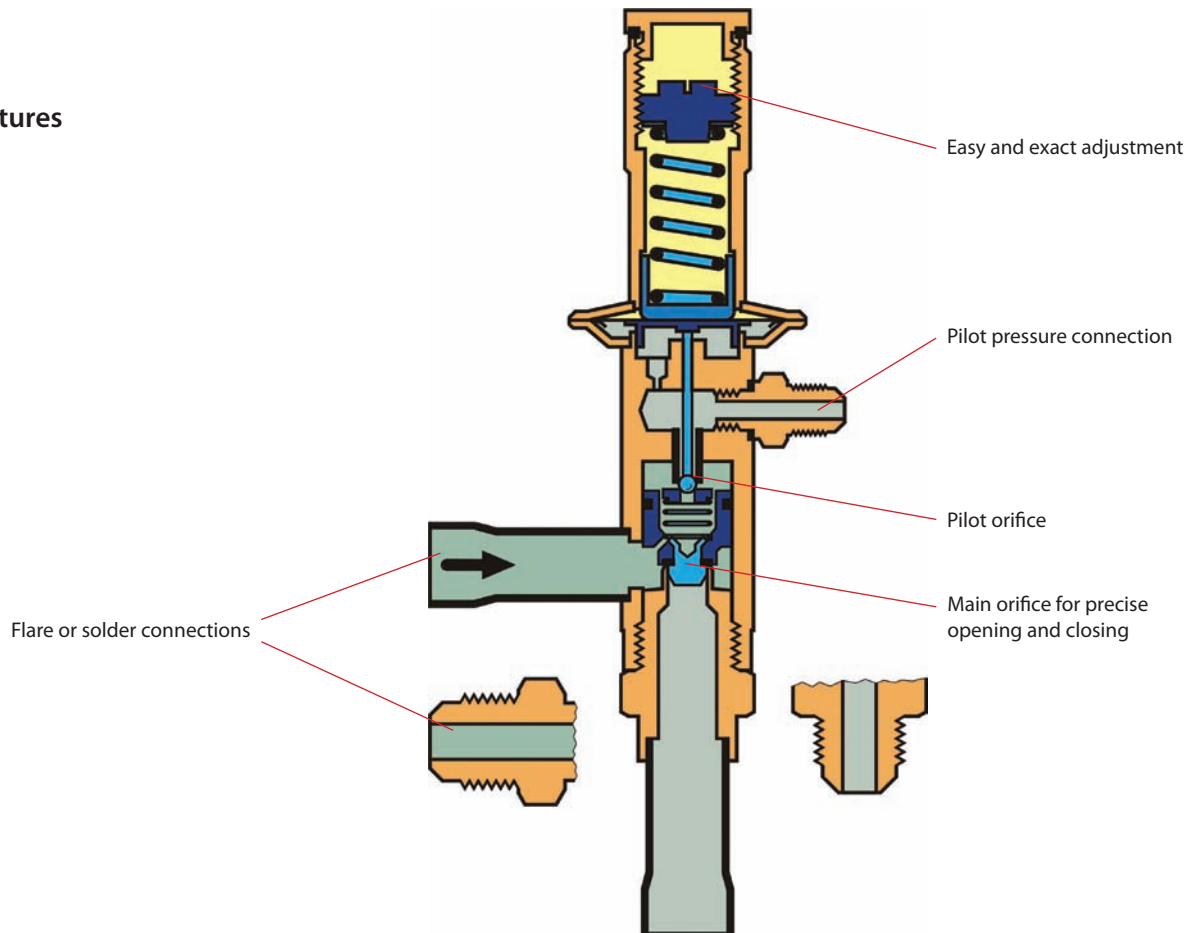
⚠ Note: Please also refer to CPCE valve for hot gas capacity regulation.



CPCE – Capacity regulator (hot gas bypass)

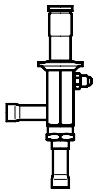
CPCE capacity regulators adapt compressor capacity to actual evaporator load. They are designed for installation in a bypass line between the low and high pressure sides of the refrigeration system, for hot gas injection between evaporator and thermostatic expansion valve. Injection should be arranged to occur through an LG liquid-gas mixer.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Air conditioning units · Commercial refrigeration · Compressed air dryers · Transport refrigeration 	<ul style="list-style-type: none"> · Avoids high suction superheats by combining hot gas injection with expansion valve characteristics · Can also protect against too low an evaporating temperature, i.e. avoids evaporator icing · LG can be used for hot gas defrosting or reverse cycle systems · Superior control accuracy 	<ul style="list-style-type: none"> · 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 provides homogenous mixing of the liquid and hot gas refrigerant injected into the evaporator · Can be used for HCFC and HFC refrigerants · Max. working pressure PS = 28 bar

Technical data and ordering - CPCE capacity regulators (hot gas bypass)



Capacity regulators

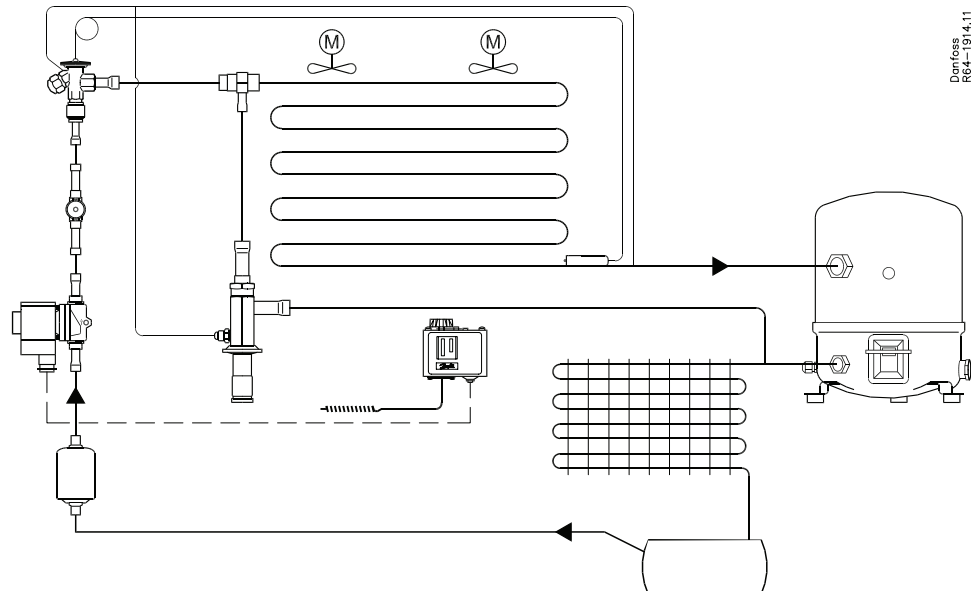
Type	Rated capacity in kW ¹⁾				Flare connection		Solder connection		Code no.
	R22	R134a	R404A/R507	R407C	in.	mm	in.	mm	
CPCE 12	17.4	7.9	16.4	19.0	½	12	∅	-	034N0081
CPCE 12	17.4	7.9	16.4	19.0	∅	∅	½	12	034N0082
CPCE 15	25.6	11.6	24.2	27.9	∅	∅	∅	16	034N0083
CPCE 22	34.0	15.2	32.0	37.1	∅	∅	7/8	22	034N0084

¹⁾ Rated capacity is the capacity of the regulator at:
 - Evaporating temperature $t_e = -10\text{ °C}$,
 - Condensing temperature $t_c = +30\text{ °C}$
 - Reduction of suction temperature/pressure $\Delta t_s = \text{CPCE} : 4\text{ K}$.



Liquid-gas mixer

Type	Connection						Code no.
	Expansion valve Solder, ODM		Hot gas Solder, ODF		Liquid distributor Solder, ODF		
	in.	mm	in.	mm	in.	mm	
LG 12-16	∅	16	½	12	∅	16	069G4001
LG 12-22	7/8	22	½	12	7/8	22	069G4002
LG 16-28	1½	28	∅	16	1½	28	069G4003
LG 22-35	1∅	35	7/8	22	1∅	35	069G4004



⚠ Note: LG mixer recommended and are purchased separately.

⚠ Note: Not currently suitable for R410A.

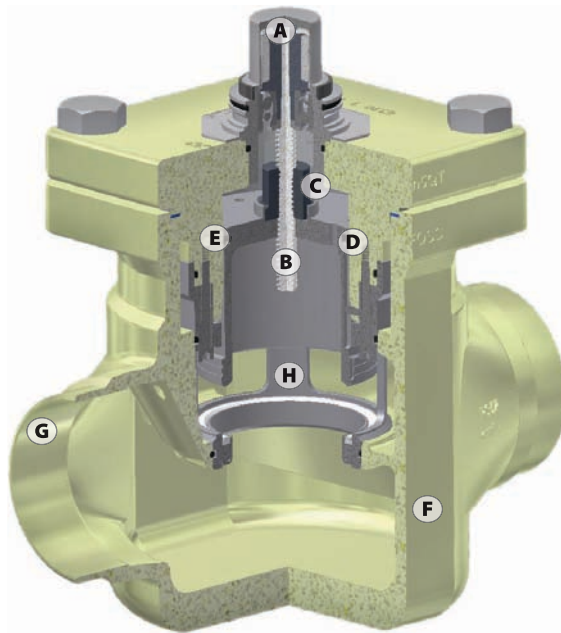


ICM – Flexline™ Motor valves

Danfoss' extensive experience has been used to create a new valve concept which sets new and improved standards with respect to the demands required from control and injection valves. ICM valves are manufactured with a series of unique features.

⚠ Refer to industrial refrigeration QRG supplement.

Features



ICM

- Ⓐ Hermetic sealed magnet coupling
- Ⓑ Spindle
- Ⓒ PEEK nut
- Ⓓ Teflon piston sealing
- Ⓔ Pressure balanced piston
- Ⓕ Low temperature steel housing, approved for 52 bar
- Ⓖ Direct weld connections
- Ⓗ Optimized regulating cone



The Flexline™ platform is synonymous of flexibility within industrial refrigeration components.

Based on a modular design concept each product features a variety of benefits, including flexible selection, easy installation and maintenance.

The products in the Flexline™ series are: ICM control valves, ICF valve stations and SVL line components.

Advantages and features

- 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 ICM motor valve to ICS 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 Multifunction tool.
- Cavitation resistant valve seat.
- Magnet coupling - real hermetic sealing.

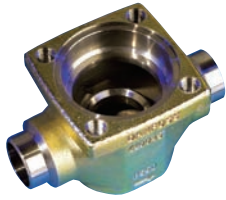
Facts

- Refrigerants:
Applicable to all common refrigerants including R717 and R744 (CO₂) and non-corrosive gases/liquids. 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.
- Pressure range
The valve is designed for:
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)

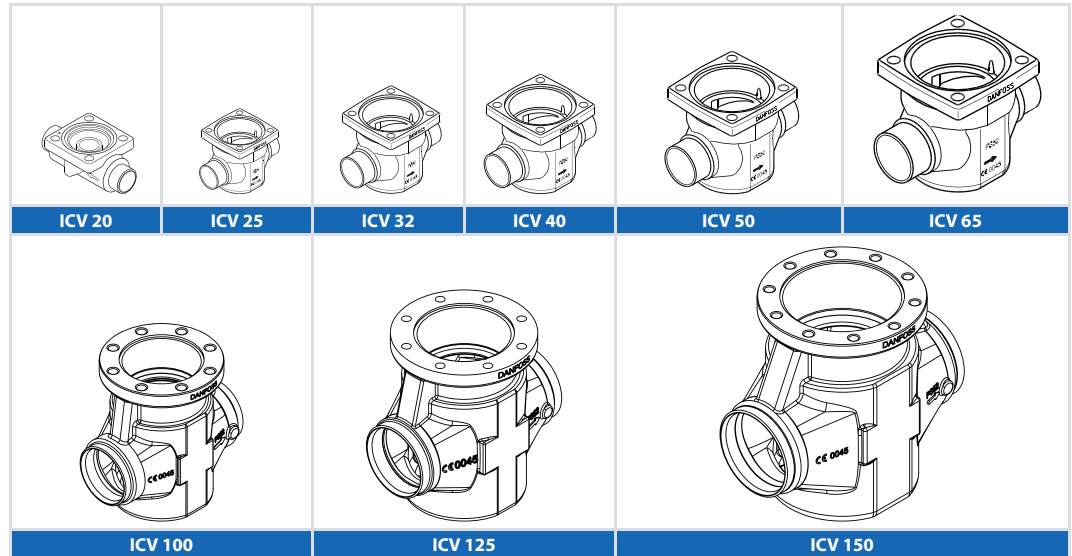
The ICM concept - motor valves

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.



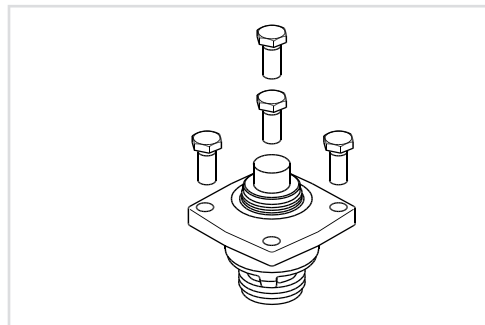
Valve bodies in the sizes ICV 20-ICV 65 are available with a range of undersizes through oversized connection sizes and types. ICV 100-ICV 150 are available in butt-weld DIN and butt-weld ANSI nominal sizes.

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

The function module / top cover



Each body may be fitted with multiple function module / top cover to give different capacities.



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

The actuator



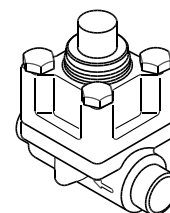
A magnetic coupled actuator is easily installed. Three actuators cover the entire ICM program



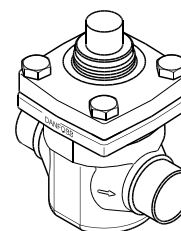
Ordering the ICM valve

For correct selection of the ICM motor valve please use the Danfoss calculation Software. The software is free of charge.

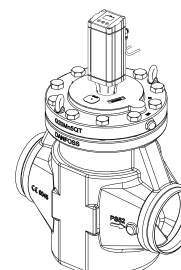
Type		ICM 20-A	ICM 20-B	ICM 20-C	ICM 25-A	ICM 25-B	ICM 32-A	ICM 32-B
For ICAD 600 actuator (not included)								
Connection		Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.
Butt-weld DIN	DN 20	027H1030	027H1031	027H1032				
	DN 25	027H1020	027H1021	027H1022	027H2000	027H2001		
	DN 32						027H3000	027H3001
	DN 40				027H2016		027H3012	
Solder DIN & ANSI	22 mm	027H1045	027H1046	027H1047	027H2006	027H2007		
	28 mm				027H2008	027H2009		
	35 mm				027H2014		027H3006	027H3007
	7/8" SA	027H1050	027H1051	027H1052	027H2010	027H2011		
	1 1/8" SA				027H2012	027H2013		
	1 3/8" SA						027H3006	027H3007
	1 5/8" SA						027H3008	027H3009



ICM 20

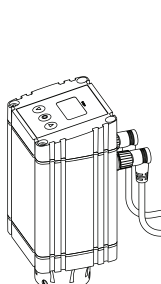


ICM 25-65

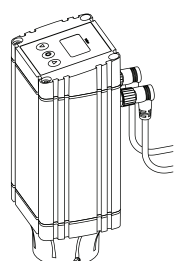


ICM 150

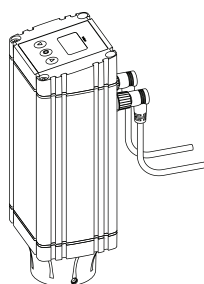
Type		ICM 40-A	ICM 40-B	ICM 50-A	ICM 50-B	ICM 65-B	ICM 100-B	ICM 125-B	ICM 150-B
For ICAD 900 actuator (not included) (ICAD 1200 optional possible)						For ICAD 1200 actuator (not included)			
Connection		Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.
Butt-weld DIN	DN 40	027H4000	027H4001						
	DN 50	027H4010		027H5000	027H5001				
	DN 65			027H5008		027H6001			
Solder DIN & ANSI	42 mm	027H4008	027H4009						
	54 mm			027H5006	027H5007				
	76 mm					027H6009			
	1 5/8" SA	027H4006	027H4007						
	2 1/8" SA			027H5006	027H5007				
Butt-weld D = DIN A = ANSI	2 5/8" SA					027H6007			
	100 D (4 in.)						027H7130		
	100 A (4 in.)						027H7131		
	125 D (5 in.)							027H7150	
	125 A (5 in.)							027H7151	
	150 D (6 in.)								027H7170
	150 A (6 in.)								027H7171



ICAD 600



ICAD 900



ICAD 1200

Actuator type	Supply voltage	Load	Analog Input	Digital Input	Output	Code no.
ICAD 600 with cables	24 V d.c.	1.2 A	0/4-20 mA 0/2-10 V	ON/OFF Volt free contact	0/4-20 mA	027H9065
ICAD 600 without cables						027H9100
ICAD 900 with cables		2.0 A				027H9066
ICAD 900 without cables						027H9101
ICAD 1200 with cable		3.0 A				027H9067
ICAD 1200 without cable						027H9102



Service Tool	Functions	Code no.
for 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
for ICM 40-150		027H0181

Can be ordered as parts programme (separate ordering of valve body, function / top cover and actuator).

Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

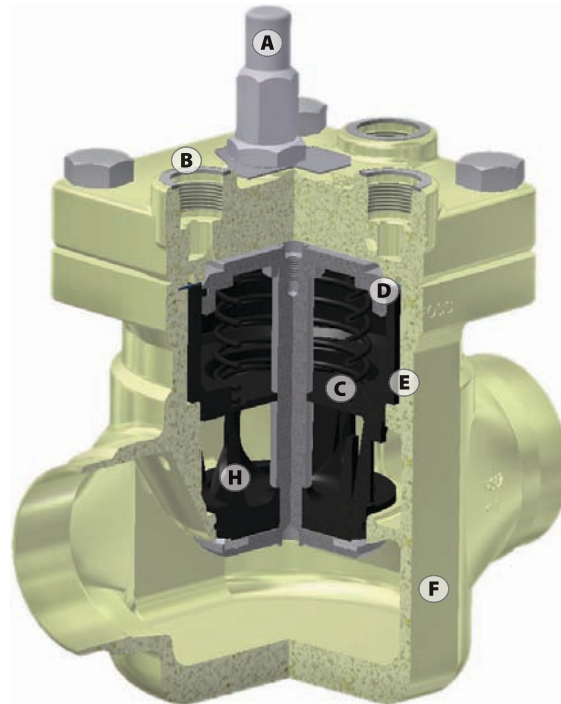


ICS – Flexline™ Servo valves

Danfoss' extensive experience has been used to create a new valve concept which sets new and improved standards with respect to the demands required from control and injection valves. ICS valves are manufactured with a series of unique features.

 Note: PM valve replacement (new installations).

Features



- A** Manual opening stem
- B** Top cover for 1-3 pilots
- C** Function module
- D** Steel piston ring
- E** Surface treated insert
- F** Low temperature steel housing, approved for 52 bar
- G** Direct weld connections
- H** Optimized regulating cone



The Flexline™ platform is synonymous of flexibility within industrial refrigeration components.

Based on a modular design concept each product features a variety of benefits, including flexible selection, easy installation and maintenance.

The products in the Flexline™ series are: ICV control valves, ICF valve stations and SVL line components.

Advantages and features

- 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 ICS 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.
- 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.

Facts

- Refrigerants:
Applicable to all common refrigerants including R717 and R744 (CO₂) and non-corrosive gases/liquids. 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.
- Pressure range
The valve is designed for:
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

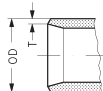
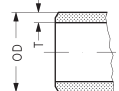
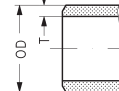
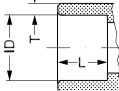
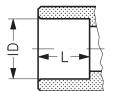
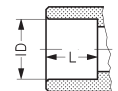



There are eight valve bodies available.

			
ICS 25	ICS 32	ICS 40	ICS 50
			
ICS 65	ICS 100	ICS 125	ICS 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

The top cover



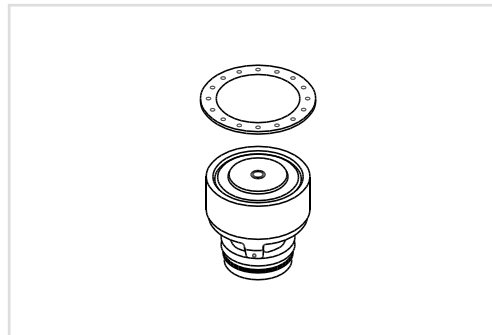
Each valve body may be fitted with a 1 pilot or 3 pilot top cover (except ICS 100-150 – only available as 3 pilots version).



The function module



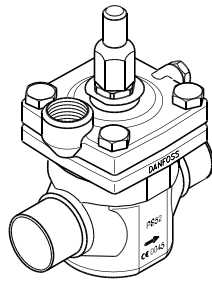
In ICS, multiple inserts (function modules) are available to give different capacities.



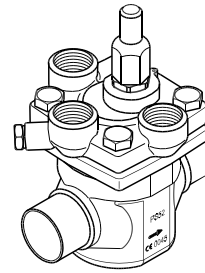
Type	Valve body size	k _v (m ³ /h)
ICS 25-5	25	1.7
ICS 25-10		3.5
ICS 25-15		6.0
ICS 25-20		8
ICS 25-25		11.5
ICS 32	32	17
ICS 40	40	27
ICS 50	50	44
ICS 65	65	70
ICS 80	80	85
ICS 100	100	142
ICS 125	125	207
ICS 150	150	354

Ordering the ICS valve △ Refer to industrial refrigeration QRG for ordering.

For correct selection of the ICS motor valve please use the Danfoss calculation Software. The software is free of charge.



1 pilot



3 pilots

		Available connections							
		20 D (3/4 in.)	25 D (1 in.)	32 D (1 1/4 in.)	40 D (1 1/2 in.)	35 SD (1 3/8 in. SA)	28 SA (1 1/8 in.)	22 SA (7/8 in.)	28 SD (1 1/8 in.)
ICS 25-5	1 Pilot	027H2028	027H2020				027H2026	027H2025	027H2024
	3 Pilots*	027H2078	027H2070				027H2076	027H2075	027H2074
ICS 25-10	1 Pilot	027H2038	027H2030				027H2036	027H2035	027H2034
	3 Pilots*	027H2088	027H2080				027H2086	027H2085	027H2084
ICS 25-15	1 Pilot	027H2048	027H2040				027H2046	027H2045	027H2044
	3 Pilots*	027H2098	027H2090				027H2096	027H2095	027H2094
ICS 25-20	1 Pilot	027H2058	027H2050				027H2056	027H2055	027H2054
	3 Pilots*	027H2108	027H2100				027H2106	027H2105	027H2104
ICS 25-25	1 Pilot	027H2068	027H2060				027H2066	027H2065	027H2064
	3 Pilots*	027H2118	027H2110				027H2116	027H2115	027H2114

		22 SD (7/8 in.)	20 A (3/4 in.)	25 A (1 in.)	32 A (1 1/4 in.)	20 SOC (3/4 in.)	25 SOC (1 in.)	20 FPT (3/4 in.)	25 FPT (1 in.)
ICS 25-5	1 Pilot	027H2023	027H2029	027H2021		027H2140			
	3 Pilots*	027H2073	027H2079	027H2071		027H2145			
ICS 25-10	1 Pilot	027H2033	027H2039	027H2031		027H2141			
	3 Pilots*	027H2083	027H2089	027H2081		027H2146			
ICS 25-15	1 Pilot	027H2043	027H2049	027H2041		027H2142			
	3 Pilots*	027H2093	027H2099	027H2091		027H2147			
ICS 25-20	1 Pilot	027H2053	027H2059	027H2051		027H2143			
	3 Pilots*	027H2103	027H2109	027H2101		027H2148			
ICS 25-25	1 Pilot	027H2063		027H2061			027H2062		
	3 Pilots*	027H2113		027H2111			027H2112		

		Available connections							
		32 D (1 1/4 in.)	40 D (1 1/2 in.)	42 SA (1 5/8 in.)	42 SD (1 5/8 in.)	35 SD (1 3/8 in. SA)	32 A (1 1/4 in.)	32 SOC (1 1/4 in.)	40 A (1 1/2 in.)
ICS 32	1 Pilot	027H3020				027H3023	027H3021	027H3022	
	3 Pilots*	027H3030				027H3033	027H3031	027H3032	

		Available connections						
		40 D (1 1/2 in.)	50 D (2 in.)	42 SA (1 5/8 in.)	42 SD (1 5/8 in.)	40 A (1 1/2 in.)	40 SOC (1 1/2 in.)	50 A (2 in.)
ICS 40	1 Pilot	027H4020		027H4024	027H4023	027H4021	027H4022	
	3 Pilots*	027H4030		027H4034	027H4033	027H4031	027H4032	

		Available connections					
		50 D (2 in.)	65 D (2 1/2 in.)	54 SD (2 1/8 in. SA)	65 A (2 1/2 in.)	50 A (2 in.)	50 SOC (2 in.)
ICS 50	1 Pilot	027H5020		027H5023		027H5021	027H5022
	3 Pilots*	027H5030		027H5033		027H5031	027H5032

		Available connections							
		65 D (2 1/2 in.)	65 A (2 1/2 in.)	65 SOC (2 1/2 in.)	80 D (3 in.)	80 A (3 in.)	67 SA (2 5/8 in.)	76 SD (3 in.)	65 J (2 1/2 in.)
ICS 65	1 Pilot	027H6020	027H6021	027H6023			027H6025	027H6024	
	3 Pilots*	027H6030	027H6031	027H6033			027H6035	027H6034	
ICS 80	1 Pilot*				027H8020	027H8021			
	3 Pilots*				027H8030	027H8031			

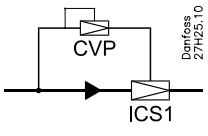
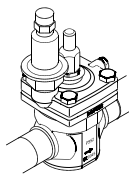
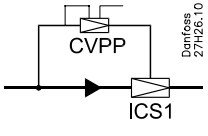
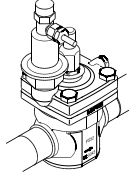
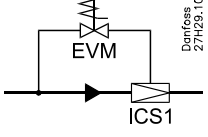
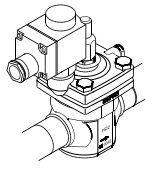
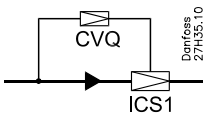
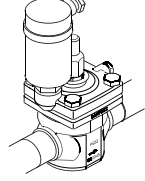
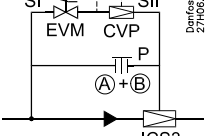
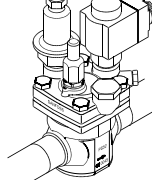
		Available connections					
		100 D (4 in.)	100 A (4 in.)	125 D (5 in.)	125 A (5 in.)	150 D (6 in.)	150 A (6 in.)
ICS 100	3 Pilots*	027H7120	027H7121				
ICS 125	3 Pilots*			027H7140	027H7141		
ICS 150	3 Pilots*					027H7160	027H7161

Can be ordered as parts programme (separate ordering of valve body, top cover and function module).

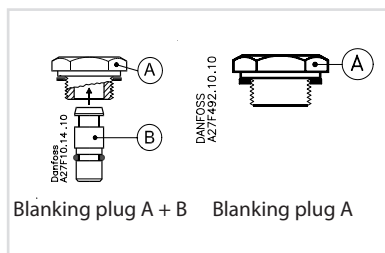
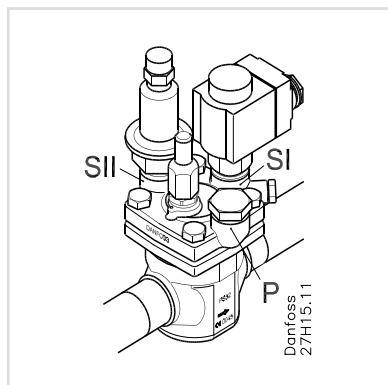
*) Including one blanking plug

ICS application examples

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

<p>Example no. 1-1</p> <p>Constant pressure regulation. -0.66 to 7 bar g (19.5 in. Hg to 102 psig).</p>	 <p>Danfoss 27H25.10</p>	<p>Products</p> <p>1 x ICS 1 Pilot 1 x CVP (LP)</p>	
<p>Example no. 1-2</p> <p>Differential pressure regulation. 0 to 7 bar g (0 to 102 psig).</p>	 <p>Danfoss 27H26.10</p>	<p>Products</p> <p>1 x ICS 1 Pilot 1 x CVPP (LP)</p>	
<p>Example no. 1-5</p> <p>On/off regulation (solenoid valve).</p>	 <p>Danfoss 27H23.10</p>	<p>Products</p> <p>1 x ICS 1 Pilot 1 x EVM 1 x coil</p>	
<p>Example no. 1-11</p> <p>Electronically controlled media temperature regulation. -1 to 8 bar g (0 in. Hg to 116 psig).</p>	 <p>Danfoss 27H35.10</p>	<p>Products</p> <p>1 x ICS 1 Pilot 1 x CVQ</p>	
<p>Example no. 3-1</p> <p>Constant pressure regulation combined with electrical shut off. -0.66 to 7 bar g (19.5 in. Hg to 102 psig).</p>	 <p>Danfoss 27H08.10</p>	<p>Products</p> <p>1 x ICS 3 Pilots 1 x blanking plug 1 x CVP (LP) 1 x EVM 1 x coil</p>	

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.



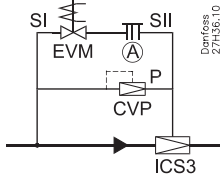
Pilot valve port			ICS valve
SI	SII	P	
Open	Open	Closed	Open
Open	Open	Open	Open
Open	Closed	Closed	Closed
Open	Closed	Open	Open
Closed	Open	Closed	Closed
Closed	Open	Open	Open
Closed	Closed	Closed	Closed
Closed	Closed	Open	Open

⚠ Pilots page 111.

ICS application examples (continued)

Example no. 3-2

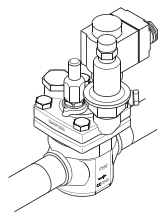
Constant pressure regulation combined with electrical wide open.
 -0.66 to 7 bar g
 (19.5 in. Hg to 102 psig).



Denfos: 27H06.10

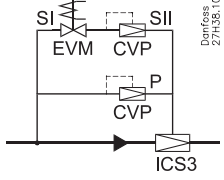
Products

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



Example no. 3-4

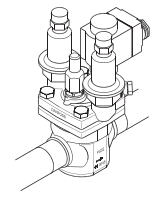
Constant pressure regulation with change-over between two preset evaporating pressures.
 -0.66 to 7 bar g
 (19.5 in. Hg to 102 psig).



Denfos: 27H06.10

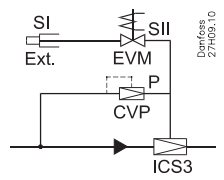
Products

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



Example no. 3-5

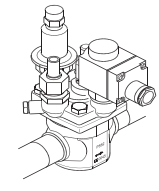
External control pressure with electrical shut off combined with constant pressure regulation.
 -0.66 to 7 bar g
 (19.5 in. Hg to 102 psig).



Denfos: 27H08.10

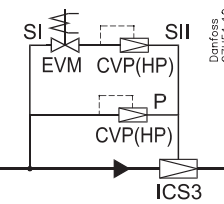
Products

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



Example no. 3-18

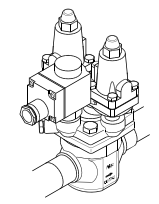
Constant pressure regulation with change-over between two preset evaporating pressures.
 -0.66 to 28 bar g
 (19.5 in. Hg to 406 psig).



Denfos: 27H45.10

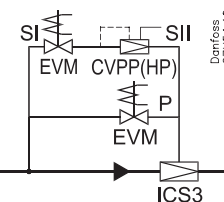
Products

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



Example no. 3-21

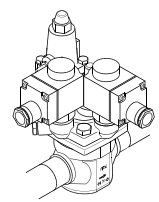
Differential pressure regulation combined with electrical wide open and shut off.
 0 to 22 bar g
 (0 to 319 psig).



Denfos: 27H54.10

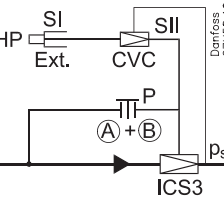
Products

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



Example no. 3-25

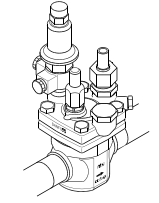
Crankcase pressure regulation (max. suction pressure regulation) at low pressure drops across the valve.
 -0.45 to 7 bar g
 (13.3 in. Hg to 102 psig).



Denfos: 27H58.10

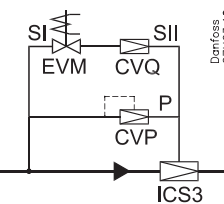
Products

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



Example no. 3-31

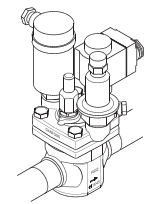
Electronically controlled media temperature regulation combined with electrical shut off and changeover to constant pressure regulation.
 -1 to 8 bar g
 (0 in. Hg to 116 psig).



Denfos: 27H63.10

Products

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



Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



Pilot valves for servo operated main valves

Each pilot valve is designed to give the optimum control accuracy within the specific function range of the valve.

Several pilot valves can be mounted in series and/or in parallel on a ICS or PM main valve to give a very large number of functions.

Mounted in a CVH housing, the pilot valves can be used in external lines, either as independently operating valves or as external control valves for the main valve.



Advantages and features

The range of pilot valves consists of:


- Constant-pressure pilot valve, type CVP (LP) and CVP (HP)
- Differential-pressure pilot valve, type CVPP (LP) and CVPP (HP)
- High pressure pilot valve, type CVP (XP) ideal for CO₂ hot gas defrosting
- Pressure-operated pilot valve with reference pressure connection, type CVC
- Electronically operated constant-pressure pilot valve, type CVQ (pressure-dependent)
- Solenoid pilot valve, type EVM (NC)
- Solenoid pilot valve, type EVM (NO)
- Housing, type CVH for pilot valves, for mounting in external pilot lines
- Applicable to all common non flammable refrigerants including R 717 and non corrosive gases/liquids dependent on sealing material compatibility.
- The pilot valves can be screwed direct into the main valve, thus avoiding the necessity of welding, soldering and separate pilot lines.
- The pilot valves can be mounted direct in a ICS or PM main valve or be connected via an external pilot line and a CVH housing.
- All pilot valves can be used on all sizes of main valves.
- Extremely accurate pressure and temperature control.
- Several pilot valves can be connected in series or in parallel to provide many functions in the same ICS or PM main valve.

Technical data and code numbers - ICS or PM pilots


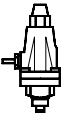

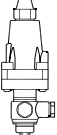
Technical data Refer to industrial refrigeration QRG for ordering.

	Valve type	MWP	k_v -value	Temperature range	Pressure range	Code no.
--	------------	-----	--------------	-------------------	----------------	----------


Low-pressure version

	CVP (LP)	17 bar g	0.40 m ³ /h	-50 to 120°C	0 bar g to 7 bar g	027B1100
	CVP (LP)	17 bar g	0.40 m ³ /h	-50 to 120°C	-0.66 bar g to 2 bar g	027B1101
	CVPP (LP)	17 bar g	0.40 m ³ /h	-50 to 120°C	$\Delta p = 0$ to 7 bar g	027B1102
	CVC (LP)	28/17 bar g	0.20 m ³ /h	-50 to 120°C	-0.45 bar g to 7 bar g	027B1070

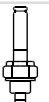
High-pressure version

	CVP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	4 bar g to 22 bar g	027B1160
	CVP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	4 bar g to 28 bar g	027B1161
	CVP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	-0.66 bar g to 7 bar g	027B1164
	CVPP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	$\Delta p = 0$ to 7 bar g	027B1162
	CVPP (HP)	40 bar g	0.40 m ³ /h	-50 to 120°C	$\Delta p = 4$ to 22 bar g	027B1268
	CVP (XP)	52 bar g	0.45 m ³ /h	-50 to 120°C	25 bar g to 52 bar g	027B0080
	CVC (XP)	52/28 bar g	0.20 m ³ /h	-50 to 120°C	4 bar g to 28 bar g	027B0087

Normally closed


	EVM (NC)	45.2 bar g	0.37 m ³ /h		MOPD: 21 bar g	027B1120
	EVM (NC)	65 bar g	0.37 m ³ /h		MOPD: 21 bar g	032F8011


Normally open

	EVM (NO)	45.2 bar g	0.12 m ³ /h		MCPD: 19 bar g	027B1130
	EVM (NO)	52 bar g	0.12 m ³ /h		MCPD: 19 bar g	027B1131

 Note: **027B112233** EVM (NC) with 240V coil included.

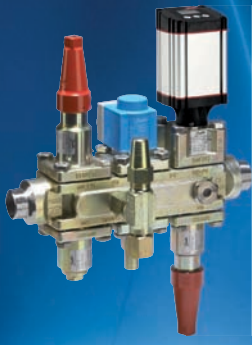
CVQ electrical data

	CVQ	17 bar g	0.45 m ³ /h		-1 bar g to 5 bar g	027B1139
	CVQ	17 bar g	0.45 m ³ /h		0 bar g to 6 bar g	027B1140
	CVQ	17 bar g	0.45 m ³ /h		1.7 bar g to 8 bar g	027B1141

Supply voltage	24V a.c. $\pm 10\%$
Frequency	50 to 60 Hz
Power consumption, operation start	50 VA 75 VA
Enclosure	NEMA 3 / IP55
Cable entry	Pg 13.5
Ambient temperature, operation transport	-30 to 50°C (-22 to 122°F) -50 to 70°C (-58 to 158°F)
 -marking	EMC-Directive 89/336/EEC, EMC-Directiv 89/336/ EN 50081-1 and EN 50082-1

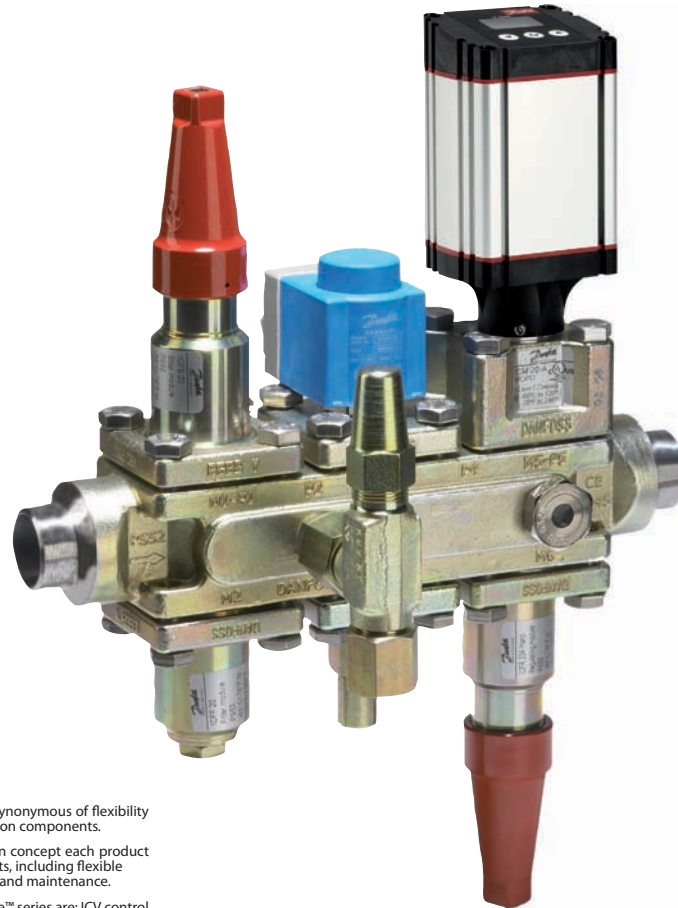
 Note: Blanking plug - **027F1046** Pressure gauge connector - **027B2035**.

Pilot valves for servo operated main valves



ICF – Flexline™ Valve stations

The ICF valve station is an innovative solution that provides the full functionality of a conventional valve station in a single compact unit. This solution not only provides a number of advantages in the design phase of a refrigeration plant but also in the installation, service and maintenance.



The Flexline™ platform is synonymous of flexibility within industrial refrigeration components.

Based on a modular design concept each product features a variety of benefits, including flexible selection, easy installation and maintenance.

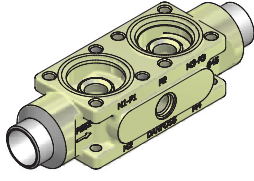
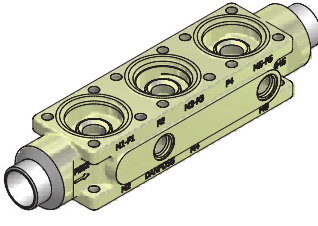
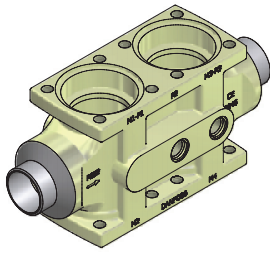
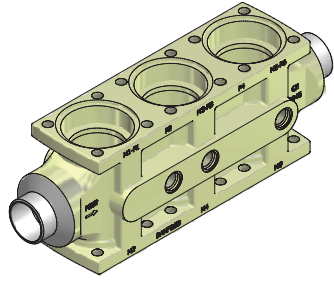
The products in the Flexline™ series are: ICF control valves, ICF valve stations and SVL line components.

Advantages and features

- Applicable to all common non-flammable refrigerants including R744 and R717.
- The main components of the ICF solution are:
 - A 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, sight glasses
- Direct Weld Connections (no leaks through flanges)
- Available with different connection types including ANSI and DIN, Socket weld
- Low temperature steel housing
- High capacities low pressure drop
- Compact design
- Low weight design

Technical data and application examples - ICF

Technical data Refer to industrial refrigeration QRG for ordering.

Refrigerants	Applicable to all common non-flammable refrigerants including R717, R744 (CO ₂) and non-corrosive gases/liquids dependent on sealing material compatibility.
Temperature range	-60/+120°C (-76/+248°F).
Pressure range	The ICF is designed for max. working pressure: 52 bar g (754 psig)
Modules	4 or 6
Connections	Butt weld, DIN (EN 10220): 20D (3/4") to 40D (1 1/2") Butt weld, ANSI (B 36.10) : 20A (3/4") to 40A (1 1/2") Socket weld, ANSI (B 16.11): 20SOC (3/4") to 40SOC (1 1/2")
Housing ICF 20	Small frame
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>ICF 20-4</p> </div> <div style="text-align: center;">  <p>ICF 20-6</p> </div> </div>
Housing ICF 25-40	Large frame
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>ICF (25-40)-4</p> </div> <div style="text-align: center;">  <p>ICF (25-40)-6</p> </div> </div>
Side ports	Number of side port are depending on on model and connection type

Accessories

- Stop valve (for sideport)
- Blind plug
- Connectors
- Sight glass
- Weld connector
- ICAD and ICAD accessories
- Coils

For a complete overview of available ICF configurations please visit www.danfoss.com/icf

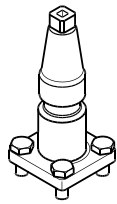
Description of the function modules for ICF 20

ICF 20

ICFS 20

Stop valve module

This module has the function of a stop valve, and has a red cap.



ICFS 20 / ICFR 20A

ICFR 20A

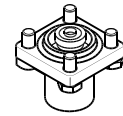
Manual regulating valve module

This module has the function of a hand regulating valve, and has a yellow cap.

ICFC 20

Check valve module

This module has the function of a check valve.



ICFC 20

ICFF 20 / ICFE 20E

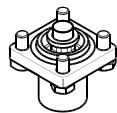
Filter module

This module functions as a filter.

Filter size (ICFF 20):
ICF with DIN and ANSI connections: Pleated 150µ (100 mesh) / 45 cm² (7.0 in²)

ICF with SOC connections (ICFF 20E):

Pleated 250µ (72 mesh) / 160 cm² (24.8 in²)

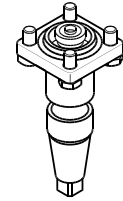


ICFF 20 / ICFE 20E

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

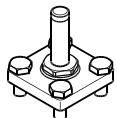
Solenoid valve module

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.

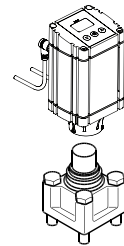


ICFE 20 / ICFA 20

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.

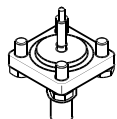


ICM 20-A, B or C

ICFO 20

Manual opening module

This module facilitates the manual opening of the solenoid valve (type ICFE).

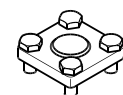


ICFO 20

ICFB 20

Blank top cover

This provides a blanking cover for unused module ports.

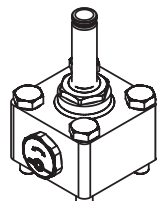


ICFB 20

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.

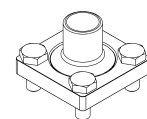


ICFE 20H

ICFW 20

Welding module 20 DIN or 3/4" SOC

This module is used for drain connection during hot-gas defrosting - in case of high capacity.



ICFW 20



Please 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.

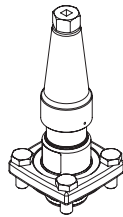
Description of the function modules for ICF 25-40

ICF 25-40

ICFS 25-40

Stop valve module

This module has the function of a stop valve, and has a red cap.

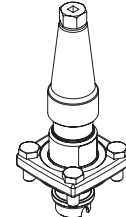


ICFS 25-40

ICFR 25-40, A or B

Manual regulating valve module

This module has the function of a hand regulating valve, and has a yellow cap.

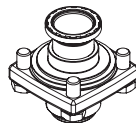


ICFR 25-40

ICFC 25-40

Check valve module

This module has the function of a check valve.



ICFC 25-40

ICFF 25-40 / ICFF (25-40)E

Filter module

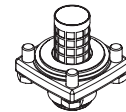
This module functions as a filter.

Filter size:

ICF with DIN and ANSI (ICFF 25-40) connections: Pleated 150 μ (100 mesh) / 160 cm² (24.8 in²)

ICF with SOC connections (ICF (25-40)E):

Pleated 250 μ (72 mesh) / 330 cm² (51.2 in²)

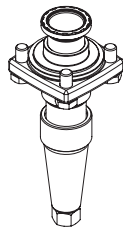


ICFF 25-40 / ICFF (25-40)E

ICFN 25-40

Stop/check valve module

This module has the function of a combined stop and check valve, and has a red cap.



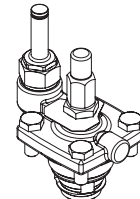
ICFN 25-40

ICFE 25-40

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.

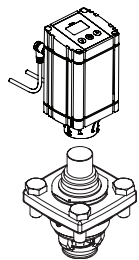


ICFE 25-40

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



Please note:

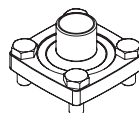
At about 10% of maximum mass flow of ICFE 25-40, the pressure differential correspond to about 0.07 Bar (1 psi). ICFE 25-40 will start to open at these conditions.

At a pressure differential of minimum 0.2 Bar (2.9 psi) ICFE 25-40 will be 100 % open.

ICFW 25-40

Welding module, 25 DIN or 25 (1") SOC

This module is used for drain connection during hot-gas defrosting - in case of high capacity.

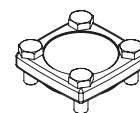


ICFW 25-40

ICFB 25-40

Blank top cover

This provides a blanking cover for unused module ports.



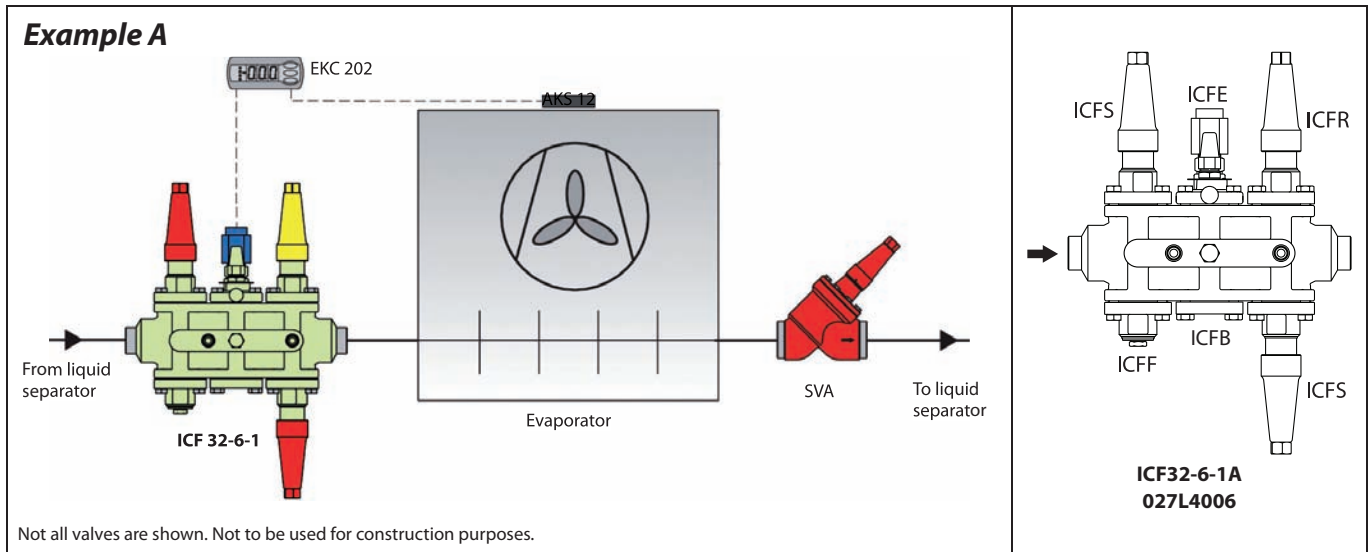
ICFB 25-40

Application example A

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:

ICF20-6-1, ICF25-6-1A, ICF32-6-1B, ICF40-6-1B, ICF20-4-10/H, ICF25-4-10, ICF32-4-10, ICF40-4-10.

Depending on capacity and size **ICF 32-6-1A with 32mm butt weld DIN connection**, code number **027L4006** could be used.



Application example B

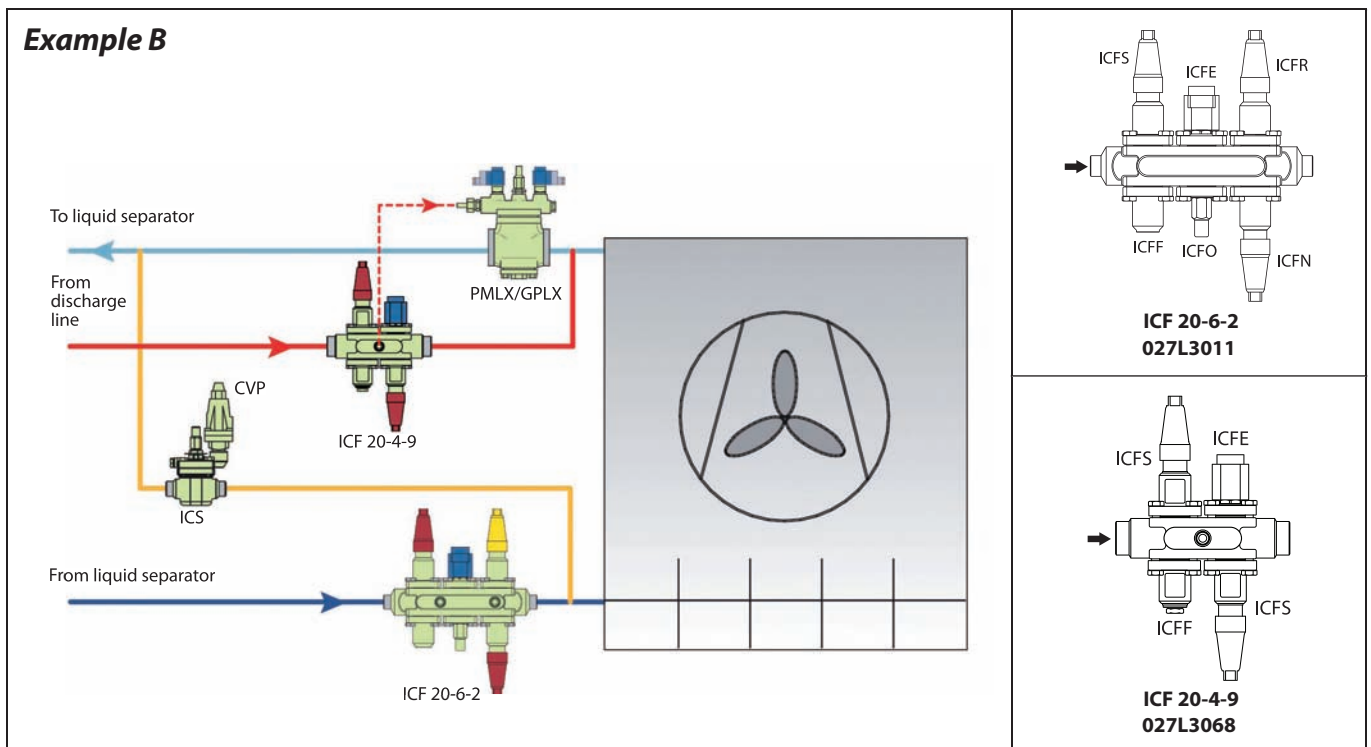
Evaporator with soft opening gas powered valve PMLX in the suction line and hot gas defrost featuring: **ICF pumped liquid** and ICF Hot gas valve stations. ICS+CVP as a defrost regulator (OFV optional depending on capacity).

ICF pumped liquid configurations vary according to capacity and size: ICF20-6-2, ICF20-6-3H, ICF25-6-3A, ICF32-6-3B, ICF40-6-3B.

Depending on capacity and size **ICF 20-6-2 with 25mm butt weld DIN connections**, code number **027L3011** could be used.

On the same evaporator ICF Hot gas Valve station with side port to power PMLX/GPLX. Depending on capacity: ICF20-4-9, ICF20-4-9H, ICF25-4-9, ICF32-4-9, ICF40-4-9.

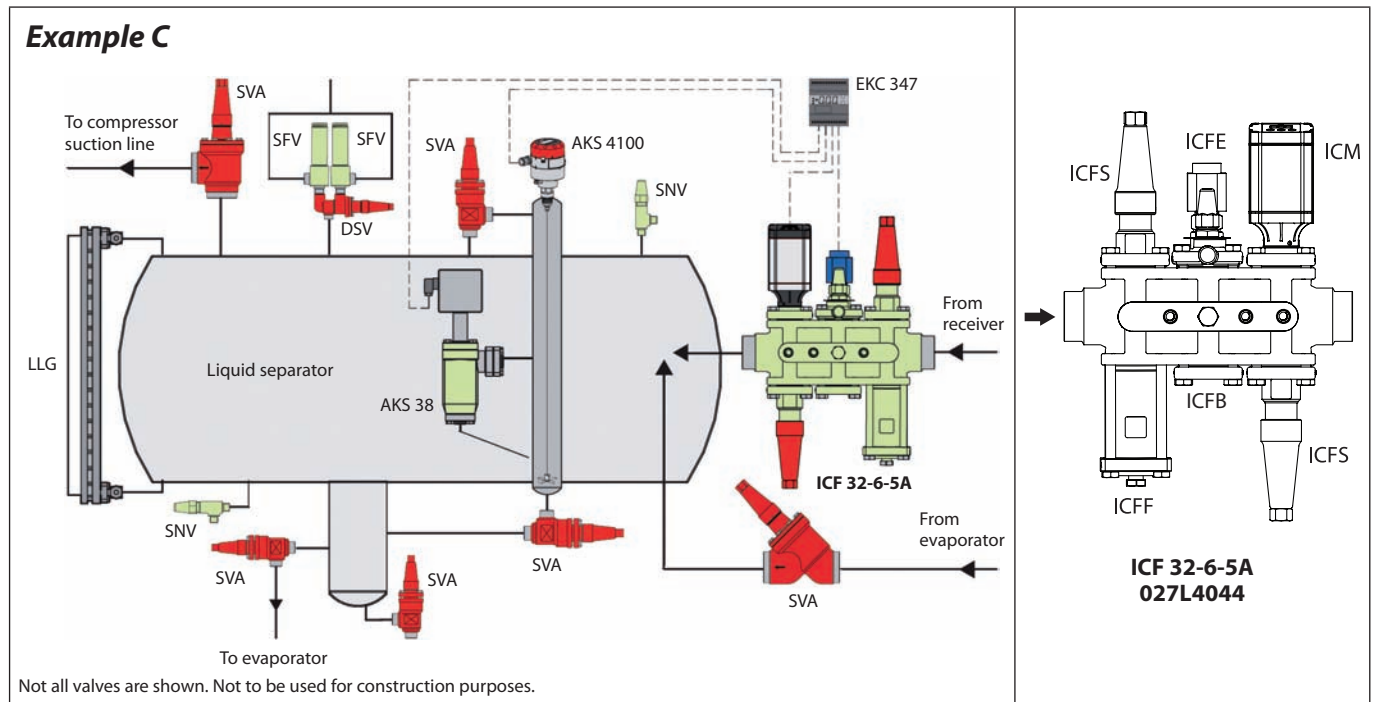
Depending on capacity and size **ICF 20-4-9 with 32 mm DIN butt weld connections**, code number **027L3068** could be used.



Application example C

A valve combination for liquid injection to separator with electronic injection valve is required. It is requested to have a solenoid valve in front of the control valve.

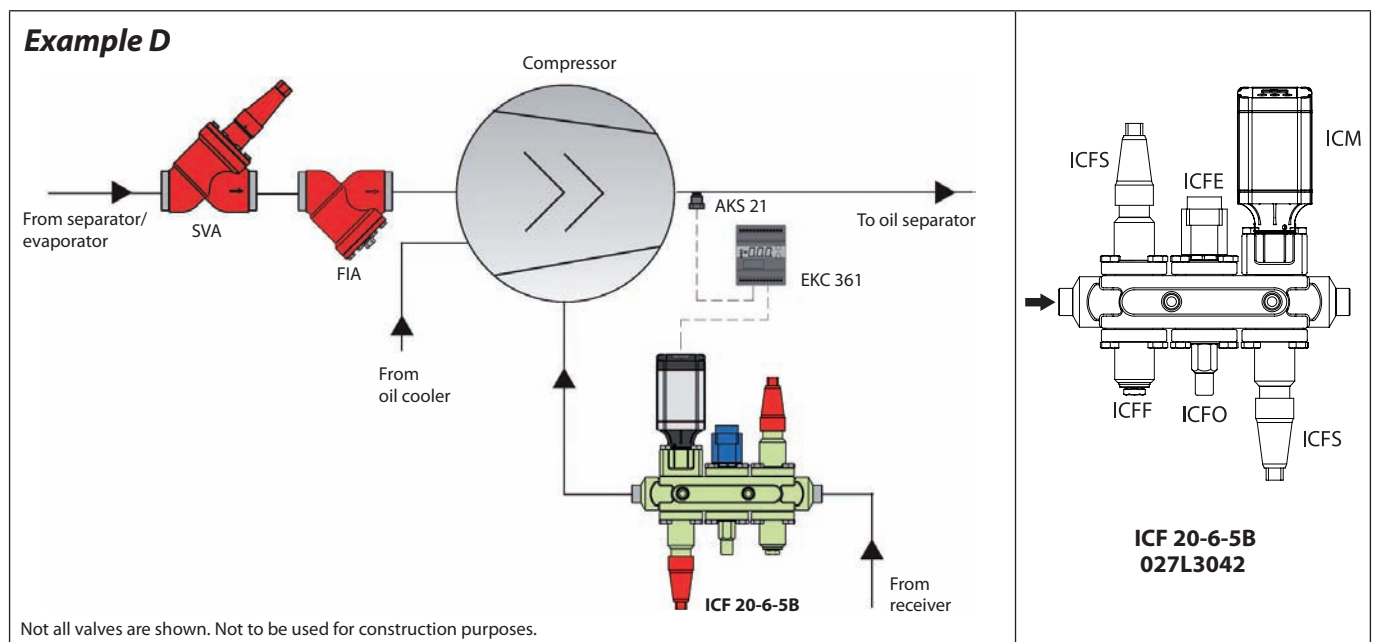
Depending on capacity and size **ICF 32-6-5A with 32 mm socket weld connections**, code number **027L4044** could be used.



Application example D

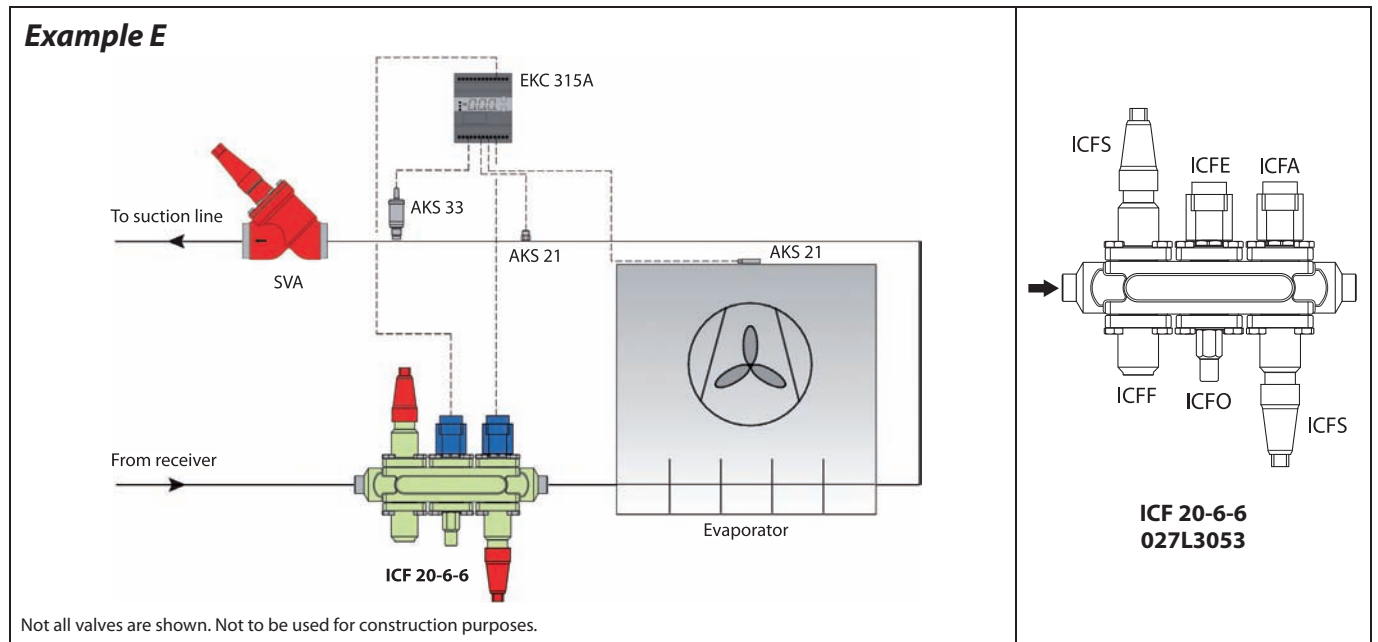
A valve combination for compressor liquid injection with electronic injection valve is required. It is a required to have a solenoid valve in front of the control valve.

For this application **ICF 20-6-5** is recommended. Verify cone size (A33;A;B66;B) of motorized valve based on compressor side port inlet pressure, oil rejection capacity and liquid inlet pressure. Depending on capacity and size **ICF 20-6-5B with 25 DIN butt well connection**, code number **027L3042** could be used.



Application example E

A valve combination for an electronically controlled DX evaporator without hotgas defrost is required.
Depending on capacity and size **ICF 20-6-6 with 20mm DIN butt weld connections**, code number **027L3053** could be used.



Notes





AKS 4100/4100U – Liquid level sensors

The AKS 4100/4100U 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 technology called Time Domain Reflectometry (TDR) or Guided Micro Wave.

AKS 4100/4100U liquid level sensor can be used to measure the liquid level of many different refrigerants in vessels, accumulators, receivers, standpipes, etc.



Advantages and features

- 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 (ϵ_r) do not affect operation.
- 5000 mm (197 in.) probe length with cable version
- 2-wire loop powered; no separate transformer needed
- Multi language HMI.
Level and setting readout in mm,cm,m(ft, in.)

Technical data - AKS 4100/4100U

 refer to industrial refrigeration QRG for ordering.

Supply Voltage	14-30 V d.c. Min/Max. Value for an output of 22 mA at the terminal.	
Ambient temperature supply voltage limitations	-40°C/+80°C(-40°F / +176°F) : 16-30 V d.c. -20°C/+80°C(-4°F / +176°F) : 14-30 V d.c.	
Load	RL <input type="checkbox"/> <input type="checkbox"/> ((Uext -14 V)/20 mA) – Default (Error output set to 3.6 mA) RL <input type="checkbox"/> <input type="checkbox"/> ((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 (0.24-0.31in.) AKS 4100U ½ in. NPT	
Refrigerant temperature	-60°C/100°C (-76°F/212°F)	
Ambient temperature	-40°C / +80°C (-40°F / +176°F) For HMI : -20°C / +60°C (-4°F / +140°F)	
Process pressure	-1 barg / 100 barg (-14.5 psig / 1450 psig)	
Terminals (spring loaded)	0.5-1.5 mm ² (~20-15 AWG)	
Enclosure:	IP66/67 (~NEMA type 4X)	
Mechanical connection	AKS 4100:	G1 in. pipe thread. Aluminium gasket included
Cable version/Coaxial version	AKS 4100U:	¾ in. NPT
Refrigerants	The listed refrigerants are qualified and approved by Danfoss	
	R717 / NH ₃	-40°C / +50°C (-40°F / +122°F)
	R744 / CO ₂	-50°C / +15°C (-58°F / +59°F)
	HCFC:	R22 -50°C / +48°C (-58°F / +118°F)
	HFC:	R404A -50°C / +15°C (-58°F / +59°F) R410A -50°C / +15°C (-58°F / +59°F) R134a -40°C / +50°C (-40°F / +122°F)
The listed refrigerants may be used in the complete temperature range of AKS 4100/4100U, however, the accuracy may be affected if the above listed temperature range is exceeded.		
Other refrigerants within the groups of HCFC and HFC can be detected and measured if the following conditions are fulfilled:		
Reference conditions	Dielectric constant Cable version to be used in R717 / NH ₃ , HCFC and HFC ε _r , liquid > 5.6	
The coaxial version is mandatory for R744 / CO ₂ ε _r , liquid > 1.3 and marine applications.		
The coaxial version can also be used R717 / NH ₃ , HCFC and HFC.		

 Note: Refer to EK347 Controller: **084B7067** and ICM & AKVA valves for complete control application.

Ordering



Cable version - AKS 4100/4100U

Description	Code number With HMI	Code number Without HMI*
AKS 4100 with 5 m (197 in.) Ø2 mm (Ø0.08 in.) stainless cable and counterweight	084H4501	084H4500
AKS 4100U with 5 m (197 in.) Ø2 mm (Ø0.08 in.) stainless cable and counterweight	084H4521	084H4520

Coaxial version - AKS 4100/4100U (available in predefined lengths, with or without HMI)



Description	Probe length		Code number With HMI	Code number Without HMI*
	mm	in.		
AKS 4100 - Coaxial	500		084H4510	084H4503
AKS 4100 - Coaxial	800		084H4511	084H4504
AKS 4100 - Coaxial	1000		084H4512	084H4505
AKS 4100 - Coaxial	1200		084H4513	084H4506
AKS 4100 - Coaxial	1500		084H4514	084H4507
AKS 4100 - Coaxial	1700		084H4515	084H4508
AKS 4100 - Coaxial	2200		084H4516	084H4509
AKS 4100U - Coaxial		19.2	084H4530	084H4524
AKS 4100U - Coaxial		30	084H4531	084H4525
AKS 4100U - Coaxial		45	084H4532	084H4526
AKS 4100U - Coaxial		55	084H4533	084H4527
AKS 4100U - Coaxial		65	084H4534	084H4528
AKS 4100U - Coaxial		85	084H4535	084H4529

Accessories



Description	Code number
AKS 4100/4100U HMI Service/Display unit with rear cover and mounting bracket	084H4540
AKS 4100/4100U HMI Display	084H4548



Description	Code number
AKS 4100/4100U Signal Converter without HMI, excluding cable gland	084H4541

* When ordering without HMI please observe:
Each AKS 4100/AKS 4100 must always be programmed via the HMI display unit.

The HMI display unit can be ordered separately and there are two possibilities:

- 084H4540 AKS 4100/4100U HMI display unit with rear cover and mounting bracket. The mounting bracket is very useful when the AKS 4100/4100U have to be programmed. The same AKS 4100/4100U HMI display unit can be used to programme more AKS 4100/4100U and both Cable and Coaxial versions.
- 084H4548 AKS 4100/4100U HMI display unit (usually spare part).

EV220B Servo-operated solenoid valves. Water, Glycol, Oil and Air



EV220B 6-22 servo-operated valves, brass, NC

Type	Connection	Kv m ³ /h	Media			Seal material	Differential pressure bar	Code number
			Water 100°C	Oil / Air				
EV220B 6	G 1/4	0.7	✓			EPDM	0.1 → 20	032U1236
EV220B 6	G 1/4	0.7		✓		FKM	0.1 → 30	032U1237
EV220B 6	G 3/8	0.7	✓			EPDM	0.1 → 20	032U1241
EV220B 6	G 3/8	0.7		✓		FKM	0.1 → 30	032U1242
EV220B 10	G 3/8	1.5	✓			EPDM	0.1 → 20	032U1246
EV220B 10	G 3/8	1.5		✓		FKM	0.1 → 30	032U1247 *
EV220B 10	G 1/2	1.5	✓			EPDM	0.1 → 20	032U1251
EV220B 10	G 1/2	1.5		✓		FKM	0.1 → 30	032U1252 *
EV220B 12	G 1/2	2.5	✓			EPDM	0.3 → 10	032U1256
EV220B 12	G 1/2	2.5		✓		FKM	0.3 → 10	032U1255
EV220B 18	G 3/4	6	✓			EPDM	0.3 → 10	032U1261
EV220B 18	G 3/4	6		✓		FKM	0.3 → 10	032U1260
EV220B 22	G 1	6	✓			EPDM	0.3 → 10	032U1263
EV220B 22	G 1	6		✓		FKM	0.3 → 10	032U1256



EV220B 15-50 servo-operated valves, NC DZR brass, brass or stainless steel (SS)

Type	Connection	Kv m ³ /h	Media			Seal material	Body material			Code number
			Water 120°C	Water 90°C	Oil / Air		DZR	Brass	SS	
EV220B 15	G 1/2	4	✓			EPDM	✓			032U5815 *
EV220B 15	G 1/2	4	✓			EPDM		✓		032U7115
EV220B 15	G 1/2	4	✓			EPDM			✓	032U8500
EV220B 15	G 1/2	4			✓	FKM		✓		032U7116
EV220B 15	G 1/2	4			✓	FKM			✓	032U8506
EV220B 15	G 1/2	4		✓	✓	NBR		✓		032U7170 *
EV220B 20	G 3/4	8	✓			EPDM	✓			032U5820
EV220B 20	G 3/4	8	✓			EPDM		✓		032U7120
EV220B 20	G 3/4	8	✓			EPDM			✓	032U8501
EV220B 20	G 3/4	8			✓	FKM		✓		032U7121
EV220B 20	G 3/4	8			✓	FKM			✓	032U8507
EV220B 20	G 3/4	8		✓	✓	NBR		✓		032U7171
EV220B 25	G 1	11	✓			EPDM		✓		032U7125
EV220B 25	G 1	11	✓			EPDM			✓	032U8502
EV220B 25	G 1	11			✓	FKM		✓		032U7126
EV220B 25	G 1	11			✓	FKM			✓	032U8508
EV220B 25	G 1	11		✓	✓	NBR		✓		032U7172
EV220B 32	G 1 1/4	18	✓			EPDM	✓			032U5832*
EV220B 32	G 1 1/4	18	✓			EPDM		✓		032U7132
EV220B 32	G 1 1/4	18	✓			EPDM			✓	032U8503



EV220B 15-50 servo-operated valves, NC DZR brass, brass or stainless steel (SS)

Type	Connection	Kv m ³ /h	Media			Seal material	Body material			Code number
			Water 120°C	Water 90°C	Oil / Air		DZR	Brass	SS	
EV220B 32	G 1 1/4	18			✓	FKM		✓		032U7133
EV220B 32	G 1 1/4	18			✓	FKM			✓	032U8509
EV220B 32	G 1 1/4	18		✓	✓	NBR		✓		032U7173
EV220B 40	G 1 1/2	24	✓			EPDM	✓			032U5840
EV220B 40	G 1 1/2	24	✓			EPDM		✓		032U7140
EV220B 40	G 1 1/2	24	✓			EPDM			✓	032U8504
EV220B 40	G 1 1/2	24			✓	FKM		✓		032U7141
EV220B 40	G 1 1/2	24			✓	FKM			✓	032U8510
EV220B 40	G 1 1/2	24		✓	✓	NBR		✓		032U7174 *
EV220B 50	G 2	40	✓			EPDM	✓			032U5850*
EV220B 50	G 2	40	✓			EPDM		✓		032U7150
EV220B 50	G 2	40	✓			EPDM			✓	032U8505
EV220B 50	G 2	40			✓	FKM		✓		032U7151
EV220B 50	G 2	40			✓	FKM			✓	032U8511
EV220B 50	G 2	40		✓	✓	NBR		✓		032U7175

⚠ Note: Only codes in bold listed in Australia. For detailed information on full range of Industrial Automation valve & controls please contact Danfoss
* High volume request.

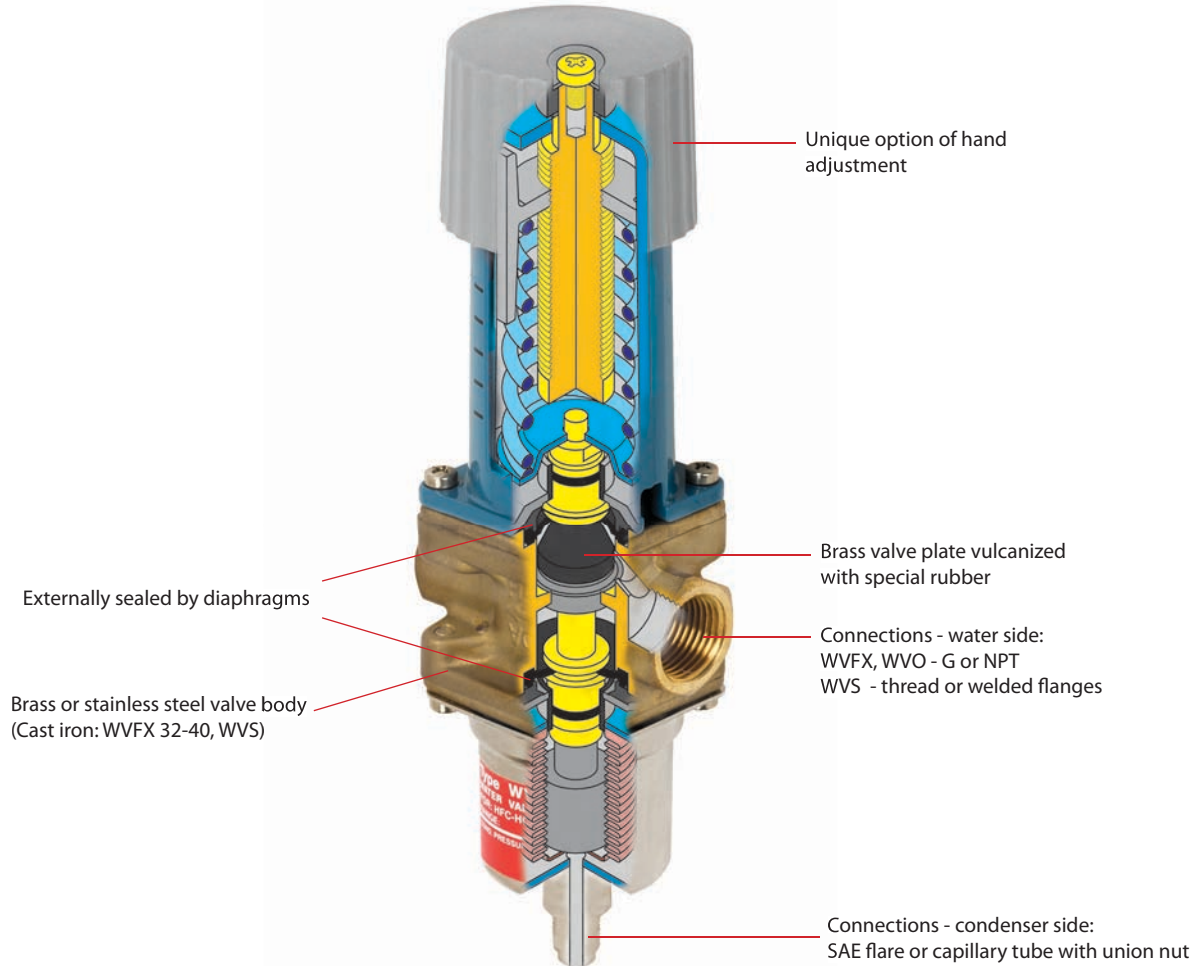
EPDM seal material suitable for Water, Glycol and Brine (potassium no oxygen, closed system) - 30 to +120°C.



WVFX, WVO and WVS – Pressure controlled water valves

Water regulating valves type WVFX, WVO and WVS are used to regulate the flow of water in refrigeration plant with water-cooled condensers. 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. Valves guarantee constant proportional regulation of condensing pressure.

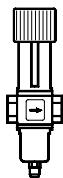
Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Air conditioning units Other applications with water-cooled condenser 	<ul style="list-style-type: none"> WVFX 10 - 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 (MWP) - 16 bar - can be used with water towers. Low flow version - 0,63 m³/h (available on request) 	<ul style="list-style-type: none"> Below 20% of max. capacity the WVS valves will act as an on-off regulators. WVFX 10 → 40 are direct actuated valves. WVS 32 → 100 are servo-operated valves. Max. condensing pressure up to 45.2 bar Very wide media temperature range from -25 up to 130 °C Versions with capillary tube available on request

Technical data and ordering - WVFX, WVO and WVS

WVFX, commercial applications



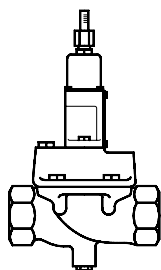
Type	Connection		Range (refrigerant) bar	Code no.
	Water side ISO 228-1	Condenser side		
WVFX 10	G 3/8	1/4 in. / 6 mm flare	3.5 - 16	003N1100
WVFX 10	G 3/8	1/4 in. / 6 mm flare	4.0 - 23	003N1105
WVFX 15	G 1/2	1/4 in. / 6 mm flare	3.5 - 16	003N2100
WVFX 15	G 1/2	1/2 in. / 1 mm SAE flare	4.0 - 23	003N2205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

WVFX with stainless steel housing - limited stock held in Australia

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

WVFX for high pressure refrigerants(Max. working Pressure 45.2bar)

WVFX 10	G 3/8	1/4 in. / 6 mm flare	15 - 29	003N1410
WVFX 15	G 1/2	1/4 in. / 6 mm flare	15 - 29	003N2410
WVFX 20	G 3/4	1/4 in. / 6 mm flare	15 - 29	003N3410
WVFX 25	G 1	1/4 in. / 6 mm flare	15 - 29	003N4410



WVS, parts programme

Type	Connection ISO 228-1	Code no.				
		Valve body	Pilot unit ²⁾	Pilot unit for R410A and R744 (CO ₂) ³⁾	Flange set ³⁾	Servo spring for differential pressure range of 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 WVFX 10 → 25	003N0388

Technical data

Type	Refrigerant	Condenser side			Media	Liquid side		k _v value ¹⁾ m ³ /h
		Control press. adjustable closing press. bar	Max. working pressure PB bar	Max. test pressure p' bar		Max. working pressure PB bar	Max. test pressure p' bar	
WVO 10		See ordering	26.4	60		16	24	1.4
WVFX 10		3.5 - 16	26.4	60		16	24	1.4
WVFX 10		4.0 - 23	26.4	60		16	24	1.4
WVO 15		See ordering	26.4	60		16	24	1.4
WVFX 10		15.0 - 29.0	45.2	60		16	24	1.4
WVFX 15		3.5 - 16.0	26.4	29		16	24	1.9
WVFX 15		4.0 - 23.0	26.4	29		16	24	1.9
WVFX 15	HCFC, HFC	15.0 - 29.0	45.2	60	Fresh water, neutral brine, sea water	16	24	1.9
WVFX 20		3.5 - 16.0	26.4	29		16	24	3.4
WVFX 20		4.0 - 23.0	26.4	29		16	24	3.4
WVFX 20		15.0 - 29.0	45.2	60		16	24	3.4
WVFX 25		3.5 - 16.0	26.4	29		16	24	5.5
WVFX 25		4.0 - 23.0	26.4	29		16	24	5.5
WVFX 25		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
WVS 32		2.2 - 19.0	26.4	29		10	16	12.5
WVS 40		2.2 - 19.0	26.4	29		10	16	21.0
WVS 50	HCFC, HFC	2.2 - 19.0	26.4	29	Fresh water, neutral brine	10	16	32.0
WVS 65	R717 (NH ₃)	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

Media temperature range
WVFX 10 - 25: -25 - +130 °C
WVFX 32 - 40: -25 - +90 °C
WVS: -25 - +90 °C

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

¹⁾ 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.

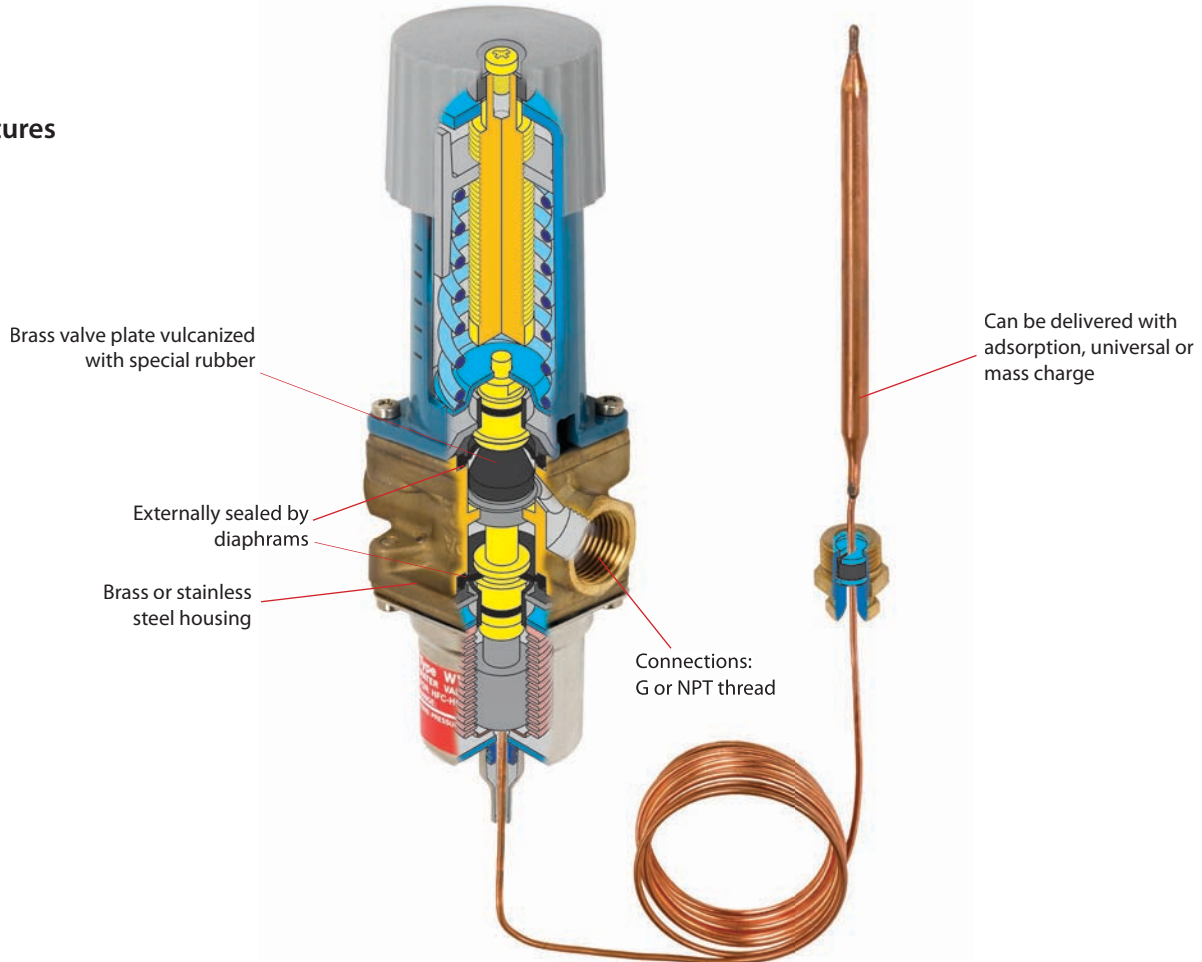


AVTA – Thermostatic water regulating valves

Thermostatic water regulating valves are used for proportional regulation of water flow quantity, depending on the setting and the sensor temperature. The valves are self-acting, i.e. they operate without the supply of auxiliary energy such as electricity, or compressed air.

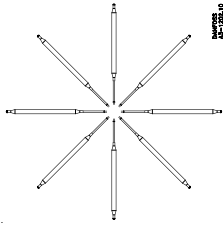
The required temperature is maintained at constant level with lowest possible water consumption in the condenser.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration with water cooled condenser Cooling of industrial processes 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Differential pressure: 0 to 10 bar Max. working pressure: 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

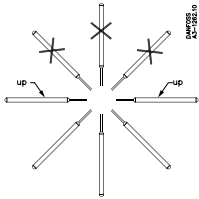


Sensor installation

AVTA with adsorption charge (sensor $\varnothing 9.5 \times 150$ mm)

Connection ISO 228-1	Regulating range [°C]	Max.temp. sensor [°C]	k_v value (m ³ /h at $\Delta p = 1$ bar)	Capillary tube length [m]	Type	Code no. ¹⁾
G $\frac{1}{2}$	+10 - +80 °C	130	1.4	2.3	AVTA 10	003N1144
G $\frac{3}{4}$			1.9		AVTA 15	003N0107
G 1			3.4		AVTA 20	003N0108
G 1			5.5		AVTA 25	003N0109

1) Code no. covers complete valve incl. capillary tube gland.

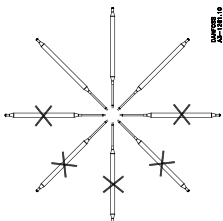


Sensor installation

AVTA with universal charge (sensor $\varnothing 18 \times 210$ mm)

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

1) Code no. covers complete valve incl. capillary tube gland.



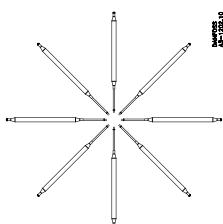
Sensor installation

AVTA with mass charge (sensor $\varnothing 9.5 \times 180$ mm)

\triangle Limited stock in Australia.

Connection ISO 228-1	Regulating range [°C]	Max.temp. sensor [°C]	k_v value (m ³ /h at $\Delta p = 1$ bar)	Capillary tube length [m]	Type	Code no. ¹⁾
G $\frac{1}{2}$	+0 - +30 °C	57	1.9	2.0	AVTA 15	003N0042
G $\frac{3}{4}$			3.4		AVTA 20	003N0043
G $\frac{1}{2}$	+25 - +65 °C	90	1.9	2.0	AVTA 15	003N0045
G $\frac{3}{4}$			1.9	2.0 (armoured)	AVTA 15	003N0299
G 1			1.9	5.0	AVTA 15	003N0034
G $\frac{1}{2}$			3.4	2.0	AVTA 20	003N0046
G 1			5.5	2.0	AVTA 25	003N0047

1) Code no. covers complete valve incl. capillary tube gland.



Sensor installation

AVTA in stainless steel with adsorption charge (sensor $\varnothing 9.5 \times 150$ mm)

Connection ISO 228-1	Regulating range [°C]	Max.temp. sensor [°C]	k_v value (m ³ /h at $\Delta p = 1$ bar)	Capillary tube length [m]	Type	Code no. ¹⁾
G $\frac{1}{2}$	+10 - +80 °C	130	1.9	2.3	AVTA 15	003N2150
G $\frac{3}{4}$			3.4		AVTA 20	003N3150
G 1			5.5		AVTA 25	003N4150

1) Code no. covers complete valve incl. capillary tube gland.

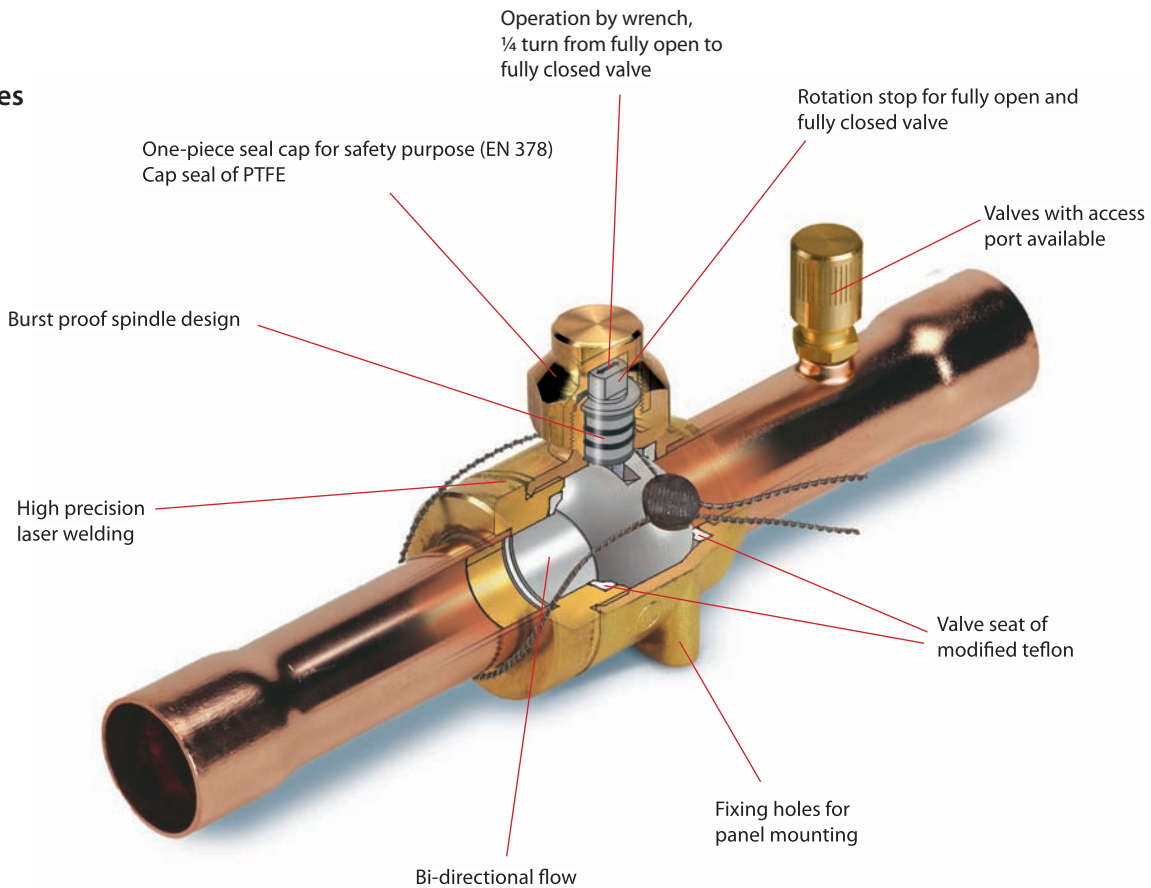
\triangle Note: Stainless steel version, limited stock in Australia.



GBC - Ball valves

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

Features

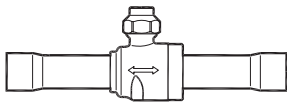


Applications	Advantages	Facts
<ul style="list-style-type: none"> GBC valves are used in liquid, suction and hot gas lines in all refrigeration and air-conditioning systems with fluorinated refrigerants 	<ul style="list-style-type: none"> Full flow with minimum pressure drop Bi-directional flow, i.e. 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 The available 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. 	<ul style="list-style-type: none"> GBC can be used for all fluorinated refrigerants (CFC, HCFC, HFC) Temperature range: -40 to +150 °C Max. working pressure (PS/MWP) <ul style="list-style-type: none"> GBC 6s to 42s with/without access port: 45 bar (650 psig) GBC 54s without access port: 45 bar (650 psig) GBC 54s with access port: 35 bar (500 psig) GBC 67s to 79s with/without access port: 35 bar (500 psig) Test pressure: 65 bar (940 psig) Approvals: UL, CE

Ordering - GBC ball valves

The product range consists of following valve types: one with and one without access port.

Both versions can be supplied in inch or millimeter sizes from 1/4 in. to 3 1/8 in. (6 mm to 79 mm). All valves have holes for panel mounting.

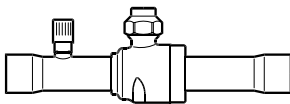


GBC without access port

GBC without access port, ODF/ODF

Type	Solder ODF/ODF connection		Solder ODF/ODF connection		k _v value (calculated value) [m ³ /h]
	[in.]	Code no.	[mm]	Code no.	
GBC 6s	1/4	009G7020	6	009G7030	1.96
GBC 10s	3/8	009G7021	10	009G7031	5.68
GBC 12s	1/2	009G7022	12	009G7032	10.58
GBC 16s	5/8	009G7023	16	009G7023	14.11
GBC 18s	3/4	009G7024	18	009G7035	20.42
GBC 22s	7/8	009G7025	22	009G7025	28.17
GBC 28s	1 1/8	009G7026	28	009G7033	51.95
GBC 35s	1 3/8	009G7027	35	009G7027	80.89
GBC 42s	1 5/8	009G7028	42	009G7034	121.07
GBC 54s	2 1/8	009G7029	54	009G7029	224.96
GBC 67s	2 5/8	009G7959	67	009G7959	310.00
GBC 67s RP	2 5/8	009G7036	67	009G7036	245.78
GBC 79s	3 1/8	009G7980	79	009G7980	700.00
GBC 79s RP	3 1/8	009G7037	79	009G7037	222.52

RP - Reduced Port

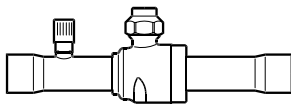


GBC with access port
(1/4" access port)

GBC with access port, ODF/ODF

Type	Solder ODF/ODF connection		Solder ODF/ODF connection		k _v value (calculated value) [m ³ /h]
	[in.]	Code no.	[mm]	Code no.	
GBC 6s	1/4	009G7050	6	009G7060	1.96
GBC 10s	3/8	009G7051	10	009G7061	5.68
GBC 12s	1/2	009G7052	12	009G7062	10.58
GBC 16s	5/8	009G7053	16	009G7053	14.11
GBC 18s	3/4	009G7054	18	009G7065	20.42
GBC 22s	7/8	009G7055	22	009G7055	28.17
GBC 28s	1 1/8	009G7056	28	009G7063	51.95
GBC 35s	1 3/8	009G7057	35	009G7057	80.89
GBC 42s	1 5/8	009G7058	42	009G7064	121.07
GBC 54s	2 1/8	009G7059	54	009G7059	224.96
GBC 67s	2 5/8	009G7960	67	009G7960	310.00
GBC 67s RP	2 5/8	009G7066	67	009G7066	245.78
GBC 79s	3 1/8	009G7981	79	009G7981	700.00
GBC 79s RP	3 1/8	009G7067	79	009G7067	222.52

RP - Reduced Port



GBC with access port
(1/2" UNF access port)

GBC with access port (R410A), ODF/ODF

Type	Solder ODF/ODF connection		Pressure Ratings		k _v value (calculated value) [m ³ /h]
	[in.]	Code no.	MWP	Max Test	
GBC 12s	1/2	009G7270	45.0 bar	65.0 bar	10.58
GBC 16s	5/8	009G7271	45.0 bar	65.0 bar	14.11
GBC 18s	3/4	009G7272	45.0 bar	65.0 bar	20.42
GBC 22s	7/8	009G7273	45.0 bar	65.0 bar	28.17
GBC 28s	1 1/8	009G7274	45.0 bar	65.0 bar	51.45
GBC 35s	1 3/8	009G7672	45.0 bar	65.0 bar	80.89
GBC 42s	1 5/8	009G7673	45.0 bar	65.0 bar	121.07

⚠ Note: Access port 1/2"-20UNF for R410A service line connections.

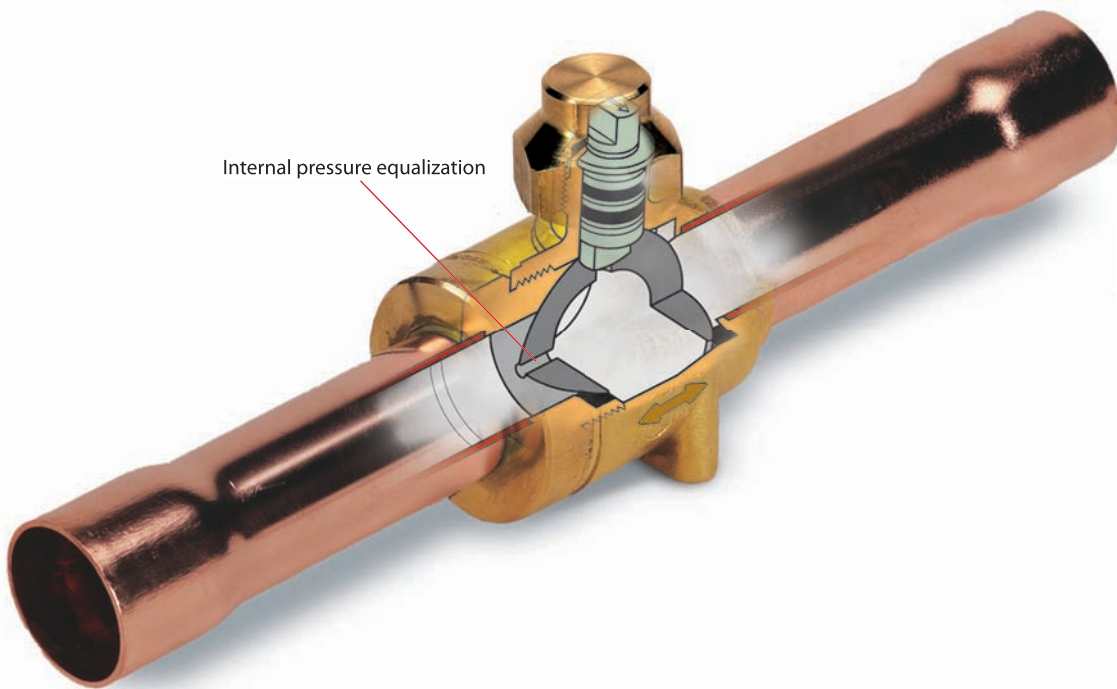
⚠ Note: Access port 1/2"-20UNF (5/16" schrader type)..

GBC – Ball valve for CO₂

Danfoss ball valves, type GBC for CO₂ are manually operated shut-off valves only for single-flow direction. These ball valves give maximum flow in the fully open position. They are designed for operation within a broad temperature range.



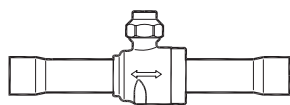
Features



Applications	Advantages	Facts
<ul style="list-style-type: none">The valves can be used for applications in liquid, suction and hot-gas lines in refrigeration and air-conditioning systems.	<ul style="list-style-type: none">Slimline body – easier to install and service¼ turn from fully open to fully closed.Rotation stops at fully open and fully closed positions.Indicator on spindle top shows degree of opening.Precision laser welded construction.Burst-proof spindle design.Valve seal of low friction, tight-sealing modified PTFE Teflon®.Drilled and tapped for panel mounting.To release entrapped liquid via hole in the ball.	<ul style="list-style-type: none">Refrigerants R 744 (CO₂)Temperature range –40 → +150 °C (–40 → +300 °F)Max. working pressure (PS/MWP) 45 bar (653 psig)Max. test pressure 65 bar (943 psig)Flow direction: Single-flowApproval: UL, CE

Ordering - CO₂

The GBC for CO₂ offers the product can be supplied in inch and millimeter sizes from ¼ in. to 1 ¾ in. (6 mm to 42 mm). All valves have holes for panel mounting.



GBC valve ODF/ODF

GBC valve ODF/ODF

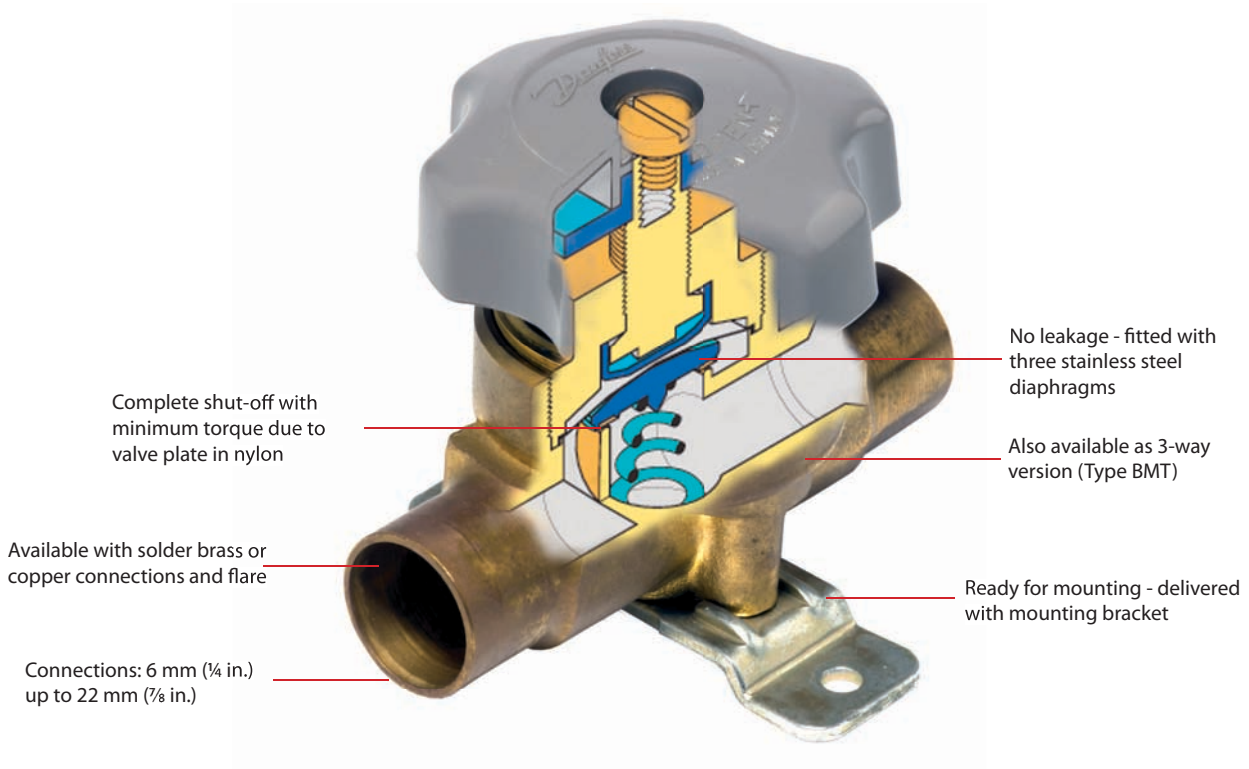
Type	Solder ODF/ODF connection				k _v value (calculated value) [m ³ /h]
	[in.]	Code no.	[mm]	Code no.	
GBC 6s	¼	009G7520	6	009G7570	1.96
GBC 10s	⅜	009G7521	10	009G7571	5.68
GBC 12s	½	009G7522	12	009G7572	10.58
GBC 16s	⅝	009G7523	16	009G7523	14.11
GBC 18s	¾	009G7524	18	009G7574	20.42
GBC 22s	⅞	009G7525	22	009G7025	28.17
GBC 28s	1 ⅛	009G7526	28	009G7576	51.95
GBC 35s	1 ⅜	009G7528	35	009G7528	80.89
GBC 42s	1 ¾	009G7529	42	009G7579	121.07



BM – Shut-off valves

The BM is a manual shut-off valve designed for installation in the liquid, suction and hot gas lines of refrigeration plant.

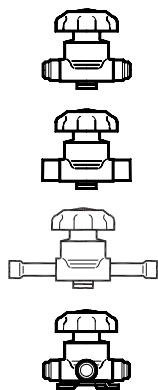
Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Can be used for all fluorinated refrigerants (CFC, HCFC, HFC) Temperature range: -55 °C to +100 °C Max. working pressure PS = 28 bar Max. test pressure p' = 30.8 bar Approvals: UL

Technical data and ordering - BM shut-off valves

BM with hand wheel



Version	Type	Connection	Code no.			k _v -value m ³ /h
			Flare	ODF solder	ODF extended ends	
Straight way	BML 6	1/4 in. 6 mm	009G0101	009G0102 009G0108	009G0202 009G0208	0.3
	BML 10	3/8 in. 10 mm	009G0127	009G0128 009G0128	009G0222 009G0228	0.84
	BML 12	1/2 in. 12 mm	009G0141	009G0142 009G0148	009G0242 009G0248	1.5
	BML 15	3/4 in. 16 mm	009G0168	009G0162 009G0170	009G0262	2.2
	BML 18	1 in. 18 mm	009G4004	009G0181 009G0184	009G4009	2.9
	BML 22	7/8 in. 22 mm		009G0191	009G0291	2.9
				009G0194		
Three-way	BMT 6	1/4 in.	009G0105			0.3

⚠ Note: Limited codes stocked in Australia.

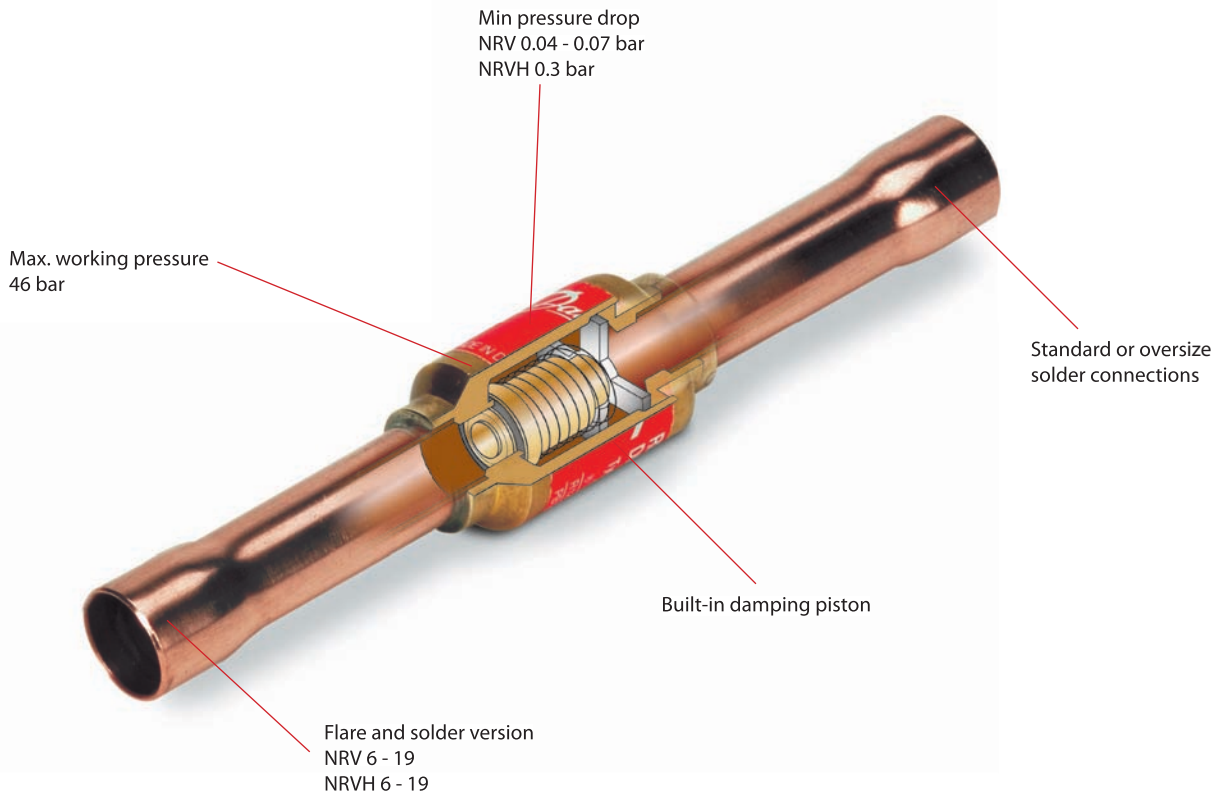
⚠ Note: Refer to GBC (ball valves) for alternative.



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 fluorinated refrigerants. 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.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Traditional refrigeration · Heat pump systems · Air conditioning units · Liquid coolers · Transport refrigeration · UL approved 	<ul style="list-style-type: none"> · For fluorinated refrigerants · 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. 	<ul style="list-style-type: none"> · In refrigeration plants with compressors connected in parallel, it is advantageous to use NRVH, since the spring is stronger than in NRV. · Both straightway and angleway versions. · Max. working pressure PS/MWP = 46 bar · Max. test pressure $p' = 60$ bar · Temperature of the medium $-50 - 140^{\circ}\text{C} / -60 - 285^{\circ}\text{F}$

Technical data and ordering - NRV/NRVH check valves

Type	Version		Connection				Pressure drop across valve Δp bar ¹⁾	k _v -value ²⁾ m ³ /h	Max. working pressure
			in.		mm				
			Size	Code no.	Size	Code no.			
	Flare		¼	020-1040	6	020-1040	0.07	0.56	46 bar
NRV 10			⅜	020-1041	10	020-1041		1.43	
NRV 12			½	020-1042	12	020-1042		2.05	
NRV 16			⅝	020-1043	16	020-1043	0.05	3.60	
NRV 19			¾	020-1044	19	020-1044		5.50	
NRV 6s	Straight-way		¼	020-1010	6	020-1014	0.07	0.56	
NRV 6s ³⁾			⅜	020-1057	10	020-1050			
NRVH 6s ³⁾			⅜	020-1069	10	020-1062	0.07	1.43	
NRV 10s			⅜	020-1011	10	020-1015	0.30		
NRVH 10s			⅜	020-1046	10	020-1036	0.07	2.05	
NRV 10s ³⁾			½	020-1058	12	020-1051	0.30		
NRVH 10s ³⁾			½	020-1070	12	020-1063	0.05	3.60	
NRV 12s			½	020-1012	12	020-1016	0.30		
NRVH 12s			½	020-1039	12	020-1037	0.05	5.50	
NRV 12s ³⁾			⅝	020-1052	16	020-1052	0.30		
NRVH 12s ³⁾			⅝	020-1064	16	020-1064	0.05	19.00	
NRV 16s			⅝	020-1018	16	020-1018	0.30		
NRVH 16s			⅝	020-1038	16	020-1038	0.04	8.50	
NRV 16s ³⁾			-	-	18	020-1053	0.30		
NRVH 16s ³⁾			-	-	18	020-1065	0.05	29.00	
NRV 16s ³⁾			¾	020-1059	19	020-1059	0.30		
NRVH 16s ³⁾			¾	020-1071	19	020-1071	0.04	19.00	
NRV 19s			-	-	18	020-1017	0.30		
NRVH 19s			-	-	18	020-1008	0.05	5.50	
NRV 19s			¾	020-1019	19	020-1019	0.30		
NRVH 19s	¾	020-1023	19	020-1023	0.05	8.50			
NRV 19s ³⁾	7/8	020-1054	22	020-1054	0.30				
NRVH 19s ³⁾	7/8	020-1066	22	020-1066	0.04	19.00			
NRV 22s	7/8	020-1020	22	020-1020	0.30				
NRVH 22s	7/8	020-1032	22	020-1032	0.04	29.00			
NRV 22s ³⁾	1 1/8	020-1060	28	020-1055	0.30				
NRVH 22s ³⁾	1 1/8	020-1072	28	020-1067	0.04	19.00			
NRV 28s	1 1/8	020-1021	28	020-1025	0.30				
NRVH 28s	1 1/8	020-1029	28	020-1033	0.04	8.50			
NRV 28s ³⁾	1 3/8	020-1056	35	020-1056	0.30				
NRVH 28s ³⁾	1 3/8	020-1068	35	020-1068	0.04	19.00			
NRV 35s	1 3/8	020-1026	35	020-1026	0.30				
NRVH 35s	1 3/8	020-1034	35	020-1034	0.04	29.00			
NRV 35s ³⁾	1 3/4	020-1061	42	020-1027	0.30				
NRVH 35s ³⁾	1 3/4	020-1073	42	020-1035	0.04				

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 value is the flow of water in m³/h at a pressure drop across valve of 1 bar, $\rho = 1000 \text{ kg/m}^3$.
³⁾ Oversize connections.

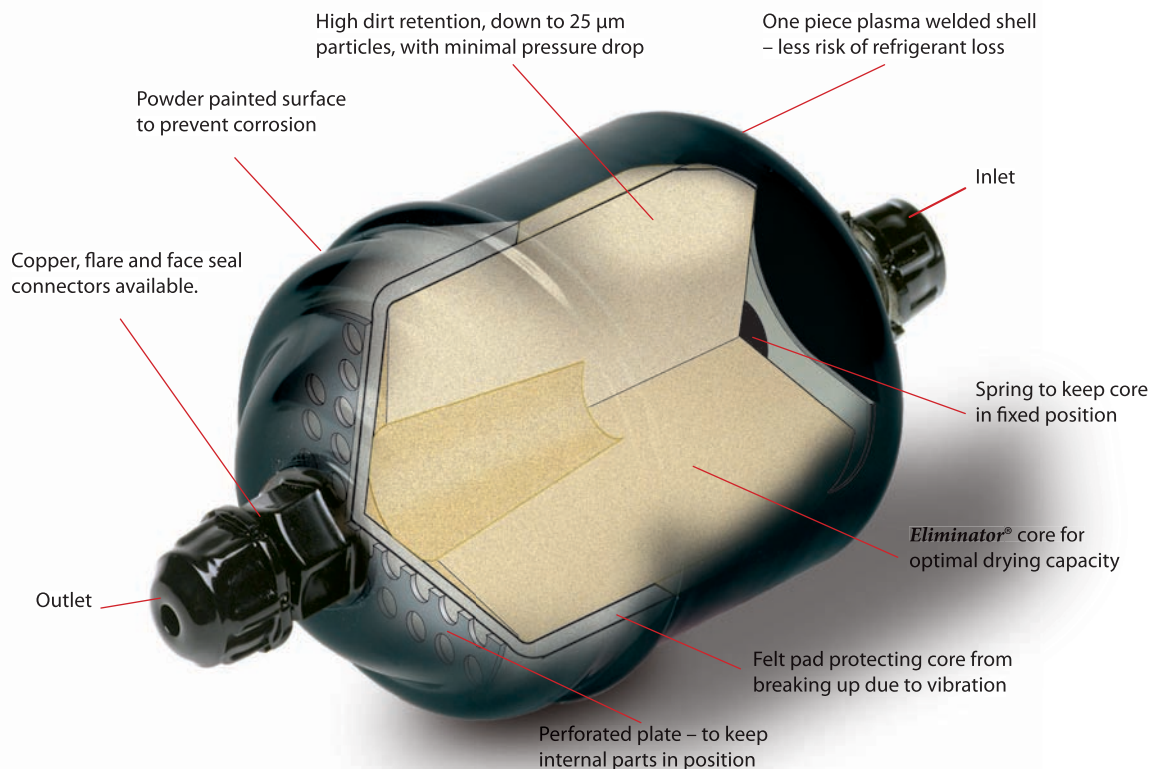
 Note: Discharge lines on parallel racks it is recommended to use NRVH series.



DML – Liquid line filter driers

The DML liquid line filter driers protect refrigeration and air conditioning systems from moisture, acids and solid particles. The 100% solid molecular sieve core assures a high drying capacity and prevents acid formation in the system.

Features



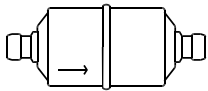
Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Air conditioning units Transport refrigeration 	<ul style="list-style-type: none"> High drying capacity avoiding the risk of acid formation in the refrigeration system. All Danfoss filter driers have end caps designed for greater protection and easy removal. Wide range with sizes from 3 to 75 cubic inches. Powder paint surface for 500 hrs in salt spray (shell body) 	<ul style="list-style-type: none"> 100% 3Å molecular sieve core. Optimized for HFC refrigerants (R134a, R404A, R410A, etc.) with POE and PAG oils. Compatible with R22. MWP (PS): 46 bar (667 psig). HCFC & HFC refrigerants. Available with flare- or solder connectors. Wide range with sizes from 3 to 75 cubic inches.

Technical data and ordering - DML liquid line driers

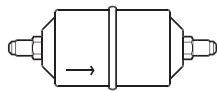
Liquid line filter drier - Solder (pure copper)

Type	Connection		Solid core		Drying capacity [kg refrigerant] ¹⁾						Liquid capacity in kW ²⁾			Solder	Flare								
			Surface [cm ²]	Volume [cm ³]	R134a		R404A R507		R22 R407C R410A		R134a	R404A R507	R22 R407C R410A	Code no.	Code no.								
	in.	mm			24 °C	52 °C	24 °C	52 °C	24 °C	52 °C				in.									
DML 032	1/4	6	82	41	5.5	5	7.5	4.5	4.5	4	7	5	7	023Z5048	023Z5035 ³⁾								
DML 033	3/8	10									17	13	19	023Z5050	023Z5036 ³⁾								
DML 052	1/4	6	95	67	8.5	8	13	7.5	8	7	7	5	8	023Z5053	023Z5037								
DML 053	3/8	10									18	14	19	023Z5054	023Z5038								
DML 082	1/4	6	131	104	12.5	12	20	11.5	12.5	11	7	5	8	023Z5057	023Z5039								
DML 083	3/8	10									19	14	21	023Z5058	023Z5040								
DML 084	1/2	12									26	20	29	023Z5061	023Z5041								
DML 085	5/8	16									42	31	46	023Z5072	023Z5073								
DML 162	1/4	6	220	234	27	25.5	43.5	24	27	23	7	5	8	023Z5063	023Z5042								
DML 163	3/8	10									22	16	24	023Z5064	023Z5043								
DML 164	1/2	12									30	22	33	023Z5067	023Z5044								
DML 165	5/8	16									43	30	47	023Z5068	023Z5045								
DML 166	3/4	19									44	31	48	023Z5071	023Z5046								
DML 303	3/8	10	378	494	57	54	92.5	51	57	48.5	21	15	23	023Z0067	023Z0049								
DML 304	1/2	12									31	22	34	023Z0068	023Z0050								
DML 305	5/8	16									45	33	49	023Z0069	023Z0051								
DML 306	3/4	19									62	45	68	023Z0070	023Z0193								
DML 307	7/8	22									62	45	68	023Z0071	-								
DML 414	1/2	12									510	681	80	75	130	70	80	74	32	23	35	023Z0111	023Z0109
DML 415	5/8	16																	53	37	58	023Z0112	023Z0110
DML 417	7/8	22	91	65	100	023Z0113	-																
DML 606	3/4	19	756	988	113	107	185	101	114	97	44	32	48	023Z0225	-								
DML 607	7/8	22									75	54	82	023Z0073	-								
DML 609	1 1/8	28									87	64	95	023Z0074	-								
DML 757	7/8	22									82	60	90	023Z0117	-								
DML 759	1 1/8	28	1019	1363	160	150	260	140	160	148	94	68	102	023Z0118	-								

¹⁾ Drying capacity is based on following moisture content test standards before and after drying:
 R134a: From 1050 ppm W to 75 ppm W. If drying to 50 ppm W is required, reduce stated capacities by 15%.
 R404A, R507: From 1020 ppm W to 30 ppm W.
 R407C: From 1020 ppm W to 30 ppm W.
 R410A: From 1050 ppm W to 60 ppm W.
 R22: From 1050 ppm W to 60 ppm W in accordance with ARI 710-86.
²⁾ Given in accordance with ARI 710-86 for t_e = -15 °C (5°F), t_c = 30 °C (85°F) and Δp = 0.07 bar (1 psig).
³⁾ Wire mesh in filter drier outlet.

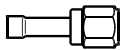


Solder version



Flare version

Flare / solder adapter



Type	Connection Solder, ODF mm	Code no. for 1 pc	Code no. for 2 pcs.
FSA 22	1/4 x 1/4	023U801266	023U800266
FSA 32	3/8 x 1/4	023U802266	-
FSA 33	3/8 x 3/8	023U801466	023U800466
FSA 44	1/2 x 1/2	023U801666	023U800666
FSA 516m	5/8 x 5/8	023U801766	023U800766
FSA 66	3/4 x 3/4	023U802066	023U801066

Type	Connection Solder, ODF mm	Code no. for 1 pc	Code no. for 2 pcs.
FSA 26m	1/4 x 6	023U8011	023U8001
FSA 36m	3/8 x 6	023U8021	-
FSA 310m	3/8 x 10	023U8013	023U8003
FSA 412m	1/2 x 12	023U8015	023U8005
FSA 516m	5/8 x 16	023U8017	023U8007
FSA 618m	3/4 x 18	023U8019	023U8009

Accessories



Caps	Size	Qty.	Code no.
Gasket B2 - 4 spec.	1/4 in (6 mm)	300	011L4025
B2 - 6	3/8 in (10 mm)	300	011L4017
B2 - 8	1/2 in (12 mm)	200	011L4018

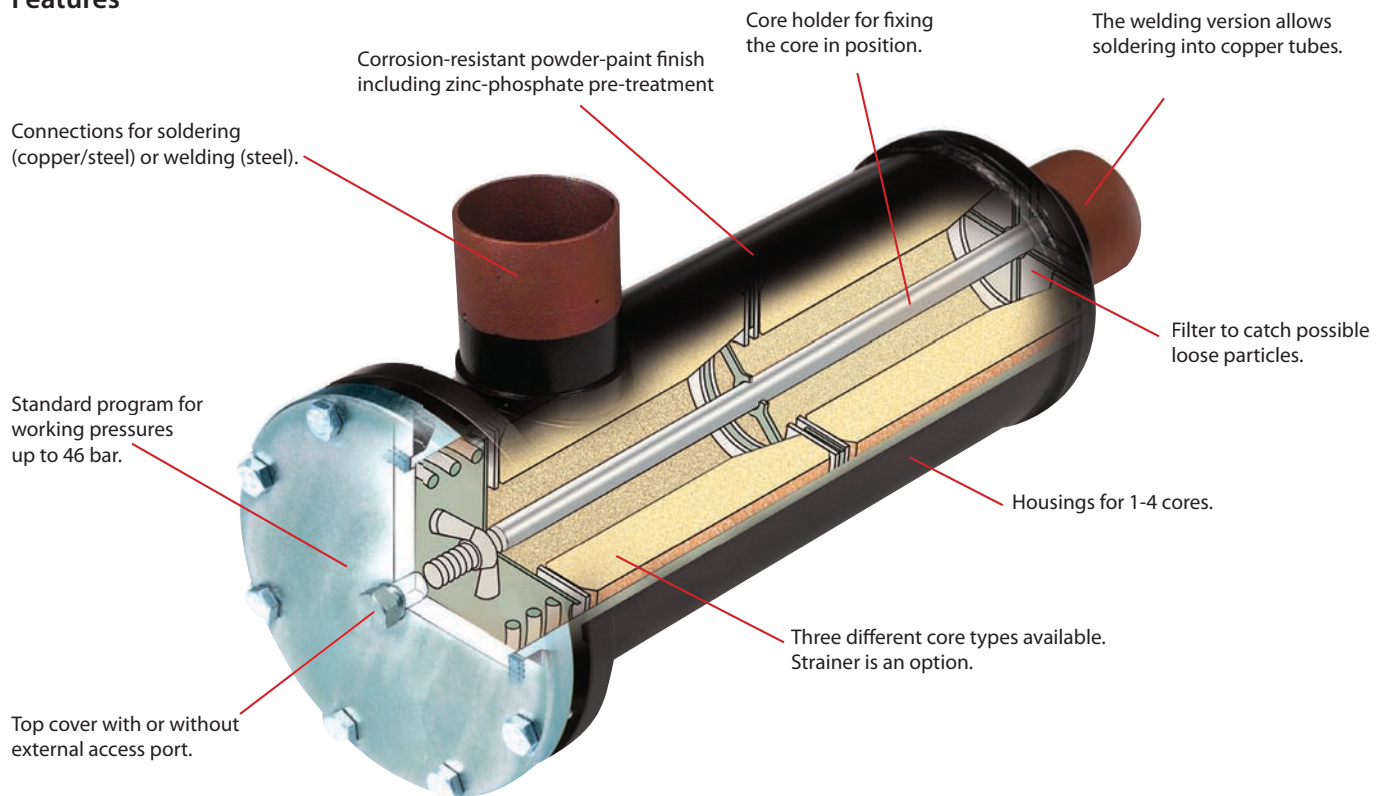
Caps	Size	Qty.	Code no.
B2 -10	5/8 in (16 mm)	100	011L4019
B2 -12	3/4 in (18 mm)	50	011L4020



DCR – with replaceable solid core

DCR filter driers protect refrigeration, freezing and air conditioning systems from moisture, acids and solid particles. DCR filter driers, with exchangeable solid core, are for use in liquid and/or suction lines. DCR filter driers are available both in high-pressure versions suitable for plants with R410A and CO₂ refrigerants, and in standard-pressure versions for use with fluorinated refrigerants.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> For refrigeration plants with fluorinated refrigerants or CO₂. 	<ul style="list-style-type: none"> Highly efficient dirt retaining capabilities on both the suction and the liquid line. Can be used in all environments, corrosion resistant powder-painted finish in shell (body) for 500 hrs in salt spray, according 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. 	<ul style="list-style-type: none"> 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 core for liquid line application (80% molecular sieve and 20% activated alumina for HCFC). Effectively adsorbs moisture and acid in the system. 48 - DA core for suction line after a compressor burn-out (30% molecular sieve and 70% activated alumina for HCFC/HFC). 48 - F strainer - compatible with all refrigerants: <ul style="list-style-type: none"> Retains dirt particles larger than 15 µm. For use direct in DCR housings. Utilized in the suction or liquid line.

Capacities - DCR drier shells

DCR with 48-DM core

Type	Number of cores	Drying capacity [kg refrigerant] ¹⁾						Liquid capacity [kW] ²⁾		
		R134a		R404A/R507		R407C/R410A		R134a	R404A/R507	R407C/R410A
		24 °C	52 °C	24 °C	52 °C	24 °C	52 °C			
DCR 0485	1							79	57	88
DCR 0487								139	99	153
DCR 0489								186	133	206
DCR 04811		82.5	78.5	135.0	74.0	83.0	71.0	227	162	259
DCR 04813								227	162	259
DCR 04817								227	162	259
DCR 04821							227	162	259	
DCR 0967	2							140	100	155
DCR 0969								217	155	240
DCR 09611		165.0	157.0	270.0	148.0	166.0	142.0	295	211	326
DCR 09613								358	256	396
DCR 09617							358	256	396	
DCR 1449	3							226	162	250
DCR 14411								356	255	394
DCR 14413		247.5	235.5	405.0	222.0	249.0	213.0	356	255	394
DCR 14417								356	255	394
DCR 19211	4							372	266	411
DCR 19213		330.0	314.0	540.0	296.0	332.0	284.0	460	329	509
DCR 19217								460	329	509

DCR with 48-DC core

Type	Number of cores	Drying capacity [kg refrigerant] ¹⁾								Liquid capacity [kW] ²⁾			
		R22		R134a		R404A/R507		R407C/R410A		R22	R134a	R404A/R507	R407C/R410A
		24 °C	52 °C	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C				
DCR 0485	1									88	79	57	88
DCR 0487										153	139	99	153
DCR 0489										206	186	133	206
DCR 04811		67.0	62.0	71.0	67.5	115.0	62.0	70.5	60.0	259	227	162	259
DCR 04813										259	227	162	259
DCR 04817										259	227	162	259
DCR 04821									259	227	162	259	
DCR 0967	2									155	140	100	155
DCR 0969										240	217	155	240
DCR 09611		134.0	124.0	142.0	135.0	230.0	124.0	141.0	120.0	326	295	211	326
DCR 09613										396	358	256	396
DCR 09617									396	358	256	396	
DCR 1449	3									250	226	162	250
DCR 14411										394	356	255	394
DCR 14413		201.0	186.0	213.0	202.5	345.0	186.0	211.5	180.0	394	356	255	394
DCR 14417										394	356	255	394
DCR 19211	4									411	372	266	411
DCR 19213		268.0	248.0	284.0	270.0	460.0	248.0	282.0	240.0	509	460	329	509
DCR 19217										509	460	329	509
DCR 19221										509	460	329	509

¹⁾ Drying capacity is based on the following moisture contents before and after drying:
R22: From 1050 ppm W to 60 ppm W in accordance with ARI 710-86.
R134a: From 1050 ppm W to 75 ppm W. If refrigerant is to be dried to 50 ppm W, reduce the stated capacities by 15%.
R404A, R407C & R507: From 1020 ppm W to 30 ppm W.
R410A: From 1050 ppm W to 60 ppm W.

²⁾ Liquid capacity given in accordance with ARI 710-2002 evaporating temperature $t_e = -15\text{ °C}$, condensing temperature $t_c = +30\text{ °C}$ and pressure drop across filter drier $\Delta p = 0.07\text{ bar}$.

⚠ Note: Drier cores sold separately please see next page.

Capacities - DCR

Drying capacity [g of water] ³⁾

48-DA

Type	Number of cores	Evaporating temperature t _e [°C]												Acid capacity ⁴⁾ [g]						
		-40			-20			4.4			-30				-20			4.4		
		R22			R134a			R404A/R507			R407C/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).

Recommended plant capacity [kW] ⁵⁾ in suction line - burn-out

48-DA

Type	Evaporating temperature t _e [°C]																	
	-40			-20			4.4			-30			-20			4.4		
	Pressure drop [Δp bar]																	
	0.04			0.10			0.21			0.04			0.07			0.14		
	R22			R134a			R404A/R507			R407C/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						

⁵⁾ Recommended plant capacity is given in accordance with ARI-Standard 710-2002 at:
 Evaporating temperature t_e = 4.4 °C
 Condensing temperature t_c = 32.2 °C



Dimensions
Zustellung 6

Strainer mounted in suction line

48-F

Refrigerant	R22			R134a			R404A/R507			R407C/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 plant capacity [kW]	15	47	113	15	28	69	12	38	93	15	47	113

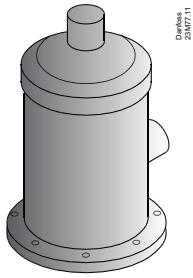
Strainer mounted in liquid line ⁶⁾

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

⁶⁾ Recommended plant capacity is given in accordance with ARI-Standard 710-2002 at:
 Evaporating temperature t_e = -15 °C
 Condensing temperature t_c = +30 °C
 Pressure drop across filter drier Δp = 0.07 bar

The data given apply to DCR 04811 with 48-F core.

Technical data and ordering - DCR drier shells and cores



DCR housing
incl. top cover

DCR with steel connections

Type	Number of cores	Solder		Butt weld	Code no.	Max. working pressure (PS/MWP)	
		ODF in.	ODF mm	in.			
DCR 0485	1	5/8	16	1/2	023U7050	46 bar / 667 psig	
DCR 0487		7/8	22	3/4	023U7051		
DCR 0489		1 1/8	-	1	023U7053		
DCR 04811		1 3/8	35	1 1/4	023U7054		
DCR 04813		1 5/8	-	1 1/2	023U7055		
DCR 048117		2 1/8	54	2	023U7057		
DCR 04821		2 5/8	-	2 1/2	023U7076		
DCR 0969	2	-	28	1	023U7059		
DCR 0969		1 1/8	-	1	023U7060		
DCR 09611		1 3/8	35	1 1/4	023U7061		
DCR 09613		1 5/8	-	1 1/2	023U7062		
DCR 09613		-	42	1 1/2	023U7063		
DCR 09617		2 1/8	54	2	023U7064		
DCR 1449		3	-	28	1		023U7065
DCR 1449	1 1/8		-	1	023U7066		
DCR 14413	1 5/8		35	1 1/4	023U7068		
DCR 14413	-		42	1 1/2	023U7069		
DCR 14417	2 1/8		54	2	023U7070		
DCR 19211	4		1 3/8	35	1 1/4		023U7071
DCR 19213			1 5/8	-	1 1/2		023U7072
DCR 19213		-	42	1 1/2	023U7073		

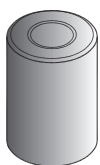
⚠ Note: Copper connection version stocked in Australia.

DCR with copper connections

DCR 0485s	1	5/8	16	-	023U7250	46 bar / 667 psig	
DCR 0487s		7/8	22	-	023U7251		
DCR 0489s		-	28	-	023U7252		
DCR 0489s		1 1/8	-	-	023U7253		
DCR 04811s		1 3/8	35	-	023U7254		
DCR 04813s		1 5/8	-	-	023U7255		
DCR 04813s		-	42	-	023U7256		
DCR 04817s	2 1/8	54	-	023U7257			
DCR 04821s	2 5/8	-	-	023U7276			
DCR 0969s	2	-	28	-	023U7259		
DCR 09611s		1 3/8	35	-	023U7261		
DCR 09613s		-	42	-	023U7263		
DCR 09617s		2 1/8	54	-	023U7264		
DCR 1449s		3	-	28	-		023U7265
DCR 14413s			-	42	-		023U7269
DCR 14417s			2 1/8	54	-		023U7270
DCR 19213s	4	-	42	-	023U7273		

DCR with high-pressure steel connections

DCR 0487	1	7/8	22	3/4	023U7451	46 bar / 667 psig
DCR 0489		-	28	1	023U7452	
DCR0489		1 1/8	-	1	023U7453	
DCR 04811		1 3/8	35	1 1/4	023U7454	
DCR 04813		1 5/8	-	1 1/2	023U7455	
DCR 048117		2 1/8	54	2	023U7457	
DCR 0967		2	7/8	22	3/4	
DCR 0969	-		28	1	023U7459	
DCR 09611	1 3/8		35	1 1/4	023U7461	
DCR 09613	1 5/8		-	1 1/2	023U7462	
DCR 09617	2 1/8		54	2	023U7464	



Solid core



Strainer (Sock)

DCR inserts with gasket - (Replacement Cores).

Type	Material	Code no. 8 pcs.	Code no. 455 pcs.
48-DM solid core	100% molecular sieve	023U1392	023U1394
48-DC solid core	80% molecular sieve & 20% Al ₂ O ₃	023U4381	023U4383
48-DA solid core	30% molecular sieve & 70% Al ₂ O ₃	023U5381	-
48-F strainer	Strainer Insert	023U1921	-
48-DM solid core	Special version with gasket kit	023U1496	-

⚠ Note: 48F strainer (Industry terminology "Sock").

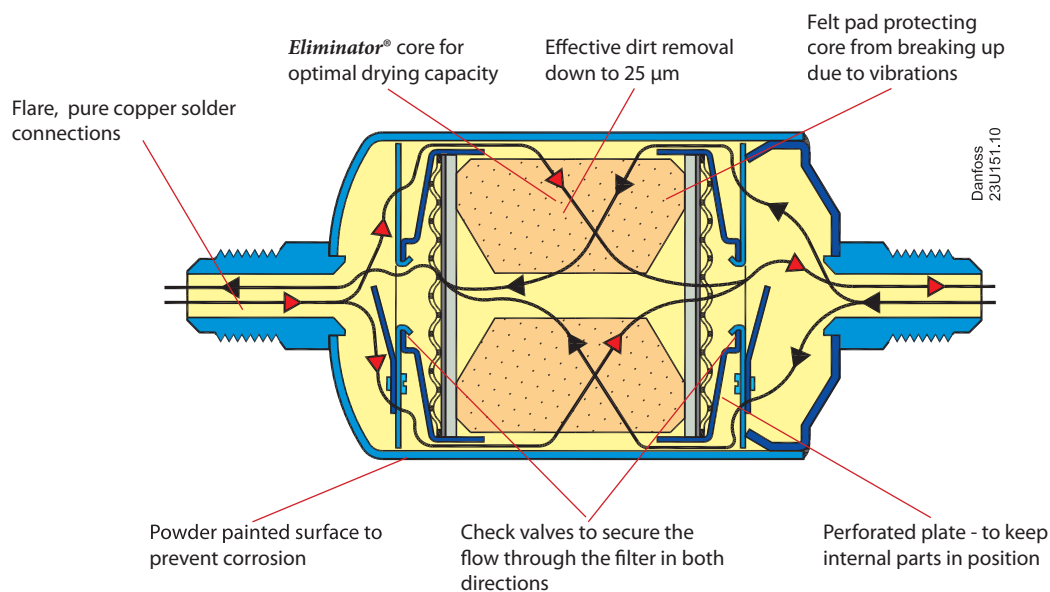


DMB – Bi-flow filter driers (Heat pumps A/C units)

Bi-flow filter driers have built-in check valves which ensure that refrigerant liquid always flows through the filter driers from the outer side of the filter core towards the center. Thus all dirt particles are retained irrespective of flow direction.

DMB filter driers ensure fast and effective adsorption of moisture as well as organic and inorganic acids.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Heat pumps Air conditioning units 	<ul style="list-style-type: none"> 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 Bi-flow filters can, save up to ten solder connections. This reduces production costs and the number of potential leakage points. 	<ul style="list-style-type: none"> DMB filter driers contain a solid core consisting of 100% 3Å Molecular Sieve. DMB filter driers are especially suitable for heat pumps with HFC refrigerant and polyolester oil with additives Optimum flow characteristics and dirt retention Optimized for HFC refrigerants.

Technical data and ordering - DMB Bi flow filter driers

Solder, ODF (Copper connections)

Type	Conn. in.	Code no.
DMB 082s	1/4	023Z1443
DMB 083s	3/8	023Z1442
DMB 084s	1/2	023Z1441
DMB 163s	3/8	023Z1446
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

Flare

Type	Conn. in.	mm	Code no.
DMB 082	1/4	6	023Z1412
DMB 083	3/8	10	023Z1411
DMB 084	1/2	12	023Z1410
DMB 162	1/4	6	-
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

Drying and liquid capacity

R134a, R507, R404A, R407C, R410A, R22

Type	Drying capacity [kg refrigerant] ¹⁾								Liquid capacity [kW] ²⁾			Max Working Pressure PS [bar]
	R134a		R404A R507		R407C R410A		R22		R134a	R404A R507	R22 R407C R410A	
	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C				
DMB 082 / 082s	9.2	8.5	8.7	8.1	8.0	7.3	8.7	8.0	3.9	2.8	4.3	46
DMB 083 / 083s									7.4	5.3	8.2	
DMB 084 / 084s									8.3	6.0	9.2	
DMB 162	17.8	16.5	16.8	15.7	15.4	14.1	16.8	15.6	7.6	5.3	8.8	46
DMB 163 / 163s									18	13	20	
DMB 164 / 164s									28	20	32	
DMB 165 / 165s									37	29	40	
DMB 303	43.5	40.4	41.4	38.4	37.8	34.6	41.2	38.1	19	15	21	46
DMB 304 / 304s									28	20	31	
DMB 305 / 305s									38	28	42	
DMB 307s									43	32	47	

¹⁾ Drying capacity is based on following moisture content test standards before and after drying:
R134a: From 1050 ppm W to 75 ppm W. If drying to 50 ppm W is required, reduce stated capacities by 15%.
R404A, R507: From 1020 ppm W to 30 ppm W.
R407C: From 1020 ppm W to 30 ppm W.
R410A: From 1050 ppm W to 60 ppm W.
R22: From 1050 ppm W to 60 ppm W in accordance with ARI 710-86.

²⁾ Capacity given in accordance with ARI 710-86
 $t_e = -15\text{ °C (5°F)}$
 $t_c = 30\text{ °C (86°F)}$
 $\Delta p = 0.07\text{ bar (1 psig)}$.

 Note: Cross reference (OEM pack codes).

DMB 084s 1/2" solder 023Z1641 (pack 16) —> 023Z1441
 DMB 164s 1/2" solder 023Z1645 (pack 12) —> 023Z1445
 DMB 165s 5/8" solder 023Z1644 (pack 12) —> 023Z1444

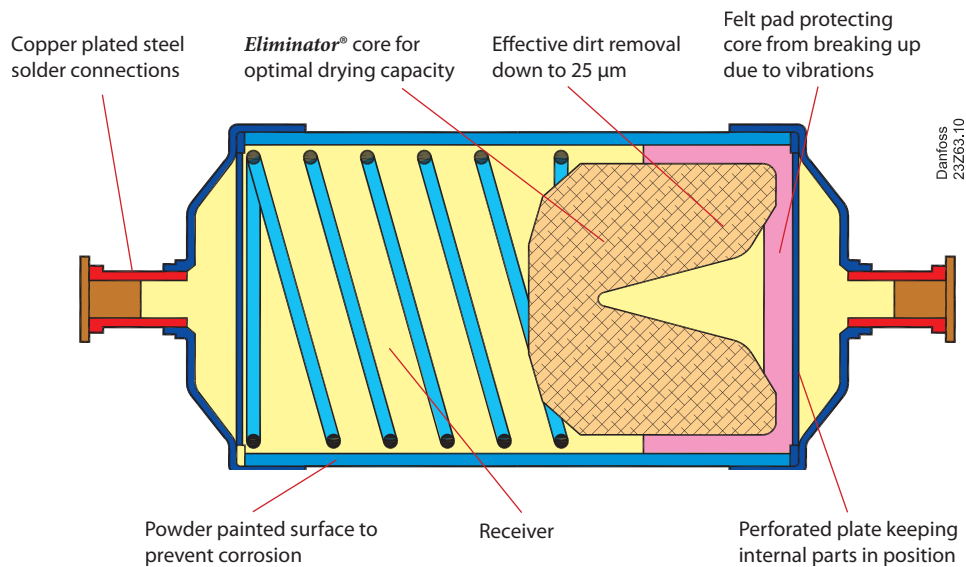


DMC – Combined filter driers and receivers

DMC is a combined receiver and filter drier, and is optimized to systems where the condenser is incapable of containing the total quantity of refrigerants.

DMC filters contain a solid core consisting of 100% Molecular Sieve, and are especially suitable for A/C systems with HFC refrigerant and polyolester oil with additives.

Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> · Air conditioning systems · Heat pumps 	<ul style="list-style-type: none"> · Combined filter drier and receiver to keep down number of components · Space-saving · Fast installation · High drying capacity at high and low liquid temperatures 	<ul style="list-style-type: none"> · DMC filter driers contain a solid core consisting of 100% 3Å Molecular Sieve. · Available with solder connections (Cu-plated steel connectors). · Optimum flow characteristics and dirt retention. · Optimized for HFC refrigerants. · Approved as HP container according to PED 97/23/EC - a3p3.

Technical data and ordering - DMC

Type	Connections Cu-plated (ODF)	Multi-pack	
		Code no.	Qty.
DMC 2032s	1/4 in	023Z7022	18
DMC 2033s	3/8 in	023Z7024	18
DMC 2034s	1/2 in	023Z7026	18
DMC 40163s	3/8 in	023Z7028	10
DMC 40164s	1/2 in	023Z7030	10

Capacity

Drying and liquid capacity

R134a, R507, R404A, R407C, R410A, R22

Type	Drying Capacity (kg of refrigerant) ¹⁾								Liquid Capacity (kW) ²⁾			Max. Working Pressure PS [bar]
	R410A R407C		R22		R134a		R404A R507		R22 R410A R407C	R134a	R404A R507	
	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C				
DMC 0432s	5.9	5.4	6.4	5.9	6.4	5.9	6.3	6.0	7.5	7.0	5.0	42
DMC 0732s	5.9	5.4	6.4	5.9	6.4	5.9	6.3	6.0	7.5	7.0	5.0	42
DMC 2032s									7.5	7.0	5.0	
DMC 2033s	5.9	5.4	6.4	5.9	6.4	5.9	6.3	6.0	21.0	19.0	14.0	42
DMC 2034s									26.5	24.0	18.5	
DMC 40163s									23.0	21.0	15.0	42
DMC 40164s	25.8	23.7	28.1	26.0	28.3	26.0	27.8	26.2	28.5	26.0	19.5	

¹⁾ Drying capacity is based on following moisture content in the refrigerant before and after drying:

R22: From 1050 ppm W to 60 ppm W in accordance with ARI 710-86.

R134a: From 1050 ppm W to 75 ppm W. If drying of refrigerant to 50 ppm W is required, this can be achieved with a 15% reduction of the stated capacities.

R404A, R407C og R507: From 1020 ppm W to 30 ppm W.

R410A: From 1050 ppm W to 60 ppm W.

²⁾ Given in accordance with

ARI 710-86 for

$t_e = -15\text{ °C}$ (5°F),

$t_c = 30\text{ °C}$ (86 °C) and

$\Delta p = 0.07\text{ bar}$ (1 psig).

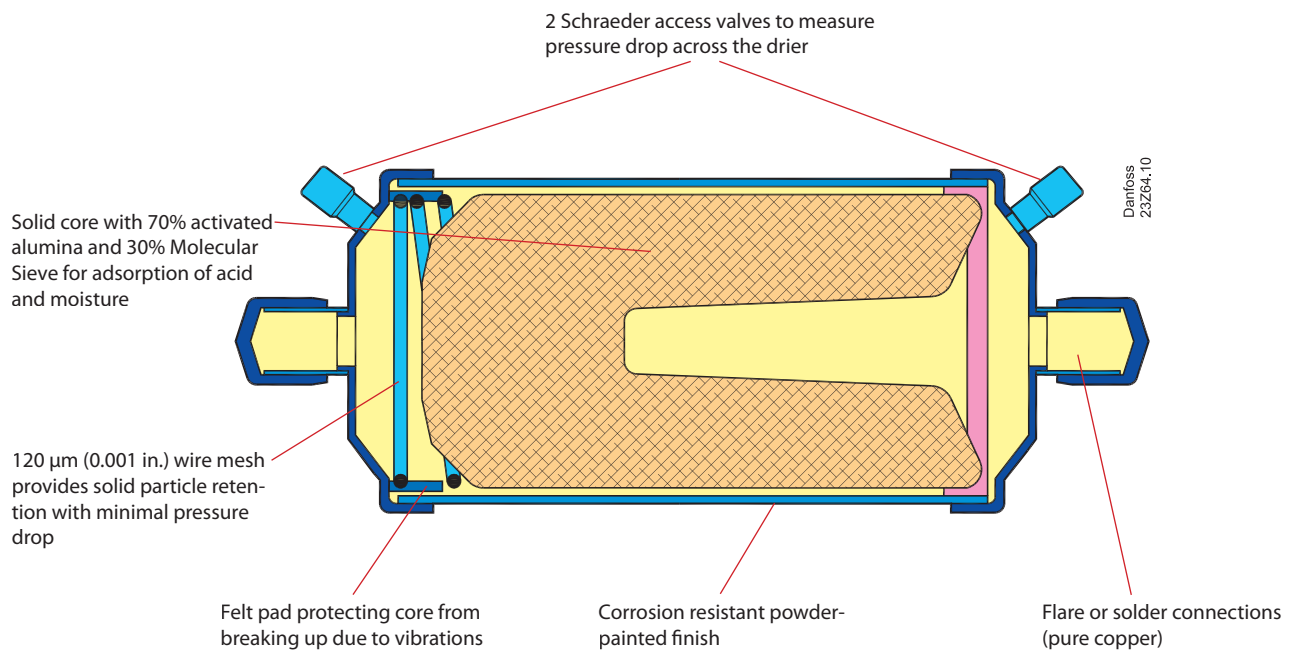
 Limited codes listed in Australia.



DAS – Burn-out suction line filter driers

Eliminator[®] burn-out filter driers type DAS are used in the suction line to clean up refrigeration and AC systems with fluorinated 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. By adsorbing these acids, the DAS burn-out filter drier protects the new compressor against failure.

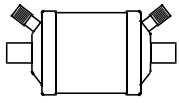
Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Air conditioning units Transport refrigeration 	<ul style="list-style-type: none"> The large diameter of the 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 (shell for 500 hrs in salt spray chamber) 	<ul style="list-style-type: none"> Installation with any orientation provided the flow is in the arrow direction Available in sizes from 8 to 60 cubic inches For use with HCFC and HFC refrigerants

Technical data and ordering - DAS burn-out suction line filter drier

Ordering



Flare

Type	Connection in.	Code no.
DAS 083	3/8	023Z1001
DAS 084	1/2	023Z1002
DAS 164	1/2	023Z1007
DAS 165	5/8	023Z1008

Solder (pure copper)

Type	Connection in.	Code no.
DAS 083	3/8	023Z1003
DAS 084	1/2	023Z1004
DAS 085	5/8	023Z1005
DAS 086	3/4	023Z1006
DAS 164	1/2	023Z1009
DAS 165	5/8	023Z1010
DAS 166	3/4	023Z1011
DAS 167	7/8	023Z1012
DAS 305	5/8	023Z1013
DAS 306	3/4	023Z1014
DAS 307	7/8	023Z1015
DAS 309	1 1/8	023Z1016
DAS 417	7/8	023Z1017
DAS 419	1 1/8	023Z1018
DAS 607	7/8	023Z1019
DAS 609	1 1/8	023Z1020

Capacities

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

¹⁾ Rated capacity is stated at:
evaporating temperature t_e = 4 °C
pressure drop Δp = 0.21 bar

²⁾ Adsorption capacity of oleic acid at
0.05 TAN (Total Acid Number).

Capacities for other temperatures than 4 °C 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

Correction factors. F_e evaporating temperatures [°C]

[°C]	4	0	-5	-10	-15	-20	-25	-30	-35	-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 burn-out filter drier for a R22 plant with an evaporator capacity at 8.5 kW at -20 °C you may use a burn-out filter drier with a rated capacity of 8.5/0.4 = 21.25 kW or bigger.

For example DAS 306.



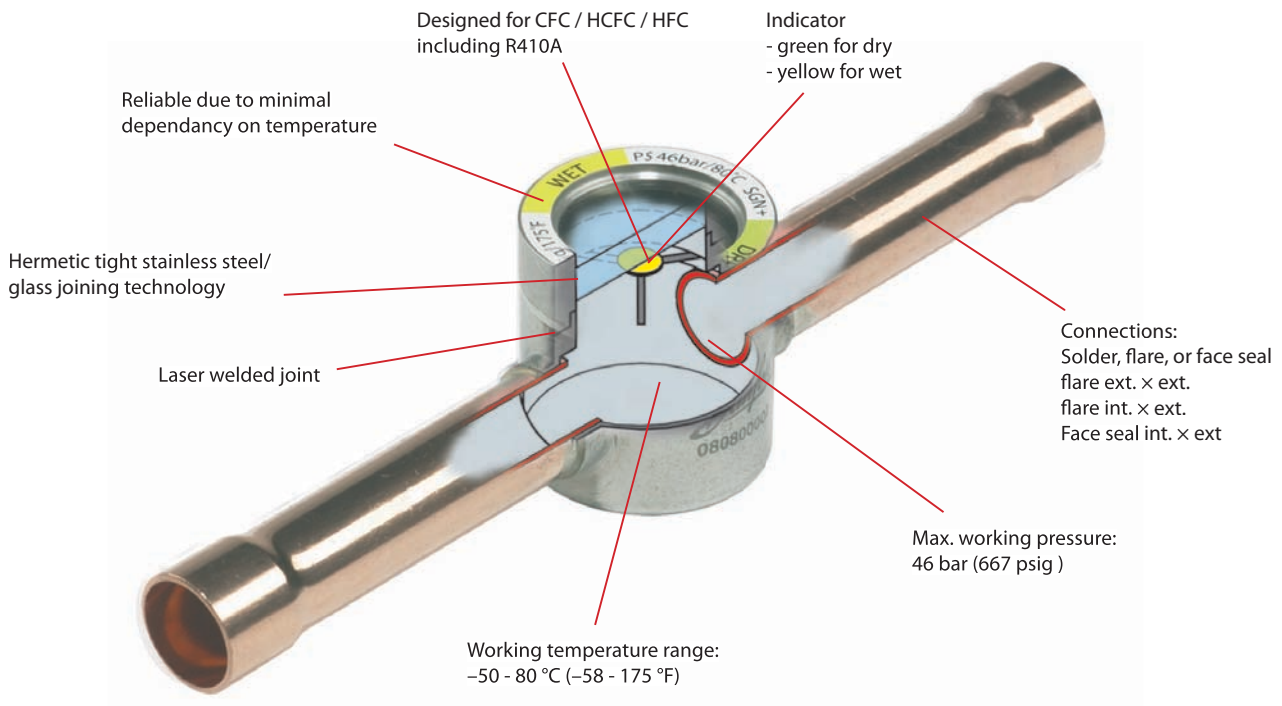
SG+ – High pressure sight glasses

SG+ are sight glasses for commercial refrigeration applications. They are made in stainless steel and are available in versions with flare and solder connections.

The SGM+ 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.



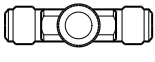
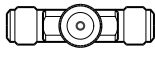
The SGN+ are equipped with sensitive indicators that reflects a colour, depending on the moisture content in the refrigerant.

Features

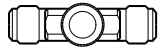







Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Heat pump systems Air conditioning units Liquid coolers Transport refrigeration 	<ul style="list-style-type: none"> Visual indication of moisture: <ul style="list-style-type: none"> - Minimum dependence of temperature. - Quick and clear colour change. The flare ext. x int. version can be screwed together with filter drier (reduction of assembly costs). Flare connections are 4-sided for quick installation. All solder versions are with extended ends. Designed for high working pressures. 	<ul style="list-style-type: none"> Designed for CFC/HCFC/HFC refrigerants. Connections: <ul style="list-style-type: none"> - Solder x solder - Flare ext. x ext. - Flare int. x ext. - Face seal int. x ext. Wide range with sizes from 6 to 22 mm. Max. working pressure: 46 bar (667 psig) Working temperature: -50 - 80 °C (-58- 175 °F) Approvals: UL, CE.

Available types - ordering SGN+

 Solder version	SGM+: Without moisture indicator ⚠ Not currently stocked in Australia.	 Solder version	SGN+: With HFC moisture indicator
 Flare version		 Flare version	

Ordering

	Type	Version	Connection in.	Connection mm	Code no.	Code no. (Industrial pack for OEM)
	SGM+ 10	Flare ext. x ext.	$\frac{3}{8} \times \frac{3}{8}$	10 x 10	014F0080	
	SGM+ 12s SGM+ 16s	Solder ODF x ODF	$\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$	16 x 16	014F0086 014F0087	

SGN+	Type	Version	Connection in.	Connection mm	Code no. Single pack	Code no. (Industrial pack for OEM)
	SGN+ 6 SGN+ 10 SGN+ 12 SGN+ 16 SGN+ 19	Flare ext. x ext.	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{8} \times \frac{3}{8}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{4} \times \frac{3}{4}$	6 x 6 10 x 10 12 x 12 16 x 16 19 x 19	014F0161 014F0162 014F0163 014F0165 014F0166	014F1131 014F0250
	SGN+ 6 SGN+ 10 SGN+ 12 SGN+ 16 SGN+ 19	Flare int. x ext. ¹⁾	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{8} \times \frac{3}{8}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{4} \times \frac{3}{4}$	6 x 6 10 x 10 12 x 12 16 x 16 19 x 19	014F0171 014F0172 014F0173 014F0174 014F0175	014F1132 014F0124 014F1128 014F1129
	SGN+ 6s SGN+ 10s SGN+ 12s SGN+ 16s SGN+ 19s SGN+ 22s SGN+ 22s	Solder ODF x ODF	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{8} \times \frac{3}{8}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{7}{8} \times \frac{7}{8}$ $1\frac{1}{8} \times 1\frac{1}{8}$	6 x 6 10 x 10 12 x 12 16 x 16 19 x 19 22 x 22	014F0181 014F0182 014F0183 014F0184 014F0185 014F0186 014F0187	014F0148 014F1224 014F0117 014F0199 014F0200
	SGN+ 6s SGN+ 10s SGN+ 12s SGN+ 18s	Solder ODF x ODF		6 x 6 10 x 10 12 x 12 18 x 18	014F0191 014F0192 014F0193 014F0195	014F1020 014F1130
	SGN+ 6s SGN+ 10s SGN+ 12s SGN+ 16s SGN+ 22s	Solder ODF x ODM	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{8} \times \frac{3}{8}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{7}{8} \times \frac{7}{8}$	16 x 16 22 x 22	014F0201 014F0202 014F0203 014F0204 014F0206	014F1201 014F1202 014F1203 014F1204 014F1206

¹⁾ Can be screwed directly into the filter drier.

Accessories

Cap Cover		
	Sight glasses	Code no.
	size 6 - 10	014F5481
	size 12 - 22	014F5480

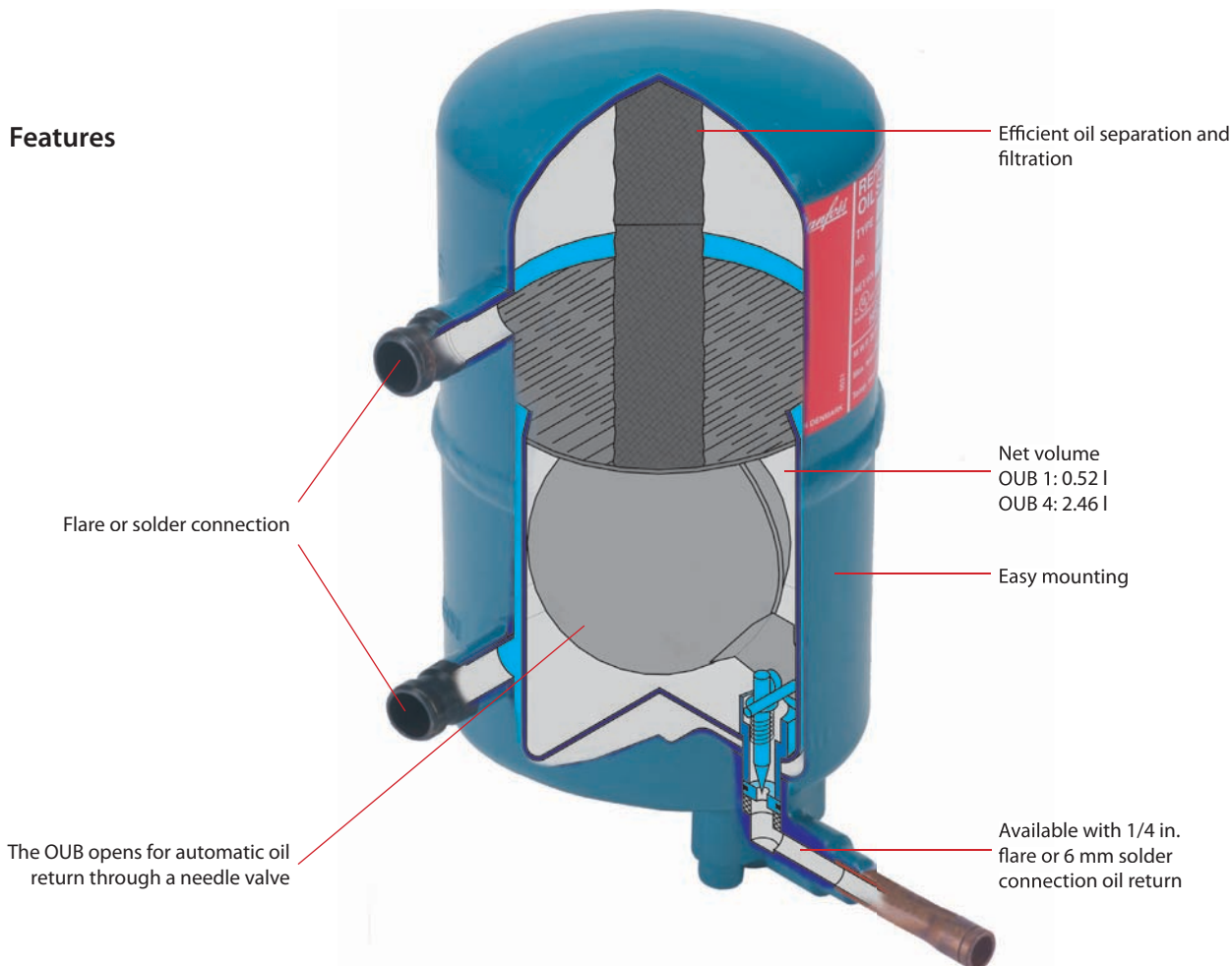
⚠ Note: Sight glass covers not currently stocked in Australia.



OUB – Oil separators

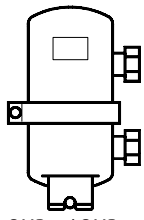
The oil separator type OUB is for use in all refrigeration plant where the compressor lubricating oil must be returned directly to the compressor oil sump under all operating conditions. In this way lubricating oil from the compressor is prevented from circulating with the refrigerant in the refrigeration system itself.

Features

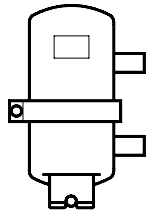


Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Air conditioning units 	<ul style="list-style-type: none"> High efficiency Due to the interaction of reduced flow and a change of flow direction for oil concentration. The collection of the separated oil at high 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. 	<ul style="list-style-type: none"> Ensures oil return to compressor oil sump. Pulsation and noise damping on high-pressure side of system Max. working pressure PS = 28 bar Refrigerants HCFC, HFC Temperature of medium –40 to 120 °C Net volume OUB 1: 0.52 l OUB 4: 2.46 l

Technical data and ordering - OUB oil separators



OUB 1 / OUB 4



OUB 1s

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 x 040B0132
	3/8	-	Solder						040B0010 + 2 x 040B0140
	-	10	Solder						040B0010 + 2 x 040B0138
	1/2	12	Flare						040B0010 + 2 x 040B0134
	1/2	-	Solder						040B0010 + 2 x 040B0142
	-	12	Solder						040B0010 + 2 x 040B0139
	5/8	16	Flare						040B0010 + 2 x 040B0136
5/8	16	Solder	040B0010 + 2 x 040B0144						
Without connection unions									
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 x 040B0256
	5/8	16	Solder						040B0040 + 2 x 040B0266
	3/4	18	Flare						040B0040 + 2 x 040B0258
	3/4	-	Solder						040B0040 + 2 x 040B0268
	7/8	-	Solder						040B0040 + 2 x 040B0270
	-	22	Solder						040B0040 + 2 x 040B0264
	1	25	Flare						040B0040 + 2 x 040B0260
	1	-	Solder						040B0040 + 2 x 040B0272
	1 1/8	-	Solder						040B0040 + 2 x 040B0274
	-	28	Solder						040B0040 + 2 x 040B0265
	Without connection unions								
040B0040									

- 1) 1/4 in. flare connection to oil return line.
 2) 6 mm ODF solder connection to oil return line.

Note: Limited stock holding in Australia.

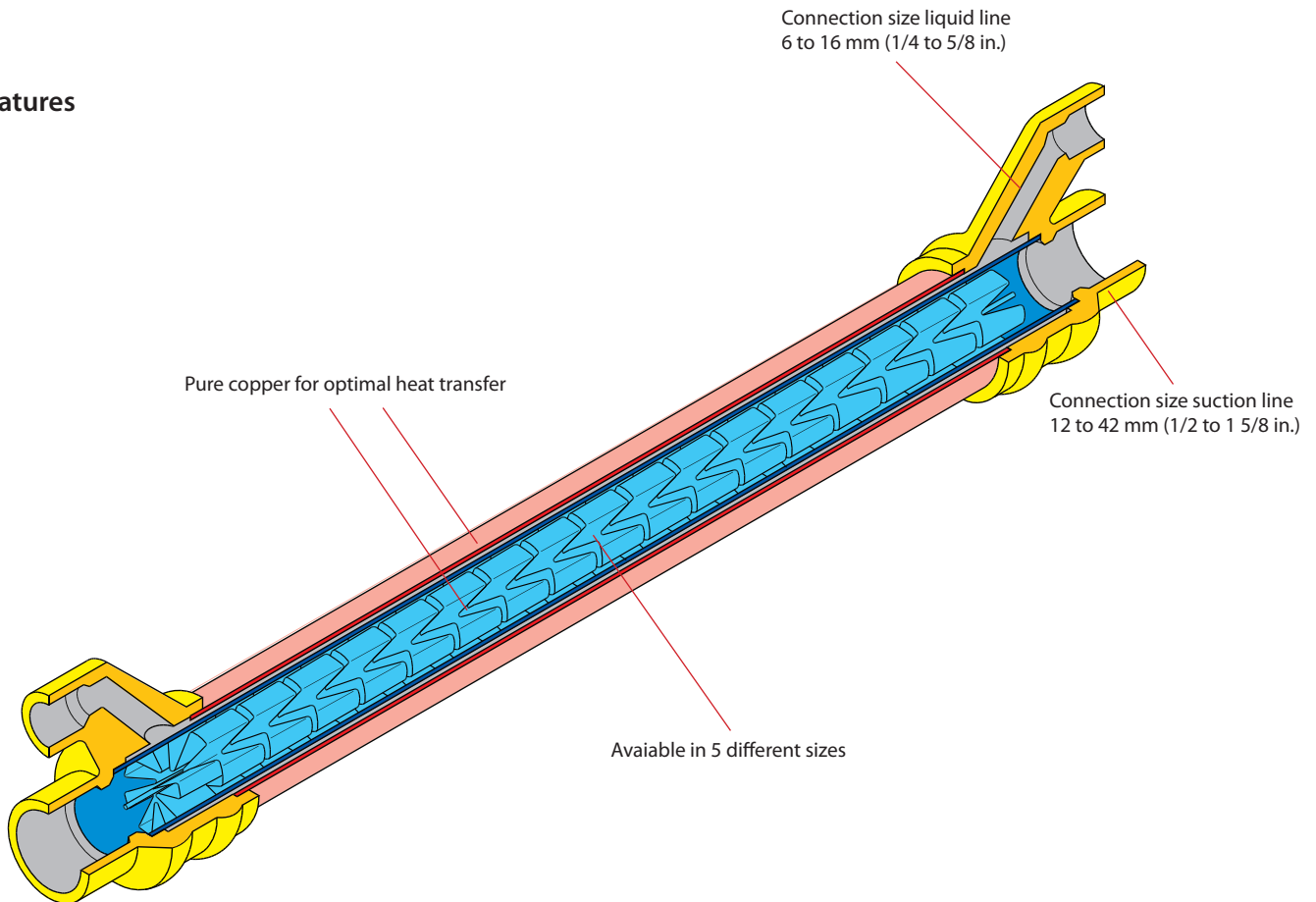
HE – Heat exchanger

Heat exchanger type HE is used primarily for heat transfer between the liquid and suction lines of the refrigeration plant.

The purpose is to utilize the cooling effect which without a heat exchanger is otherwise lost to the ambient air via uninsulated suction lines.

In the heat exchanger, this effect is used to subcool the refrigerant liquid.

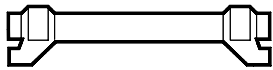
Features



Applications	Advantages	Facts
<ul style="list-style-type: none"> Traditional refrigeration Air conditioning units 	<ul style="list-style-type: none"> The design is such that normal suction gas velocities are achieved, with a subsequent small pressure drop. Thus the heat exchanger capacity will match plant capacity. At the same time, oil return to the compressor is ensured. Helps ensure vapour-free liquid ahead of expansion valve. Helps prevent sweating and iced-up suction lines. Maximum utilisation of evaporator on setting the thermostatic expansion valve for minimum superheat. 	<ul style="list-style-type: none"> For use with HCFC and HFC refrigerants Max. working pressure HE 0.5, 1.0, 1.5, 4.0: PS = 28 bar HE 8.0: PS = 21.5 bar Operating temperature –60 to 120 °C

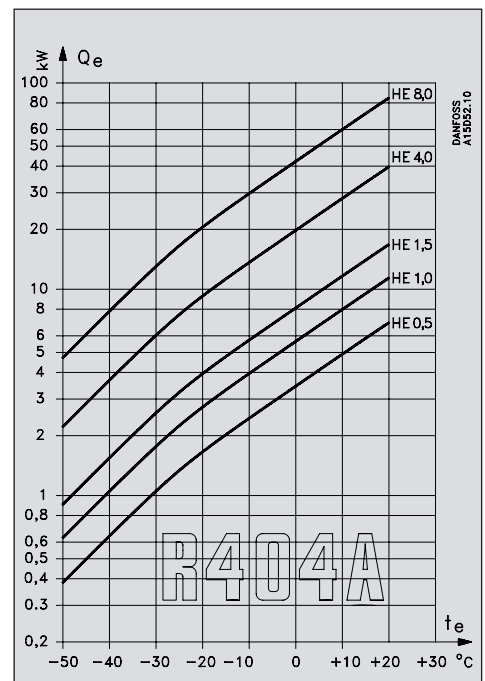
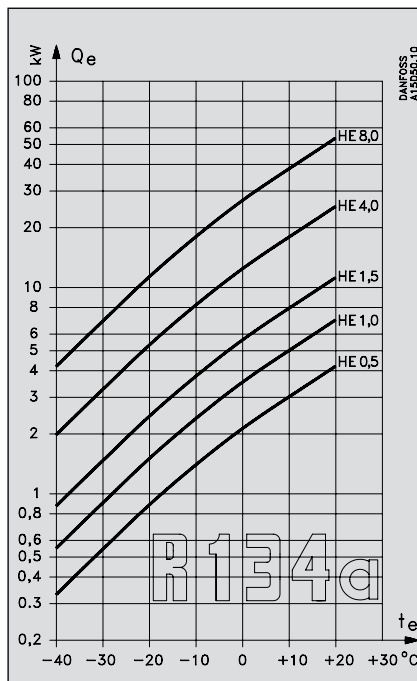
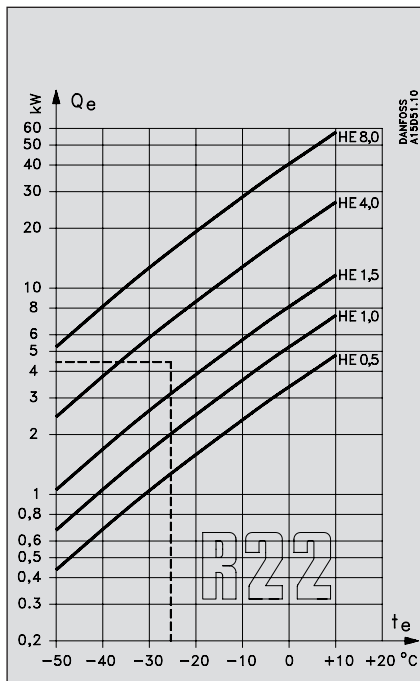
⚠ Note: Limited stock holding in Australia.

Technical data and ordering - HE heat exchangers



Type	Solder connection ODF				Code no.
	Liquid line		Suction line		
	in.	mm	in.	mm	
HE 0.5	-	6	-	12	015D0001
	1/4	-	1/2	-	015D0002
HE 1.0	-	10	-	16	015D0003
	3/8	-	5/8	-	015D0004
HE 1.5	-	12	-	18	015D0005
	1/2	-	3/4	-	015D0006
HE 4.0	-	12	-	28	015D0007
	1/2	-	1 1/8	-	015D0008
HE 8.0	-	16	-	42	015D0009
	5/8	-	1 5/8	-	015D0010

Selection



The curve for R22 shows that an HE 4.0 is suitable. The curve for HE 4.0 lies immediately above the intersection of the lines through $Q_e = 4.5 \text{ kW}$ and $t_e = -25 \text{ °C}$.

The heat flow Q during heat exchange is calculated from the formula:
 $Q = k \times A \times \Delta t_m$

- Q heat flow in W
- k heat transfer coefficient in $\text{W/m}^2 \text{ °C}$
- A transfer area of the heat exchanger in m^2
- Δt_m the average temperature difference in °C , calculated from the formula:

$$\Delta t_m = \frac{\Delta t_{\max} - t_{\min}}{\ln \frac{\Delta t_{\max}}{\Delta t_{\min}}}$$

$k \times A$ values
 Determined by experiment (see table).

Type	$K \times A$
	¹⁾ Dry suction gas / refrigerant liquid (normal use in refrigeration plant with fluorinated refrigerants) W / °C
HE 0.5	2.3
HE 1.0	3.1
HE 1.5	4.9
HE 4.0	11.0
HE 8.0	23.0

¹⁾ These figures apply to dry gas only. Even if a thermostatic expansion valve is used, the suction gas will carry very small liquid drops into the suction line. The fins of the HE catch these drops which then evaporate. This may result in a smaller superheat than the theoretically calculated value.

Precise heat exchanger sizing can be obtained from the curves which show plant capacity Q_e for R22, R134a and R404A depending on evaporating temperature t_e .

Example
 Plant capacity Q_e = 4.5 kW
 Refrigerant = R22
 Evaporating temperature t_e = -25 °C

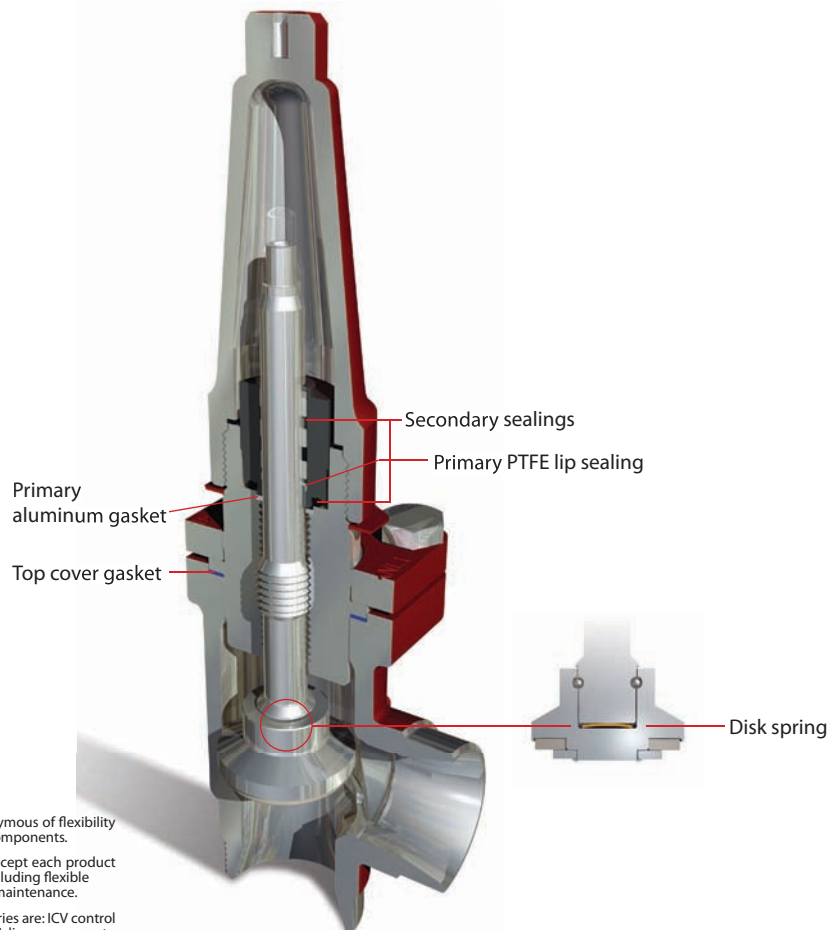


SVA-S and SVA-L – Flexline™ Stop valves

SVA Stop valves are available in angleway and straightway versions and with Standard neck (SVA-S) and Long neck (SVA-L).

The stop valves are designed to meet all industrial refrigeration application requirements and are designed to give favourable flow characteristics and are easy to dismantle and repair when necessary.

⚠ Industrial refrigeration.



The Flexline™ platform is synonymous of flexibility within industrial refrigeration components.

Based on a modular design concept each product features a variety of benefits, including flexible selection, easy installation and maintenance.

The products in the Flexline™ series are: ICV control valves, ICF valve stations and SVL line components.

Advantages and features

- Applicable to all common refrigerants including flammable hydrocarbons and all non-corrosive gases/liquids. Can be used in chemical and petro-chemical applications.
- Optional accessories:
 - Heavy duty industrial hand wheel for frequent operation.
 - Cap for infrequent operation.
- 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 unauthorized persons, using a seal wire.
- Internal metal backseating:
 - DN 6 - 65 (¼ - 2½ 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.
- Max. working pressure: 52 bar g (754 psi g)
Temperature range: -60/+150°C (-76/+302°F)
- Classification: DNV, CRN, BV etc.

Technical data and code numbers - SVA-S and SVA-LS

Technical data

- **Refrigerants**
Applicable to all common refrigerants including flammable hydrocarbons and all non-corrosive gases/liquids.
For further information please see installation instruction for SVA.
- **Temperature range** -60/+150°C (-76/+302°F).
- **Pressure range** The valves are designed for max. working pressure 52 bar g (754 psi g).

Ordering

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
6	x	-
10	x	-
15	x	x
20	x	x
25	x	x
32	x	x
40	x	x
50		x
65		x
80		x
100		x
125		x
150		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.

Type codes

Valve type	SVA	Stop valve				
		Nominal size in mm	A/D	Available connections		
				SOC	FPT	T
(valve size measured on the connection diameter)	6	DN 6 (1/4)	x			x
	10	DN 10 (3/8)	x			x
	15	DN 15 (1/2)	x	x	x	
	20	DN 20 (3/4)	x	x	x	
	25	DN 25 (1)	x	x	x	
	32	DN 32 (1 1/4)	x	x	x	
	40	DN 40 (1 1/2)	x	x		
	50	DN 50 (2)	x	x		
	65	DN 65 (2 1/2)	x			
	80	DN 80 (3)	x			
	100	DN 100 (4)	x			
	125	DN 125 (5)	x			
	150	DN 150 (6)	x			
200	DN 200 (8)	x				
Connections	A	Butt-weld connection: ANSI B 36.10 schedule 80, DN 15 - 40 (1/2 - 1 1/2 in.)				
	D	Butt-weld connection: ANSI B 36.10 schedule 40, DN 50 - 200 (2 - 8 in.)				
	SOC	Butt-weld connection: DIN EN 10220				
	FPT	Socket weld: ANSI B 16.11				
	T	Female Pipe Thread NPT: ANSI/ASME B 1.20.1				
		Outside threaded connections ISO 228/1 Pipe thread				
Valve housing	ANG	Angle flow				
	STR	Straight flow				
Other equipment	H-WHEEL	Hand wheel				
	CAP	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.

⚠ Note: SVA stop valves stocked in Australia are ANSI connections.

Ordering SVA-S

Example:
SVA-S 20 DIN angleway with hand wheel = **148B5300**

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.

SVA-S Angleway

Size		Type	MWP		Code number
mm	in.		bar	psi	

Butt-weld DIN (EN 10220)

6	¼	SVA-S 6 D ANG H-WHEEL	52	754	148B5000
6	¼	SVA-S 6 D ANG CAP	52	754	148B5001
10	¾	SVA-S 10 D ANG H-WHEEL	52	754	148B5100
10	¾	SVA-S 10 D ANG CAP	52	754	148B5101
15	½	SVA-S 15 D ANG H-WHEEL	52	754	148B5200
15	½	SVA-S 15 D ANG CAP	52	754	148B5201
20	¾	SVA-S 20 D ANG H-WHEEL	52	754	148B5300
20	¾	SVA-S 20 D ANG CAP	52	754	148B5301
25	1	SVA-S 25 D ANG H-WHEEL	52	754	148B5400
25	1	SVA-S 25 D ANG CAP	52	754	148B5401
32	1¼	SVA-S 32 D ANG H-WHEEL	52	754	148B5500
32	1¼	SVA-S 32 D ANG CAP	52	754	148B5501
40	1½	SVA-S 40 D ANG H-WHEEL	52	754	148B5600
40	1½	SVA-S 40 D ANG CAP	52	754	148B5601
50	2	SVA-S 50 D ANG H-WHEEL	52	754	148B5700
50	2	SVA-S 50 D ANG CAP	52	754	148B5701
65	2½	SVA-S 65 D ANG H-WHEEL	52	754	148B5800
65	2½	SVA-S 65 D ANG CAP	52	754	148B5801
80	3	SVA-S 80 D ANG H-WHEEL	52	754	148B5900
80	3	SVA-S 80 D ANG CAP	52	754	148B5901
100	4	SVA-S 100 D ANG H-WHEEL	52	754	148B6000
100	4	SVA-S 100 D ANG CAP	52	754	148B6001
125	5	SVA-S 125 D ANG H-WHEEL	52	754	148B6100
125	5	SVA-S 125 D ANG CAP	52	754	148B6101
150	6	SVA-S 150 D ANG H-WHEEL	52	754	148B6200
150	6	SVA-S 150 D ANG CAP	52	754	148B6201
200	8	SVA-S 200 D ANG H-WHEEL	52	754	148B6300
200	8	SVA-S 200 D ANG CAP	52	754	148B6301

Butt-weld ANSI (B 36.10 Schedule 80)

6	¼	SVA-S 6 A ANG H-WHEEL	52	754	148B5020
6	¼	SVA-S 6 A ANG CAP	52	754	148B5021
10	¾	SVA-S 10 A ANG H-WHEEL	52	754	148B5120
10	¾	SVA-S 10 A ANG CAP	52	754	148B5121
15	½	SVA-S 15 A ANG H-WHEEL	52	754	148B5220
15	½	SVA-S 15 A ANG CAP	52	754	148B5221
20	¾	SVA-S 20 A ANG H-WHEEL	52	754	148B5320
20	¾	SVA-S 20 A ANG CAP	52	754	148B5321
25	1	SVA-S 25 A ANG H-WHEEL	52	754	148B5420
25	1	SVA-S 25 A ANG CAP	52	754	148B5421
32	1¼	SVA-S 32 A ANG H-WHEEL	52	754	148B5520
32	1¼	SVA-S 32 A ANG CAP	52	754	148B5521
40	1½	SVA-S 40 A ANG H-WHEEL	52	754	148B5620
40	1½	SVA-S 40 A ANG CAP	52	754	148B5621

Butt-weld ANSI (B 36.10 Schedule 40)

50	2	SVA-S 50 A ANG H-WHEEL	52	754	148B5720
50	2	SVA-S 50 A ANG CAP	52	754	148B5721
65	2½	SVA-S 65 A ANG H-WHEEL	52	754	148B5820
65	2½	SVA-S 65 A ANG CAP	52	754	148B5821
80	3	SVA-S 80 A ANG H-WHEEL	52	754	148B5920
80	3	SVA-S 80 A ANG CAP	52	754	148B5921
100	4	SVA-S 100 A ANG H-WHEEL	52	754	148B6020
100	4	SVA-S 100 A ANG CAP	52	754	148B6021
125	5	SVA-S 125 A ANG H-WHEEL	52	754	148B6120
125	5	SVA-S 125 A ANG CAP	52	754	148B6121
150	6	SVA-S 150 A ANG H-WHEEL	52	754	148B6220
150	6	SVA-S 150 A ANG CAP	52	754	148B6221
200	8	SVA-S 200 A ANG H-WHEEL	52	754	148B6320
200	8	SVA-S 200 A ANG CAP	52	754	148B6321

Socket welding ANSI (B 16.11)

15	½	SVA-S 15 SOC ANG H-WHEEL	52	754	148B5222
15	½	SVA-S 15 SOC ANG CAP	52	754	148B5223
20	¾	SVA-S 20 SOC ANG H-WHEEL	52	754	148B5322
20	¾	SVA-S 20 SOC ANG CAP	52	754	148B5323
25	1	SVA-S 25 SOC ANG H-WHEEL	52	754	148B5422
25	1	SVA-S 25 SOC ANG CAP	52	754	148B5423
32	1¼	SVA-S 32 SOC ANG H-WHEEL	52	754	148B5522
32	1¼	SVA-S 32 SOC ANG CAP	52	754	148B5523
40	1½	SVA-S 40 SOC ANG H-WHEEL	52	754	148B5622
40	1½	SVA-S 40 SOC ANG CAP	52	754	148B5623
50	2	SVA-S 50 SOC ANG H-WHEEL	52	754	148B5722
50	2	SVA-S 50 SOC ANG CAP	52	754	148B5723

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)

15	½	SVA-S 15 FTP ANG H-WHEEL	52	754	148B5224
15	½	SVA-S 15 FTP ANG CAP	52	754	148B5225
20	¾	SVA-S 20 FTP ANG H-WHEEL	52	754	148B5324
20	¾	SVA-S 20 FTP ANG CAP	52	754	148B5325
25	1	SVA-S 25 FTP ANG H-WHEEL	52	754	148B5424
25	1	SVA-S 25 FTP ANG CAP	52	754	148B5425
32	1¼	SVA-S 32 FTP ANG H-WHEEL	52	754	148B5524
32	1¼	SVA-S 32 FTP ANG CAP	52	754	148B5525

T outside pipe thread, (ISO 228/1)

6	¼	SVA-S 6 T ANG CAP	52	754	148B5032
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ANG = Angleway
STR = Straightway

CAP = Cap
H-WHEEL = Hand wheel

SVA-S Straightway

Size		Type	MWP		Code number
mm	in.		bar	psi	

Butt-weld DIN (EN 10220)

6	¼	SVA-S 6 D STR H-WHEEL	52	754	148B5010
6	¼	SVA-S 6 D STR CAP	52	754	148B5011
10	¾	SVA-S 10 D STR H-WHEEL	52	754	148B5110
10	¾	SVA-S 10 D STR CAP	52	754	148B5111
15	½	SVA-S 15 D STR H-WHEEL	52	754	148B5210
15	½	SVA-S 15 D STR CAP	52	754	148B5211
20	¾	SVA-S 20 D STR H-WHEEL	52	754	148B5310
20	¾	SVA-S 20 D STR CAP	52	754	148B5311
25	1	SVA-S 25 D STR H-WHEEL	52	754	148B5410
25	1	SVA-S 25 D STR CAP	52	754	148B5411
32	1¼	SVA-S 32 D STR H-WHEEL	52	754	148B5510
32	1¼	SVA-S 32 D STR CAP	52	754	148B5511
40	1½	SVA-S 40 D STR H-WHEEL	52	754	148B5610
40	1½	SVA-S 40 D STR CAP	52	754	148B5611
50	2	SVA-S 50 D STR H-WHEEL	52	754	148B5710
50	2	SVA-S 50 D STR CAP	52	754	148B5711
65	2½	SVA-S 65 D STR H-WHEEL	52	754	148B5810
65	2½	SVA-S 65 D STR CAP	52	754	148B5811
80	3	SVA-S 80 D STR H-WHEEL	52	754	148B5910
80	3	SVA-S 80 D STR CAP	52	754	148B5911
100	4	SVA-S 100 D STR H-WHEEL	52	754	148B6010
100	4	SVA-S 100 D STR CAP	52	754	148B6011
125	5	SVA-S 125 D STR H-WHEEL	52	754	148B6110
125	5	SVA-S 125 D STR CAP	52	754	148B6111
150	6	SVA-S 150 D STR H-WHEEL	52	754	148B6210
150	6	SVA-S 150 D STR CAP	52	754	148B6211
200	8	SVA-S 200 D STR H-WHEEL	52	754	148B6310
200	8	SVA-S 200 D STR CAP	52	754	148B6311

Butt-weld ANSI (B 36.10 Schedule 80)

6	¼	SVA-S 6 A STR H-WHEEL	52	754	148B5030
6	¼	SVA-S 6 A STR CAP	52	754	148B5031
10	¾	SVA-S 10 A STR H-WHEEL	52	754	148B5130
10	¾	SVA-S 10 A STR CAP	52	754	148B5131
15	½	SVA-S 15 A STR H-WHEEL	52	754	148B5230
15	½	SVA-S 15 A STR CAP	52	754	148B5231
20	¾	SVA-S 20 A STR H-WHEEL	52	754	148B5330
20	¾	SVA-S 20 A STR CAP	52	754	148B5331
25	1	SVA-S 25 A STR H-WHEEL	52	754	148B5430
25	1	SVA-S 25 A STR CAP	52	754	148B5431
32	1¼	SVA-S 32 A STR H-WHEEL	52	754	148B5530
32	1¼	SVA-S 32 A STR CAP	52	754	148B5531
40	1½	SVA-S 40 A STR H-WHEEL	52	754	148B5630
40	1½	SVA-S 40 A STR CAP	52	754	148B5631

Butt-weld ANSI (B 36.10 Schedule 40)

50	2	SVA-S 50 A STR H-WHEEL	52	754	148B5730
50	2	SVA-S 50 A STR CAP	52	754	148B5731
65	2½	SVA-S 65 A STR H-WHEEL	52	754	148B5830
65	2½	SVA-S 65 A STR CAP	52	754	148B5831
80	3	SVA-S 80 A STR H-WHEEL	52	754	148B5930
80	3	SVA-S 80 A STR CAP	52	754	148B5931
100	4	SVA-S 100 A STR H-WHEEL	52	754	148B6030
100	4	SVA-S 100 A STR CAP	52	754	148B6031
125	5	SVA-S 125 A STR H-WHEEL	52	754	148B6130
125	5	SVA-S 125 A STR CAP	52	754	148B6131
150	6	SVA-S 150 A STR H-WHEEL	52	754	148B6230
150	6	SVA-S 150 A STR CAP	52	754	148B6231
200	8	SVA-S 200 A STR H-WHEEL	52	754	148B6330
200	8	SVA-S 200 A STR CAP	52	754	148B6331

Socket welding ANSI (B 16.11)

15	½	SVA-S 15 SOC STR H-WHEEL	52	754	148B5232
15	½	SVA-S 15 SOC STR CAP	52	754	148B5233
20	¾	SVA-S 20 SOC STR H-WHEEL	52	754	148B5332
20	¾	SVA-S 20 SOC STR CAP	52	754	148B5333
25	1	SVA-S 25 SOC STR H-WHEEL	52	754	148B5432
25	1	SVA-S 25 SOC STR CAP	52	754	148B5433
32	1¼	SVA-S 32 SOC STR H-WHEEL	52	754	148B5532
32	1¼	SVA-S 32 SOC STR CAP	52	754	148B5533
40	1½	SVA-S 40 SOC STR H-WHEEL	52	754	148B5632
40	1½	SVA-S 40 SOC STR CAP	52	754	148B5633
50	2	SVA-S 50 SOC STR H-WHEEL	52	754	148B5732
50	2	SVA-S 50 SOC STR CAP	52	754	148B5733

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)


15	½	SVA-S 15 FTP STR H-WHEEL	52	754	148B5234
15	½	SVA-S 15 FTP STR CAP	52	754	148B5235
20	¾	SVA-S 20 FTP STR H-WHEEL	52	754	148B5334
20	¾	SVA-S 20 FTP STR CAP	52	754	148B5335
25	1	SVA-S 25 FTP STR H-WHEEL	52	754	148B5434
25	1	SVA-S 25 FTP STR CAP	52	754	148B5435
32	1¼	SVA-S 32 FTP STR H-WHEEL	52	754	148B5534
32	1¼	SVA-S 32 FTP STR CAP	52	754	148B5535

Ordering SVA-L

Example:
SVA-L 20 DIN angleway with
hand wheel = **148B5340**

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.

 Note: See note previous page.

ANG = Angleway
STR = Straightway
CAP = Cap
H-WHEEL = Hand wheel

SVA-L Angleway

Size		Type	MWP		Code number
mm	in.		bar	psi	

Butt-weld DIN (EN 10220)

15	½	SVA-L 15 D ANG H-WHEEL	52	754	148B5240
15	½	SVA-L 15 D ANG CAP	52	754	148B5241
20	¾	SVA-L 20 D ANG H-WHEEL	52	754	148B5340
20	¾	SVA-L 20 D ANG CAP	52	754	148B5341
25	1	SVA-L 25 D ANG H-WHEEL	52	754	148B5440
25	1	SVA-L 25 D ANG CAP	52	754	148B5441
32	1¼	SVA-L 32 D ANG H-WHEEL	52	754	148B5540
32	1¼	SVA-L 32 D ANG CAP	52	754	148B5541
40	1½	SVA-L 40 D ANG H-WHEEL	52	754	148B5640
40	1½	SVA-L 40 D ANG CAP	52	754	148B5641

Butt-weld ANSI (B 36.10 Schedule 80)

15	½	SVA-L 15 A ANG H-WHEEL	52	754	148B5260
15	½	SVA-L 15 A ANG CAP	52	754	148B5261
20	¾	SVA-L 20 A ANG H-WHEEL	52	754	148B5360
20	¾	SVA-L 20 A ANG CAP	52	754	148B5361
25	1	SVA-L 25 A ANG H-WHEEL	52	754	148B5460
25	1	SVA-L 25 A ANG CAP	52	754	148B5461
32	1¼	SVA-L 32 A ANG H-WHEEL	52	754	148B5560
32	1¼	SVA-L 32 A ANG CAP	52	754	148B5561
40	1½	SVA-L 40 A ANG H-WHEEL	52	754	148B5660
40	1½	SVA-L 40 A ANG CAP	52	754	148B5661

Socket welding ANSI (B 16.11)

15	½	SVA-L 15 SOC ANG H-WHEEL	52	754	148B5262
15	½	SVA-L 15 SOC ANG CAP	52	754	148B5263
20	¾	SVA-L 20 SOC ANG H-WHEEL	52	754	148B5362
20	¾	SVA-L 20 SOC ANG CAP	52	754	148B5363
25	1	SVA-L 25 SOC ANG H-WHEEL	52	754	148B5462
25	1	SVA-L 25 SOC ANG CAP	52	754	148B5463
32	1¼	SVA-L 32 SOC ANG H-WHEEL	52	754	148B5562
32	1¼	SVA-L 32 SOC ANG CAP	52	754	148B5563
40	1½	SVA-L 40 SOC ANG H-WHEEL	52	754	148B5662
40	1½	SVA-L 40 SOC ANG CAP	52	754	148B5663

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)

15	½	SVA-L 15 FTP ANG H-WHEEL	52	754	148B5264
15	½	SVA-L 15 FTP ANG CAP	52	754	148B5265
20	¾	SVA-L 20 FTP ANG H-WHEEL	52	754	148B5364
20	¾	SVA-L 20 FTP ANG CAP	52	754	148B5365
25	1	SVA-L 25 FTP ANG H-WHEEL	52	754	148B5464
25	1	SVA-L 25 FTP ANG CAP	52	754	148B5465
32	1¼	SVA-L 32 FTP ANG H-WHEEL	52	754	148B5564
32	1¼	SVA-L 32 FTP ANG CAP	52	754	148B5565

The products are also available in stainless steel.

Please refer to the Danfoss brochure DKRCI.PD.K00.A for further details or contact your local Danfoss sales office.

SVA-L Straightway

Size		Type	MWP		Code number
mm	in.		bar	psi	

Butt-weld DIN (EN 10220)

15	½	SVA-L 15 D STR H-WHEEL	52	754	148B5250
15	½	SVA-L 15 D STR CAP	52	754	148B5251
20	¾	SVA-L 20 D STR H-WHEEL	52	754	148B5350
20	¾	SVA-L 20 D STR CAP	52	754	148B5351
25	1	SVA-L 25 D STR H-WHEEL	52	754	148B5450
25	1	SVA-L 25 D STR CAP	52	754	148B5451
32	1¼	SVA-L 32 D STR H-WHEEL	52	754	148B5550
32	1¼	SVA-L 32 D STR CAP	52	754	148B5551
40	1½	SVA-L 40 D STR H-WHEEL	52	754	148B5650
40	1½	SVA-L 40 D STR CAP	52	754	148B5651

Butt-weld ANSI (B 36.10 Schedule 80)

15	½	SVA-L 15 A STR H-WHEEL	52	754	148B5270
15	½	SVA-L 15 A STR CAP	52	754	148B5271
20	¾	SVA-L 20 A STR H-WHEEL	52	754	148B5370
20	¾	SVA-L 20 A STR CAP	52	754	148B5371
25	1	SVA-L 25 A STR H-WHEEL	52	754	148B5470
25	1	SVA-L 25 A STR CAP	52	754	148B5471
32	1¼	SVA-L 32 A STR H-WHEEL	52	754	148B5570
32	1¼	SVA-L 32 A STR CAP	52	754	148B5571
40	1½	SVA-L 40 A STR H-WHEEL	52	754	148B5670
40	1½	SVA-L 40 A STR CAP	52	754	148B5671

Socket welding ANSI (B 16.11)

15	½	SVA-L 15 SOC STR H-WHEEL	52	754	148B5272
15	½	SVA-L 15 SOC STR CAP	52	754	148B5273
20	¾	SVA-L 20 SOC STR H-WHEEL	52	754	148B5372
20	¾	SVA-L 20 SOC STR CAP	52	754	148B5373
25	1	SVA-L 25 SOC STR H-WHEEL	52	754	148B5472
25	1	SVA-L 25 SOC STR CAP	52	754	148B5473
32	1¼	SVA-L 32 SOC STR H-WHEEL	52	754	148B5572
32	1¼	SVA-L 32 SOC STR CAP	52	754	148B5573
40	1½	SVA-L 40 SOC STR H-WHEEL	52	754	148B5672
40	1½	SVA-L 40 SOC STR CAP	52	754	148B5673

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)

15	½	SVA-L 15 FTP STR H-WHEEL	52	754	148B5274
15	½	SVA-L 15 FTP STR CAP	52	754	148B5275
20	¾	SVA-L 20 FTP STR H-WHEEL	52	754	148B5374
20	¾	SVA-L 20 FTP STR CAP	52	754	148B5375
25	1	SVA-L 25 FTP STR H-WHEEL	52	754	148B5474
25	1	SVA-L 25 FTP STR CAP	52	754	148B5475
32	1¼	SVA-L 32 FTP STR H-WHEEL	52	754	148B5574
32	1¼	SVA-L 32 FTP STR CAP	52	754	148B5575

Accessories

6T and 10-15T Nipple Kit solution

Code no.	
148B4244	ACCESSORY WELD.NIPPLE DN10 D + UNION NUT
148B4245	ACCESSORY WELD.NIPPLE DN6 A + UNION NUT
148B4246	ACCESSORY WELD.NIPPLE DN10 A + UNION NUT
148B4247	ACCESSORY WELD.NIPPLE DN15 A + UNION NUT
148B4184	ACCESSORY WELD.NIPPLE DN6 D + UNION NUT
148B4185	ACCESSORY WELD.NIPPLE DN15 D + UNION NUT

 Note: Ordering please refer to Industrial refrigeration Quick guide supplement.

SVA- Caps

Size	Code
15 - 20	148B4059
25 - 65	148B4048
80 - 100	148B4049
125 - 150	148B4050
200	148B4051



SNV-ST/SNV-SS – Stop needle valves

SNV valves are designed to meet all industrial refrigeration application requirements. Designed as service valves they provide favourable flow characteristics. Available in standard version with normal or extended tube.

⚠ Limited codes stocked in Australia.



Advantages and features

- Applicable to all common refrigerants including R717 and R744 (CO₂) and non corrosive gases/liquids.
- 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
- Full temperature range:
-60/+150°C (-76/+302°F)

Technical data and code numbers

Technical data

Refrigerants

Applicable to all common refrigerants including R 717 and R744 (CO₂) and non corrosive gases/liquids. For further information please see installation instruction for SNV-ST.

Temperature range

-60/+150°C (-76/+302°F).

Maximum working pressure

The valve is designed for: Maximum operating pressure of 52 bar g (754 psig).
Valves for higher operating pressure available on request.

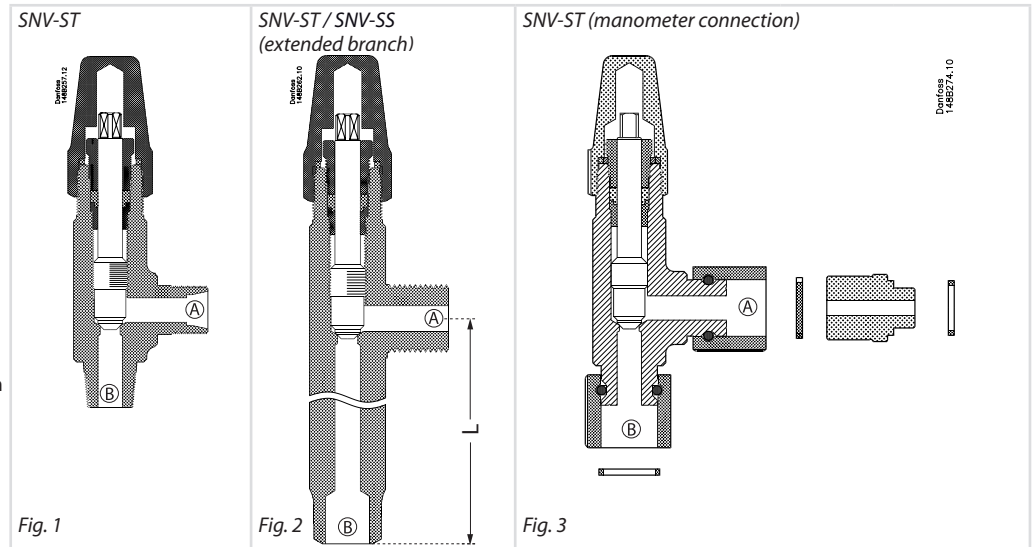
Code numbers

How to order

The table below is used to identify the valve required. Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range.

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.



See figure 1

Side branch connection A	Bottom branch connection B	Type	Quantity	Code no.
CD 10	CD 10	SNV-ST CD10-CD10	1 pc.	148B3740
CD 10	CD 10	SNV-ST CD10-CD10	30 pcs.	148B4177
CD 10	¼ MPT	SNV-ST CD10-1/4MPT	1 pc.	148B3741
CD 6	¼ MPT	SNV-ST CD6-1/4MPT	1 pc.	148B3742
CD 10	⅜ MPT	SNV-ST CD10-3/8MPT	1 pc.	148B3743
CD 6	⅜ MPT	SNV-ST CD6-3/8MPT	1 pc.	148B3744
G ½ (external)	G ½ (external)	SNV-ST G1/2-G1/2	1 pc.	148B3745
G ½ (external)	G ½ (external)	SNV-ST G1/2-G1/2	30 pcs.	148B4179
¼ FPT	¼ MPT	SNV-ST 1/4FPT-1/4MPT	1 pc.	148B3746
¼ FPT	¼ MPT	SNV-ST 1/4FPT-1/4MPT	30 pcs.	148B4180
⅜ FPT	⅜ MPT	SNV-ST 3/8FPT-3/8MPT	1 pc.	148B3747
⅜ FPT	⅜ MPT	SNV-ST 3/8FPT-3/8MPT	30 pcs.	148B4181
⅜ FPT	½ MPT	SNV-ST 3/8FPT-1/2MPT	30 pcs.	148B4233
¼ FPT	¼ MPT	SNV-ST 1/4FPT-1/4MPT	30 pcs.	148B4223
½ MPT	½ MPT	SNV-ST 1/2MPT-1/2MPT	30 pcs.	148B4224
⅜ FPT	⅜ FPT	SNV-ST 3/8FPT-3/8FPT	30 pcs.	148B4225
½ MPT	⅜ FPT	SNV-ST 1/2MPT-3/8FPT	30 pcs.	148B4226
CD 6	¼ MPT	SNV-ST CD6-1/4MPT*	30 pcs.	148B4216
7/16 UNF	¼ MPT	SNV-ST 7/16UNF-1/4MPT	30 pcs.	148B4230

* With handwheel

Extended Branch

See figure 2

L50 = 50 mm (2 in.)

L100 = 100 mm (4 in.)

L125 = 125 mm (5 in.)

L150 = 150 mm (6 in.)

Side branch connection A	Bottom branch connection B	Type	Quantity	Code no.
CD10	W½ L100	SNV-ST CD10-W1/2 L100	1 pc.	148B3768
CD10	W½ L100	SNV-ST CD10-W1/2 L100	30 pcs.	148B4210
G ½ (external)	W½ L100	SNV-ST G1/2-W1/2 L100	1 pc.	148B3769
G ½ (external)	W½ L100	SNV-ST G1/2-W1/2 L100	30 pcs.	148B4211
G ½ (external)	W½ L125	SNV-ST G1/2-W1/2 L125	30 pcs.	148B4219
G ½ (external)	W½ L50	SNV-ST G1/2-W1/2 L50	30 pcs.	148B4218
G ¼ (internal)	R¼ L50 (external)	SNV-ST G1/4-R1/4 L50	30 pcs.	148B4231
¼ FPT	¼ MPT L100	SNV-ST 1/4FPT-1/4MPT L100	30 pcs.	148B4232
G ½ (external)	W½ L50	SNV-SS G1/2-W1/2 L50	1 pc.	148B4265
G ½ (external)	W½ L150	SNV-SS G1/2-W1/2 L150	1 pc.	148B4266
G ¾ (external)	W½ L125	SNV-ST G3/8-W1/2 L125	30 pcs.	148B4336

Manometer connection

See figure 3

Side branch connection	Bottom branch connection	Type	Quantity	Code no.
G ½	G ½	SNV-ST G½ Man	1 pc.	148B3778**

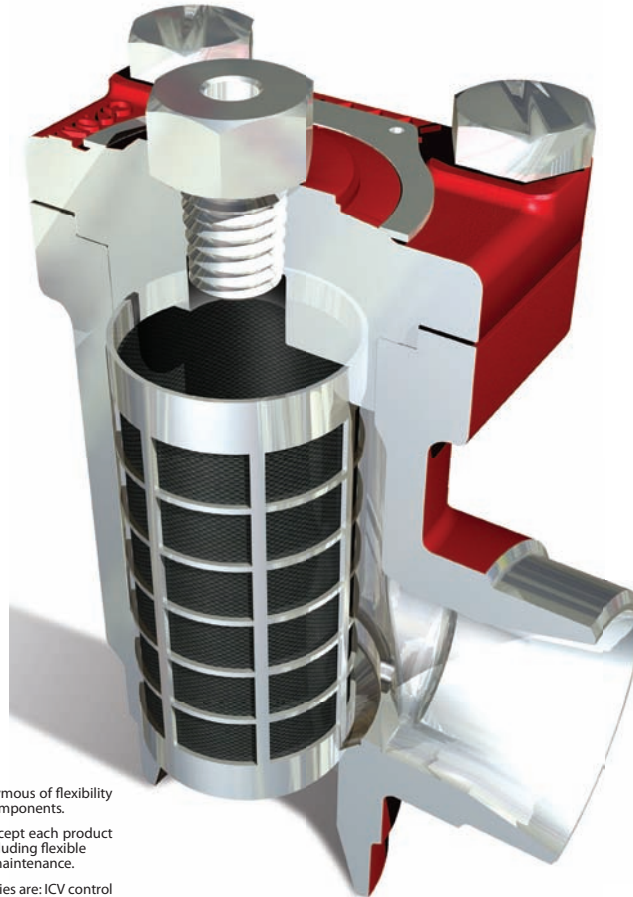
** Including adaptor for connection to ICS/PM valve



FIA – Flexline™ Filters (SVL platform)

FIA filters are a range of angleway and straightway filters, which are carefully designed to give favourable flow conditions. The design makes the filter easy to install, and ensures quick filter inspection and cleaning.

⚠ Industrial refrigeration.



The Flexline™ platform is synonymous of flexibility within industrial refrigeration components.

Based on a modular design concept each product features a variety of benefits, including flexible selection, easy installation and maintenance.

The products in the Flexline™ series are: ICF control valves, ICF valve stations and SVL line components.

Advantages and features

- Housing is standard SVA angleway or straightway housing allowing other inserts from the SVL platform to be installed.
- Applicable to all common refrigerants including flammable hydrocarbons and all non-corrosive gases/liquids. Can be used in chemical and petro-chemical applications.
- Filter net of stainless steel mounted direct without extra gaskets means easy servicing.
- Two types of filter inserts are available:
 - A plain insert of stainless steel.
 - A pleated insert (DN 15-200) with extra large surface, which ensures long intervals between cleaning and low pressure drop.
- 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 50-200 (2 - 8 in.):
A large capacity filter bag (50µ) can be inserted for cleaning plant during commissioning.
- FIA 50-200 (2 - 8 in.) can be equipped with a magnetic insert for detention of iron particles and other magnetic particles.
- Each filter clearly marked with type, size and performance range
- Housing 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)

⚠ Note: Only ANSI connections stocked in Australia.

Technical data, code numbers and accessories - FIA

Technical data

- **Refrigerants**
Applicable to all common refrigerants including flammable refrigerants and all non-corrosive gases/liquids. For further information please see installation instruction for FIA.

- **Temperature range**
-60°C/+150°C (-76°F/+302°F).
- **Max. working pressure:**
52 bar g (754 psi g).

Code numbers

The table below is used to identify the filter required. Please note that you have to order **FIA filter without element, a filter element and accessories.**

Example:
FIA 50 D ANG + FIA-X 50 150µ Filter Element + Filter Bag =
148H5912 + 148H3130 + 148H3150

Size		Type	FIA Without Filter Element	Filter Element 100µ 150 mesh	Filter Element 150µ 100 mesh	Filter Element 250µ 72 mesh	Filter Element 500µ 38 mesh	Pleated filter element 150µ 100 mesh	Pleated filter element 250µ 72 mesh	Pleated filter element 500µ 38 mesh
mm	in.									

Butt-weld DIN (EN 10220) - Angleyway

15	½	FIA 15 D ANG	148B5242	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 D ANG	148B5342							
25	1	FIA 25 D ANG	148B5442							
32	1¼	FIA 32 D ANG	148B5543	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
40	1½	FIA 40 D ANG	148B5624							
50	2	FIA 50 D ANG	148B5712	148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189
65	2½	FIA 65 D ANG	148B5812	-	148H3131	148H3139	148H3145	148H3180	148H3185	148H3190
80	3	FIA 80 D ANG	148B5905	-	148H3119	148H3120	148H3121	148H3181	148H3186	148H3191
100	4	FIA 100 D ANG	148B6006	-	148H3132	148H3140	148H3146	148H3182	148H3187	148H3192
125	5	FIA 125 D ANG	148B6105	-	148H3133	148H3141	148H3147	148H3183	148H3188	148H3193
150	6	FIA 150 D ANG	148B6202	-	148H3134	148H3142	148H3148	148H3226	-	-
200	8	FIA 200 D ANG	148B6302	-	148H3135	148H3143	148H3149	-	-	-

Butt-weld DIN (EN 10220) - Straightway

15	½	FIA 15 D STR	148B5243	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 D STR	148B5343							
25	1	FIA 25 D STR	148B5443							
32	1¼	FIA 32 D STR	148B5544	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
40	1½	FIA 40 D STR	148B5625							
50	2	FIA 50 D STR	148B5713	148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189
65	2½	FIA 65 D STR	148B5813	-	148H3131	148H3139	148H3145	148H3180	148H3185	148H3190
80	3	FIA 80 D STR	148B5906	-	148H3119	148H3120	148H3121	148H3181	148H3186	148H3191
100	4	FIA 100 D STR	148B6007	-	148H3132	148H3140	148H3146	148H3182	148H3187	148H3192
125	5	FIA 125 D STR	148B6106	-	148H3133	148H3141	148H3147	148H3183	148H3188	148H3193
150	6	FIA 150 D STR	148B6203	-	148H3134	148H3142	148H3148	148H3226	-	-
200	8	FIA 200 D STR	148B6303	-	148H3135	148H3143	148H3149	-	-	-

Butt-weld ANSI (B 36.10 Schedule 80) - Angleyway

15	½	FIA 15 A ANG	148B5244	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 A ANG	148B5344							
25	1	FIA 25 A ANG	148B5444							
32	1¼	FIA 32 A ANG	148B5545	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
40	1½	FIA 40 A ANG	148B5642							

Butt-weld ANSI (B 36.10 Schedule 80) - Straightway

15	½	FIA 15 A STR	148B5247	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 A STR	148B5347							
25	1	FIA 25 A STR	148B5447							
32	1¼	FIA 32 A STR	148B5552	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
40	1½	FIA 40 A STR	148B5644							

Butt-weld ANSI (B 36.10 Schedule 40) - Angleyway

50	2	FIA 50 A ANG	148B5714	148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189
65	2½	FIA 65 A ANG	148B5814	-	148H3131	148H3139	148H3145	148H3180	148H3185	148H3190
80	3	FIA 80 A ANG	148B5907	-	148H3119	148H3120	148H3121	148H3181	148H3186	148H3191
100	4	FIA 100 A ANG	148B6008	-	148H3132	148H3140	148H3146	148H3182	148H3187	148H3192
125	5	FIA 125 A ANG	148B6107	-	148H3133	148H3141	148H3147	148H3183	148H3188	148H3193
150	6	FIA 150 A ANG	148B6204	-	148H3134	148H3142	148H3148	148H3226	-	-
200	8	FIA 200 A ANG	148B6304	-	148H3135	148H3143	148H3149	-	-	-

⚠ Refer to Industrial refrigeration quick guide supplement.

Code numbers (continued) - FIA

Size		Type	FIA Without Filter Element	Filter Element	Filter Element	Filter Element	Filter Element	Pleated filter element	Pleated filter element	Pleated filter element
mm	in.			100µ 150 mesh	150µ 100 mesh	250µ 72 mesh	500µ 38 mesh	150µ 100 mesh	250µ 72 mesh	500µ 38 mesh

Butt-weld ANSI (B 36.10 Schedule 40) - Straightway

Size (mm)	Size (in.)	Type	FIA Code	100µ	150µ	250µ	500µ	Pleated 150µ	Pleated 250µ	Pleated 500µ
50	2	FIA 50 A STR	148B5716	148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189
65	2½	FIA 65 A STR	148B5815	-	148H3131	148H3139	148H3145	148H3180	148H3185	148H3190
80	3	FIA 80 A STR	148B5908	-	148H3119	148H3120	148H3121	148H3181	148H3186	148H3191
100	4	FIA 100 A STR	148B6009	-	148H3132	148H3140	148H3146	148H3182	148H3187	148H3192
125	5	FIA 125 A STR	148B6108	-	148H3133	148H3141	148H3147	148H3183	148H3188	148H3193
150	6	FIA 150 A STR	148B6205	-	148H3134	148H3142	148H3148	148H3226	-	-
200	8	FIA 200 A STR	148B6305	-	148H3135	148H3143	148H3149	-	-	-

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1) - Angleway

Size (mm)	Size (in.)	Type	FIA Code	100µ	150µ	250µ	500µ	Pleated 150µ	Pleated 250µ	Pleated 500µ
15	½	FIA 15 FTP ANG	148B5246	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 FTP ANG	148B5346	-	-	-	-	-	-	-
25	1	FIA 25 FTP ANG	148B5446	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
32	1¼	FIA 32 FTP ANG	148B5547	-	-	-	-	-	-	-

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1) - Straightway

Size (mm)	Size (in.)	Type	FIA Code	100µ	150µ	250µ	500µ	Pleated 150µ	Pleated 250µ	Pleated 500µ
15	½	FIA 15 FTP STR	148B5249	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 FTP STR	148B5349	-	-	-	-	-	-	-
25	1	FIA 25 FTP STR	148B5449	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
32	1¼	FIA 32 FTP STR	148B5549	-	-	-	-	-	-	-

Socket welding ANSI (B 16.11) - Angleway

Size (mm)	Size (in.)	Type	FIA Code	100µ	150µ	250µ	500µ	Pleated 150µ	Pleated 250µ	Pleated 500µ
15	½	FIA 15 SOC ANG	148B5245	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 SOC ANG	148B5345	-	-	-	-	-	-	-
25	1	FIA 25 SOC ANG	148B5445	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
32	1¼	FIA 32 SOC ANG	148B5546	-	-	-	-	-	-	-
40	1½	FIA 40 SOC ANG	148B5643	148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189
50	2	FIA 50 SOC ANG	148B5715	-	-	-	-	-	-	-

Socket welding ANSI (B 16.11) - Straightway

Size (mm)	Size (in.)	Type	FIA Code	100µ	150µ	250µ	500µ	Pleated 150µ	Pleated 250µ	Pleated 500µ
15	½	FIA 15 SOC STR	148B5248	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾	FIA 20 SOC STR	148B5348	-	-	-	-	-	-	-
25	1	FIA 25 SOC STR	148B5448	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
32	1¼	FIA 32 SOC STR	148B5548	-	-	-	-	-	-	-
40	1½	FIA 40 SOC STR	148B5645	148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189
50	2	FIA 50 SOC STR	148B5717	-	-	-	-	-	-	-

- SOC = Socket welding
 FPT = Inside pipe thread
 ANG = Angleway
 STR = Straightway

The products are also available in stainless steel.
 Please refer to the Danfoss brochure DKRCL.PD.K00.A for further details or contact your local Danfoss sales office.

Accessories

Part	Accessory for	Code number
Magnet insert	FIA 65-100	148H3447
	FIA 125-200	148H3448

Part	Accessory for	Code number
Filter element µ150 with removable element µ50 for the first start up	FIA 15-20	148H3301
	FIA 25-40	148H3302

Part	Accessory for	Code number
Filter bag	FIA 50	148H3150
	FIA 65	148H3151
	FIA 80	148H3152
	FIA 100	148H3153
	FIA 125	148H3154
	FIA 150	148H3155
	FIA 200	148H3156

Part	Accessory for	Code number
Purge valve complete	FIA 50 - 300	148B3745
Blind nut with gasket		148H3450

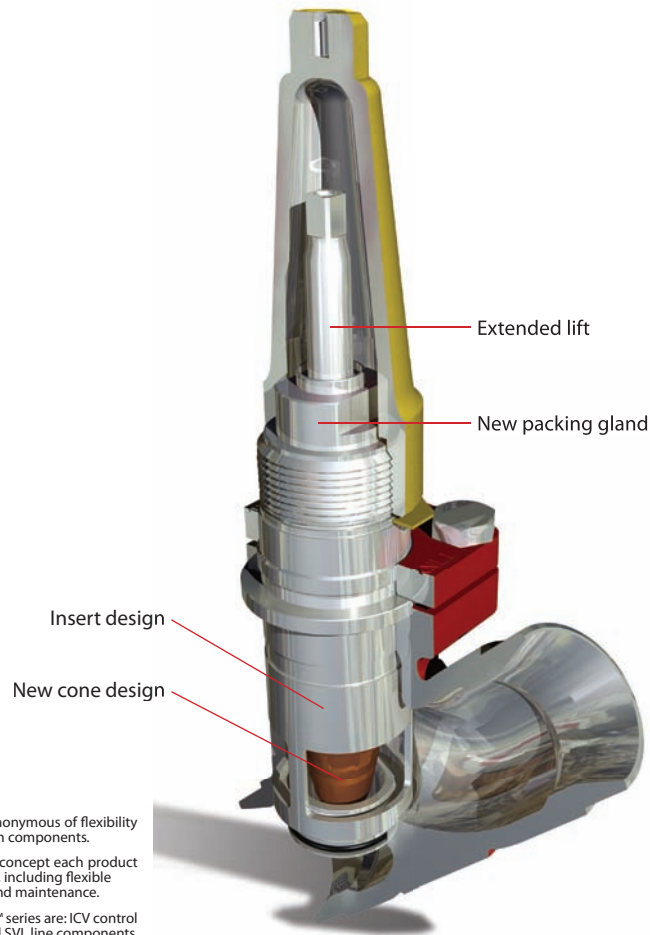


REG-SA and REG-SB – Flexline™ Regulating valves

REG-SA and REG-SB are angleway and straightway hand regulating valves, which act as normal stop valves in closed position.

The valves are available in two different versions – REG-SA is for use in expansion lines (cone type A), while REG-SB is designed for regulation purposes in liquid lines (cone type B).

⚠ Industrial refrigeration.



The Flexline™ platform is synonymous of flexibility within industrial refrigeration components.

Based on a modular design concept each product features a variety of benefits, including flexible selection, easy installation and maintenance.

The products in the Flexline™ series are: ICF control valves, ICF valve stations and SVL line components.

Advantages and features

- Housing is Standard SVL angleway or straightway housing allowing other inserts from the SVL platform to be installed. Applicable to all common non-flammable refrigerants and all non-corrosive gases/liquids. Can be used in chemical and petro-chemical applications.
- 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 psi g)
- Temperature range: $-60/+150^{\circ}\text{C}$ ($-76/+302^{\circ}\text{F}$)
- Acts as a normal stop valve in closed position.
- Housing and bonnet material is low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities.

⚠ Refer to Industrial refrigeration quick guide supplement.

⚠ Note: Only ANSI connections stocked in Australia.

Technical data and code numbers

Technical data

- **Refrigerants**
Applicable to all common non-flammable refrigerants and all non-corrosive gases/liquids.
Can be used in chemical and petro-chemical applications.
- **Temperature range**
-60/+150°C (-76/+302°F)

- **Max working pressure**
52 bar g (754 psi g)
- **Flow coefficients**
Flow coefficients for fully opened valves from $k_v = 0.15$ to $80 \text{ m}^3/\text{h}$ ($C_v = 0.17$ to $92.5 \text{ USgal}/\text{min}$).

Code numbers

Example:
REG-SA (Cone A) 15 DIN
angleway = **148B5226**

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 (Cone type A)

Butt-weld DIN (EN 10220)

Size		Type	Code no.
mm	in.		

Angleway - REG-SA with cone type A

10	3/8	REG-SA 10 D ANG	148B5102
15	1/2	REG-SA 15 D ANG	148B5226
20	3/4	REG-SA 20 D ANG	148B5326
25	1	REG-SA 25 D ANG	148B5426
32	1 1/4	REG-SA 32 D ANG	148B5527
40	1 1/2	REG-SA 40 D ANG	148B5627

Butt-weld DIN (EN 10220)

Size		Type	Code no.
mm	in.		

Straightway - REG-SA with cone type A

10	3/8	REG-SA 10 D STR	148B5104
15	1/2	REG-SA 15 D STR	148B5228
20	3/4	REG-SA 20 D STR	148B5328
25	1	REG-SA 25 D STR	148B5428
32	1 1/4	REG-SA 32 D STR	148B5528
40	1 1/2	REG-SA 40 D STR	148B5629

Butt-weld ANSI (B 36.10 Schedule 80)

Size		Type	Code no.
mm	in.		

Angleway - REG-SA with cone type A

10	3/8	REG-SA 10 A ANG	148B5106
15	1/2	REG-SA 15 A ANG	148B5202
20	3/4	REG-SA 20 A ANG	148B5302
25	1	REG-SA 25 A ANG	148B5402
32	1 1/4	REG-SA 32 A ANG	148B5502
40	1 1/2	REG-SA 40 A ANG	148B5602

Butt-weld ANSI (B 36.10 Schedule 80)

Size		Type	Code no.
mm	in.		

Straightway - REG-SA with cone type A

10	3/8	REG-SA 10 A STR	148B5116
15	1/2	REG-SA 15 A STR	148B5212
20	3/4	REG-SA 20 A STR	148B5312
25	1	REG-SA 25 A STR	148B5412
32	1 1/4	REG-SA 32 A STR	148B5512
40	1 1/2	REG-SA 40 A STR	148B5612

Socket welding ANSI (B 16.11)

Size		Type	Code no.
mm	in.		

Angleway - REG-SA with cone type A

15	1/2	REG-SA 15 SOC ANG	148B5204
20	3/4	REG-SA 20 SOC ANG	148B5304
25	1	REG-SA 25 SOC ANG	148B5404
32	1 1/4	REG-SA 32 SOC ANG	148B5504
40	1 1/2	REG-SA 40 SOC ANG	148B5604

Socket welding ANSI (B 16.11)

Size		Type	Code no.
mm	in.		

Straightway - REG-SA with cone type A

15	1/2	REG-SA 15 SOC STR	148B5214
20	3/4	REG-SA 20 SOC STR	148B5314
25	1	REG-SA 25 SOC STR	148B5414
32	1 1/4	REG-SA 32 SOC STR	148B5514
40	1 1/2	REG-SA 40 SOC STR	148B5614

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)

Size		Type	Code no.
mm	in.		

Angleway - REG-SA with cone type A

15	1/2	REG-SA 15 FTP ANG	148B5206
20	3/4	REG-SA 20 FTP ANG	148B5306
25	1	REG-SA 25 FTP ANG	148B5406
32	1 1/4	REG-SA 32 FTP ANG	148B5506

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)

Size		Type	Code no.
mm	in.		

Straightway - REG-SA with cone type A

15	1/2	REG-SA 15 FTP STR	148B5216
20	3/4	REG-SA 20 FTP STR	148B5316
25	1	REG-SA 25 FTP STR	148B5416
32	1 1/4	REG-SA 32 FTP STR	148B5516

D = Butt-weld DIN ANG = Angleway
A = Butt-weld ANSI STR = Straightway
SOC = Socket weld
FPT = Inside pipe thread

Code numbers (continued)

Example:

REG-SB (Cone B) 15 DIN
angleway = **148B5227**

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-SB (Cone type B)

Butt-weld DIN (EN 10220)

Size		Type	Code no.
mm	in.		
10	3/8	REG-SB 10 D ANG	148B5103
15	1/2	REG-SB 15 D ANG	148B5227
20	3/4	REG-SB 20 D ANG	148B5327
25	1	REG-SB 25 D ANG	148B5427
32	1 1/4	REG-SB 32 D ANG	148B5526
40	1 1/2	REG-SB 40 D ANG	148B5626
50	2	REG-SB 50 D ANG	148B5726
65	2 1/2	REG-SB 65 D ANG	148B5826

Angleway - REG-SB with cone type B

10	3/8	REG-SB 10 D ANG	148B5103
15	1/2	REG-SB 15 D ANG	148B5227
20	3/4	REG-SB 20 D ANG	148B5327
25	1	REG-SB 25 D ANG	148B5427
32	1 1/4	REG-SB 32 D ANG	148B5526
40	1 1/2	REG-SB 40 D ANG	148B5626
50	2	REG-SB 50 D ANG	148B5726
65	2 1/2	REG-SB 65 D ANG	148B5826

Butt-weld ANSI (B 36.10 Schedule 80)

Size		Type	Code no.
mm	in.		

Angleway - REG-SB with cone type B

10	3/8	REG-SB 10 A ANG	148B5107
15	1/2	REG-SB 15 A ANG	148B5203
20	3/4	REG-SB 20 A ANG	148B5303
25	1	REG-SB 25 A ANG	148B5403
32	1 1/4	REG-SB 32 A ANG	148B5503
40	1 1/2	REG-SB 40 A ANG	148B5603

Butt-weld ANSI (B 36.10 Schedule 40)

Size		Type	Code no.
mm	in.		

Angleway - REG-SB with cone type B

50	2	REG-SB 50 A ANG	148B5706
65	2 1/2	REG-SB 65 A ANG	148B5806

Socket welding ANSI (B 16.11)

Size		Type	Code no.
mm	in.		

Angleway - REG-SB with cone type B

15	1/2	REG-SB 15 SOC ANG	148B5205
20	3/4	REG-SB 20 SOC ANG	148B5305
25	1	REG-SB 25 SOC ANG	148B5405
32	1 1/4	REG-SB 32 SOC ANG	148B5505
40	1 1/2	REG-SB 40 SOC ANG	148B5605
50	2	REG-SB 50 SOC ANG	148B5727

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)

Size		Type	Code no.
mm	in.		

Angleway - REG-SB with cone type B

15	1/2	REG-SB 15 FTP ANG	148B5207
20	3/4	REG-SB 20 FTP ANG	148B5307
25	1	REG-SB 25 FTP ANG	148B5407
32	1 1/4	REG-SB 32 FTP ANG	148B5507

Butt-weld DIN (EN 10220)

Size		Type	Code no.
mm	in.		

Straightway - REG-SB with cone type B

10	3/8	REG-SB 10 D STR	148B5105
15	1/2	REG-SB 15 D STR	148B5229
20	3/4	REG-SB 20 D STR	148B5329
25	1	REG-SB 25 D STR	148B5429
32	1 1/4	REG-SB 32 D STR	148B5529
40	1 1/2	REG-SB 40 D STR	148B5628

Butt-weld ANSI (B 36.10 Schedule 80)

Size		Type	Code no.
mm	in.		

Straightway - REG-SB with cone type B

10	3/8	REG-SB 10 A STR	148B5117
15	1/2	REG-SB 15 A STR	148B5213
20	3/4	REG-SB 20 A STR	148B5313
25	1	REG-SB 25 A STR	148B5413
32	1 1/4	REG-SB 32 A STR	148B5513
40	1 1/2	REG-SB 40 A STR	148B5613

Butt-weld ANSI (B 36.10 Schedule 40)

Size		Type	Code no.
mm	in.		

Angleway - REG-SB with cone type B

50	2	REG-SB 50 A STR	148B5724
65	2 1/2	REG-SB 65 A STR	148B5809

Socket welding ANSI (B 16.11)

Size		Type	Code no.
mm	in.		

Straightway - REG-SB with cone type B

15	1/2	REG-SB 15 SOC STR	148B5215
20	3/4	REG-SB 20 SOC STR	148B5315
25	1	REG-SB 25 SOC STR	148B5415
32	1 1/4	REG-SB 32 SOC STR	148B5515
40	1 1/2	REG-SB 40 SOC STR	148B5615
50	2	REG-SB 50 SOC STR	148B5725

FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)

Size		Type	Code no.
mm	in.		

Straightway - REG-SB with cone type B

15	1/2	REG-SB 15 FTP STR	148B5217
20	3/4	REG-SB 20 FTP STR	148B5317
25	1	REG-SB 25 FTP STR	148B5417
32	1 1/4	REG-SB 32 FTP STR	148B5517

D = Butt-weld DIN ANG = Angleway
A = Butt-weld ANSI STR = Straightway
SOC = Socket weld
FPT = Inside pipe thread

Notes

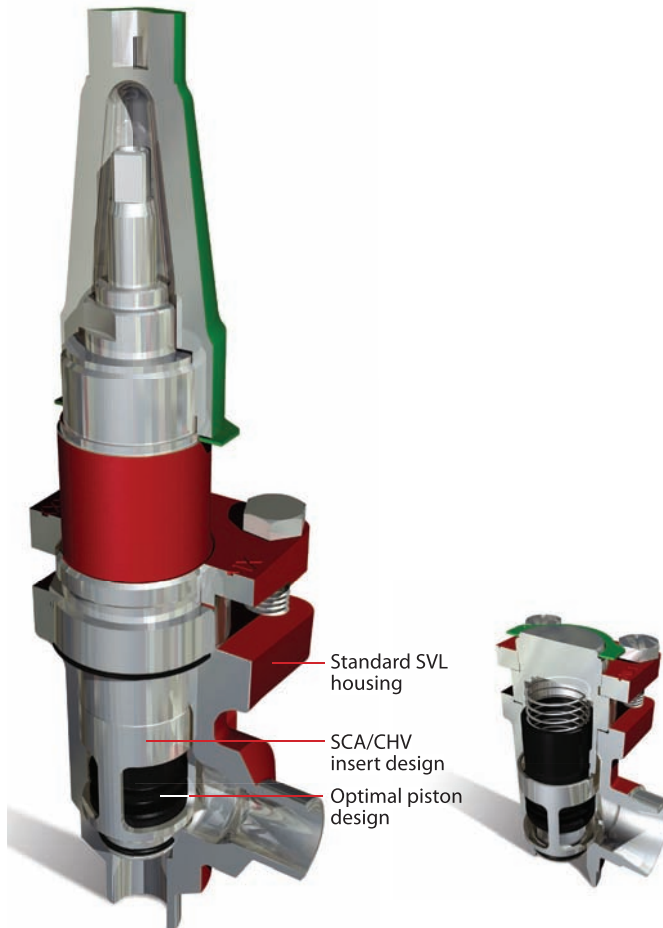
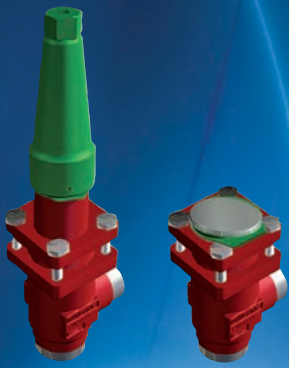
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SCA-X – Flexline™ Stop check valves and CHV-X – check valves

SCA-X are check valves with a built-in stop valve function. CHV-X are check valves only. SCA-X/CHV-X are available in angleway versions.

The valves are designed to open at very low differential pressures, allow favourable flow conditions and are easy to disassemble for inspection and service.

⚠ Industrial refrigeration.



The Flexline™ platform is synonymous of flexibility within industrial refrigeration components.

Based on a modular design concept each product features a variety of benefits, including flexible selection, easy installation and maintenance.

The products in the Flexline™ series are: ICF control valves, ICF valve stations and SVL line components.

Advantages and features

- Applicable to all common non-flammable refrigerants and all non-corrosive gases/liquids.
Can be used in chemical and petro-chemical applications.
- 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:
52 bar g (754 psi g)
- Temperature range:
-60°C/+150° (-76°F/+302°F)

⚠ Refer to Industrial refrigeration quick guide supplement.

⚠ Note: Only ANSI connections stocked in Australia.

Technical data and code numbers

Technical data

- **Refrigerants**

Applicable to all common non-flammable refrigerants and all non-corrosive gases/liquids.

For further information refer to the product instruction for SCA-X/CHV-X.

- **Temperature range**

-60/+150°C (-76/+302°F).

- **Max. working pressure**

52 bar g (754 psig).

Code numbers

How to order

The table below is used to identify the valve required.

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	SCA-X CHV-X	Stop Check Valve Check Valve		
		ANSI	DIN	SOC
(valve size measured on the connection diameter)	15	DN 15	x	x
	20	DN 20	x	x
	25	DN 25	x	x
	32	DN 32	x	x
	40	DN 40	x	x
	50	DN 50	x	x
	65	DN 65	x	x
	80	DN 80	x	x
	100	DN 100	x	x
	125	DN 125	x	x
		A	Welding branches: ANSI B 31.5 schedule 80 DN 15 - 40 (½ - 1½ in.) Welding branches: ANSI B 31.5 schedule 40 DN 50 - 125 (2 - 5 in.)	
	D	Welding branches: EN 10220		
Connections	ANG	Angle flow		
Valve housing	ANG	Angle flow		

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.

SCA-X Butt-weld DIN (EN 10220)

Size		Type	Code no.
mm	in.		
15	½	SCA-X 15 D ANG	148B5208
20	¾	SCA-X 20 D ANG	148B5308
25	1	SCA-X 25 D ANG	148B5408
32	1¼	SCA-X 32 D ANG	148B5508
40	1½	SCA-X 40 D ANG	148B5608
50	2	SCA-X 50 D ANG	148B5702
65	2½	SCA-X 65 D ANG	148B5803
80	3	SCA-X 80 D ANG	148B5902
100	4	SCA-X 100 D ANG	148B6002
125	5	SCA-X 125 D ANG	148B6102

CHV-X Butt-weld DIN (EN 10220)

Size		Type	Code no.
mm	in.		
15	½	CHV-X 15 D ANG	148B5236
20	¾	CHV-X 20 D ANG	148B5336
25	1	CHV-X 25 D ANG	148B5436
32	1¼	CHV-X 32 D ANG	148B5536
40	1½	CHV-X 40 D ANG	148B5636
50	2	CHV-X 50 D ANG	148B5736
65	2½	CHV-X 65 D ANG	148B5838
80	3	CHV-X 80 D ANG	148B5936
100	4	CHV-X 100 D ANG	148B6036
125	5	CHV-X 125 D ANG	148B6136

SCA-X Butt-weld ANSI (B 36.10 Schedule 80)

Size		Type	Code no.
mm	in.		
15	½	SCA-X 15 A ANG	148B5209
20	¾	SCA-X 20 A ANG	148B5309
25	1	SCA-X 25 A ANG	148B5409
32	1¼	SCA-X 32 A ANG	148B5509
40	1½	SCA-X 40 A ANG	148B5609

CHV-X Butt-weld ANSI (B 36.10 Schedule 80)

Size		Type	Code no.
mm	in.		
15	½	CHV-X 15 A ANG	148B5237
20	¾	CHV-X 20 A ANG	148B5337
25	1	CHV-X 25 A ANG	148B5437
32	1¼	CHV-X 32 A ANG	148B5537
40	1½	CHV-X 40 A ANG	148B5637

SCA-X Butt-weld ANSI (B 36.10 Schedule 40)

Size		Type	Code no.
mm	in.		
50	2	SCA-X 50 A ANG	148B5703
65	2½	SCA-X 65 A ANG	148B5802
80	3	SCA-X 80 A ANG	148B5903
100	4	SCA-X 100 A ANG	148B6004
125	5	SCA-X 125 A ANG	148B6103

CHV-X Butt-weld ANSI (B 36.10 Schedule 40)

Size		Type	Code no.
mm	in.		
50	2	CHV-X 50 A ANG	148B5737
65	2½	CHV-X 65 A ANG	148B5837
80	3	CHV-X 80 A ANG	148B5937
100	4	CHV-X 100 A ANG	148B6037
125	5	CHV-X 125 A ANG	148B6137

SCA-X Socket welding ANSI (B 16.11)

Size		Type	Code no.
mm	in.		
50	2	SCA-X 50 SOC ANG	148B5704

CHV-X Socket welding ANSI (B 16.11)

Size		Type	Code no.
mm	in.		
32	1¼	CHV 32 SOC ANG	148B5539
50	2	CHV 50 SOC ANG	148B5740

ANG = Angleway

The products are also available in stainless steel.

Please refer to the Danfoss brochure DKRCI.PD.K00.A for further details or contact your local Danfoss sales office.



NRVA – Check valves

Check valve type NRVA can be used in liquid, suction and hot gas lines in refrigeration and air conditioning plant with ammonia.
NRVA can also be used in refrigerating systems with fluorinated refrigerants.

⚠ Industrial refrigeration.



Advantages and features

- 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.

⚠ Refer to Industrial refrigeration quick guide supplement.

Technical data and code numbers - NRVA check valves

Technical data

Refrigerants

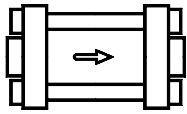
Can be used for all normal, non-flammable refrigerants, including R 717, and non-corrosive gases/liquids – assuming seals of the correct material are used. For further information please see installation instruction for NRVA.

Use with flammable hydrocarbons cannot be recommended.

Temperature range: -50°C / +140°C (-58°F / +284°F).

Pressure range The valve is designed for: Max. working pressure: 40 bar g (580 psig).

Code numbers



Complete valves incl. DIN 2448 flange:

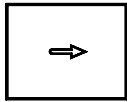
Type	Weld flange connection	Code no.		Dp ²⁾				k _v value ³⁾	C _v value ⁴⁾
		Valve	Spec. spring ¹⁾	With standard spring		With spec. spring ¹⁾			
				bar	psig	bar	psig		
NRVA 15	1/2	020-2000	020-2307	0.12	1.7	0.3	4.4	5	6
NRVA 20	3/4	020-2001	020-2307	0.12	1.7	0.3	4.4	6	7
NRVA 25	1	020-2002	020-2317	0.12	1.7	0.3	4.4	19	22
NRVA 32	1 1/4	020-2003	020-2317	0.12	1.7	0.3	4.4	20	23
NRVA 40	1 1/2	020-2004	020-2327	0.07	1.0	0.4	5.8	44	51
NRVA 50	2	020-2005	020-2327	0.07	1.0	0.4	5.8	44	51
NRVA 65	2 1/2	020-2006	020-2337	0.07	1.0	0.4	5.8	75	87

¹⁾ A special type spring can be supplied to replace the standard valve spring.

²⁾ Δp = the minimum pressure differential at which the valve is completely open.

³⁾ 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.

⁴⁾ 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.

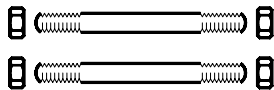


Valve body without flanges:

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:

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



⚠ Note: Only complete valves with flanges stocked in Australia.



SFA 15 – Safety relief valves

SFA 15 are standard, back pressure dependent safety relief valves in angle-way 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. The inlet flow diameters of the valves are: 13 mm (½ in.) for SFA 15. The valves can be delivered with set pressures between 10 and 40 bar g (145 and 580 psi g).

⚠ Industrial refrigeration.



Advantages and features

- Applicable for the refrigerants R717 (ammonia, NH₃), HFC, HCFC (e.g. R22, R134a, R404A) and other refrigerants (dependent on sealing materials compatibility) within a temperature range of -30°C/+100°C (-22°F/+212°F).

⚠ Refer to Industrial refrigeration quick guide supplement.

Technical data and code numbers - SFA15 safety relief valves

Technical data

- Refrigerants
Applicable for the refrigerants R717 (ammonia, NH₃), HFC, HCFC (e.g. R22, R134a, R404A) and other refrigerants dependent on sealing material compatibility within a temperature range of -30°C/+100°C (-22°F/+212°F).
Flammable hydrocarbons are not recommended.
- Pressure
Pressure setting range: 10 - 40 bar g
(145 - 580 psi g).

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.
- 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)

Code numbers

Certified SFA valves with standard set pressure

Size		Type	Set pressure bar g (psi g)	Code number
mm	in.			
15	½	SFA 15 T 210	10 (145)	148F3210
15	½	SFA 15 T 211	11 (160)	148F3211
15	½	SFA 15 T 212	12 (174)	148F3212
15	½	SFA 15 T 213	13 (189)	148F3213
15	½	SFA 15 T 214	14 (203)	148F3214
15	½	SFA 15 T 215	15 (218)	148F3215
15	½	SFA 15 T 216	16 (232)	148F3216
15	½	SFA 15 T 217	17 (247)	148F3217
15	½	SFA 15 T 218	18 (261)	148F3218
15	½	SFA 15 T 219	19 (276)	148F3219
15	½	SFA 15 T 220	20 (290)	148F3220
15	½	SFA 15 T 221	21 (305)	148F3221
15	½	SFA 15 T 222	22 (319)	148F3222
15	½	SFA 15 T 223	23 (334)	148F3223
15	½	SFA 15 T 224	24 (348)	148F3224
15	½	SFA 15 T 225	25 (363)	148F3225
15	½	SFA 15 T 226	26 (377)	148F3226
15	½	SFA 15 T 227	27 (392)	148F3227
15	½	SFA 15 T 228	28 (406)	148F3228
15	½	SFA 15 T 229	29 (421)	148F3229
15	½	SFA 15 T 230	30 (435)	148F3230
15	½	SFA 15 T 231	31 (450)	148F3231
15	½	SFA 15 T 232	32 (464)	148F3232
15	½	SFA 15 T 233	33 (479)	148F3233
15	½	SFA 15 T 234	34 (493)	148F3234
15	½	SFA 15 T 235	35 (508)	148F3235
15	½	SFA 15 T 236	36 (522)	148F3236
15	½	SFA 15 T 237	37 (537)	148F3237
15	½	SFA 15 T 238	38 (551)	148F3238
15	½	SFA 15 T 239	39 (566)	148F3239
15	½	SFA 15 T 240	40 (580)	148F3240

Certified SFA valves with standard set pressure and TÜV pressure setting certificate with each valve

Size		Type	Set pressure bar g (psi g)	Code number
mm	in.			
15	½	SFA 15 T 310	10 (145)	148F3310
15	½	SFA 15 T 311	11 (160)	148F3311
15	½	SFA 15 T 312	12 (174)	148F3312
15	½	SFA 15 T 313	13 (189)	148F3313
15	½	SFA 15 T 314	14 (203)	148F3314
15	½	SFA 15 T 315	15 (218)	148F3315
15	½	SFA 15 T 316	16 (232)	148F3316
15	½	SFA 15 T 317	17 (247)	148F3317
15	½	SFA 15 T 318	18 (261)	148F3318
15	½	SFA 15 T 319	19 (276)	148F3319
15	½	SFA 15 T 320	20 (290)	148F3320
15	½	SFA 15 T 321	21 (305)	148F3321
15	½	SFA 15 T 322	22 (319)	148F3322
15	½	SFA 15 T 323	23 (334)	148F3323
15	½	SFA 15 T 324	24 (348)	148F3324
15	½	SFA 15 T 325	25 (363)	148F3325
15	½	SFA 15 T 326	26 (377)	148F3326
15	½	SFA 15 T 327	27 (392)	148F3327
15	½	SFA 15 T 328	28 (406)	148F3328
15	½	SFA 15 T 329	29 (421)	148F3329
15	½	SFA 15 T 330	30 (435)	148F3330
15	½	SFA 15 T 331	31 (450)	148F3331
15	½	SFA 15 T 332	32 (464)	148F3332
15	½	SFA 15 T 333	33 (479)	148F3333
15	½	SFA 15 T 334	34 (493)	148F3334
15	½	SFA 15 T 335	35 (508)	148F3335
15	½	SFA 15 T 336	36 (522)	148F3336
15	½	SFA 15 T 337	37 (537)	148F3337
15	½	SFA 15 T 338	38 (551)	148F3338
15	½	SFA 15 T 339	39 (566)	148F3339
15	½	SFA 15 T 340	40 (580)	148F3340



SFV – Safety relief valves

SFV 20-25 are standard, back pressure dependent safety relief valves in angle-way 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. The inlet flow diameters of the valves are: 18 mm (3/4 in.) for SFV 20, and 23 mm (1 in.) for SFV 25. The valves can be delivered with set pressures between 10 and 25 bar g (145 and 363 psi g).

⚠ Industrial Refrigeration.



Advantages and features

- Applicable for the refrigerants R717 (ammonia, NH₃), HFC, HCFC (e.g. R22, R134a, R404A) and other refrigerants (dependent on sealing materials compatibility) within a temperature range of -30°C/+100°C (-22°F/+212°F).

⚠ Refer to Danfoss industrial refrigeration specialist for further details.

Technical data and code numbers - SFV Safety relief valves

Technical data

- Refrigerants
Applicable for the refrigerants R717 (ammonia, NH₃), HFC, HCFC (e.g. R22, R134a, R404A) and other refrigerants dependent on sealing material compatibility within a temperature range of -30°C/+100°C (-22°F/+212°F). Flammable hydrocarbons are not recommended.
- Pressure
Pressure setting range: 10 - 25 bar g (145 - 363 psi g).

The valves are designed for:

Strength test: 43 bar g (624 psi g)

Leakage safety: Same as set pressure

Important: The SFV 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.

- 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)

Code numbers

Certified SFV valves with standard set pressure

Size		Construction and test facilities are approved by TÜV		
mm	in.	Type	bar g (psi g)	Part no.
20	3/4	SFV20 T 210	10 (145)	2416+254
20	3/4	SFV20 T 211	11 (160)	2416+255
20	3/4	SFV20 T 212	12 (174)	2416+256
20	3/4	SFV20 T 213	13 (189)	2416+150
20	3/4	SFV20 T 214	14 (203)	2416+257
20	3/4	SFV20 T 215	15 (218)	2416+258
20	3/4	SFV20 T 216	16 (232)	2416+259
20	3/4	SFV20 T 217	17 (247)	2416+260
20	3/4	SFV20 T 218	18 (261)	2416+151
20	3/4	SFV20 T 219	19 (276)	2416+261
20	3/4	SFV20 T 220	20 (290)	2416+262
20	3/4	SFV20 T 221	21 (305)	2416+152
20	3/4	SFV20 T 222	22 (319)	2416+241
20	3/4	SFV20 T 223	23 (334)	2416+263
20	3/4	SFV20 T 224	24 (348)	2416+264
20	3/4	SFV20 T 225	25 (363)	2416+183

Certified SFV valves with standard set pressure and TÜV pressure setting certificate with each valve

Size		Each valve is certified by a representative from TÜV		
mm	in.	Type	bar g (psi g)	Part no.
20	3/4	SFV20 T 310	10 (145)	2416+285
20	3/4	SFV20 T 311	11 (160)	2416+286
20	3/4	SFV20 T 312	12 (174)	2416+287
20	3/4	SFV20 T 313	13 (189)	2416+160
20	3/4	SFV20 T 314	14 (203)	2416+288
20	3/4	SFV20 T 315	15 (218)	2416+289
20	3/4	SFV20 T 316	16 (232)	2416+290
20	3/4	SFV20 T 317	17 (247)	2416+291
20	3/4	SFV20 T 318	18 (261)	2416+161
20	3/4	SFV20 T 319	19 (276)	2416+292
20	3/4	SFV20 T 320	20 (290)	2416+293
20	3/4	SFV20 T 321	21 (305)	2416+162
20	3/4	SFV20 T 322	22 (319)	2416+294
20	3/4	SFV20 T 323	23 (334)	2416+295
20	3/4	SFV20 T 324	24 (348)	2416+296
20	3/4	SFV20 T 325	25 (363)	2416+186

Certified SFV valves with standard set pressure

Size		Construction and test facilities are approved by TÜV		
mm	in.	Type	bar g (psi g)	Part no.
25	1	SFV25 T 210	10 (145)	2416+265
25	1	SFV25 T 211	11 (160)	2416+266
25	1	SFV25 T 212	12 (174)	2416+267
25	1	SFV25 T 213	13 (189)	2416+153
25	1	SFV25 T 214	14 (203)	2416+268
25	1	SFV25 T 215	15 (218)	2416+269
25	1	SFV25 T 216	16 (232)	2416+270
25	1	SFV25 T 217	17 (247)	2416+271
25	1	SFV25 T 218	18 (261)	2416+154
25	1	SFV25 T 219	19 (276)	2416+272
25	1	SFV25 T 220	20 (290)	2416+273
25	1	SFV25 T 221	21 (305)	2416+155
25	1	SFV25 T 222	22 (319)	2416+242
25	1	SFV25 T 223	23 (334)	2416+274
25	1	SFV25 T 224	24 (348)	2416+275
25	1	SFV25 T 225	25 (363)	2416+184

Certified SFV valves with standard set pressure and TÜV pressure setting certificate with each valve

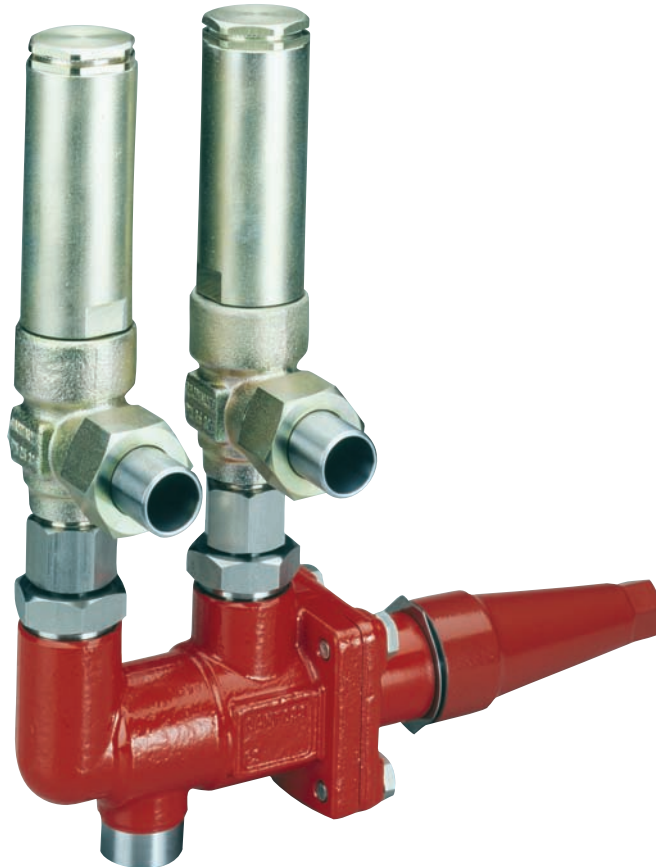
Size		Each valve is certified by a representative from TÜV		
mm	in.	Type	bar g (psi g)	Part no.
25	1	SFV25 T 310	10 (145)	2416+297
25	1	SFV25 T 311	11 (160)	2416+298
25	1	SFV25 T 312	12 (174)	2416+299
25	1	SFV25 T 313	13 (189)	2416+163
25	1	SFV25 T 314	14 (203)	2416+300
25	1	SFV25 T 315	15 (218)	2416+301
25	1	SFV25 T 316	16 (232)	2416+302
25	1	SFV25 T 317	17 (247)	2416+303
25	1	SFV25 T 318	18 (261)	2416+164
25	1	SFV25 T 319	19 (276)	2416+304
25	1	SFV25 T 320	20 (290)	2416+305
25	1	SFV25 T 321	21 (305)	2416+165
25	1	SFV25 T 322	22 (319)	2416+306
25	1	SFV25 T 323	23 (334)	2416+307
25	1	SFV25 T 324	24 (348)	2416+308
25	1	SFV25 T 325	25 (363)	2416+187



DSV – Double stop valves

DSV 1 and DSV 2 are 3-way valves, which are designed to meet all industrial refrigeration application requirements. They are designed specifically for use with double safety valve systems. The valves are designed to give favourable flow characteristics and are easy to dismantle for servicing. The valve cone is designed to ensure perfect closing, even with minimum torque the valve will close effectively.

⚠ Industrial refrigeration.



Advantages and features

- Applicable to all common non flammable refrigerants including R717 and non corrosive gases/liquids dependent on sealing material compatibility.
- 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.
- Can accept 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:
DSV 1 and DSV 2: 40 bar g (580 psi g)
- Temperature range:
DSV 1 and DSV 2: -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 × FV 25, meet the requirements according to EN13136 "Safety Valves Calculations" regarding max. 3% pressure drop in upstream line.

Technical data and code numbers - DSV double stop valves

Technical data

- Refrigerants

Applicable to all common non-flammable refrigerants, including R717 and non corrosive gases/liquids, dependent on sealing material compatibility. Flammable hydrocarbons are not recommended. The valve is only recommended for use in closed circuits.

- Temperature range
-50/+100°C (-58/+212°F).

- Pressure

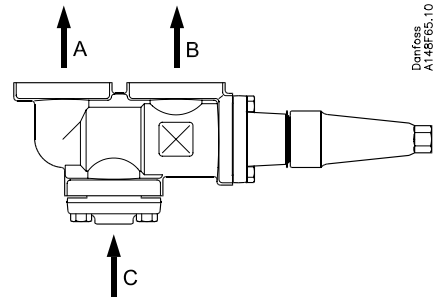
The valves are designed for:
Max. operating pressure: 40 bar g (580 psig)
Valves for higher design pressure are available on request.

- Capacity

Type	K _v -value	C _v -value
	m ³ /h	Usgal/min
DSV 1	17.5	20.3
DSV 2	30.0	34.8

- Installation

DSV are used as changeover valves between two SFA/SFV safety valves. When the spindle is turned clockwise (fig. 1) the inlet port C is connected to B. When the spindle is turned anticlockwise (fig. 1) the inlet port C is connected to A. For further information refer to installation instruction for DSV.



Code numbers

Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range.

Type codes

Valve type	DSV inlet connection	DSV outlet connection	SFV outlet connection	Safety valve combination	Code no.
DSV 1	D25 (1 in.)	G ¾" Union	ND20 (¾ in.)	SFA15	148F3005
DSV 2	FD20 (¾ in.)	G ¾" thread flange	ND20 (¾ in.)	SFA15	148F3006
DSV 2	FD25 (1 in.)	G ¾" thread flange	ND20 (¾ in.)	SFA15	148F3007
DSV 2	FD32 (1¼ in.)	G ¾" thread flange	ND20 (¾ in.)	SFA15	148F3008
DSV 2	FD25 (1 in.)	G 1¼" thread flange	FD25 (1 in.)	SFV20	148F3009
DSV 2	FD32 (1¼ in.)	G 1¼" thread flange	FD25 (1 in.)	SFV20	148F3010
DSV 2	FD32 (1¼ in.)	G 1¼" thread flange	FD32 (1¼ in.)	SFV25	148F3011
Connection fittings:	D	Weld branches DIN 2448		DSV valves are supplied c/w DSV inlet connection fittings, DSV outlet connection fittings, and SFA/SFV outlet connection fittings.	
	ND	Weld nipples DIN 2448			
	FD	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.

⚠ Refer to Danfoss Industrial refrigeration specialist for further details.



QDV – Quick closing oil drain valves

QDV is a quick closing oil drain valve, designed particularly for draining oil from systems containing refrigerant (ammonia) under pressure.

The valve will close immediately on release of the handle, thus protecting user and environment against unnecessary refrigerant leaks.

⚠ Industrial refrigeration.



Advantages and features

- QDV is generally used 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 (preventing 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 psi g).
- Temperature range: -50/+150°C (-58/+302°F).

Technical data and code numbers - QDV oil drain valves

Technical data

- Refrigerants
QDV is generally used 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 backpressure building up when relieving.
- For further information please see installation instruction for QDV.
Flammable hydrocarbons are not recommended.
- Temperature range
-50/+150°C (-58/+302°F).
- Pressure
The valve is designed for:
Maximum operating pressure of 40 bar g
(580 psi g)

Code numbers

How to order

The table below is used to identify the valve required.

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"			148H3451
Fittings for welding connection - G ¾"			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.

⚠ QDV valve stocked in Australia **148H3272**.

⚠ Most commonly used fitting used in Australia **148H3452**.



LLG – Liquid level glasses

LLG are liquid level glasses made of ductile steel which meets the strictest requirements on industrial and marine refrigeration installations

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 LLG are delivered with stop valves, which ensures easy insulation on site as well as easy inspection and service, if any.

⚠ Industrial refrigeration.



Advantages and features

- All LLG liquid level 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.
- Refrigerants
Applicable to all common non flammable refrigerants including R717 and non corrosive gases/liquids dependent on sealing material compatibility.
- Temperature range
-10/+100 °C or -50/+30 °C
- Maximum operating pressure: 25 bar g
Equipped with boron-silicate glass, hardened by an accurately controlled heat treatment process.

- The range of liquid level 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.
- The liquid level 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).

NOTE:

The LLG liquid level glass can only be placed in CE approved applications with the stop valves in front i.e. LLG S or LLG SF.

Technical data and code numbers - LLG liquid level glasses

Technical data

	LLG
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	LLG S: -10/+100 °C LLG SF: -50/+30 °C
Pressure range Max. operating pressure	25 bar g
Pressure range Strength test	50 bar g
Pressure range Leakage test	at 25 bar g

Code numbers

Liquid level glasses - LLG S *With safety system and stop valves (SNV-ST)*

Length		Type	Code no.
mm	in.		
185	7¼	LLG 185 S	2512+056
335	13¼	LLG 335 S	2512+057
590	23¼	LLG 590 S	2512+058
740	29¼	LLG 740 S	2512+059
995	39¼	LLG 995 S	2512+060
1145	45	LLG 1145 S	2512+061
1550	61	LLG 1550 S	2512+062

Liquid level glasses for insulating - LLG SF *With safety system, stop valves (SNV-ST) and sight adapter*

Length		Type	Code no.
mm	in.		
185	7¼	LLG 185 SF	2512+066
335	13¼	LLG 335 SF	2512+067
590	23¼	LLG 590 SF	2512+068
740	29¼	LLG 740 SF	2512+069
995	39¼	LLG 995 SF	2512+070
1145	45	LLG 1145 SF	2512+071
1550	61	LLG 1550 SF	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.

⚠ Refer to Danfoss Industrial refrigeration specialist for further details.



GD – Gas Detectors

Danfoss Gas Detectors, 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.

⚠ Note: Heavy Industry application (also refer to DGS range).



Advantages and features

- GD is specifically developed for refrigeration applications
- Interchangeable precalibrated sensors
- Optional models: LCD display, IP65 enclosure, EExd (Explosion Protected)
- Can operate as stand alone product
- 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
- Manual or automatic alarm reset optional
- Alarm levels can be set locally.
- 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 - EC
 - Semi-Conductor - SC
 - Catalytic - CT
 - Infra-Red - IR

Technical data and code numbers - GD gas detectors

Technical data

Refrigerants	Ammonia (R 717) Type GDA: 0-100 ppm, 0-300 ppm, 0-1,000 ppm, 0-10,000 ppm, 0-30,000 ppm
	Carbon Dioxide (R 744) Type GDC: 0-10,000 ppm, 0-20,000 ppm, 0-40,000 ppm
	Halo-Carbon - HCFC (R 22, R 123) Type GDHC: 0-1,000 ppm
	HFC (R 404A, R 410A, R 134a, R 407C, R 507) Type GDHF: 0-1,000 ppm
	Hydro-carbon - Propane (R 290), R 600, R 600a, R 1270 Type GDH: 0-5,000 ppm
Versions/temperature range	Standard, LCD display, IP65 and EExd: -20 °C/+50 °C Low temperature model: -40 °C/+50 °C
Cable connection	1 gland for 6-13 mm cable (0.2"-0.5") 1 Ø 20 mm (0.8") hole with blanking plug. 1 extra gland can be fitted (only Standard, LCD display and EExd).
Approvals	CE: EN55011: 1998, EN61326: 1996 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.

Code numbers

Type of gas	All models		Standard	With LCD display	EExd	IP56 Low Temp.	EExd Low. Temp.	IP66 with remote IP65 sensor	IP66 with remote IP65 EExd sensor	IP56
	Danfoss Type	Range [PPM]								
Code no.										
Ammonia - NH₃										
R 717	GDA EC 100	0-100	148H5000	148H5001	148H5003	148H5005	148H5006			148H5009
	GDA EC 300	0-300			148H5063					
	GDA EC 1000	0-1000	148H5010	148H5011	148H5013	148H5015	148H5016			148H5019
	GDA EC 1000	0-1000	148H5050	148H5051	148H5053	148H5055				148H5059
	GDA SC 1000	0-1000	148H5040							148H5049
	GDA SC 10000	0-10000	148H5020	148H5021	148H5023	148H5025	148H5026	148H5027	148H5028	148H5029
	GDA CT 30000	0-30000	148H5030	148H5031	148H5033	148H5035				148H5039
Carbon Dioxide - CO₂										
R 744	GDC IR 10000	0-10000	148H5070	148H5071	148H5073	148H5075				148H5072
	GDC IR 20000	0-20000				148H5085				148H5082
	GDC IR 40000	0-40000								148H5092
Halo-Carbon										
HCFC (R 22, R 123)	GDHC SC 1000	0-1000	148H5100	148H5101		148H5105		148H5107		148H5109
HFC (R 404A, R 410A, R 134a, R 407C, R 507)	GDHF SC 1000	0-1000	148H5110	148H5111		148H5115		148H5117		148H5119
HFC (R 134a)	GDHF-R3 SC 1000	0-1000	148H5120	148H5121		148H5125		148H5127		148H5129

EC = Electro-chemical, SC = Semi-chemical, CT = Catalytic, IR = Infrared

Accessories

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 Repeater all models. Between GD and Danfoss Monitoring System	148H5231
GD mother PCB all models	148H5232
GD Ampoules 10 pcs. 100 ppm ammonia.	148H5234
GD Ampoules 10 pcs. 1000 ppm ammonia.	148H5235
GD Ampoules 10 pcs 2000 ppm CO ₂	148H5236
Remote LCD display IP41	148H5238

⚠ Note: Refer to industrial refrigeration supplement for additional ordering details.



DGS – Gas sensors

DGS helps to comply to environmental F-Gas Regulations and/or Health & Safety requirements, on new or existing systems in:

- Supermarkets
- Process refrigeration plants
- Refrigerated storage and warehousing
- Special applications areas/zones

IP41
version
(pictured)



Functions

- Utilising either Semi-Conductor (SC) or Infrared (IR) technologies
- DGS gives quick and immediate response in detecting a wide range of different gases typically applied in Refrigeration & Air Conditioning systems.
- DGS sensors can be used in stand-alone or integrated systems, where continuous real-time, automatic monitoring with Danfoss ADAP-KOOL® Refrigeration Control & Monitoring System and/or Building Management Systems is applied.

Advantages

Typical Refrigerant gas applications include:

- Halocarbons: HFC's, HCFC's, CFCs.
- Carbon Dioxide (CO₂ / R744)
- Hydrocarbons (e.g. R290, R600a)
- Other special application gases to customer request



Danfoss Gas Sensor (DGS)

The Danfoss Gas Sensor (Type DGS) is designed to support Refrigeration and Air Conditioning Applications; its state-of-the-art fixed gas detector can detect a wide range of different gases and offers customers absolute confidence that both safety and compliance requirements are met or exceeded.

Savings

Customer Benefits

- Cost effective Detection
- Automatic Monitoring and Control
- Legal Compliance
- Environmental Considerations
- Better Performance
- Tailored to Task, Tailored to Gas
- Increased Connectivity
- Stand-alone


Compliant

Applications

- Compliance and Health and Safety on new or existing systems in:
- Supermarkets
- Process Refrigeration Plants
- Refrigerated Storage and Warehousing
- Special Applications areas/zones





Technical data & codes - DGS gas detectors/sensors

Technical Power Supply	DGS 12/24 V AC/DC ± 20%
Power Consumption	EC: 60 mA SC: 153mA, at 12V IR: 136mA
Power Monitoring	Green LED
Visual Alarm	Red LED
Audible Alarm	Sounder, enabled/disabled
Fault monitoring	Red LED ON – Green OFF
Fault state	0-0.5V(1-5V), 0-1V(2-10V), 0-2mA(4-20mA)
Analogue Outputs	0-5V, 1-5V, 0-10V, 2-10V, 4-20mA
Digital Outputs	1 Relay
	1 Amp/24 V d.c /120 V a.c
	Selectable delay: 0,1,5,10min
IP Rating	IP41 or IP66 (see selection below)
Dimensions & Weight	See below
Standard Compliance	 WEEE RoHS EuP

Sensor Information		Semiconductor with filter (multigas) SC Halocarbons	Semiconductor (multigas) SC Hydrocarbons	Infrared IR CO2
Typical Measurement Range		0-1,000 ppm	0-1,000 ppm	0-10,000 ppm
				0-20,000 ppm
				0-50,000 ppm
Relay Factory Default Setting		50% of range		
Temperature	IP41	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Range	IP66	-40°C to +50°C	-40°C to +50°C	-40°C to +50°C
Humidity Range non condensing		0 to 95%	0 to 95%	0 to 95%
Typical Sensor Life		5 yrs	5 yrs	5 yrs
Alarm threshold T50		76 sec (filtered)	50 sec (filtered)	50 sec
	T90	215sec (filtered)	90 sec (filtered)	120 sec
Recovery Time		600 sec	200 sec	235 sec
Linearity		Linear over calibrated range		
Calibration Requirements		Standards generally require annual test or calibration. Refer to Danfoss for instructions. Semiconductor sensors are non-selective, but calibrated to a specific gas.		

Standard Options & Codes


Danfoss DGS IP41 Versions				Danfoss DGS IP66 Versions			
Refrigerant	Product Description	Code No.	Model	Refrigerant	Product Description	Code No.	Model
R404A, R507	DGS-SC Gas Detector (IP41) Std. default R404A/R507 (min. -20C)	080Z2098		R404A, R507	DGS-SC Gas Detector (IP66) Std. default R404A/R507 (min. -40C)	080Z2099	
R134a	DGS-SC Gas Detector (IP41) std. default R134a (min. -20C)	080Z2092		R134a	DGS-SC Gas Detector (IP66) std. default R134a (min.-40C)	080Z2089	
R410A	DGS-SC Gas Detector (IP41) std. default R410A (min. -20C)	080Z2088		R410A	DGS-SC Gas Detector (IP66) std. default R410A (min.-40C)	080Z2087	
R22	DGS-SC Gas Detector (IP41) std. default R22 (min. -20C)	080Z2090		R22	DGS-SC Gas Detector (IP66) std. default R22 (min.-40C)	080Z2091	
CO2	DGS-IR-CO2 Gas Detector (IP41) for CO2 std. (min.-20C)	080Z2095		CO2	DGS-IR-CO2 Gas Detector (IP66) for CO2 (min.-40C)	080Z2096	
R407A	DGS-SC Gas Detector (IP41) std. default R407A. (min.-20C)	080Z2093		CO2	DGS-IR-CO2 Gas Detector (IP66) with 3M remote lead	080Z2097	
R407F	DGS-SC Gas Detector (IP41) std. default R407F. (min.-20C)	080Z2076		R407A	DGS-SC Gas Detector (IP66) std. default R407A. (min.-40C)	080Z2094	
			R407F	DGS-SC Gas Detector (IP66) std. default R407F. (min.-20C)	080Z2077		

If more information is required on the technical aspects of any of these products, please contact Danfoss or an authorized Danfoss distributor.

Technical data and ordering - DGS gas detectors/sensors (IP41)

Power Supply	12/24 V AC/DC ±20%
Power Consumption	EC: 60 mA / 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-Amp / 24 V D.C. / 120 V A.C.
	Selectable Delay: 0, 1 min., 5 min., 10 min.
IP Enclosure rating	IP41 or IP66
Standard Compliance	WEEE RoHS EuP

Sensor Information		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
Relay Factory Default Setting		50% of Range	50% of Range	50% of Range
Temperature Range	IP41	-20°C to +50°C (-4°F to 122°F)	20°C to +50°C (-4°F to 122°F)	20°C to +50°C (-4°F to 122°F)
	IP66	-40°C to +50°C (-40°F to +122°F)	-40°C to +50°C (-40°F to +122°F)	-40°C to +50°C (-40°F to +122°F)
Humidity Range non-condensing		0 to 95%	0 to 95%	0 to 95%
Typical sensor life		5-years	5-years	5-years
Alarm threshold	T50	76 sec (filtered)	50 sec (filtered)	50 sec
	T90	215 sec (filtered)	90 sec (filtered)	120 sec
Recovery time		600 sec	200 sec	235 sec
Linearity		Linear over calibrated range		
Calibration requirements		<ul style="list-style-type: none"> Standards generally require annual test and calibration See Danfoss Manual for Instructions Note: Semi-Conductor sensors are non-selective, but calibrated to a specific gas. 		

Danfoss DGS - IP41 Enclosure Versions			
		Product 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
	R410	DGS-SC Gas Detector (IP41) std. default R410 (min. -20°C)	080Z2088
	CO ₂ (R744)	DGS-IR-CO ₂ Gas Detector (IP41) for CO ₂ std. (min. -20°C)	080Z2095

Danfoss DGS IP66 enclosure versions can be delivered on request.

⚠ Note: Full listing of IP41 and IP66 gas sensors refer to page 186.

⚠ Note: Use IP66 versions when sensors placed inside coolrooms/freezers.

⚠ Note: Outdoor applications IP66 versions are recommended.

Electronic controls – overview

△ Note: Codes in bold currently stocked in Australia.

Type		Code Nr.	Relay / temperature sensor	Defrost heating	Cooling or heating function	Rail heat	Fan	Alarm / light / misc. (choosable)	2nd compressor	DI / DO / AI / AO	Batterie for clock (optional)	HACCP via system / HACCP integrated	Application modul	Definition and waiting of thermostat sensors	Defrost / defrost on demand / defrost on demand via bus	Voltage 230 V	Voltage 115 V	Voltage 24 V	
Case controller																			
EKC 102A		084B8500	1/1		x						-/x/-/					x			
EKC 102A		084B8503	1/1		x						-/x/-/						x		
EKC 102B		084B8501	2/2						x/-/	x	-/x/-/				x/-/	x			
EKC 102C		084B8502	2/2	x					x/-/		-/x/-/				x/-/	x			
EKC 102C		084B8505	2/2	x					x/-/		-/x/-/				x/-/		x		
EKC 102D		084B8506	3/2	x			x	x/-/		x/x/-/						x			
EKC 202A		084B8521	3/2	x				x/-/		x/x/-/	x	x/-		x/-/x	x				
EKC 202B		084B8522	4/2	x			x	x/-/		x/x/-/	x	x/-		x/-/x	x				
EKC 202C		084B8523	4/2	x			x	x/x/-		x/x/-/	x	x/-		x/-/x	x				
EKC 202C-MS		084B8543	4/2	x			x	x/x/-		x/x/-/	x	-/-		x/-/x	x				
EKC 302A			084B4162	2/2					x/-/		x/x/-/		x/-		x/-/x	x			
EKC 302B		084B4163	3/2	x			x			x/x/-/		x/-		x/-/x	x				
EKC 302D		084B4164	4/3	x		x	x	x/x/x		x/x/-/		x/-	x	x/-/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			
AK-CC 250A		084B8528	4/3	x		x	x	x/x/x	x	x/x/-/	x	x/x	x	x	x/x/x	x			
AK-CC 250B		084B8529	4/3	x		x	x	x/x/x	x	x/x/-/	x	-/-	x	x	x/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		
AK-CC 450			084B8022	6/5	x		x	x	x/x/x		x/x/-/		x/x	x	x	x/x/x	x		
AK-CC 550A		084B8030	6/5	x		x	x	x/x/x		x/x/-/		x/-	x	x	x/x/x	x			
AK-CC 750		080Z0121	9/5	x		x	x	x/x/x		x/x/x/x		x/-	x	x	x/x/x	x		x	
AK-CC 750		080Z0122	9/5	x		x	x	x/x/x		x/x/x/x		x/-	x	x	x/x/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	
Superheat Controller																			
EKC 315A		084B7086	2/2					x/-/										x	
EKC 312		084B7250	1/2						x/-/										x
EKC 316A		084B7088	2/2						x/-/										x
EKD 316		084B8040	1/2					x/-/											x
Temperature Controller																			
EKC 368		084B7079	4/2	x				x/-/											
Liquid level Controller																			
EKC 347		084B7067																	
Capacity Controller																			
EKC 331T		084B7105	5/2					x/-/	2x	x/x/-/						x			
AK-PC 530		084B8007	10/2				4x	x/-/	2x	x/x/-/									x
Condensing unit Controller																			
AK-RC 101		080Z3200	Single-phase																
AK-RC 103		080Z3201	Three-phase (3 kW), 4.5-6.3 A																
		080Z3202	Three-phase (3 kW), 7-10 A																
		080Z3206	Three-phase (5 kW), 11-16 A																
		080Z3207	Three-phase (5 kW), 14-20 A																



EKC 102 – Temperature controller

EKC 102 controllers for panel mounting are used for temperature and defrost control via pump-down or start/stop of compressor.

 Note: Order sensor separately.



Functions

Thermostat

- ON/OFF thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC5000
- Calibration of sensors
- Day/night control
- Alarm thermostat with delays

Defrost

- Electrical or natural defrost
- Start via DI input, time interval or display
- Defrost on demand
- Stop on time or temperature

Compressor

- Anti cycle timers for optimum compressor protection
- High-effect 16A relays for connection of compressors without use of intermediate relay
- Control of 2 compressors (version 102B)

Multipurpose DI input

- Multipurpose DI input for defrost start, day/night control, dooralarm or main switch

Other functions

- The S5 sensor can be used for monitoring of condenser temperature or as product sensor (version 102B+102D)
- Door function with alarm monitoring
- Manual control of outputs
- Delay of outputs at power up

Display & Programming

- High-efficient LED display with icons for indication of operational status. Parameter settings/readouts and alarm conditions can be read on the display.
- "Copy key" programming key with room for 25 different controller setups

Fan (102D only)

- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high S5 temperature

Advantages

- Integrated refrigeration-technical functions
- Defrost on demand in 1:1 systems
- Buttons and seal imbedded in the front
- IP65 density from the front panel
- Can control two compressors
- Digital input for either:
 - Door 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 102 series

Technical data

Supply voltage	230 V a.c.(115 V) +10/-15 %. 1.5 VA		
Sensors	Pt 1000 or PTC (1000 ohm/25 °C) or NTC-M2020 (5000 ohm/25 °C)		
Accuracy	Measuring range	-60 to +99 °C	
	Controller	±1 K below -35 °C ±0.5 K between -35 to +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 mm ² multi-core cable on supply and relays. Max. 1 mm ² on sensors - and DI inputs. Terminals are mounted on the circuit board		
Relays*		CE (250 V a.c.)	UL ** (240 V a.c.)
	DO1. Refrigeration	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO2. Alarm/ Defrost/ Refrigeration	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO3. Fan	6 (3) A	6 A Resistive 3FLA, 18LRA 131 VA Pilot duty
Environments	0 to +55 °C, During operations -40 to +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.		
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 is a 8 A relay. Max. load must be kept.

** UL-approval based on 30000 couplings

⚠ Standard sensor normally used PT1000 code: 084N0036.

Ordering

Type	Description	Supply	Code no.
EKC 102A	Temperature controller	230 V a.c.	084B8500
		115 V a.c.	084B8503
EKC 102B	Temperature controller with alarm function	230 V a.c.	084B8501
EKC 102C	Temperature controller for electric defrost	230 V a.c.	084B8502
		115 V a.c.	084B8505
EKC 102D	Controller for refrigeration with fan function	230 V a.c.	084B8506

Accessories

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

⚠ EKC102C (special version) 12V.a.c 50/60Hz control and alarm **084B8616**. (only available in industrial pack 30 pcs)

⚠ Accessory - enclosure box 110mm x 110mm with cut out **EKCBOX00**.



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.

⚠ Note: Order sensor separately.




⚠ Note: EKC202C-MS controller supports NTC sensors and is an ideal service replacement controller.

Functions	Advantages
<p>Thermostat</p> <ul style="list-style-type: none"> · ON/OFF heating or cooling thermostat · Sensors: Danfoss Pt1000, PTC1000 or NTC · Day/night control · Thermostat band · Alarm thermostat with delay <p>Defrost</p> <ul style="list-style-type: none"> · 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 <p>Compressor</p> <ul style="list-style-type: none"> · Anti cycle timers for optimum protection · High-effect 16A relays for connection of compressors without use of intermediate relays <p>DI input</p> <ul style="list-style-type: none"> · Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band. <p>Fan</p> <ul style="list-style-type: none"> · Fan delay during defrost · Fan stop when compressor cuts out · Fan stop at high S5 temperature <p>Light control</p> <ul style="list-style-type: none"> · Light control of day/night, door, or via network 	<ul style="list-style-type: none"> · 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: <ul style="list-style-type: none"> - 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 <p>Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)</p>

Technical data and ordering - EKC 202 series

Technical data

Supply voltage	230 V a.c. +10/-15 %. 1.5 VA		
Sensors for EKC 202A, 202B, 202C	Pt 1000 ohm (0 °C) PTC 1000 ohm (25 °C) or 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 to +99 °C	
	Controller	±1 K below -35 °C ±0,5 K between -35 to +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 Max. 1,5 mm ² multi-core cable on supply and relays. Power current terminals are mounted on the circuit board. Max. 1 mm ² on sensors - and DI inputs.		
Electrical connection cable			
Relays*		CE (250 V a.c.)	UL *** (240 V a.c.)
	DO1. Refrigeration	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO2. Defrost	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO3. Fan	6 (3) A	6 A Resistive 3FLA, 18LRA 131 VA Pilot duty
	DO4. Alarm or light	4 (1) A Min. 100 mA**	4 A Resistive 131 VA Pilot duty
Environments	0 to +55 °C, During operations -40 to +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. Small load must be kept.

** 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

Accessories

EKA 178A	Data communication module MODBUS	084B8564
EKA 179A	RS485 LON	084B8565
EKA 181A	Battery & Buzzer	084B8566
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.

⚠ Note: Order sensor/s separately.



Functions

Thermostat

- ON/OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC
- Day/night control
- Thermostat band
- Alarm thermostat with delay

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 16A relays for connection of compressors without use of intermediate relays

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

Advantages

- 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)
- AKC 302D: Several applications in the same unit.

Technical data and ordering - EKC 302 series

Technical data

Supply voltage	230 V a.c. +10/-15 %. 1.5 VA	
Sensors for EKC 302	Pt 1000 ohm (0 °C) PTC 1000 ohm (25 °C) or NTC 5000 ohm (25°C) M 2020	
Accuracy	Measuring range	-60 to +99 °C
	Controller	±1 K below -35 °C ±0,5 K between -35 to +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 mm ² multi-core cable on supply and relays. Power current terminals are mounted on the circuit board. Max. 1 mm ² on sensors - and DI inputs.	
Relays*		IEC 60 730
	DO1. Refrigeration	10 (6) A & (5 FLA, 30 LRA) 1) 16 (8) A & (10 FLA, 60 LRA) 2)
	DO2. Defrost	6 (3) A & (3 FLA, 18 LRA) 1) 10 (6) A & (3 FLA, 30 LRA) 2)
	DO3. Fan	6 (3) A & (3FLA, 18 LRA) 1) 10 (6) A & (5 FLA, 30 LRA) 2)
	DO4. Alarm	4 (1) A Min. 100 mA**
	Environments	0 to +55 °C, During operations -40 to +70 °C, During transport 20 - 80% Rh, not condensed No shock influence/vibrations
Enclosure	IP 20	
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 is a 20 A relay. DO2 and DO3 are 16 A relays. DO4 is a 10 A relay. The max. load listed above must be observed when connecting without zero-crossing control. When connecting with zero-crossing, the load must be increased to the value indicated by 2).

** 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

Accessories

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.

⚠ Refer to AK-CC250A for alternative.



Functions

Thermostat

- ON/OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC5000
- Day/night control
- Thermostat band
- Alarm thermostat with delay

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 16A relays for connection of compressors without use of intermediate relays

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

Advantages

- 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
- Digital inputs for various functions
- Clock function with backup
- 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)

Technical data and ordering - AK-CC 210

Technical data		⚠ Refer to AK-CC250A for alternative.	
Supply voltage	230 V a.c. +10/-15 %. 2.5 VA		
Sensors 3 pcs off either	Pt 1000 ohm (0 °C)PTC (1000 ohm/25 °C) or NTC-M2020 (5000 ohm/25 °C)		
Accuracy	Measuring range	-60 to +99 °C	
	Controller	±1 K below -35 °C ±0.5 K between -35 to +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		
External display	EKA 163A		
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 mm ² multi-core cable		
Relays*		CE (250 V a.c.)	UL *** (240 V a.c.)
	DO1. Refrigeration	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO2. Defrost	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO3. Fan	6 (3) A	6 A Resistive 3FLA, 18LRA 131 VA Pilot duty
	DO4. Alarm	4 (1) A Min. 100 mA**	4 A Resistive 131 VA Pilot duty
Environments	0 to +55 °C, During operations -40 to +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 kept.

** Gold plating ensures make function with 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


Accessories

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 181A	Battery & Buzzer	084B8566	
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/250B – 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.

 Note: Order sensor/s separately.



Functions

Thermostat

- ON/OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000, NTC
- Day / night control
- Thermostat band
- Alarm thermostat with delay

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 16A relays for connection of compressors without use of intermediate relays

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

Advantages

- 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
- Quick setup
- Two temperature references
- Digital inputs for various functions
- Clock function with backup
- 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)

Technical data and ordering - AK-CC 250A/250B

Technical data

Supply voltage	230 V a.c. +10/-15 %. 2.5 VA		
Sensors for AK-CC 250A, 3 pcs off either	Pt 1000 or PTC (1000 ohm / 25°C)		
Sensors for AK-CC 250B	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 to +99°C	
	Controller	±1 K below -35°C ±0.5 K between -35 to +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		
External display	EKA 163A (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 mm ² multi-core cable		
Relays*		CE (250 V a.c.)	UL *** (240 V a.c.)
	DO1. Refrigeration	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO2. Defrost	10 (6) A	10 A Resistive 5FLA, 30LRA
	DO3. Fan	6 (3) A	6 A Resistive 3FLA, 18LRA 131 VA Pilot duty
	DO4. Alarm	4 (1) A Min. 100 mA**	4 A Resistive 131 VA Pilot duty
Environments	0 to +55°C, During operations		
	-40 to +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 kept.

** Gold plating ensures make function with 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
AK-CC 250B	Refrigeration controller with MODBUS data communication. Multi sensor (only NTC)	084B8529

Accessories

EKA 163A	External display for AK-CC 250	084B8562
EKA 181A	Battery & Buzzer	084B8566
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 350 – 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. For DIN rail mounting.

⚠ Note: Order sensor/s separately.



Functions

Thermostat

- ON/OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000, NTC
- Day / night control
- Thermostat band
- Alarm thermostat with delay

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 20A relay for connection of compressor without use of intermediate relays

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


- Programming key

Advantages

- 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
- Quick setup
- Two temperature references
- Digital inputs for various functions
- Clock function with backup
- 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)

Technical data and ordering - AK-CC 350

Technical data

Supply voltage	230 V a.c. +10/-15 %. 2.5 VA	
Sensors for AK-CC 250A, 3 pcs off either	Pt 1000 or PTC (1000 ohm / 25°C)	
Sensors for AK-CC 250B	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 to +99°C
	Controller	±1 K below -35°C ±0.5 K between -35 to +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	
External display	EKA 163A (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 mm ² multi-core cable	
Relays*		IEC 60 730
	DO1. Refrigeration	10 (6) A & (5 FLA, 30 LRA) 1) 16 (8) A & (10 FLA, 60 LRA) 2)
	DO2. Defrost	6 (3) A & (3 FLA, 18 LRA) 1) 10 (6) A & (3 FLA, 30 LRA) 2)
	DO3. Fan	6 (3) A & (3FLA, 18 LRA) 1) 10 (6) A & (5 FLA, 30 LRA) 2)
	DO4. Alarm	4 (1) A Min. 100 mA**
	Environments	0 to +55°C, During operations -40 to +70°C, During transport 20 - 80% Rh, not condensed No shock influence / vibrations
Enclosure	IP 20	
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 is a 20 A relay. DO2 and DO3 are 16 A relays. DO4 is a 10 A relay. The max. load listed above must be observed when connecting without zero-crossing control. When connecting with zero-crossing, the load must be increased to the value indicated by 2).

** Gold plating ensures make function with small contact loads.

Ordering

Type	Description	Code no.
AK-CC 350	Refrigeration controller with MODBUS data communication	084B4165

Accessories

EKA 163A	External display for AK-CC 350	084B8562
EKA 183A	Programming key	084B8582
AKS 12	Pt 1000 Sensor 1.5 m	084N0036
EKS 111	PTC 1000 Sensor 1.5 m	084N1178

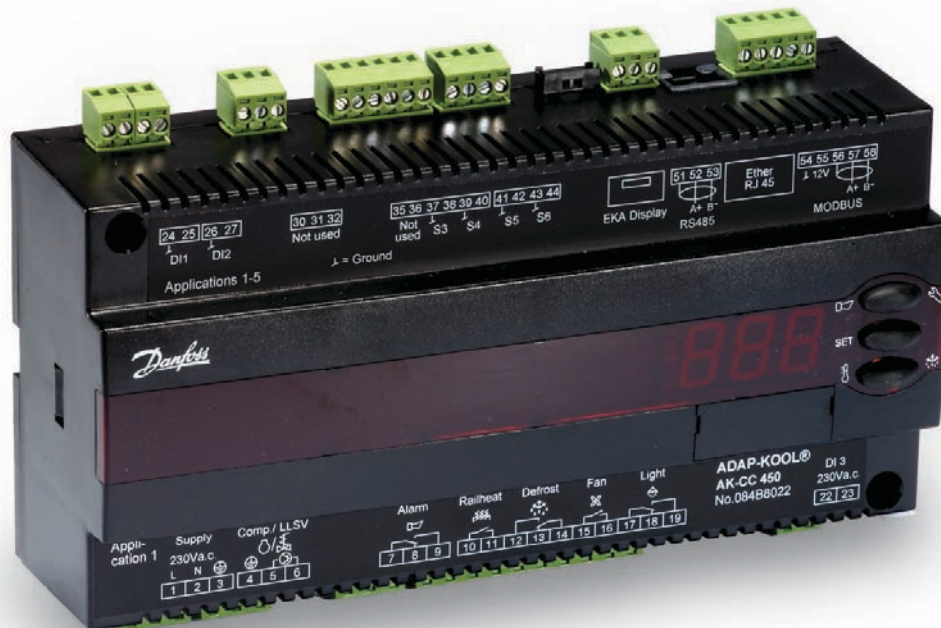


AK-CC 450 – Controller for appliance control

Complete refrigeration appliance control with great flexibility to adapt to all types of refrigeration appliances and cold storage rooms.

- For cooling with brine
- For use with a thermostatic expansion valve.

⚠ Refer to AK-CC 550A for alternative.



Functions

- Day/night thermostat with ON/OFF or modulating control
- Product sensor S6 with separate alarm limits
- Switch between thermostat settings via digital input
- Start of defrost via schedule, digital input or network
- Natural, electric or hot gas defrost
- Stop of defrost on time and/or temperature
- Coordination of defrost across several controls
- Pulsing of fans when thermostat is satisfied
- Case cleaning function for documentation of HACCP procedure
- Rail heat control via day/night load or dew point
- Door function
- Control of two compressors
- Control of night blinds
- Light control
- Heat thermostat
- Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)
- Integrated MODBUS communication with the option of mounting a LonWorks communication card

Advantages

- 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

Technical data and ordering - AK-CC 450

Technical data	⚠ Refer to AK-CC 550A for alternative.	
Supply voltage	230 V a.c. +10/-15 %. 5 VA, 50/60 Hz	
Sensors	Pt 1000 or PTC 1000 ohm/25 °C (All 4 must be of the same type)	
Accuracy	Measuring range	-60 to +120 °C
	Controller	±1 K below -35 °C ±0.5 K between -35 to +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	
External display	EKA 163B or 164B. (any EKA 163A or 164A)	
Digital inputs DI1, DI2	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 a.c.	
Electrical connection cable	Max. 1.5 mm ² multi-core cable	
Solid state output	DO1 (for solenoid coil)	Max. 240 V a.c. , Min. 28 V a.c. Max. 0.5 A Leak < 1 mA Max. 1 pcs. coil
Relays*		CE (250 V a.c.)
	DO3, DO4	4 (3) A
	DO2, DO5, DO6	4 (3) A
Environments	0 to +55 °C, During operations -40 to +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/Build-in	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.

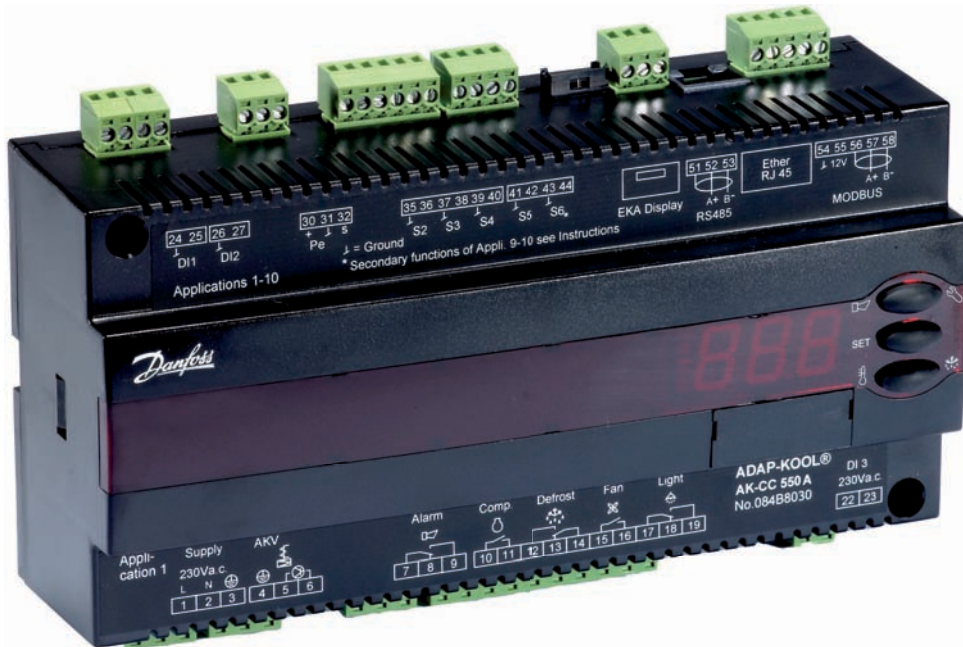
Ordering

Type	Description	Code no.
AK-CC 450	Case controller with MODBUS data communication	084B8022
Accessories		
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 164A	External display with operation buttons and screw terminals	084B8563

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.

 Note: Order sensor/s separately.



Functions

- Day/night thermostat with ON/OFF or modulating principle
- Product sensor S6 with separate alarm limits
- Switch between thermostat settings via digital input
- Adaptive control of superheat
- Adaptive defrosting based on evaporator performance
- Start of defrost via schedule, digital input or network
- Natural, electric or hot gas defrost
- Stop of defrost on time and/or temperature
- Coordination of defrosting among several controls
- Pulsing of fans when thermostat is satisfied
- Case cleaning function for documentation of HACCP procedure
- Rail heat control via day/night load or dew point
- Door function
- Control of two compressors
- Control of night blinds
- Light control
- Heat thermostat
- Factory calibration that will ensure a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)
- Integrated MODBUS communication with the option of mounting a LonWorks or Ethernet communication card

Advantages

- 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 CO₂ systems

Technical data and ordering - AK-CC 550A

Technical data

Supply voltage	230 V a.c. +10/-15%, 5 VA	
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 to +120 °C
	Controller	±1 K below -35 °C ±0.5 K between -35 to +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, DI2	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 a.c.	
Electrical connection cable	Max. 1.5 mm ²⁰⁵ multi-core cable	
Solid state output	DO1 (for AKV coil)	Max. 240 V a.c. , Min. 28 V a.c. Max. 0,5 A Leak < 1 mA Max. 1 pcs. AKV
		CE (250 V a.c.)
Relays*	DO3, DO4	4 (3) A
	DO2, DO5, DO6	4 (3) A
Environments	0 to +55 °C, During operations	
	-40 to +70 °C, During transport	
	20 - 80% Rh, not condensed No shock influence/vibrations	
Enclosure	IP20	
Mounting	DIN rail or on wall	
Weight	0.4 kg	
Data communication	Fixed	MODBUS
	Extension options	LON RS485/DANBUSS/TCP/IP/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. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN 50081-1 and EN 50082-2	

*) 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
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 operation buttons and plug for direct connection	084B8575
EKA 163A	External display with screw terminals	084B8562
EKA 164A	External display with operation buttons and screw terminals	084B8563

AK-CC 750 – Controller for evaporator control

- Multi evaporator controller (1-4 evaporators)
- Preset applications for electronic and thermostatic expansion valves and different defrost methods
- Full energy optimisation functions (dew point, fans, defrost, blinds etc.)
- Remote display connections (up to 4 displays)
- Flexible I/O configuration
- Easy application selection for fast configuration
- Built in RS 485 LON communication

⚠ refer to Danfoss electronics specialist for further details.



Energy optimisation

- **Adaptive superheat via the AKV electronic expansion valve**
Optimum utilisation of evaporator at all load conditions:
Precondition for major energy savings via optimised suction pressure and floating condensing pressure control
- **Adaptive defrost**
Intelligent defrost skip based on performance monitoring of evaporator
- **Dew point pulsing of rail heat**
Pulsing of rail heat according to the actual load condition
- **Pulsing of fans**
Pulsing of fans at thermostat cut out



Food quality/HACCP compliance

- **Modulating temperature control**
Accurate temperature control
- **Measuring accuracy**
Factory calibration guarantees a better measuring accuracy than required in the EN 12830 and EN 13485 standards without subsequent calibration on site (Pt 1000 ohms sensor)
- **Product temperature**
Separate product temperature for compliance with EN 12830 and EN 13485
- **Case cleaning**
Case cleaning function for documentation of case cleanings carried out according to HACCP procedures



Service and commissioning

- **Easy performance check**
Provides vital info for performance check
- **Versatile controller**
 - A single controller covering several applications
 - Flexible IO configuration
 - Built-in LON communication
- **Fast and easy commissioning**
 - Preset setup for fast start-up
 - Only 5 settings required

Technical data and ordering - AK-CC 750

Supply voltage	24 V d.c./a.c. +/- 20%	
Power consumption	8 VA	
Analogue inputs	Pt 1000 ohm /0 °C	Dissolution: 0.1 °C Accuracy: +/- 0.5°
	Pressure transmitter type AKS 32R/AKS 32 (1-5 V)	Dissolution 1 mV Accuracy +/- 10 mV Max. connection of 5 pressure transmitters on one module
	Voltage signal 0-10 V	
	Contact function (On/Off)	On at R < 20 ohm Off at R > 2K ohm (Gold plated contacts not necessary)
On/off supply voltage inputs	Low voltage 0/80 V a.c./d.c.	Off: U < 2 V On: U > 10 V
	High voltage 0/260 V a.c.	Off: U < 24 V On: U > 80 V
Relay outputs SPDT	AC-1 (ohmic)	5 A
	AC-15 (inductive)	3 A
	U	Min. 24 V Max. 230 V Low and high voltage must not be connected to the same output group
	Fuse	5 A (F)
Solid state outputs	Can be used for loads that are frequently cut in and out e.g. decompression, rail heating, fans and AKV valve	Max. 240 V a.c. , Min. 48 V a.c. Max. 0.5 A, Leak < 1 mA Max. 1 AKV
Ambient temperature	During transport	-40 to 70 °C
	During operation	-20 to 55 °C , 0 to 95% RH (non condensing) No shock influences/vibrations
Enclosure	Material	PC/ABS
	Enclosure	IP10 , VBG 4
	Mounting	For mounting on wall or DIN rail
Weight with screw terminals	Modules in 100-/200-/controller series	Approx. 200 g/500 g/600 g
Approvals	Complies with EU low voltage directive and EMC requirements	LVD tested according to EN 60730 EMC tested Immunity according to EN 61000-6-2 Emission according to EN 50081-1
	UL file number	E166834

Ordering AK-CC 750

Type	Language	Code no.
AK-CC 750	English, German, French, Italian, Dutch	080Z0121
	English, Spanish, Portuguese	080Z0122
	English, Danish, Swedish, Finnish	080Z0125

Ordering accessories

Extension modules and survey for inputs and outputs

Type	Analog inputs	On/off outputs		On/off supply voltage (DI signal)		Module with switches	Code no.
	For sensors, pressure transmitters etc.	Relay (SPDT)	Solid state	Low voltage (max. 80 V)	High voltage (max. 260 V)	For override of relay outputs	with screw terminals
Controller	11	4	4	-	-	-	-
AK-XM 101A	8						080Z0007
AK-XM 102A				8			080Z0008
AK-XM 102B					8		080Z0013
AK-XM 204A		8					080Z0011
AK-XM 204B		8				x	080Z0018
AK-XM 205A	8	8					080Z0010
AK-XM 205B	8	8				x	080Z0017

Software

AK-ST 500	Software for operation of AK controllers	080Z0161
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Remote displays

EKA 163B	Display unit	080B8574
EKA 164B	Display unit with operation buttons	080B8575

Miscellaneous

Trafo (AK-PS 075)		080Z0053
Display cable - 2 meters		084B7298
Display cable - 6 meters		084B7299



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. E.g.:

- Cold store (air coolers)
- Processing plant (water chillers)
- A/C plant

⚠ Note: AKV valve, temp sensors & transmitter sold separately.



Functions

- Regulation of superheat
- Temperature control
- MOP function
- ON/OFF input for start/stop of regulation
- Input signal that can displace the superheat reference or the temperature reference
- Alarm if the set alarm limits are exceeded
- Relay output for solenoid valve
- PID regulation
- Output signal following the temperature showing in the display

Advantages

- 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

⚠ Note: Use AKV series of valves.

Technical data and ordering - EKC 315A (single valve controller)

Technical data

Supply voltage	24 V a.c. +/-15% 50/60 Hz, (80 VA) (the supply voltage is galvanically separated from the input and output signals)	
Power consumption	Controller	5 VA
	AKV coil	55 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	
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 to 55 °C, during operations	
	-40 to +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, AKS 33, standard	084B7086
EKC 315A	Superheat controller, AKS 32R	084B7085
EKC 315A	I-pack of 084B7085	084B7128

Accessories

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

⚠ Note: Option of different pressure transmitters standar option AKS 3000 - 060G1323.

⚠ Note: Special application AKS33 - 1 to 34 bar - 06G2051.



EKC 312 – Superheat controller

The controller and valve can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration. E.g.:

- Processing plant (water chillers)
- Cold store (air coolers)
- A/C plant



Functions

- Regulation of superheat
- MOP function
- ON/OFF input for start/stop of regulation
- Alarm if the set alarm limits are exceeded
- PID regulation

Advantages

- 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 - EKC 312

Technical data

⚠ Note: Not currently stocked in Australia.

Supply voltage	24 V a.c. +/-15% 50/60 Hz, 10 VA (the supply voltage is galvanically separated from the input and output signals)	
Power consumption	Controller	5 VA
	ETS 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) AC-15: 3 A (inductive)
Step motor output	Pulsating 100 mA	
Data communication	Possible to connect a data communication module	
Environments	-10 to +55 °C, during operations -40 to +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	
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	

Ordering

Type	Description	Code no.
EKC 312	Superheat controller	084B7250

Accessories

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:



EKC 316A – Superheat controller - water chiller

The controller and valve can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration. E.g.:

- Processing plant (water chillers)
- Cold store (air coolers)
- A/C plant



Functions

- Regulation of superheat
- Temperature control
- MOP function
- ON/OFF input for start/stop of regulation
- Alarm if the set alarm limits are exceeded
- Relay output for solenoid valve
- PID regulation

Advantages

- 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.

⚠ Note: Use ETS series of valves, not suitable for AKV (pulse) valves.

Technical data and ordering - EKC 316A (single ETS valve controller)

Technical data

Supply voltage	24 V a.c. +/-15% 50/60 Hz, 10 VA (the supply voltage is galvanically separated from the input and output signals)	
Power consumption	Controller	5 VA
	ETS 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	
Thermostat relay	1 pcs. SPST	AC-1: 4 A (ohmic)
Alarm relay	1 pcs. SPST	AC-15: 3 A (inductive)
Step motor output	Pulsating 100 mA	
Data communication	Possible to connect a data communication module	
Environments	0 to +55 °C, during operations -40 to +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	
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 d.c. min. 100 mAh


Ordering

Type	Description	Code no.
EKC 316A	Superheat controller	084B7088

Accessories

EKA 175	Data communication module (accessories), (RS 485 module)	084B8579
EKA 174	Data communicationsmodule (accessories), (RS 485 module) with galvanic separation	

Temperature sensor Pt 1000 ohm/Pressure transmitter type AKS 33:

 Note: Refer to ETS valve section of this catalogue for valve selection.

Standard pressure transmitter AKS 33 - 1/12bar 060G2049.
Accessories temperature sensor AKS 11 PT1000 084N0003.



EKD 316 – Superheat controller (OEM version only)

The controller and valve can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration. E.g.:

- Processing plant (water chillers)
- Cold store (air coolers)
- A/C plant



Functions

- Regulation of superheat
- MOP function
- ON/OFF input for start/stop of regulation
- Alarm if the set alarm limits are exceeded
- PID regulation

Advantages

- 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.

⚠ Note: Use ETS valve series.

Technical data and ordering - EKD 316

Technical data

 Note: Refer to EKC 316A for service replacement.

Supply voltage	24 V a.c. +/-15% 50/60 Hz, 10 VA (the supply voltage is galvanically separated from the input and output signals)	
Power consumption	Controller	5 VA
	ETS step motor	1,3 VA
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) AC-15: 3 A (inductive)
	Pulsating 30-300 mA	
Data communication	Mounted with MODBUS data communication	
Environments	0 to +55 °C, during operations	
	-40 to +70 °C, during transport	
	20 - 80% Rh, not condensed	
	No shock influence/vibrations	
Enclosure	IP20	
Weight	300 g	
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 d.c. min. 120 mAh

Ordering

Type	Description	Code no.
EKD 316	Superheat controller ²⁾	084B8040

Accessories

EKA 164A	Display with buttons to change settings (with MODBUS communication) ²⁾	084B8563
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²⁾ In order to change settings either display EKA 164A or software AK-ST 500 (Plus accessories) is needed

Temperature sensor Pt 1000 ohm/Pressure transmitter type AKS 32R:



EKC 368 – Controller for temperature control of unpacked food products

Controller and valve are used where there are high requirements to refrigeration of unpacked food products, e.g. delicatessen appliances, cold rooms for meat products, cold rooms for fruits and vegetables, containers and air conditioning plants.



Functions

- Modulating temperature control
- Defrost function: electric, hotgas or natural
- Alarm if the set alarm limits are exceeded
- Relay outputs for defrost function, solenoid valve, fan and alarm
- Input signal that can displace the temperature reference

Advantages

- Wastage is reduced because the air humidity around the products is kept as high as possible.
- The temperature is kept within an accuracy of ± 0.25 °C or better after a transient phenomenon
- A transient phenomenon can be controlled with the adaptive function so that temperature variations is kept on a minimum.
- Defrost sensor, so that the defrost time will be as short as possible.
- PID regulation

⚠ Note: Use KVS valve series.

Technical data and ordering - EKC 368

Technical data

Supply voltage	24 V a.c. +/-15% 50/60 Hz, 10 VA (the supply voltage is galvanically separated from the input and output signals)	
Power consumption	Controller	5 VA
	KVS-step motor	1,3 VA
Input signal	Voltage signal	0-10 V or 2-10 V
	Digital input from external contact function	
	Short-circuit (pulse signal) of 18-20 will start a defrost	
Sensor input	2 pcs. Pt 1000 ohm	
Relay output	3 pcs. SPST	AC-1: 4 A (ohmic)
Alarm relay	1 pcs. SPST	AC-15: 3 A (inductive)
Step motor output	Pulsating 100 mA	
Data communication	Possible to connect a data communication module	
Ambient temperature	During operation	-10 - 55 °C
	During transport	-40 - 70 °C
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	

If battery backup is used:
Requirements to battery: 18 V d.c. min. 100 mAh

Ordering

Type	Description	Code no.
EKC 368	Media temperature controller	084B7079

Accessories

EKA 172	Realtime clock	084B7069
EKA 175	Data communication module (accessories), (RS 485 module)	084B8579
EKA 174	Data communicationsmodule (accessories), (RS 485 module) with galvanic separation	084B7124

 Note: Refer to KVS valve section in this catalogue see page 56.



EKC 347 – Liquid level controller

The controller is used for regulation of the refrigerant level in pump reservoirs, separators, intermediate coolers, economisers, condensers or receivers.

A signal transmitter (AKS 4100/4100U) will constantly measure the refrigerant liquid level in the reservoir – the controller will receive the signal and subsequently control the valve, in order to control the refrigerant liquid level according to liquid level setpoint.



Functions

- Liquid level control
- Alarm if the set alarm limits are exceeded
- Relay outputs for upper and lower level limits and for alarm level
- Analog input signal which can displace the reference
- PI control
- Low or High side control
- When AKV/A is selected, a MASTER/SLAVE system can run up to 3 AKV/A with distributed Opening Degree
- Manual control of output
- Limitation of Opening degree possible
- ON/OFF operation with hysteresis

Advantages

- Dedicated controller with easy setup for pumped refrigerant liquid systems
- With the AKS 4100/4100U liquid level transmitter it is possible to set the refrigerant level within a wide range.
- Flexible and can be used with ICM or AKV/A expansion valves ICM - ICM are direct operated motorized valves driven by digital stepper motor type ICAD AKV/A - AKVA or AKV are pulse-width modulating expansion valves.
- PC operation (extra option)
The controller can be provided with data communication, so that it may be hooked up with other products in the ADAP-KOOL® range of refrigeration controls. Operation, monitoring and data collection can then be performed from a PC.

Technical data and ordering - EKC 347 liquid level controller

Technical data

Supply voltage	24 V a.c. +/-15% 50/60 Hz, 60 VA (the supply voltage is galvanically separated from the input and output signals. Input/output are not individual galvanic isolated)	
Power consumption	Controller	5 VA
	20 W coil for AKV	55 VA
Input signal	Level signal	4-20 mA or 0-10 V
	Reference displacement	4-20 mA, 0-20 mA, 2-10 V or 0-10 V
	ICM valve feedback signal	From ICAD 0/4-20 mA
	Contact function start/stop of regulation	
Relay output	2 pcs. SPST	AC-1: 4 A (ohmic)
Alarm relay	1 pcs. SPST	AC-15: 3 A (inductive)
Current output	0-20 mA or 4-20 mA Max. load: 500 ohm	
Valve connection	ICM - via current output AKV/A- via 24 a.c. Pulse-Width Modulating output	
Data communication	Possible to connect a data communication module	
Environments	-10 - 55 °C, during operation	
	-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	

Ordering

Type	Description	Code no.
EKC 347	Liquid level controller	084B7067

Accessories


EKA 174	Data communicationsmodule (accessories), (RS 485 module) with galvanic separation	084B7124
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 Note: Refer to level transmitter AKS 4100 & AKS 4100U see page 228.



EKC 331T – Capacity controller

The controller is used for capacity regulation of compressors or condensers in small refrigerating systems. Regulation can be carried out with up to four identical capacity steps.

 Note: Temperature sensor or press transmitter sold separately.



Functions

- **Regulation**
Regulation with up to four relay outputs can be carried out. Regulation takes place with a set reference which is compared to a signal from a pressure transmitter or a temperature sensor.
- **Relay module**
It is possible to use the controller as relay module, so that the relays are cut in or out by means of an external voltage signal.
- **Alarmfunction**
A relay becomes activated when the set alarm limits are exceeded.
- **Digital input**
The digital input can be used for:
 - night operation where the suction pressure is raised
 - heat recovery where the condensing pressure is raised
 - external start/stop of the regulation.
 - Monitoring of safety circuit
- **Possibility of data communication**

Advantages

- Patented neutral zone regulation
- Sequential or cyclic operation

Technical data and ordering - EKC 331T capacity controller

Technical data


Supply voltage	230 V a.c. +/-15% 50/60 Hz, 5 VA	
Input signal	Pressure transmitter*) with 4-20 mA or temperature sensor Pt 1000 ohm or temperature sensor PTC 1000 ohm or voltage signal (0 - 5 V, 0 - 10 V or 5 - 10 V) Digital input to external contact function	
Relay output	4 pcs. SPST	AC-1: 4 A (ohmic) AC-15: 3 A (inductive)
Alarmrelay	1 pcs. SPST	AC-1: 4 A (ohmic) AC-15: 1 A (inductive)
Data communication	Possible to connect a data communication module	
Environments	-10 - 55 °C, during operation -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	

*) As pressure transmitter can be used AKS 32R or AKS 33.

The installation of data communications must comply with the requirements described in literature sheet no. RC8AC

Ordering

Type	Function	Ordering
EKC 331T	Capacity controller	084B7105
EKA 175	Data communication module (accessories), (RS 485 module)	084B8579

 Note: Use pressure transmitter or temperature sensor. See input signal options above.

Transmitter option: AKS 32R, AKS 33 or AKS 3000 see page 237.



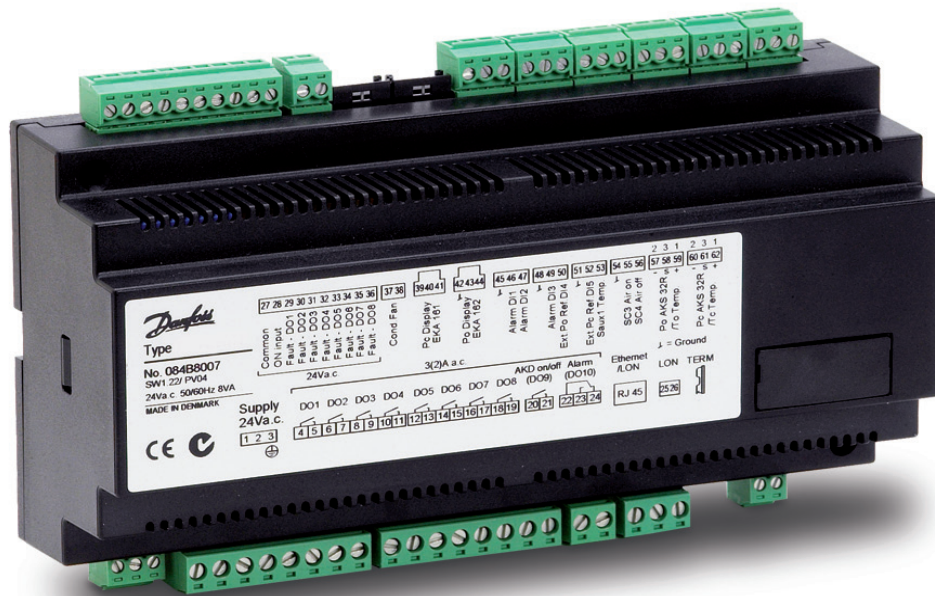
AK-PC 530 – Capacity controller

The controller is used for capacity regulation of compressors or condensers in small refrigerating systems.

Numbers of compressors and condensers can be connected, as required.

There are eight outputs and more can be added via an external relay module.

⚠ Note: Refer to Danfoss electronics specialist for further detail.



Functions

- Relays for compressor and condenser regulation
- Voltage output for capacity regulation of condenser
- Status inputs. An interrupted signal indicates that the safety circuit has been activated and the respective circuit stopped
- Contact inputs for indication of alarms
- Contact inputs for displacement of references or for indication of alarms
- Alarm relay
- External start/stop of regulation
- Possibility of data communication

Advantages

- Patented neutral zone regulation
- Many possible combinations for compressor constellations
- Sequential or cyclic operation
- Possibility of suction pressure optimization via the data communication

Technical data and ordering - AK-PC 530 Capacity controller

Technical data


Supply voltage	24 V a.c. +/-15% 50/60 Hz, 5 VA	
Input signal	2 pcs. pressure transmitters type AKS 32R (temperature sensors in brine systems)	
	3 pcs. temperature sensor input for PT 1000 ohm/0 °C or PTC 1000 ohm/25 °C	
Digitale input from contact function	1 pcs. for Start/stop of regulation	
	8 pcs. for monitoring of safety circuits	
	3 pcs. for alarm function	
	2 pcs. for alarm function or for displacement of references	
Relay output for capacity regulation	8 pcs. SPST	AC-1: 3 A (ohmic) AC-15: 2 A (inductive)
"AKD start/stop" relay	1 pcs. SPST	
Alarm relay	1 pcs. SPDT	AC-1: 6 A (ohmic) AC-15: 3 (inductive)
Voltage output	0-10 V d.c.	
Display outputs	EKA 163	Pc display
	EKA 165(164)	Operation, Po display and LED
Data communication	Possible to connect a data communication module	
Environments	0 - 55 °C, during operation	
	-40 - 70 °C, during transport	
	20 - 80% Rh, not condensing	
	No shock influence/vibrations	
Enclosure	IP20	
Weight	0.4 kg	
Mounting	DIN rail or on wall	
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 EN61000-6-2 and 3	

Ordering

Type	Function	Code no.
AK-PC 530	Capacity controller	084B8007

Accessories

EKA 163B	Display unit	084B8574
EKA 164B	Display unit with operation buttons	084B8575
EKA 165	Display unit with operation buttons and light-emitting diodes for input and output	084B8573
EKA 175	Data communication module, RS 485	084B8579
Cables	Cable for display unit 2 m, 1 pcs.	084B7298
	Cable for display unit 6 m, 1 pcs.	084B7299

 Note: For pressure transmitters and temp sensors refer to page 237.

Optyma™ Control

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 magnetothermal circuit breaker, which guarantees safety by cutting the general power supply.

⚠ Note: Currently not stocked in Australia.



Features of Optyma™ Control, single-phase

- Guaranteed certified safety and protection thanks to incorporated differential magnetothermal circuit breaker, which cuts the general power supply.
- Simple wiring and live outputs.
- New hinged cover for ease of installation and opening.
- Transparent cover for access to magnetothermal breaker, all with IP65 protection rating.
- Simple, flexible programming for optimum versatility.
- Stylish new design.
- Compressor can be run in pump-down stop mode.
- Integration of control and protection in a single room-dedicated unit reduces installation time and costs.

Features of Optyma™ Control, three-phase

- Direct control of the compressor, condenser fans, compressor oil heater, defrosting heaters, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards.
- Differential magnetothermal 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.
- Easy wiring on the internal terminal block.
- Selection of functioning mode for the compressor (pumpdown / thermostat).
- Auxiliary relay with activation configurable by parameter.
- Transparent cover for access to magnetothermal circuit breaker, all with IP65 protection rating.
- Electronic control with wide LED display and easy-to-use buttons.
- Status signaling with LED icons.

Technical data and ordering - optyma control

Optyma™ Control AK-RC 101, single-phase

Power supply

Voltage	230 V a.c ± 10% 50/60 Hz
Max absorbed power (electronic control)	~ 7 VA

Ambient conditions

Operating temperature	-5 to +50°C
Storage temperature	-30 to +70°C
Relative humidity	< 90% RH

General characteristics

Connectable sensor types	NTC 10K 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	16A Id = 300 mA switching power 4.5 kA Id = 30 mA (on request)
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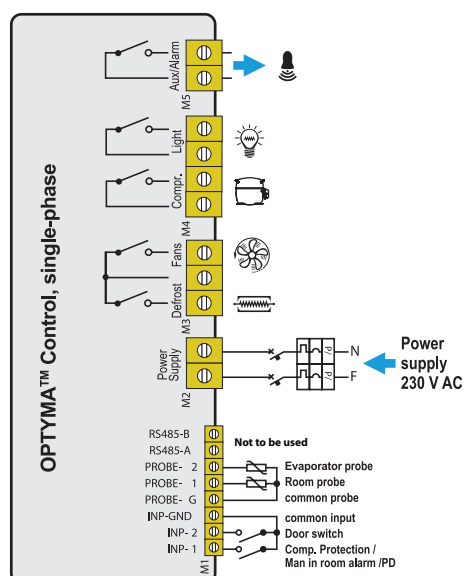
Insulation and mechanical characteristics

Cover protection rating	IP65
Cover material	self-extinguishing ABS
Type of insulation	Class II
Box dimensions	262 x 168 x 97

Ordering

AK-RC 101	Code no.
Optyma™ Control, single-phase	080Z3200

Connection diagram



Technical data and ordering

Optyma™ Control AK-RC 103, three-phase

⚠ Note: Currently not stocked in Australia.

	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% 50/60Hz	400 V AC ±10% 50/60Hz
Load type	three-phase	three-phase
Operating temperature	-5 to +40°C	-5 to +40°C
Storage temperature	-25 to +55°C	-25 to +55°C
Relative ambient humidity	< 90% RH	< 90% RH
Main switch / general protection	4 poles magnetothermic 16A	4 poles magnetothermic 25A
Compressor protection	motor circuit breaker	motor circuit breaker
Defrosting	electrical	electrical
Status indicators	LED + display	LED + display
Alarm signals	LED + buzzer	LED + buzzer

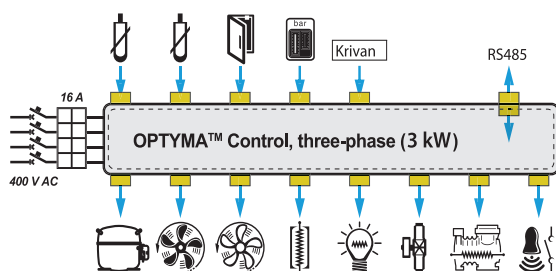
Ambient probe	NTC 10K 1%	NTC 10K 1%
Evaporator probe	NTC 10K 1%	NTC 10K 1%
Door switch	present	present
High/low pressure switch	present	present
Kriwan® connection	present	present
Compressor functioning mode selection	pump-down / thermostat	pump-down / thermostat

Compressor	370 W to 3000 W	3000 W to 5500 W
Condenser fans output 1	800 W (1ph)	800 W (1ph)
Condenser fans output 2 (separated)		total (1ph)
Evaporator fans	500 W (1ph)	2000 W (1ph / 3ph)
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

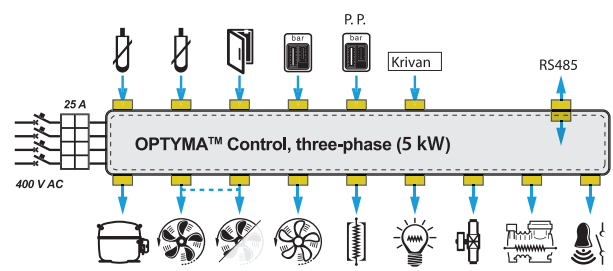
Ordering

AK-RC 103		Code no.
Optyma™ Control, three-phase (3 kW)	4.5-6.3 A	080Z3201
Optyma™ Control, three-phase (3 kW)	7-10 A	080Z3202
Optyma™ Control, three-phase (5 kW)	11-16 A	080Z3206
Optyma™ Control, three-phase (5 kW)	14-20 A	080Z3207

Connection diagrams



Optyma™ Control, three-phase (3 kW)



Optyma™ Control, three-phase (5 kW)

Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



AKS 4100/4100U – Liquid level sensors

The AKS 4100/4100U 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 technology called Time Domain Reflectometry (TDR) or Guided Micro Wave.

AKS 4100/4100U liquid level sensor can be used to measure the liquid level of many different refrigerants in vessels, accumulators, receivers, standpipes, etc.



Advantages and features

- 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 (ϵ_r) do not affect operation.
- 5000 mm (197 in.) probe length with cable version
- 2-wire loop powered; no separate transformer needed
- Multi language HMI.
Level and setting readout in mm,cm,m (ft, in.)

⚠ Refer to Industrial refrigeration supplement for more detail.

Technical data - AKS 4100/4100U – Liquid level sensors

Supply Voltage	14-30 V d.c. Min/Max. Value for an output of 22 mA at the terminal.	
Ambient temperature supply voltage limitations	-40°C/+80°C(-40°F / +176°F) : 16-30 V d.c. -20°C/+80°C(-4°F / +176°F) : 14-30 V d.c.	
Load	RL [X] [X] ((Uext -14 V)/20 mA) – Default (Error output set to 3.6 mA) RL [X] [X] ((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 (0.24-0.31in.) AKS 4100U ½ in. NPT	
Refrigerant temperature	-60°C/100°C (-76°F/212°F)	
Ambient temperature	-40°C / +80°C (-40°F / +176°F) For HMI : -20°C / +60°C (-4°F / +140°F)	
Process pressure	-1 barg / 100 barg (-14.5 psig / 1450 psig)	
Terminals (spring loaded)	0.5-1.5 mm ² (~20-15 AWG)	
Enclosure:	IP66/67 (~NEMA type 4X)	
Mechanical connection	AKS 4100:	G1 in. pipe thread. Aluminium gasket included
Cable version/Coaxial version	AKS 4100U:	¾ in. NPT
Refrigerants	The listed refrigerants are qualified and approved by Danfoss	
	R717 / NH ₃	-40°C / +50°C (-40°F / +122°F)
	R744 / CO ₂	-50°C / +15°C (-58°F / +59°F)
	HCFC:	R22 -50°C / +48°C (-58°F / +118°F)
	HFC:	R404A -50°C / +15°C (-58°F / +59°F) R410A -50°C / +15°C (-58°F / +59°F) R134a -40°C / +50°C (-40°F / +122°F)
The listed refrigerants may be used in the complete temperature range of AKS 4100/4100U, however, the accuracy may be affected if the above listed temperature range is exceeded.		
Other refrigerants within the groups of HCFC and HFC can be detected and measured if the following conditions are fulfilled:		
Reference conditions	Dielectric constant Cable version to be used in R717 / NH ₃ , HCFC and HFC ε _r , liquid > 5.6	
The coaxial version is mandatory for R744 / CO ₂ ε _r , liquid > 1.3 and marine applications.		
The coaxial version can also be used R717 / NH ₃ , HCFC and HFC.		

⚠ Refer to EKC 347 liquid level controller for stand alone system code: **084B7067**.

⚠ Refer to AKVA & ICM for valve options.

Ordering



Cable version - AKS 4100/4100U

Description	Code number With HMI	Code number Without HMI*
AKS 4100 with 5 m (197 in.) Ø2 mm (Ø0.08 in.) stainless cable and counterweight	084H4501	084H4500
AKS 4100U with 5 m (197 in.) Ø2 mm (Ø0.08 in.) stainless cable and counterweight	084H4521	084H4520

Coaxial version - AKS 4100/4100U (available in predefined lengths, with or without HMI)



Description	Probe length		Code number With HMI	Code number Without HMI*
	mm	in.		
AKS 4100 - Coaxial	500		084H4510	084H4503
AKS 4100 - Coaxial	800		084H4511	084H4504
AKS 4100 - Coaxial	1000		084H4512	084H4505
AKS 4100 - Coaxial	1200		084H4513	084H4506
AKS 4100 - Coaxial	1500		084H4514	084H4507
AKS 4100 - Coaxial	1700		084H4515	084H4508
AKS 4100 - Coaxial	2200		084H4516	084H4509
AKS 4100U - Coaxial		19.2	084H4530	084H4524
AKS 4100U - Coaxial		30	084H4531	084H4525
AKS 4100U - Coaxial		45	084H4532	084H4526
AKS 4100U - Coaxial		55	084H4533	084H4527
AKS 4100U - Coaxial		65	084H4534	084H4528
AKS 4100U - Coaxial		85	084H4535	084H4529

Accessories



Description	Code number
AKS 4100/4100U HMI Service/Display unit with rear cover and mounting bracket	084H4540
AKS 4100/4100U HMI Display	084H4548



Description	Code number
AKS 4100/4100U Signal Converter without HMI, excluding cable gland	084H4541

* When ordering without HMI please observe:
Each AKS 4100/AKS 4100U must always be programmed via the HMI display unit.

The HMI display unit can be ordered separately and there are two possibilities:

- 084H4540 AKS 4100/4100U HMI display unit with rear cover and mounting bracket. The mounting bracket is very useful when the AKS 4100/4100U have to be programmed. The same AKS 4100/4100U HMI display unit can be used to programme more AKS 4100/4100U and both Cable and Coaxial versions.
- 084H4548 AKS 4100/4100U HMI display unit (usually spare part).

Refer to EKC 347 liquid level controller 084B7067 for stand alone systems.

Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



AK-SM 350 – System Manager

The unit is a combined data collection unit and monitoring unit for smaller refrigeration installations.

- Corner shops
- Smaller supermarkets
- Restaurants
- Food manufacturers



⚠ Note: Refer to Danfoss electronics specialist for further detail.

Functions	Advantages
<p>The monitoring unit can monitor up to 65 measurements. They can originate from:</p> <ul style="list-style-type: none"> - up to 16 direct connections from sensors or switch functions - signals from separate refrigeration controllers, EKC and AK types, via data communication - signals from gas detectors via data communication - pulse counting function for energy display - all defined points can be recorded and saved with the set time intervals - the values can be viewed on the display and retrieved by connecting a printer or connecting a PC or modem 	<p>Compact unit for registering temperatures</p> <ul style="list-style-type: none"> · Collects temperature data to present to authorities · Alarm function <ul style="list-style-type: none"> - Local alarm or via modem/IP - Alarm at deviations in temperature - Alarms when doors to cold storage rooms and freezer rooms are open · Text describing the measuring area can be added to the measuring points

Technical data and ordering - AK-SM 350 – System Manager

Technical data

Supply	115 V/230 V +10/-15%, 50/60 Hz, 10 VA	
Connection	PT 1000 ohm at 0°C or PTC 1000 ohm at 25°C or NTC 5000 ohm at 25°C or Termistor (-80 to 0, -40 to 40 or 0 to 100°C) Digital On/Off signal or Standard 0 - 10 V / 4 - 20 mA signal	
Display	Graphic LCD, 240 x 64	
Direct measuring points	16	
Total number of points	65	
Measuring range, general	-60 to +50°C	
Measuring accuracy at Pt 1000	Resolution 0.1 K Accuracy: +/- 0.5 K	
Measuring interval	15, 30, 60, 120 or 240 minutes	
Data capacity	55 log points, every 15 min. for 1 year	
Battery backup	Button cell for clock function	
Power supply for e.g. pressure transmitter	5 V max. 50 mA 12 V max. 50 mA	
Pulse counter inputs for output reading	Acc. to DIN 43864. (Only for inputs 1 and 2)	
Printer connection	HP PCL-3, Parallel	
Modem connection	RJ 45	
TCP/IP connection	RJ 45	
PC connection	RJ 45	
Data communication	RS232, RS 485 (LON), RS 485 (MODBUS), RS 485 (TP) (TP= Third Party)	
Relays	Quantity	2
	Max. load	24 V a.c. or 230 V a.c. I _{max} (AC-1) = 5 A I _{max} (AC-15) = 3 A
Enclosure	IP20	
Ambient environment	0 to 50°C, during operation -20 to +70°C, during transport 20-80% RH, Non-condensed No shock loads/vibrations	
Approvals	EN 60730-1 and EN 60730-2-9 EN 50081-1 and EN 50082-1	
Weight	1.6 Kg	

Ordering

Type	Measuring points	Description	Language	Code no.
AK-SM 350	16	With inputs for PT 1000 ohm & PTC 1000 ohm	English, German, French, dutch, Italian	080Z8500
			English (UK), Spanish, Portuguese, English (US)	080Z8502
			English, Danish, Swedish, Finnish	080Z8503

Accessories

Printer cable 3 m (parallel)		080Z8401
Cable for PC (see also AK-ST 500 literature)	RJ 45 - Com port	080Z0262

Important: Installation of data communication cables and repeaters must comply with the requirements contained in the document: Data communication between ADAP-KOOL® Refrigeration system controls.



AK System Controllers & Accessories AK-SC255 & AK-355 CS Series

Note: Please refer to Danfoss product specialist for detail information and technical support

System Controllers	
Ordering Code	Description
080Z2500	AK-SC255 Rack Control TP78/Ref.lic
080Z2502	AK-SC255 Rack Control TP78/Full.lic
080Z2520	AK-SC255 "E" Controller RS485-Ref.lic
080Z2561	AK-355 CS with Modbus & Lon RS485
080Z2548	AK-355 CS with Modbus & TP78
080Z8500	AK-SM 350 Controller
080Z8118	M2 16 x PT1000, Dual 6mB
080Z2240	Refrig to Full Upgrade incl. HVAC & Lighting
AK I/O Cards/Modules	
Ordering Code	Description
080Z0061	AK-CM 101A,Control,Comm Module TP78
080Z0063	AK-CM with RS485 comms
080Z0007	AK-XM 101A,Control,Extension Module,8AI
080Z0017	AK-XM 205B,Control,8AI/8DO OVR Euro conn
080Z0020	AK-XM 107A,Control, Pulse Counter Module
080Z0032	AK-XM 103A,Control,Extension Module 4AI/4AO
080Z0022	AK-XM 208B,Control, Stepper Valve Module
080Z2170	VO2 Output Board Incl. STN6 Snaptrack
Case Controllers & Enclosures	
Ordering Code	Description
084B8520	AK-CC 210, Ref. Controller, M-Pack
084B8528	AK-CC 250A, Ref. Controller, PT/PTC
084B8529	AK-CC 250B, Ref. Controller, NTC
084B8022	AK-CC 450, Controller,LLSV,Std ver.230V
084B8020	AK-CC550 (Replaced by 084B8030)
084B8030	AK-CC 550A, Case-Controller,Std ver.230V
080Z0121	AK-CC 750 Controller, UK-D-F-NL-I
PMAK550LTKIT	Low Temp Single Case Controller Enclosure
LP-PM164-2	PM164-2 AKC164 Power Module (No longer available)
LP-EEPRKIT	AK2 Enclosure

Please Note: Refer to Danfoss Electronics Product Specialist for further technical and application support including full Service part listing.

Notes - AK system controllers

1. Please refer to Danfoss product specialist for support on system controller applications.

A large grid of graph paper for taking notes, consisting of approximately 30 columns and 30 rows of small squares.

EKS/AKS – Temperature and Pressure transmitters

Danfoss can supply a wide range of sensors and transmitters for electronic control of refrigeration applications.



Temperature sensors

- The AK-HS 1000 sensor is based on a high - accuracy PT 1000 element and developed for temperature monitoring and data logging in HACCP systems. It has been designed to simulate a product placed in a refrigeration application. Hereby a realistic HACCP report is achieved.
- Temperature sensors are temperature dependent resistance sensors.
- Sensors in the AKS series are mainly for use in commercial and industrial refrigeration plants where the requirements on grade of enclosure and temperature range are high.
- The sensors are adjusted and meet the tolerance requirements of DIN IEC 751 class B.
- Sensors in the EKS series are mainly for use in air conditioning and comfort applications where there is a focus on the design of the unit and where the requirements to the temperature regulation are less demanding.
- The EKS sensors consist of a PTC element (1000 ohm at 25 °C).

Pressure transmitters

- AKS pressure transmitters are designed for precise and energy optimized control.
- The robust design makes AKS suitable for a wide range of applications, such as:
 - Air conditioning systems-Refrigeration plants
 - Process control applications
 - Laboratory applications
- Product range:
 - 4 - 20 mA (AKS 33, AKS 3000)
 - 1 - 5 V d.c.
 - 1 - 6 V d.c.
 - 0 - 10 V d.c. (AKS 32)10
 - 90% ratiometric output (AKS 32R)

Technical data and code numbers - temperature sensors & pressure transmitters



AK-HS 1000
(CHOOK)



Product Temperature Sensor

Type	Code number	Signal	Temperature range	Measuring accuracy	Enclosure	Cable length
AK-HS 1000	084N1007	PT1000	-30 → 50 °C	EN 60751 Class B	IP54	5.5 m

Temperature sensors

Type	Code number	Signal	Measure range	Sensor tube	Electrical connection	Cable length
EKS 111	084N1178	PTC1000	-55 → 100 °C	Round	Cable with pins	1.5 m
EKS 111	084N1179	PTC1000	-55 → 100 °C	Round	Cable with pins	3.5 m
EKS 111	084N1182	PTC1000	-55 → 100 °C	Round	AMP Plug	3.5 m
EKS 211	084B4404	NTC5000	-40 → 80 °C	Round	Cable	3.5 m
EKS 211	084N1220	NTC5000	-40 → 80 °C	Round	Cable	1.5 m
AKS12	084N0036	PT1000	-40 → 80 °C	Round	Cable	1.5 m
AKS12	084N0045	PT1000	-40 → 80 °C	Round	AMP Plug	5.5 m
AKS 11	084N0003	PT1000	-50 → 100 °C	Concave	Cable	3.5 m
AKS 11	084N0005	PT1000	-50 → 100 °C	Concave	Cable	5.5 m
AKS 11	084N0008	PT1000	-50 → 100 °C	Concave	Cable	8.5 m
AKS 21 M	084N2003	PT1000	-70 → 180 °C	Round	Cable	2.5 m
AKS 21 W	084N2017	PT1000	-70 → 180 °C	Sensor pipe	Cable	2.5 m
AKS 21 D	084N2035	PT1000	-40 → 80 °C	Channel bulb	Terminal socket/ Type B	-



EKS 111, 211
AKS 12, 21M



AKS 11



AKS 21W



AKS 21D

Pressure transmitters

Type	Code number	Signal	Measure range	Max. working pressure	Electrical connection	Connection
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AKS 32R, 10-90% rated output signal, 4.75-8 V d.c. supply voltage, 0.3% FS

AKS 32R	060G0090	10-90% supply voltage	-1/34 bar	55 bar	DIN 43650-A Connection without plug	7/16-20 UNF flare
AKS 32R	060G1036		-1/12 bar	33 bar		G3/8 EN 837
AKS 2050	060G5750		-1/59 bar	100 bar		
	060G5751		-1/99 bar	150 bar		
	060G5752	-1/159 bar	250 bar			
Cable with plug for AKS32R	060G1034				Plug 3 + E (female)	5 m



AKS 32R



AKS 32R
AKS 2050

AKS 32, 1-5 V output signal, 9-30 V d.c. supply voltage, 0.3% FS

AKS 32	060G2069	1 → 5 V	-1/12 bar	33 bar	DIN 43650-A Plug Pg 9	7/16-20 UNF flare
AKS 32	060G2071	1 → 5 V	-1/34 bar	55 bar		

AKS 33, 4-20 mA output signal, 10-30 V d.c. supply voltage, 0.3% FS

AKS 33	060G2048	4 → 20 mA	-1/6 bar	33 bar	DIN 43650-A Plug Pg 9	7/16-20 UNF flare
AKS 33	060G2049	4 → 20 mA	-1/12 bar	33 bar		
AKS 33	060G2045	4 → 20 mA	0/25 bar	33 bar		
AKS 33	060G2051	4 → 20 mA	-1/34 bar	55 bar		G3/8 EN 837
AKS 33	060G2104	4 → 20 mA	-1/6 bar	33 bar		
AKS 33	060G2105	4 → 20 mA	-1/12 bar	33 bar		
AKS 33	060G2107	4 → 20 mA	-1/34 bar	55 bar		



AKS 33

AKS 3000, 4-20 mA output signal, 10-30 V d.c. supply voltage, 1.0% FS

AKS 3000	060G1323	4 → 20 mA	-1/12 bar	33 bar	DIN 43650-A Plug Pg 9	7/16-20 UNF flare
AKS 3000	060G1327	4 → 20 mA	0/30 bar	55 bar		G3/8 EN 837
AKS 3000	060G1896	4 → 20 mA	-1/12 bar	33 bar		
AKS 3000	060G1041	4 → 20 mA	0/25 bar	40 bar		G3/8 EN 837
AKS 3000	060G1066	4 → 20 mA	0/40 bar	100 bar		



AKS 3000

⚠ Note: Plug only for AKS 32R - 060G0008.

⚠ Note: Further detail on Danfoss PT1000 temperature sensors see next page.

⚠ Note: 7/16 UNF flare is 1/4" flare G 3/8 = 3/8" BSP.

Technical data - PT1000 sensors

Pt 1000 ohm / 0°C

AKS 11, AKS 12, AKS 21, AK-HS 1000

Application

These sensors are recommended for accurate temperature measurement in applications such as superheating, food safety logs, and other important temperature measurement applications.

Functional description

The sensor unit consists of a platinum element the resistance value of which changes proportionally with the temperature.

Pt 1000 ohm sensor (1000 ohm at 0°C).

The sensors are adjusted and meet the tolerance requirements of EN 60751 Class B.



Type	Description	Temperature range °C	Sensor/ sensor body	Connection/ cable	Enclosure	Time constant [s]	Cable length m	Qty	Code
AKS 11 *)	Surface and duct sensor for control and monitoring	-50 to +100	Top: PPO (Noryl) Bottom: stainless steel	PVC cable, 2 x 0.2 mm ²	IP 67	3 ¹⁾ 10 ²⁾ 35 ³⁾	3.5 m	1	084N0003
							3.5 m + AMP	110	084N0050
							5.5 m	1	084N0005
							5.5 m + AMP	70	084N0051
							8.5 m	1	084N0008
AKS 12	Air temperature sensor for monitoring	-40 to 100	18/8 stainless steel	PVC cable 2 x 0.22 mm ²	IP 67	15 ²⁾	8.5 m + AMP	50	084N0052
							1.5 m	1	084N0036
							3.5 m	30	084N0039
							5.5 m	30	084N0038
AKS 21A **)	Surface sensor with clip	-70 to +180	18/8 stainless steel	Fire-resistant silicone rubber cable, 2 x 0.2 mm ²	IP 67	6 ¹⁾ 14 ²⁾ 35 ³⁾	5.5 m + AMP	30	084N0037
	Surface sensor with shielded cable and clip	-70 to +180					2.5 m	1	084N2007
AKS 21M	Multipurpose sensor	-70 to +180					5.0 m	1	084N2008
AKS 21W	Immersion sensor with cable and sensor pocket, welded version	-70 to +180	Immersion sensor, 18/8 stainless steel tube	Fire-resistant silicone rubber cable, 2 x 0.2 mm ²	IP 56	18 ¹⁾	2.5 m	1	084N2017
			Weld nipple: free cutting steel						
			Thread nipple: free cutting steel						
AK-HS 1000	Product sensor for HACCP logging	-30 to +50	ABS and PC	PVC cable	IP 54	180-900 ³⁾	5.5 m	1	084N1007

¹⁾ Recommended for measuring superheat

²⁾ Recommended for hot gas systems

¹⁾ Agitated liquid.

²⁾ Clamped to pipe.

³⁾ Air 4 m/s.

⚠ Note: PT1000 resistance table on the following page can be used for testing the temperature sensors.

⚠ Note: AK-HS1000 also commonly known in the supermarket industry as a "chook".

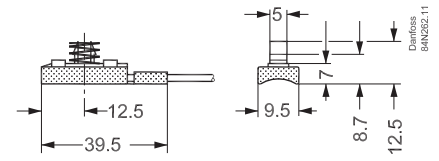
Technical data - PT1000 resistance table

AKS 11, AKS 12, AKS 21

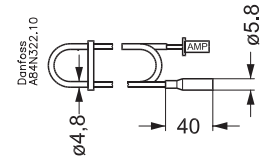
°C	ohm	°C	ohm
0	1000.0		1000.0
1	1003.9	-1	996.1
2	1007.8	-2	992.2
3	1011.7	-3	988.3
4	1015.6	-4	984.4
5	1019.5	-5	980.4
6	1023.4	-6	976.5
7	1027.3	-7	972.6
8	1031.2	-8	968.7
9	1035.1	-9	964.8
10	1039.0	-10	960.9
11	1042.9	-11	956.9
12	1046.8	-12	953.0
13	1050.7	-13	949.1
14	1054.6	-14	945.2
15	1058.5	-15	941.2
16	1062.4	-16	937.3
17	1066.3	-17	933.4
18	1070.2	-18	929.5
19	1074.0	-19	925.5
20	1077.9	-20	921.6
21	1081.8	-21	917.7
22	1085.7	-22	913.7
23	1089.6	-23	909.8
24	1093.5	-24	905.9
25	1097.3	-25	901.9
26	1101.2	-26	898.0
27	1105.1	-27	894.0
28	1109.0	-28	890.1
29	1112.8	-29	886.2
30	1116.7	-30	882.2
31	1120.6	-31	878.3
32	1124.5	-32	874.3
33	1128.3	-33	870.4
34	1132.2	-34	866.4
35	1136.1	-35	862.5
36	1139.9	-36	858.5
37	1143.8	-37	854.6
38	1147.7	-38	850.6
39	1151.5	-39	846.7
40	1155.4	-40	842.7
41	1159.3	-41	838.8
42	1163.1	-42	835.0
43	1167.0	-43	830.8
44	1170.8	-44	826.9
45	1174.7	-45	822.9
46	1178.5	-46	818.9
47	1182.4	-47	815.0
48	1186.3	-48	811.0
49	1190.1	-49	807.0
50	1194.0	-50	803.1

approx. 3.9 ohm/K

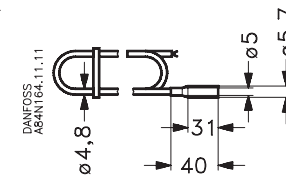
AKS 11



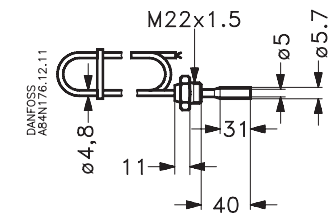
AKS 12



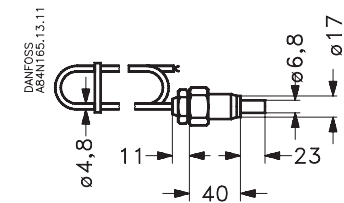
AKS 21A,
AKS 21M



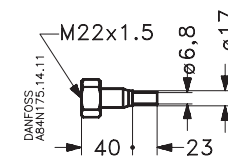
AKS 21W



AKS 21W
welded version

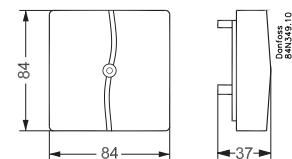


Pocket in welded version
for AKS 21W



The tolerance of a Pt1000 sensor is less than $\pm(0.3 + 0.005 T)$.
This translates into a temperature error of less than 0.5 degree for refrigeration control.

AK-HS1000
Product sensor
for HACCP
(chook)





Compressors

Danfoss Compressors - Overview



Constant innovation, constant progress

Throughout the last 50 years Danfoss Compressors has built a strong position as a global leader in the refrigeration and air conditioning industry. By constantly listening to the needs of our customers and the daily users of our products, we continue to develop innovative solutions that are energy-efficient and environmentally responsible.

With the most complete range of products for virtually any refrigeration or air-conditioning application, we are proud to offer solutions that are famous and trusted by customers all over the world for their reliability, efficiency and high quality.

Extensive product and application range

Our product range covers all common HC, HFC and HCFC refrigerants. Customers can choose from small, direct current hermetic compressors for mobile applications to large scroll compressors for commercial air conditioning or industrial applications.

Pushing technology further

We were the first to market with R134a. We can also cater for needs with energy optimised, including models with variable speed and monitoring as well as models developed for the solar energy industry. Proof of our constant focus on providing value through maximum efficiency, environmental safety and low noise levels.

Scroll Compressors

Danfoss scroll compressors cover a full range of capacities, perfect for any application from light commercial to large commercial systems. 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.

Special features	Benefits	Applications
<ul style="list-style-type: none"> · Simple, compact and lightweight construction · Optimised scroll, motor and shell design · 100% suction gas cooled and shielded motor · Large refrigerant capacity · Large oil reserve 	<ul style="list-style-type: none"> · Easy to install and service · Energy efficiency with long lifetime expectancy and low noise · Works in high temperature environments · Reliable operation in all conditions 	<ul style="list-style-type: none"> · Water chillers · Self contained air conditioning units · Split systems · Central air handling units · Heat pumps · Residential air conditioning

Reciprocating Compressors (commercial)

Designed for refrigeration as well as air conditioning applications with refrigerants R22, R407C, R134a, R404A and R507A, the Danfoss Maneurop range of compressors covers all requirements in the 1.5-26 HP range. The compressors are available with rotoblock connections, suitable for parallel mounting as well as factory made units.

Special features	Benefits	Applications
<ul style="list-style-type: none"> · Large internal volume, large oil sump, sturdy design · 100% suction gas-cooled motor · Internal motor protection · High efficiency circular valve design 	<ul style="list-style-type: none"> · operation under extreme conditions · versatile · no need for air circulation around the compressor · long lifetime expectancy and reliability 	<ul style="list-style-type: none"> · Walk-in freezers & cold rooms · Frozen food processing and storage · Blast freezers · Low temperature racks · Ice cream machines · Display cabinets · Water chillers · Large packaged air conditioners

Reciprocating Compressors (household & light commercial)

Specially optimised for use in household and light commercial applications, hermetic reciprocating compressors from Danfoss provide high cooling capacity in an energy saving design. The compressor series can be used with refrigerants R134a, R290, R404A/R507A, R407C and R600a perfect for cooling needs from 20 W to 6 kW.

Special features	Benefits	Applications
<ul style="list-style-type: none"> · Compact construction · Durable housing · Optimised motor technology · Wide voltage range · Low GWP refrigerant · Variable speed 	<ul style="list-style-type: none"> · Easy installation at lower cost · Low noise and high energy efficiency · Robust in tough operating conditions · Immune to unstable power supply · Environmentally friendly solutions 	<ul style="list-style-type: none"> · 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

Variable Speed Solutions for Light Commercial Refrigeration

Cut a slice out of your energy bill with variable speed control

Optimise cabinet display cooling with SLV compressors

SLV Variable Speed Drive 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 applications like freezers and cabinets. You will thus secure both high food quality and a low energy bill in a single solution.

System performance monitoring with built-in data logging function, use of one, intelligent controller for control and alarm management integrated in a compact, reliable and easy to install unit – and many other important enhancements that place SLV compressors far ahead of optimised compressors.

The integrated design of the compressors helps reduce system costs, enabling of more than 30% energy reduction in supermarket and convenience store cabinets, compared to non-optimised compressors.

SLV compressors are available for R404A/R507 and the environmentally friendly refrigerant, R290.

Product advantages	Customer benefits
<ul style="list-style-type: none"> · Integrated variable speed and adaptive temperature control · High Temperature Stability · Wide voltage range · Uses R290 (other refrigerants possible) · Built-in data logging and failure detection · Remote monitoring option · Lower average compressor speed · Compressor, speed control, cabinet control functions, display and monitoring – all in one integrated solution 	<ul style="list-style-type: none"> · Reduces energy consumption of more than 30% · Reduced food loss and increased food quality · High efficiency and reliability · Allows shop owners to comply with future legal refrigerant requirements now · Environmentally friendly · Enables shop owners to comply with the HACCP standard on food quality · Easy integration in existing and new monitoring systems, e.g. Retail Care® · Lower acoustic noise · Simpler installation, less room for errors, easier field service

Reciprocating Compressors (Direct current) - BD range

Tailored for cooling on the move

The excellent performance of the BD series safeguards food, medical and telecommunication. Use:

- BD35F/50F/80F compressors for 12/24V DC, R134a in mobile refrigerators and freezers
- BD220CL compressors for 12V DC, R404A LBP/MBP for bigger van cooling boxes
- BD250GH / BD350GH compressors for 12/24V DC, R134a HBP for mobile spot cooling systems
- BD250GH / BD350GH compressors for 48 V DC, R 134a HBP for telecommunication.

All the compressors are equipped with an electronic control unit with built in speed control, thermostat signal, thermal protection, safety against destructive battery discharge, electronic thermostat and fan speed control on selected.

Product advantages	Customer benefits
<ul style="list-style-type: none"> · Efficient and reliable · Lasting performance · Low weight · Silent operation · Ideal for solar energy supply · Compact design · Energy optimisation · Speed/capacity control · Energy optimisation, high COP 	<ul style="list-style-type: none"> · Operation under extreme conditions · Minimal energy consumption · Portable beyond traditional limits · Low sound emission · Application possible at extreme voltage rate · Fits virtually anywhere · Safeguard for your food

Reciprocating compressors – BD Direct current



BD35F Multivoltage

R134a, -30°C, +10°C evap. temp.

All mobile applications for portable boxes, boats, trucks etc., can be powered with AC and DC, 85-265 V AC 50/60 Hz, 12-24 V DC, automatic selection of AC when available, 26-150 W cooling capacity.

BD35F/50F/80F Basic

R134a, -30°C, +10°C evap. temp.

All mobile applications for portable boxes, boats, trucks etc., 26-150/36-190/55-270 W cooling capacity.

BD35F with EMI Electronic (standard version Australia)

R134a, -30°C, +10°C evap. temp.

Designed for boats and trucks if risk of electric interference with radio or other electrical equipment, 26-150 W cooling capacity.

⚠ Note: For larger models, please refer to Danfoss product specialist.

Applications	Compressors		
	BD35F	BD50F	BD80F
Truck refrigerators	✓		
Boat refrigerators	✓	✓	✓
Bus refrigerators	✓		
Portable boxes	✓	✓	✓
Car minibars (high end)	✓		
Car minibars (SUV, MPV)	✓		
Spot cooling (e.g. trucks)			
Self-contained van boxes		✓	✓
Battery cooling - telecommunication			
Solar chest cabinets	✓	✓	
Heatpumps			

Compressors R134a	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	Solar 10-45 V DC 101N0400	AC/DC conv. 12-24 V DC & 100-240 V AC 101N0500	Automotive 12-24 V DC 101N0600 101N0630	Extended EMI 12-24 V DC 101N0900
BD35F (std.)	195B0574		✓							
BD35F (AC/DC.)	195B0416							✓		
BD50F (std.)	195B0576		✓							
BD50F (AC/DC.)	195B0354							✓		
BD80F (std.)	195B0331					✓				

⚠ Compressor supplied complete with designated electronic module.

Compressors R134a	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			26.2 32.2 35.9 44.2	40.4 49.7	50.5 62.2	69.8 86.0	93.6 115	122 150							
BD50F			36.7 45.2 52.2 64.4	58.3 71.9	71.4 88.2	94.9 117	123 152	157 194							
BD80F			54.8 67.6 78.0 96.1	86.7 107	105 130	138 170	176 218	221 274							

Compressors R134a	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	101Z0200			36.0	42.8	45.4	50.8	59.5	68.9	78.5					
BD50F	101Z1220			47.0	59.0	63.0	70.7	82.6	95.0	108					
BD80F	101Z0280			69.0	87.0	93.0	105	123	144	168					

Test condition

EN 12900-CECOMAF / ASHRAE LBP

Condensing temperature: 55 °C / 54.4 °C
Ambient temperature: 32 °C / 32 °C

Suction gas temperature: 32 °C / 32 °C
Liquid temperature: 32 °C

⚠ Note: BD35/50 electronic module 101N0210 replaced by 101N0220.

Reciprocating compressors – BD Direct current



Ordering standard service kit: includes compressor and electronic module

Model	Code	Description
BD35F	195B0574	(compressor only REF: 101Z0200)
BD50F	195B0576	(compressor only REF: 101Z0220)
BD80F	195B0331	(compressor only REF: 101Z0280)

Ordering spare part electronic module EMI (standard version Australia)

Model	Code	Description
BD35F/BD50F	101N0220	(replaces 101N0210)
BD80F	101N0290	(replaces 101N0280)

⚠ Note: BD35F and BD50F use the same electronic module

Ordering BD35F and BD50F with AC/DC electronic module

Model	Code	Description
BD35F	195B0416	(compressor only REF: 101Z0200)
BD50F	195B0354	(compressor only REF: 101Z1220)

Ordering spare part AC/DC electronic module for BD35F and BD50F

Model	Code	Description
BD35F/BD50F	101N0500	

⚠ Note: AC/DC module is not available for BD80F compressor

Speed range of BD compressors (speed determined by resistor)

Model	RPM	Description
BD35F/BD50F	2000 - 3500 RPM	minimum speed no resistor fitted
BD80F	2500 - 4400 RPM	minimum speed no resistor fitted

⚠ Note: Resistors for speed selection are not supplied with the compressor and have to be purchased externally.

Resistance testing of BD compressors (electronic compressor terminals)

Compressor resistances can be tested to determine if windings are OK.
Digital OHMS meter can be placed across windings and the OHMS reading should be as follows:

Model	OHMS	Temperatures
BD35F/BD50F	2.2 OHMS	(+ 25 °c compressor temp)
BD80F	1.8 OHMS	(+ 25 °c compressor temp)

⚠ Refer to following pages for more detailed technical information.

BD35F

Direct Current Compressor

R134a, 12-24V DC, 10-45V Solar & 100-240V AC 50/60Hz

General

Code number (without electronic units)	101Z0200
Electronic unit - standard	101N0210, 30 pcs: 101N0211
Electronic unit 12-24V DC - with metal shielding	101N0220, 30 pcs: 101N0221
Electronic unit 12-24V DC - AEO & metal shielding	101N0320, 30 pcs: 101N0321
Electronic unit 10-45V - solar applications	101N0400, 30 pcs: 101N0401
Electronic unit 12-24V DC & 100-240V AC 50/60Hz	101N0500, 36 pcs: 101N0501
Electronic unit 12-24V DC - automotive applications	101N0600, 30 pcs: 101N0601
Electronic unit 12-24V DC - automotive applications	101N0630, 30 pcs: 101N0631
Approved compressor - electronic unit combinations	refer to <i>Instructions</i> for 101N0xxx
Additional approvals	e4, C-Tick
Compressors on pallet	150

Application

Application	LBP/MBP/HBP
Evaporating temperature °C	-30 to 0 (10)
Voltage range (DC& AC)	12-24V DC & 100-240V AC 50/60Hz 10-45V DC for solar applications
Max. condensing temperature continuous (short) °C	60 (70)
Max. winding temperature continuous (short) °C	125 (135)

Cooling requirements

Application	LBP	MBP	HBP
32°C	S	S	S
38°C	S	S	S
43°C	S	S	S

Remarks on application: Fan cooling F₁ depending on application and speed.

Motor

Motor type	Variable speed
Resistance, all 3 windings (25°C) Ω	2.2

Design

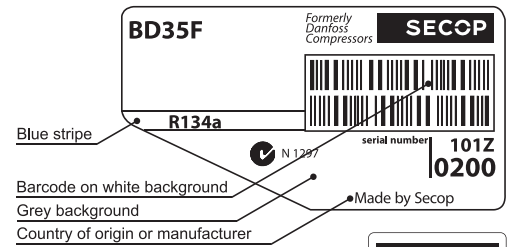
Displacement	cm ³	2.00
Oil quantity (type)	cm ³	150 (polyolester)
Maximum refrigerant charge	g	300
Free gas volume in compressor	cm ³	870
Weight - Compressor/Electronic unit	kg	4.3/0.25

Standard battery protection settings (refer to 101N0xxx *Instructions* for optional settings)

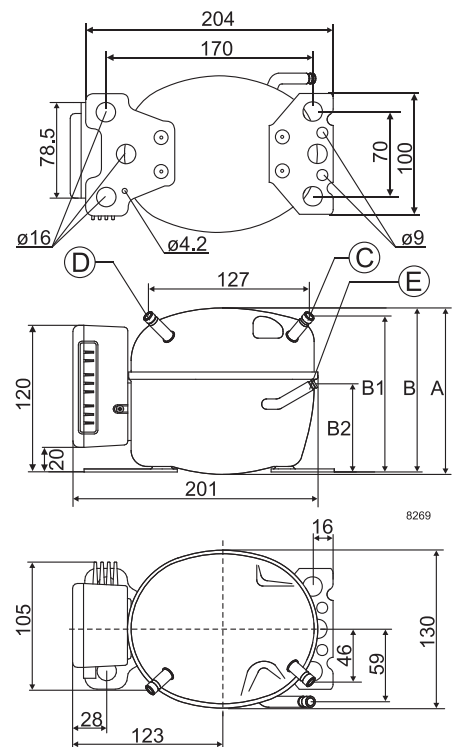
	12V	24V
Voltage	12V	24V
Cut out VDC	10.4	22.8
Cut in VDC	11.7	24.2

Dimensions

Height	mm	A	137
		B	135
		B1	128
		B2	73
Suction connector	location/I.D. mm angle	C	6.2 41.5°
	material comment		Cu-plated steel Al cap
Process connector	location/I.D. mm angle	D	6.2 45°
	material comment		Cu-plated steel Al cap
Discharge connector	location/I.D. mm angle	E	5.0 21°
	material comment		Cu-plated steel Al cap
Connector tolerance	I.D. mm		±0.09, on 5.0 +0.12/+0.20
Remarks:			



- S = Static cooling normally sufficient
- O = Oil cooling
- F₁ = Fan cooling 1.5 m/s (compressor compartment temperature equal to ambient temperature)
- F₂ = Fan cooling 3.0 m/s necessary
- SG = Suction gas cooling normally sufficient
- = not applicable in this area



BD35F

Capacity (EN 12900 Household/CECOMAF) 12V DC, static cooling **watt**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	15.8	23.9	26.9	33.1	43.8	56.6	71.7	89.9	111	122	136	
2,500	20.2	29.9	33.5	41.2	54.6	70.7	89.7	112	139	152		
3,000	22.5	32.4	36.5	45.4	61.8	81.7	105	133				
3,500	26.2	35.9	40.4	50.5	69.8	93.6	122					

Capacity (ASHRAE LBP) 12V DC, static cooling **watt**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	19.5	29.4	33.1	40.7	54.0	69.8	88.6	111	137	151	169	
2,500	24.9	36.8	41.3	50.7	67.3	87.1	111	139	172	189		
3,000	27.7	39.9	44.9	55.9	76.1	101	130	164				
3,500	32.2	44.2	49.7	62.2	86.0	115	150					

Power consumption 12V DC, static cooling **watt**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	17.6	23.4	25.3	28.7	33.6	38.3	43.0	48.0	53.4	56.0	59.5	
2,500	23.3	30.9	33.3	37.8	44.1	50.2	56.2	62.3	68.7	71.7		
3,000	29.9	36.0	38.3	43.0	50.7	58.7	66.8	74.8				
3,500	36.0	42.8	45.4	50.8	59.5	68.9	78.5					

Current consumption (for 24V applications the following must be halved) **A**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	1.5	2.0	2.1	2.4	2.8	3.2	3.6	4.0	4.5	4.67	5.0	
2,500	1.9	2.6	2.8	3.2	3.7	4.2	4.7	5.2	5.8	5.98		
3,000	2.5	3.0	3.2	3.6	4.2	4.9	5.6	6.2				
3,500	3.0	3.6	3.8	4.3	5.0	5.7	6.5					

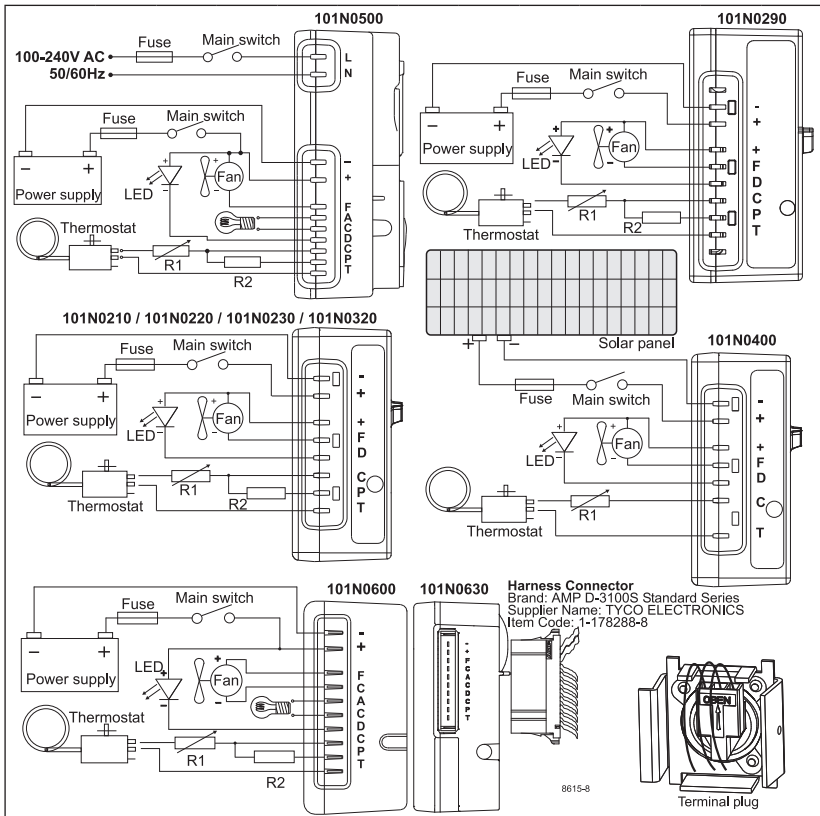
COP (EN 12900 Household/CECOMAF) **W/W**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	0.90	1.02	1.06	1.15	1.31	1.48	1.67	1.87	2.08	2.17	2.29	
2,500	0.87	0.97	1.01	1.09	1.24	1.41	1.60	1.80	2.02	2.12		
3,000	0.75	0.90	0.95	1.06	1.22	1.39	1.58	1.78				
3,500	0.73	0.84	0.89	1.00	1.17	1.36	1.55					

COP (ASHRAE LBP) 12V DC, static cooling **W/W**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	1.10	1.25	1.31	1.42	1.61	1.82	2.06	2.31	2.57	2.70	2.84	
2,500	1.07	1.19	1.24	1.34	1.53	1.74	1.97	2.23	2.50	2.63		
3,000	0.93	1.11	1.17	1.30	1.50	1.72	1.95	2.20				
3,500	0.89	1.03	1.09	1.23	1.44	1.68	1.91					

Test conditions	EN 12900/CECOMAF	ASHRAE LBP
Condensing temperature	55°C	54.4°C
Ambient temperature	32°C	32°C
Suction gas temperature	32°C	32°C
Liquid temperature	no subcooling	32°C



Operational errors shown by LED (optional)

Error code	Error type
5	Thermal cut-out of electronic unit (If the refrigeration system has been too heavily loaded, or if the ambient temperature is high, the electronic unit will run too hot).
4	Minimum motor speed error (If the refrigeration system is too heavily loaded, the motor cannot maintain minimum speed at approximately 1,850 rpm).
3	Motor start error (The rotor is blocked or the differential pressure in the refrigeration system is too high (>5 bar)).
2	Fan over-current cut-out (The fan loads the electronic unit with more than 1A _{peak}).
1	Battery protection cut-out (The voltage is outside the cut-out setting).

Compressor speed

Electronit unit	Resistor (R1) [Ω] calculated values	Motor speed [rpm]	Control circuit current [mA]
101N0210	0	2,000	5
101N0220	277	2,500	4
101N0500	692	3,000	3
101N0600	1523	3,500	2
101N0320	0	AEO	6
101N0400 with AEO	173	2,000	5
	450	2,500	4
	865	3,000	3
	1696	3,500	2

In AEO (Adaptive Energy Optimizing) speed mode the BD compressor will always adapt its speed to the actual cooling demand.

Wire Dimensions DC

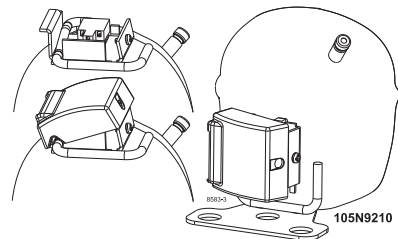
Cross section [mm ²]	Size AWG [Gauge]	Max. length* 12V operation		Max. length* 24V operation	
		[m]	[ft.]	[m]	[ft.]
2.5	12	2.5	8	5	16
4	12	4	13	8	26
6	10	6	20	12	39
10	8	10	33	20	66

*Length between battery and electronic unit

Wire Dimensions AC
Cross section min. 0.75 mm² or AWG 18

Accessories for BD35F

Accessories for BD35F	Code number
Bolt joint for one comp.	Ø:16 mm 118-1917
Bolt joint in quantities	Ø:16 mm 118-1918
Snap-on in quantities	Ø:16 mm 118-1919
Remote kit (without cable)	105N9210



AC line cord UL approved	105N9520							
AC line cord VDE approved	105N9530							
DC usage:	<table border="1"> <tr> <td>Automobile fuse</td> <td>12V: 15A</td> <td rowspan="3">Not deliverable from Secop</td> </tr> <tr> <td>DIN 7258</td> <td>24V: 7.5 A</td> </tr> <tr> <td>Main switch</td> <td>min. 20A</td> </tr> </table>	Automobile fuse	12V: 15A	Not deliverable from Secop	DIN 7258	24V: 7.5 A	Main switch	min. 20A
Automobile fuse	12V: 15A	Not deliverable from Secop						
DIN 7258	24V: 7.5 A							
Main switch	min. 20A							
AC usage:	<table border="1"> <tr> <td>Fuse, 100-240V</td> <td>min. 4A</td> </tr> <tr> <td>Main switch</td> <td>min. 6A</td> </tr> </table>	Fuse, 100-240V	min. 4A	Main switch	min. 6A			
Fuse, 100-240V	min. 4A							
Main switch	min. 6A							

BD50F Direct Current Compressor R134a 12 - 24V DC & 100-240V AC 50/60Hz

General

Code number (without electronic units)	101Z1220
Electronic unit - standard	101N0210, 30 pcs: 101N0211
Electronic unit 12-24V DC - with metal shielding	101N0220, 30 pcs: 101N0221
Electronic unit 12-24V DC - high start performance	101N0230, 30 pcs: 101N0231
Electronic unit 12-24V DC - AEO & metal shielding	101N0320, 30 pcs: 101N0321
Electronic unit 12-24V DC & 100-240V AC 50/60Hz	101N0500, 36 pcs: 101N0501
Approved compressor - electronic unit combinations	refer to <i>Instructions</i> for 101N0xxx
Additional approvals	e4, C-Tick
Compressors on pallet	150

Application

Application	LBP/MBP/HBP
Evaporating temperature °C	-30 to 0 (10)
Voltage range (DC& AC)	12-24V DC & 100-240V AC 50/60Hz
Max. condensing temperature continuous (short) °C	60 (70)
Max. winding temperature continuous (short) °C	125 (135)

Cooling requirements

Application	LBP	MBP	HBP
32°C	S	S	F ₁
38°C	S	S	F ₁
43°C	S	S	F ₁

Remarks on application: Fan cooling F₁ depending on application and speed.

Motor

Motor type	Variable speed
Resistance, all 3 windings (25°C) Ω	1.8

Design

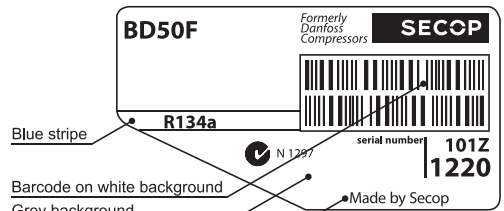
Displacement cm ³	2.50
Oil quantity (type) cm ³	150 (polyolester)
Maximum refrigerant charge g	300
Free gas volume in compressor cm ³	870
Weight - Compressor/Electronic unit kg	4.3/0.25

Standard battery protection settings (refer to 101N0xxx *Instructions* for optional settings)

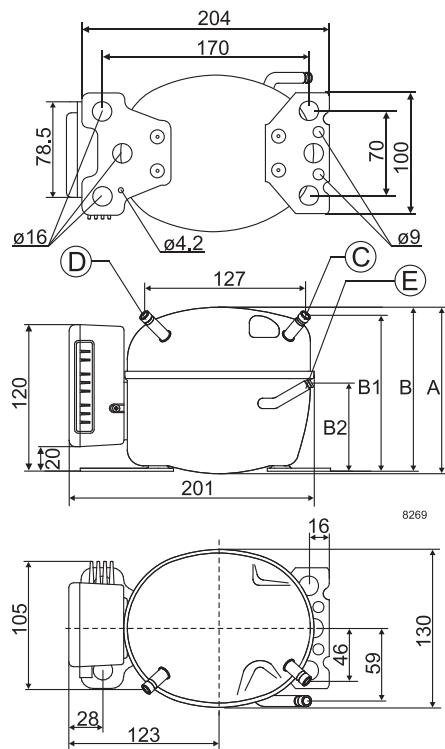
Voltage	12V	24V
Cut out VDC	10.4	22.8
Cut in VDC	11.7	24.2

Dimensions

Height mm	A	137
	B	135
	B1	128
	B2	73
Suction connector location/I.D. mm angle	C	6.2 41.5°
	material comment	Cu-plated steel Al cap
Process connector location/I.D. mm angle	D	6.2 45°
	material comment	Cu-plated steel Al cap
Discharge connector location/I.D. mm angle	E	5.0 21°
	material comment	Cu-plated steel Al cap
Connector tolerance I.D. mm		±0.09, on 5.0 +0.12/+0.20
Remarks:		



- S = Static cooling normally sufficient
- O = Oil cooling
- F₁ = Fan cooling 1.5 m/s
(compressor compartment temperature equal to ambient temperature)
- F₂ = Fan cooling 3.0 m/s necessary
- SG = Suction gas cooling normally sufficient
- = not applicable in this area



BD50F

Capacity (EN 12900 Household/CECOMAF) 12V DC, static cooling watt

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	20.8	30.0	33.6	41.6	55.9	72.6	91.9	114	138*	150*	165*	
2,500	25.9	37.3	41.8	51.4	68.4	88.9	113	142*	175*	191*		
3,000	30.9	44.8	50.2	61.7	82.2	107	136*	169*				
3,500	36.7	52.2	58.3	71.4	94.9	123*	157*					

Capacity (ASHRAE LBP) 12V DC, static cooling watt

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	25.6	37.0	41.5	51.4	69.0	89.8	114	141	171*	186*	205*	
2,500	31.9	46.0	51.5	63.4	84.5	110	140	176*	217*	237*		
3,000	38.1	55.3	61.9	76.2	101	132	168*	210*				
3,500	45.2	64.4	71.9	88.2	117	152*	194*					

Power consumption 12V DC, static cooling watt

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	26.0	32.7	34.9	39.2	45.8	52.6	60.0	68.0	76.9*	81.2*	87.0*	
2,500	32.2	41.4	44.5	50.3	59.0	67.7	76.4	85.4*	94.9*	99.2*		
3,000	38.9	50.3	54.0	61.0	71.2	81.3	91.5*	102*				
3,500	47.0	59.0	63.0	70.7	82.6	95.0*	108*					

Power consumption is limited to 100W with electronic unit 101N0500.

Current consumption (for 24V applications the following must be halved)

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	2.16	2.69	2.88	3.26	3.85	4.49	5.15	5.85	6.58*	6.91*	7.35*	
2,500	2.69	3.40	3.65	4.12	4.86	5.61	6.37	7.15*	7.94*	8.29*		
3,000	3.33	4.16	4.44	5.00	5.87	6.75	7.65*	8.57*				
3,500	4.02	4.89	5.20	5.83	6.83	7.90*	9.03*					

COP (EN 12900 Household/CECOMAF) W/W

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	0.80	0.92	0.96	1.06	1.22	1.38	1.53	1.67	1.79*	1.84*	1.90*	
2,500	0.80	0.90	0.94	1.02	1.16	1.31	1.48	1.66*	1.84*	1.92*		
3,000	0.79	0.89	0.93	1.01	1.15	1.31	1.48*	1.66*				
3,500	0.78	0.88	0.93	1.01	1.15	1.30*	1.45*					

COP (ASHRAE LBP) 12V DC, static cooling W/W

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	0.99	1.13	1.19	1.31	1.51	1.71	1.90	2.07	2.23*	2.29*	2.36*	
2,500	0.99	1.11	1.16	1.26	1.43	1.62	1.83	2.05*	2.29*	2.39*		
3,000	0.98	1.10	1.15	1.25	1.43	1.62	1.83*	2.05*				
3,500	0.96	1.09	1.14	1.25	1.42	1.60*	1.79*					

power consumption is limited to 100W with 101N0500 * fan cooling of electronic unit compulsory

Test conditions	EN 12900/CECOMAF	ASHRAE LBP
Condensing temperature	55°C	54.4°C
Ambient temperature	32°C	32°C
Suction gas temperature	32°C	32°C
Liquid temperature	no subcooling	32°C

Operational errors shown by LED (optional)

Error code	Error type
5	Thermal cut-out of electronic unit (If the refrigeration system has been too heavily loaded, or if the ambient temperature is high, the electronic unit will run too hot).
4	Minimum motor speed error (If the refrigeration system is too heavily loaded, the motor cannot maintain minimum speed at approximately 1,850 rpm).
3	Motor start error (The rotor is blocked or the differential pressure in the refrigeration system is too high (>5 bar)).
2	Fan over-current cut-out (The fan loads the electronic unit with more than 1A _{peak}).
1	Battery protection cut-out (The voltage is outside the cut-out setting).

A Compressor speed

Electronit unit	Resistor (R1) [Ω] calculated values	Motor speed [rpm]	Control circuit current [mA]
101N0210	0	2,000	5
101N0220	277	2,500	4
101N0230	692	3,000	3
101N0500	1523	3,500	2
101N0320 with AEO	0	AEO	6
	173	2,000	5
	450	2,500	4
	865	3,000	3
	1696	3,500	2

In AEO (Adaptive Energy Optimizing) speed mode the BD compressor will always adapt its speed to the actual cooling demand.

Wire Dimensions DC

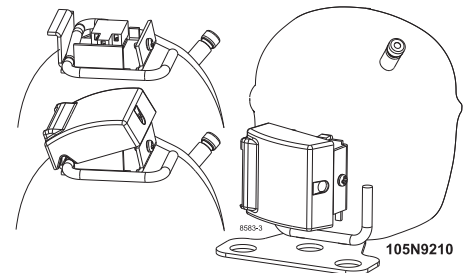
Size	Cross section [mm²]	AWG [Gauge]	Max. length* 12V operation		Max. length* 24V operation	
			[m]	[ft.]	[m]	[ft.]
2.5	12	12	2.5	8	5	16
4	12	12	4	13	8	26
6	10	10	6	20	12	39
10	8	8	10	33	20	66

*Length between battery and electronic unit

Wire Dimensions AC

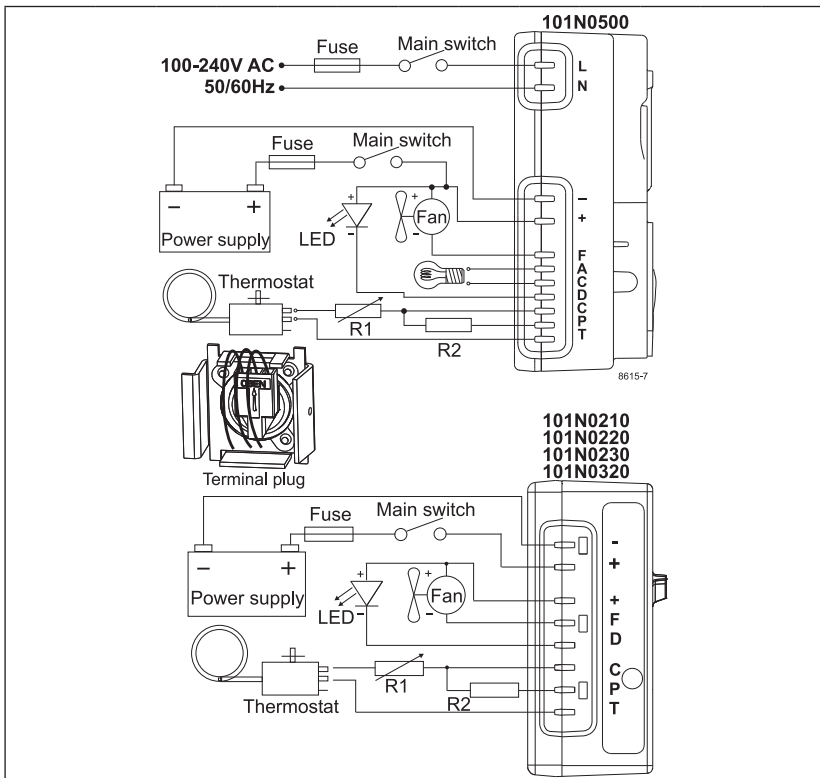
Cross section min. 0.75 mm² or AWG 18

Accessories for BD50F	Code number
Bolt joint for one comp.	Ø:16 mm 118-1917
Bolt joint in quantities	Ø:16 mm 118-1918
Snap-on in quantities	Ø:16 mm 118-1919
Remote kit (without cable)	105N9210

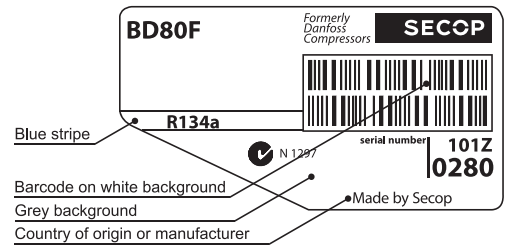


AC line cord UL approved	105N9520
AC line cord VDE approved	105N9530
DC usage:	Automobile fuse 12V: 15A DIN 7258 24V: 7.5 A
	Main switch min. 20A
AC usage:	Fuse, 100-240V min. 4A Main switch min. 6A

Not deliverable from Secop



BD80F Direct Current Compressor R134a 12 - 24V



General

Code number (without electronic units)	101Z0280
Electronic unit	101N0290, 28 pcs: 101N0291
Approved compressor - electronic unit combinations	refer to <i>Instructions</i> for 101N0290
Additional approvals	e4, C-Tick
Compressors on pallet	150

Application

Application	LBP
Evaporating temperature °C	-30 to -5
Voltage/max. voltage VDC	12-24/31.5
Max. condensing temperature continuous (short) °C	60 (70)
Max. winding temperature continuous (short) °C	125 (135)

- S = Static cooling normally sufficient
- O = Oil cooling
- F₁ = Fan cooling 1.5 m/s
(compressor compartment temperature equal to ambient temperature)
- F₂ = Fan cooling 3.0 m/s necessary
- SG = Suction gas cooling normally sufficient
- = not applicable in this area

Cooling requirements

Application	LBP	MBP	HBP
32°C	S	-	-
38°C	S	-	-
43°C	S	-	-
Remarks on application:			

Motor

Motor type	Variable speed
Resistance, all 3 windings (25°C) Ω	1.8

Design

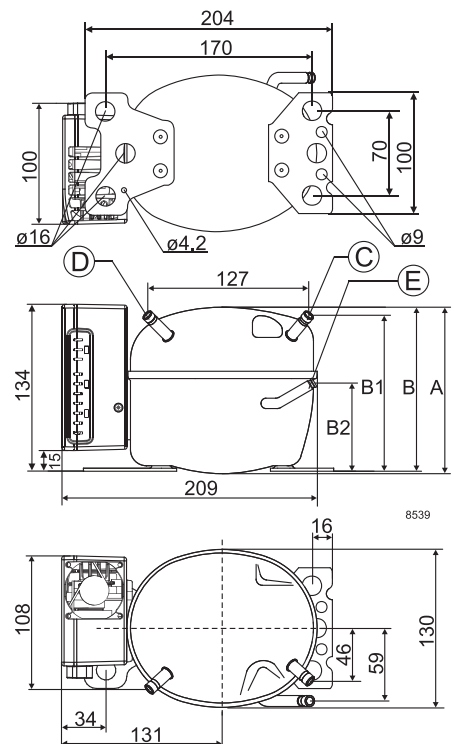
Displacement cm ³	3.00
Oil quantity (type) cm ³	150 (polyolester)
Maximum refrigerant charge g	300
Free gas volume in compressor cm ³	870
Weight - Compressor/Electronic unit kg	4.4/0.3

Standard battery protection settings (refer to 101N0290 *Instructions* for optional settings)

Voltage	12V	24V
Cut out VDC	10.4	22.8
Cut in VDC	11.7	24.2

Dimensions

Height	mm	A	137
		B	135
		B1	128
		B2	73
Suction connector	location/l.D. mm angle	C	6.2 41.5°
	material comment	Cu-plated steel Al cap	
Process connector	location/l.D. mm angle	D	6.2 45°
	material comment	Cu-plated steel Al cap	
Discharge connector	location/l.D. mm angle	E	5.0 21°
	material comment	Cu-plated steel Al cap	
Connector tolerance	l.D. mm	±0.09, on 5.0 +0.12/+0.20	
Remarks			



BD80F

Capacity (EN 12900 Household/CECOMAF) 12V DC, static cooling watt

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,500	35.3	49.5	55.0	66.6	87.1	112	140					
3,100	41.8	59.0	65.6	79.6	104	133	168					
3,800	49.6	70.5	78.5	95.3	125	159	200					
4,400	54.8	78.0	86.7	105	138	176	221					

Capacity (ASHRAE LBP) 12V DC, static cooling watt

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,500	43.5	61.1	67.8	82.2	108	138	174					
3,100	51.5	72.8	80.9	98.2	129	165	207					
3,800	61.1	87.0	96.8	118	154	197	248					
4,400	67.6	96.1	107	130	170	218	274					

Power consumption 12V DC, static cooling watt

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,500	40.0	50.0	53.4	60.3	71.3	83.1	96					
3,100	48.7	61.2	65.4	73.8	87.0	101	118					
3,800	59.5	75.0	80.2	90.3	106	124	145					
4,400	69.0	87.0	93.0	105	123	144	168					

Current consumption (for 24V applications the following must be halved) A

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,500	3.3	4.2	4.5	5.0	5.9	6.9	8.0					
3,100	4.1	5.1	5.5	6.1	7.2	8.5	9.8					
3,800	5.0	6.3	6.7	7.5	8.9	10.3	12.1					
4,400	5.8	7.2	7.7	8.7	10.3	12.0	14.0					

COP (EN 12900 Household/CECOMAF) W/W

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,500	0.88	0.99	1.03	1.10	1.22	1.34	1.46					
3,100	0.86	0.96	1.00	1.08	1.20	1.31	1.42					
3,800	0.83	0.94	0.98	1.06	1.17	1.28	1.39					
4,400	0.79	0.90	0.93	1.01	1.12	1.22	1.32					

COP (ASHRAE LBP) 12V DC, static cooling W/W

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,500	1.09	1.22	1.27	1.36	1.51	1.66	1.81					
3,100	1.06	1.19	1.24	1.33	1.48	1.62	1.76					
3,800	1.03	1.16	1.21	1.30	1.45	1.59	1.71					
4,400	0.98	1.11	1.15	1.24	1.38	1.51	1.63					

Test conditions	EN 12900/CECOMAF	ASHRAE LBP
Condensing temperature	55°C	54.4°C
Ambient temperature	32°C	32°C
Suction gas temperature	32°C	32°C
Liquid temperature	no subcooling	32°C

Operational errors errors shown by LED (optional)

Error code	Error type
5	Thermal cut-out of electronic unit (If the refrigeration system has been too heavily loaded, or if the ambient temperature is high, the electronic unit will run too hot).
4	Minimum motor speed error (If the refrigeration system is too heavily loaded, the motor cannot maintain minimum speed at approximately 2,450 rpm).
3	Motor start error (The rotor is blocked or the differential pres-sure in the refrigeration system is too high (>5 bar)).
2	Fan over-current cut-out (The fan loads the electronic unit with more than 1A _{peak}).
1	Battery protection cut-out (The voltage is outside the cut-out setting).

Compressor speed

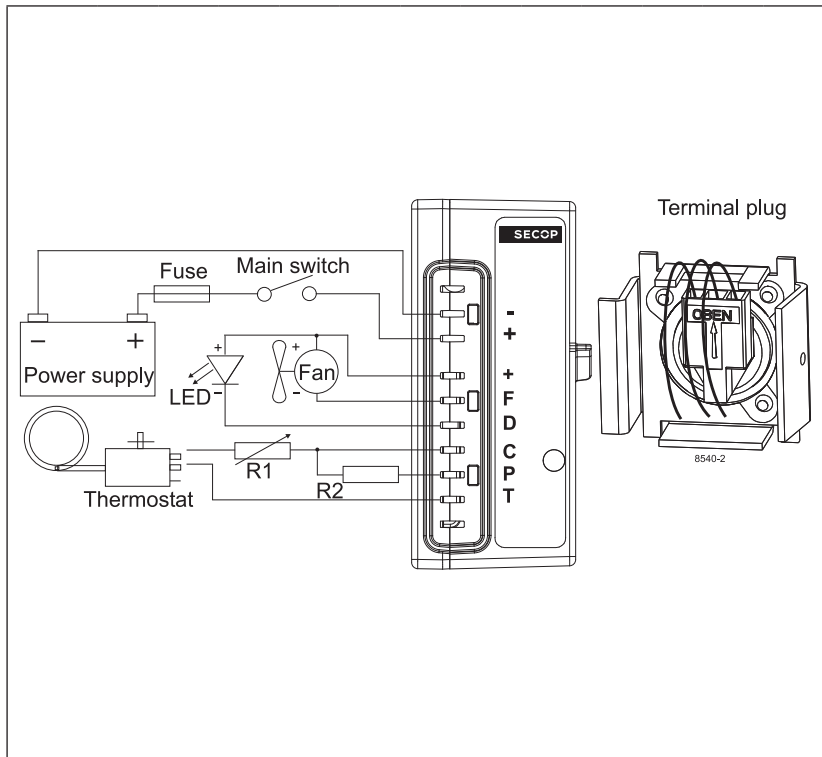
Electronit unit	Resistor (R1) [Ω] calculated values	Motor speed [rpm]	Control circuit current [mA]
101N0290 with AEO	0	AEO	6
	203	2,500	5
	451	3,100	4
	867	3,800	3
	1700	4,400	2

In AEO (Adaptive Energy Optimizing) speed mode the BD compressor will always adapt its speed to the actual cooling demand.

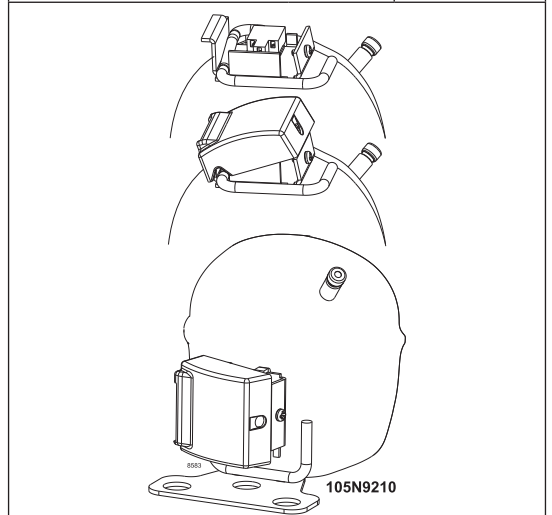
Wire Dimensions DC

Cross section [mm ²]	Size AWG [Gauge]	Max. length* 12V operation		Max. length* 24V operation	
		[m]	[ft.]	[m]	[ft.]
6	10	2.5	8	5	16

*Length between battery an electronic unit



Accessories for BD80F	Code number
Bolt joint for one compressor Ø:16 mm	118-1917
Bolt joint in quantities Ø:16 mm	118-1918
Snap-on in quantities Ø:16 mm	118-1919
Remote kit (without cable)	105N9210



Standard automobile fuse DIN 7258	12V: 30A 24V: 15A	Not deliverable from Secop
Main switch	min. 30A	

Reciprocating compressors – Household & Light commercial

Hermetic compressors R134a - codes in bold currently stocked in Australia

Application	Compressor	Code numbers			Capacity [W] conditions as listed													Power consumption [W]				
		Com-pressor on pallet	Ordering Compressor- single pack with HST equipment	Com-pressor with oil cooling	Evaporating temperature [C°]													Evaporating temperature [C°]				
					-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	-35	-25	-10	5
HBP / MBP / LBP	PL35G	101G0250	195B0245						28	39	53	69	89	112	140	172	209			48	67	90
	TL2.5G	102G4251	195B0268				11	22	36	51	69	90	116	145	179	219	264		48	60	84	113
	TL3G	102G4350	195B0006					25	41	59	81	106	136	170	211	258	312			66	96	133
	TL4G	102G4452	195B0008					41	58	80	107	140	180	226	280	342	413			83	118	154
	TL5G	102G4550	195B0011					56	79	107	139	178	224	278	341	414	497			100	149	205
	FR6G	103G6660	195B0191					48	83	124	171	226	290	365	452	552				109	172	241
	FR7.5G	103G6680	195B0024	103G6690				62	99	142	193	254	325	408	505	618				126	194	272
	FR8.5G	103G6780	195B0026	103G6790				85	123	171	228	298	381	478	592	722				151	231	321
	FR10G	103G6880	195B0027	103G6890				92	136	188	250	324	412	516	638	779				179	265	362
	FR11G	103G6980	195B0028						115	170	233	307	395	501	628	780				202	317	445
	SC10G	104G8000	195B0043				23	60	113	183	268	369	486	618	764	925	1100		93	181	290	383
	SC12G	104G8240	195B0050	104G8250			65	113	175	252	348	464	603	768	960	1182	1437		148	227	355	493
	SC15G	104G8520	195B0053	104G8530					164	290	424	568	728	908	1110	1340	1600			233	440	595
	SC18G	104G8820	195B0059	104G8830					283	394	526	684	870	1087	1337	1624	1950			331	507	695
	SC21G	104G8140	195B0636						333	453	606	792	1012	1268	1560	1889	2256			382	575	789
	SC12/12G	104G8280	195B0051				129	226	350	505	696	928	1206	1535	1920	2364	2875		296	454	710	986
	SC15/15G	104G8580	195B0056						328	581	847	1137	1457	1815	2220	2679	3201			465	879	1190
	SC18/18G	104G8880	195B0060						566	788	1052	1368	1740	2174	2674	3248	3900			662	1014	1390
SC21/21G	104G8180	195B0049						667	907	1212	1584	1840	2025	2536	3120	3778	4511		771	1156	1581	
LBP	PL50F	101G0222	195B0001					40	56	74	95	120	148						58	84		
	TL53FT	102G4324	195B0484			21	34	50	69	92	120								45	62	92	
	TL54FT	102G4424	195B0463			27	43	63	88	117	152								68	87	123	
	TL55FT	102G4524	195B0321			48	71	98	131	170	216								84.5	114	165	
	TLES5.7FT.3	102G4615				66	90	120	156	200	253								90	120	170	
	TLES6.5FT.3	102G4703	on request			72	100	134	176	228	290								107	142	200	
	NL6FT	105G6628	195B0296			60	84	115	152	198	253								93	123	184	
	NL6.1FT	105G6620	195B0440			60	84	115	152	198	253								93	123	184	
	NL7.3FT	105G6726	195B0441	105G6731			71	100	136	181	235	299							108	145	220	
	NL8.4FT	105G6865	195B0442	105G6866			87	120	162	213	275	350							127	169	252	
	NL10FT	105G6829	195B0327	105G6839			113	158	213	281	361	455							159	217	327	
	SC12FT	104G8205	195B0282 (O)	104G8215			103	163	233	314	408	517	645						184	265	380	
	SC15FT	104G8505	195B0407			126	197	280	376	489	620	772							223	311	451	
	SC18FTX	104G8805	195B0408			144	229	325	437	567	719	896							257	365	517	
	SC21FTX	104G8105	195B0514			192	296	415	553	713	901	1119							296	428	613	
	TL4FX	102G4400	195B0007			31	44	61	81	107	137								60	81	122	
	TL5FX	102G4501	195B0241			43	60	82	110	144	183								70	101	154	
	TL55FX	102G4520	195B0010			48	71	98	131	170	216								82	112	162	
TL56FX	102G4620	195B0235			58	77	104	139	183	235								84	119	181		
TL57FX	102G4720	195B0255			66	89	120	160	208	264								97	136	207		
NL7FX	105G6706	195B0176			71	99	136	182	238	303								71	136	303		
NL9FX	105G6802	195B0178			74	111	155	207	268	340								109	167	260		
NL11FX	105G6900	195B0182			102	146	200	268	351	453								137	212	331		
SC15FX	104G8500	195B0052			100	155	230	325	439	573	726							186	275	432		
SC18FX	104G8800	195B0057			129	194	280	388	518	669	842							206	313	492		
SC21FX	104G8100	195B0047			186	246	335	454	602	780	987							275	380	600		
MBP	NL6.1MF	105G6660	195B0411					141	189	245	312	390	482	588	709					187	243	
	NL7.3MF	105G6772	195B0370					179	236	304	385	480	591	719	867					227	298	
	NL8.4MF	105G6879	195B0371					213	277	353	445	553	679	825	994					261	349	
	NL10MF	105G6885	195B0275	105G6887				266	346	441	554	687	843	1023	1231					323	435	
	NL11MF	105G6151	195B0432					292	380	485	609	756	927	1125	1354					360	495	
	NLE10MF	105G6888	195B0566			88	137	194	262	343	440	554	688	845				134	198	308	426	
	SC18MFX	104G8804	on request					430	563	722	912	1137	1400							507	657	
	SC21MFX	104G8120	195B0478					530	682	866	1085	1343	1645	1996						594	784	
	GS26MFX	107B0700	195B0433					754	989	1266	1591	1970	2411							696	942	
	GS34MFX	107B0701	195B0435					998	1296	1648	2063	2550	3115							909	1234	
HBP	TL4GH	102G4455	195B0122						104	140	182	230	287	353	429					121	159	
	FR7GH	103G6683	195B0167	103G6692					199	255	327	417	525	655	807					192	258	
	SC10GH	104G8041	195B0142						233	352	478	613	762	927	1113	1323				281	395	
	SC10GHH		on request	104G8071					259	352	467	604	762	942	1144					260	345	
	SC12GH	104G8261	195B0249						429	577	752	957	1196	1471	1787					356	487	
	SC15GH	104G8561	195B0144						559	723	915	1139	1398	1698	2041					424	565	
	SC15GHH		195B0055	104G8571					435	570	726	911	1135	1405	1731					377	505	
	SC18GH	104G8860	195B0246						539	676	855	1077	1340	1645	1990					498	697	
SC18GH	104G8861	195B0266						485	639	825	1047	1310	1618	1976	2389				452	605		
GS26GHX																						



⚠ Note: LST - low starting torque electrics = PTC relay only
 HST - high starting torque electrics = starting relay + capacitor/s

Dis- placement	Recommended compressor cooling at ambient temperatures									Voltage and frequencies	Electrical equipment					Compressor	Dimensions							
	32°C			38°C			43°C				LST (RSIR)		HST (CSIR)		HST (CSR)		LST/HST		Height [mm]		Connectors location/I.D. [mm]			
	LBP	MBP	HBP	LBP	MBP	HBP	LBP	MBP	HBP		PTC Starting device	Starting relay	Starting capacitor	Starting unit	Cord relief		Cover	A	B	Suc-tion	Pro-cess	Dis-charge	Oil cooler	
[cm ³]	spades			spades			spades			6.3 mm	4.8 mm	6.3 mm	6.3 mm	6.3 mm										
2.00		F ₂	F ₂		F ₂	F ₂				1/5	103N0011		117U6021	117U5014		103N1010	103N0491	PL35G	137	135	6.2	6.2	5.0	
2.61	S	S	S	S	S	S	S	S	F ₂	1/2/3/4	103N0011		117U6007	117U5014		103N1010	103N2011	TL2.5G	163	159	6.2	6.2	5.0	
3.13	S	-	F ₂	S	S	F ₂	S	S	F ₂	1/2/3	103N0011		117U6009	117U5014		103N1010	103N2010	TL3G	163	159	6.2	6.2	5.0	
3.86	S	-	F ₂	S	S	F ₂	S	S	F ₂	1/2/3	103N0011		117U6004	117U5014		103N1010	103N2010	TL4G	173	169	6.2	6.2	5.0	
5.08	S	S	F ₂	S	S	F ₂	S	S	F ₂	1/2/3	103N0011		117U6000	117U5014		103N1010	103N2010	TL5G	173	169	6.2	6.2	5.0	
6.23	S	S	F ₂	S	S	F ₂	S	S	F ₂	1/2/3	103N0011		117U6000	117U5015		103N1010	103N2010	FR5G	196	191	8.2	6.2	6.2	
6.93	S	F ₂	F ₂	S	F ₂	F ₂	O/F ₁	F ₂	F ₂	1/2/3	103N0011		117U6001	117U5015		103N1010	103N2010	FR7.5G	196	191	8.2	6.2	6.2	6.2
7.95	S	F ₂	F ₂	O/F ₁	F ₂	F ₂	O/F ₁	F ₂	F ₂	1/2/3	103N0011		117U6005	117U5015		103N1010	103N2010	FR8.5G	196	191	8.2	6.2	6.2	6.2
9.05	S	F ₂	F ₂	O/F ₁	F ₂	F ₂	O/F ₁	F ₂	F ₂	1/2/3	103N0011		117U6010	117U5015		103N1010	103N2010	FR10G	196	191	8.2	6.2	6.2	6.2
11.15	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	1/2	103N0011		117U6010	117U5015		103N1010	103N2010	FR11G	196	191	8.2	6.2	6.2	
10.29	F ₁	F ₁	F ₂	F ₁	F ₁	F ₂	F ₁	F ₁	F ₂	1/2/3	103N0002		117U6002	117U5017		103N1004	103N2009	SC10G	199	193	8.2	6.2	6.2	
12.87	O/F ₁	F ₂	F ₂	O/F ₁	F ₂	F ₂	O/F ₁	F ₂	F ₂	1/2/3	103N0002		117U6003	117U5017		103N1004	103N2009	SC12G	209	203	8.2	6.2	6.2	6.2
15.28	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	SC15G	209	203	10.2	6.2	6.2	6.2
17.69	O/F ₁	F ₂	F ₂	O/F ₁	F ₂	F ₂	O/F ₁	F ₂	F ₂	2/3			117U6019	117U5017		103N1004	103N2009	SC18G	219	213	10.2	6.2	6.2	
20.95	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	1/2/3					117-7028	103N1004	103N2009	SC21G	219	213	10.2	6.2	6.2	
2x12.87	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	1			117U6003	117U5017		103N1004	103N2009	SC12/12G	249	244	12	6.2	6.2	
2x15.28	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	1			117U6005	117U5017		103N1004	103N2009	SC15/15G	249	244	12	6.2	6.2	
2x17.69	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	1			117U6019	117U5017		103N1004	103N2009	SC18/18G	259	254	16	6.2	6.2	
2x20.95	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	1					117-7028	103N1004	103N2009	SC21/21G	259	254	16	6.2	6.2	
2.50		F ₂			F ₂					1			117U6021	117U5014		103N1010	103N0491	PL50F	137	135	6.2	6.2	5.0	
3.13	S			S			S			2	103N0011		117U6007	117U5014		103N1010	103N2010	TLS3FT	173	169	6.2	6.2	5.0	
3.86	S			S			S			2	103N0011		117U6004	117U5014		103N1010	103N2010	TLS4FT	173	169	6.2	6.2	5.0	
5.08	S			S			S			2	103N0011		117U6000	117U5014		103N1010	103N2010	TLS5FT	173	169	6.2	6.2	5.0	
5.70	S			S			S			2	103N0011		117U6004	117U5014		103N1010	103N2010	TLES5.7FT.3	173	169	6.2	6.2	5.0	
6.49	S			S			S			2	103N0011		117U6016	117U5014		103N1010	103N2011	TLES6.5FT.3	173	169	6.2	6.2	5.0	
6.13	S			S			S			2/3	103N0011		117U6000	117U5015		103N1010	103N2010	NL6FT	197	191	6.2	6.2	5.0	
6.13	S			S			S			2	103N0011		117U6000	117U5015		103N1010	103N2010	NL6.1FT	188	182	6.2	6.2	5.0	
7.27	S			S			O/F ₁			2	103N0011		117U6001	117U5015		103N1010	103N2010	NL7.3FT	188	182	6.2	6.2	5.0	5.0
8.35	S			O/F ₁			O/F ₁			2	103N0011		117U6001	117U5015		103N1010	103N2010	NL8.4FT	190	184	6.2	6.2	5.0	5.0
10.10	S			O/F ₁			O/F ₁			2	103N0011		117U6002	117U5015		103N1010	103N2010	NL10FT	203	197	8.2	6.2	6.2	6.2
12.87	O/F ₁			O/F ₁			F ₂			2/3	103N0002		117U6003	117U5017		103N1004	103N2009	SC12FT	209	203	8.2	6.2	6.2	6.2
15.28	F ₁			F ₁			F ₂			2/3	103N0002		117U6005	117U5017		103N1004	103N2009	SC15FT	209	203	10.2	6.2	6.2	
17.69	F ₂			F ₂			F ₂			2/3			117U6019	117U5017		103N1004	103N2009	SC18FTX	219	213	10.2	6.2	6.2	
20.95	F ₂			F ₂			F ₂			2			117U6019	117U5017		103N1004	103N2009	SC21FTX	219	213	10.2	6.2	6.2	
3.86	S			S						1	103N0011		117U6009	117U5014		103N1010	103N2010	TL4FX						
5.08	S			S						1	103N0011		117U6004	117U5014		103N1010	103N2010	TL5FX						
5.08	S			S						1	103N0011		117U6004	117U5014		103N1010	103N2010	TL55FX						
5.70	S			S						1	103N0011		117U6004	117U5014		103N1010	103N2010	TL56FX						
6.49	S			S*						1	103N0011		117U6000	117U5014	103N0016	103N1010	103N2010	TL57FX						
7.27	S			S						1	103N0011		117U6003	117U5015		103N1010	103N2010	NL7FX						
8.35	S			S						1	103N0011		117U6001	117U5015		103N1010	103N2010	NL9FX						
11.15	O/F ₁									1	103N0011		117U6002	117U5015		103N1010	103N2010	NL11FX						
15.28	O/F ₁			O/F ₁						1	103N0002		117U6003	117U5017		103N1004	103N2009	SC15FX						
17.69	O/F ₁			O/F ₁						1			117U6005	117U5017		103N1004	103N2009	SC18FX						
20.95	O/F ₁			O/F ₁						1			117U6019	117U5017		103N1004	103N2009	SC21FX						
6.13		F ₁	F ₁		F ₁	F ₁		F ₁	F ₁	7/5	103N0011		117U6015	117U5015		103N1010	103N2011	NL6.1MF	190	184	8.2	6.2	6.2	
7.27		F ₁	F ₁		F ₁	F ₁		F ₁	F ₁	7/5	103N0011		117U6016	117U5015		103N1010	103N2011	NL7.3MF	197	191	8.2	6.2	6.2	
8.35		F ₁	F ₁		F ₁	F ₁		F ₁	F ₁	7/5	103N0011		117U6016	117U5015		103N1010	103N2011	NL8.4MF	197	191	8.2	6.2	6.2	
10.10		F ₁	F ₁		F ₁	F ₁		F ₁	F ₁	7/5	103N0011		117U6022	117U5018		103N1010	103N2011	NL10MF	203	197	8.2	6.2	6.2	
11.15		F ₂	F ₂		F ₂	F ₂		F ₂	F ₂	7	103N0011		117U6022	117U5018		103N1010	103N2011	NL11MF	203	197	8.2	6.2	6.2	
10.10	F ₁			F ₁			F ₁			1	103N0011		117U6003	117U5015		103N1010	103N2011	NL10MF	203	197	8.2	6.2	6.2	
17.69		F ₂			F ₂			F ₂		7/8			117U6019	117U5017		103N1004	103N2008	SC18MFX	219	213	10.2	6.2	6.2	
20.95		F ₂			F ₂			F ₂		7			117U6019	117U5017		103N1004	103N2009	SC21MFX	219	213	10.2	6.2	6.2	
26.30		F ₂			F ₂			F ₂		1					117-7055	107B9100/9101/9104*	GS26MFX	259	247	12.9	6.5	8.2		
33.80		F ₂			F ₂			F ₂		1					117-7056	107B9100/9101/9104*	GS34MFX	259	247	12.9	6.5	8.2		
3.86			F ₂			F ₂			F ₂	1/4			117U6000	117U5014		103N1010	103N2011	TL4GH	173	169	6.2	6.2	5.0	
6.93			O/F ₁			O/F ₁			O/F ₁	1/4			117U6016	117U5015		103N1010	103N2011	FR7GH	196	191	8.2	6.2	8.2	8.2
10.29			F ₂ </																					

Reciprocating compressors R404A/R507 - codes in bold currently stocked in Australia

Application	Compressor	Code numbers		Cooling capacity [W] conditions as listed												Power consumption [W]			Displacement	Recommended at ambient (* = Run capacitor)						
		Com-pressor	Com-pressor-single pack with HST equipment	Evaporating temperature [°C]												Evaporating temperature [°C]				32°C						
				-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	-35		-25	-10	5	[cm ³]	LBP	MBP	HBP
LBP	TL4CL	102U2071	195B0021	52	65	84	110	142	182	230	286	352							105	140	198		3.86	F ₂	F ₂	F ₂
	TL4.5CLX	102U2117	195B0573		80	106	139	181	232	294	366								138	181	252		4.63	F ₂	F ₂	F ₂
	FR6CL	103U2670	195B0031	77	108	145	189	243	307	383	473	578							180	242	353		6.23	F ₂	F ₂	F ₂
	FR7.5CL	103U2790	195B0398	86	114	154	202	262	333	418	515	630							197	267	395		6.93	F ₂	F ₂	F ₂
	FR8.5CL	103U2890	195B0038	99	126	168	222	290	372	468	577								231	315	472		7.95	F ₂	F ₂	F ₂
	NL7CLX	105F3710	195B0350	102	146	199	263	340	430	536	657	796							214	274	381		7.27	F ₁	F ₁	F ₁
	NL8.4CLX	105F3800	195B0481	111	158	216	287	370	468	583	715	866							238	305	428		8.35	F ₂	F ₂	F ₂
	SC10CL	104L2523	195B0074			168	258	365	489	634	800	991							243	350	530		10.29	F ₂	F ₂	F ₂
	SC10CLX	104L2533	195B0151			166	255	360	483	625	789	977	1190	1430					258	352	508	631	10.29	F ₂	F ₂	F ₂
	SC12CL	104L2623	195B0076	58	140	237	353	490	650	835	1048	1292							316	445	654		12.87	F ₂	F ₂	F ₂
	SC12CLX.2	104L2697	195B0379	130	205	294	399	522	666	834	1026								365	475	659		12.87	F ₂	F ₂	F ₂
	SC15CLX.2	104L2896	195B0399	159	250	358	486	637	813	1017	1251	1519							433	565	783		15.28	F ₂	F ₂	F ₂
	SC18CLX.2	104L2197	195B0332	194	306	439	595	780	995	1245	1532								517	680	949		17.68	F ₂	F ₂	F ₂
	SC18CLX.2	104L2196	195B0525	194	306	439	595	780	995	1245	1532								459	621	888		17.68	F ₂	F ₂	F ₂
	SC21CLX	104L2322	195B0070	226	325	455	617	813	1042	1306	1606								534	702	989		20.95	F ₂	F ₂	F ₂
	GS26CLX	107B0500	195B0427	325	497	703	949	1240	1580	1974	2427								669	888	1285		26.30	F ₂	F ₂	F ₂
	GS34CLX	107B0501	195B0439	729	1003	1330	1715	2165	2687	3289									924	1196	1721		33.80	F ₂	F ₂	F ₂
	SC12/12CL	104L4088	195B0119	115	279	475	706	980	1299	1670	2096	2583							633	891	1308		2x12.87	F ₂	F ₂	F ₂
	SC15/15CL	104L4089	195B0109		302	599	905	1230	1584	1976	2417	2916							801	1120	1580		2x15.28	F ₂	F ₂	F ₂
	SC18/18CL	104L4090	195B0110	333	541	789	1083	1430	1836	2307	2849	3469							910	1230	1788		2x17.68	F ₂	F ₂	F ₂
SC21/21CL	104L4094	195B0114	452	650	910	1235	1626	2084	2613	3213								1068	1404	1978		2x20.95	F ₂	F ₂	F ₂	
SLV12CLX.2	104L2603	on request		200	370	542	720	909	1116	1339								404	588	731		12.87	F ₂	F ₂	F ₂	
NL6.1MLX	105F3611	on request						334	425	530	650	789	946						312	375	613		6.13	F ₂	F ₂	F ₂
NF7MLX	105F3720	195B0443							511	635	777	940	1125	1336					406	488	727		7.27	F ₂	F ₂	F ₂
SC10MLX	104L2506	195B0345						546	687	855	1051	1278	1537						518	633	1029		10.29	F ₂	F ₂	F ₂
SC12MLX	104L2606	195B0323						669	838	1038	1272	1542	1852						620	762	1287		12.87	F ₂	F ₂	F ₂
SC15MLX	104L2869	195B0391						829	1038	1285	1574	1909	2293						780	979	1528		15.28	F ₂	F ₂	F ₂
SC18MLX	104L2139	195B0392						968	1210	1497	1832	2220	2665						860	1080	1768		17.68	F ₂	F ₂	F ₂
SC18MLX.3	104L2146	195B0412						1018	1266	1557	1898	2292	2743						878	1096	1768		17.68	F ₂	F ₂	F ₂
GS21MLX	107B0502	195B0436						1096	1394	1748	2164	2650	3211						965	1212	21.20		21.20	F ₂	F ₂	F ₂
GS26MLX	107B0503	195B0437						1426	1810	2254	2764	3351	4022						1213	1532	26.30		26.30	F ₂	F ₂	F ₂
GS34MLX	107B0504	195B0438						1929	2408	2953	3575	4283	5088						1725	2235	33.80		33.80	F ₂	F ₂	F ₂
TL4DL	102U2038	195B0166						196	229	281	349	432	527	631					203	256	3.86		3.86	F ₂	F ₂	F ₂
FR6DL	103U2680	195B0032						317	385	471	576	698	840	999	1177				354	456	6.23		6.23	F ₂	F ₂	F ₂
SC10DL	104L2525	195B0075						471	611	775	968	1192	1450	1747	2085				479	590	10.29		10.29	F ₂	F ₂	F ₂
SC12DL	104L2625	195B0077						609	806	1028	1279	1565	1890	2258	2674				624	750	12.87		12.87	F ₂	F ₂	F ₂
SC15DL	104L2856	195B0089						759	964	1207	1493	1825	2210	2652	3156				722	865	15.28		15.28	F ₂	F ₂	F ₂
SC15DLX.2	104L2871	on request						774	983	1225	1504	1824	2189	2604	3071				739	870	15.28		15.28	F ₂	F ₂	F ₂
SC10/10DL	104L4091	195B0111						943	1222	1550	1935	2383	2900	3494	4169				957	1180	2x10.29		2x10.29	F ₂	F ₂	F ₂
SC12/12DL	104L4092	195B0112						1217	1612	2055	2559	3130	3780	4516	5348				1248	1500	2x12.87		2x12.87	F ₂	F ₂	F ₂
SC15/15DL	104L4093	195B0113						1518	1928	2414	2985	3651	4420	5304	6311				1445	1730	2x15.28		2x15.28	F ₂	F ₂	F ₂

SLV = SC Variable speed Compressor. Performances are displayed at 4,000 rpm

Test conditions (except GS) EN 12900/CECOMAF

Condensing temperature: 45 °C
Ambient temperature: 32 °C
Suction gas temperature: 32 °C
Liquid temperature: 45 °C

Test condition for GS 21MLX, GS 26MLX and GS 34MLX EN 12900-CECOMAF

Condensing temperature: 45 °C
Ambient temp.: 32 °C
Suction gas temp.: 20 °C
Liquid temperature: 45 °C

Test condition for GS 26CLX and GS 34CLX EN 12900-CECOMAF

Condensing temperature: 40 °C
Ambient temp.: 32 °C
Suction gas temp.: 20 °C
Liquid temperature: 40 °C

⚠ Note: SC15CLX 104L 2853 (series 1) ordering code: 195B0088
SC18CLX 104L 2123 (series 1) ordering code: 195B0066

Reciprocating Compressors R22 (Limited requests)

SC10D – 195B0073
SC12D – 195B0082
SC15D – 195B0086
SC15BM – 195B0156
SC18BM – 195B0204
SC21BM – 195B0068

⚠ Note: For all other R22 enquires contact Danfoss product specialist



compressor cooling temperature compulsory					Voltage and frequencies	Electrical Equipment					Dimensions				
						HST (CSIR)		HST (CSR)	LST/HST		Height [mm]		Connectors location/I.D. [mm]		
38°C		43°C				Starting relay	Starting capacitor	Starting device	Cord relief	Cover	A	B	C	D	E
MBP	HBP	LBP	MBP	HBP		spades		spades							
					6.3 mm	6.3 mm	6.3 mm								
F ₂					1	117U6000	117U5014		103N1010	103N2010	173	169	6.2	6.2	5.0
			F ₂		1	117U6001	117U5014		103N1004	117U1022	173	169	6.2	6.2	5.0
F ₂					1	117U6015	117U5015		103N1010	103N2010	196	191	8.2	6.2	6.2
F ₂					1	117U6016	117U5015		103N1010	103N2010	196	191	8.2	6.2	6.2
					1	117U6010	117U5015		103N1010	103N2010	196	191	8.2	6.2	6.2
F ₁		F ₂	F ₂		1	117U6002	117U5015		103N1010	103N2010	203	197	8.2	6.2	6.2
F ₂		F ₂	F ₂		1	117U6003	117U5015		103N1010	103N2010	203	197	8.2	6.2	6.2
F ₂					1	117U6003	117U5017		103N1004	103N2009	209	203	8.2	6.2	6.2
					1/3	117U6005	117U5017		103N1004	103N2008	209	203	8.2	6.2	6.2
F ₂					1	117U6005	117U5017		103N1004	103N2009	209	203	8.2	6.2	6.2
					1/4	117U6019	117U5017		103N1004	103N2008	219	213	8.2	6.2	6.2
		F ₂			1	117U6019	117U5017		103N1004	103N2009	219	213	10.2	6.2	6.2
		F ₂			1	117U6013	117U5012		103N1004	103N2009	219	213	10.2	6.2	6.2
		F ₂			1			117-7012	103N1004	103N2009	219	213	10.2	6.2	6.2
					1			117-7012	103N1004	103N2009	219	213	10.2	6.2	6.2
		F ₂			1			117-7056	107B9100/9101/9104*		259	247	12.9	6.5	8.2
					1			117-7074	107B9100/9101/9104*		279	267	12.9	6.5	8.2
F ₂					1	117U6005	117U5017		103N1004	103N2009	249	244	12	6.2	6.2
F ₂					1	117U6019	117U5017		103N1004	103N2009	259	254	12	6.2	6.2
F ₂					1			117-7012	103N1004	103N2009	259	254	16	6.2	6.2
					1			117-7012	103N1004	103N2009	259	254	16	6.2	6.2
		F ₂			1	105N46xx series controllers			103N1004	103N2009	199	193	10.2	6.2	6.2
F ₂			F ₂		7/8	117U6022	117U5015		103N1010	103N2011	203	197	8.2	6.5	6.5
F ₂			F ₂		7/8	117U4139	117U5018		2x117U0349	117U1021	203	197	9.7	6.5	6.5
F ₂			F ₂		7/8	117U6011	117U5017		103N1004	103N2008	209	203	8.2	6.5	6.5
F ₂			F ₂		7/8	117U6011	117U5017		103N1004	103N2008	219	213	8.2	6.5	6.5
F ₂					1	117U6013	117U5012		103N1004	103N2009	219	213	10.2	6.2	6.2
F ₂					1			117-7012	103N1004	103N2009	219	213	10.2	6.2	6.2
F ₂					1			117-7012	103N1004	103N2009	219	213	10.2	6.2	6.2
F ₂			F ₂		1			117-7070	107B9100/9101/9104*		259	247	12.9	6.5	8.2
F ₂			F ₂		1			117-7072	107B9100/9101/9104*		279	267	16.1	6.5	9.7
F ₂			F ₂		1			117-7056	107B9100/9101/9104*		279	267	16.1	6.5	9.7
F ₂	F ₂				1	117U6001	117U5014		103N1010	103N2010	173	169	6.2	6.2	5.0
F ₂	F ₂				1	117U6010	117U5015		103N1010	103N2010	196	191	8.2	6.2	6.2
F ₂	F ₂				1	117U6005	117U5017		103N1004	103N2009	209	203	8.2	6.2	6.2
F ₂	F ₂				1	117U6019	117U5017		103N1004	103N2009	219	213	10.2	6.2	6.2
F ₂	F ₂				1			117-7028	103N1004	103N2009	219	213	10.2	6.2	6.2
F ₂	F ₂				1	117U6019	117U5017		103N1004	103N2009	219	213	10.2	6.2	8.2
F ₂	F ₂				1	117U6005	117U5017		103N1004	103N2009	249	244	12	6.2	6.2
F ₂	F ₂				1	117U6019	117U5017		103N1004	103N2009	249	244	12	6.2	6.2
F ₂	F ₂				1			117-7028	103N1004	103N2009	259	254	16	6.2	6.2

⚠ Note: SC12 CLX comp code 104L2697 (195B0379)
50/60 Hz version 'not' currently stocked in Australia.
Can use 195B0076 if only 50 Hz requirement.

TL4.5 CLX 'not' currently stocked in Australia.
There are two (2) versions
V1: 10242111 (195B0465) - special terminal box
V2: 10242117 (195B0573) - standard terminal box

Reciprocating compressors R290

⚠ Restricted range currently stocked in Australia

Application	Compressor	Code numbers		EN 12900 (CECOMAF) Capacity [W]																Power consumption (W)				Displacement	Recommended at ambient (* = Run capacitor)			
		Compressor	Compressor single pack with HST equipment	Evaporating temperature [°C]																Evap temp. (°C)					32°C		38°C	
				-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	-35	-25	-10	5	[cm ³]	LBP		MBP	HBP	LBP	
LBP / MBP	TL3CN	102H4380	195B0581		38	54	75	99	128	161	200	244	294	351					90	108	135	162	3.13	F ₁	F ₁		F ₁	
	TL4CN	102H4490	195B0589		56.5	77.8	103	132	166	205	250	302	360	426					101	127	162	188	3.86	F ₁	F ₁		F ₁	
	TL5CN	102H4590	195B0420		81	109	143	183	230	283	345	416	496	586					130	162	211	266	5.08	F ₁	F ₁		F ₁	
	NL7CN	105H6756	195B0451		118	166	223	290	368	458	561	679	814	965					174	221	291	372	7.27	F ₁	F ₁		F ₁	
	NL9CN	105H6856	195B0265		138	194	259	335	423	526	643	778	930	1102					196	250	334	428	8.35	F ₁	F ₁		F ₁	
	SC10CNX	104H8065	195B0474		126	179	245	325	420	531	660	809	979	1172					208	274	362		10.29	F ₂	F ₂		F ₂	
	SC12CNX	104H8265	195B0333		178	250	331	426	540	678	846	1050	1293	1582					269	344	456		12.87	F ₂	F ₂		F ₂	
	SC15CNX	104H8565	195B0203		195	297	415	550	707	887	1093	1328	1594	1894					315	420	560		15.28	F ₂	F ₂		F ₂	
	SC18CNX	104H8865	195B0414		219	341	480	640	824	1033	1272	1543	1849	2193					370	500	707		17.69	F ₂	F ₂		F ₂	
	SC12CNX.2	104H8266	195B0458		186	258	346	453	578	725	895								298	379	502		12.87	F ₂			F ₂	
LBP	SC15CNX.2	104H8566	195B0505		252	332	434	560	714	900	1120							351	445	610		15.28	F ₂			F ₂		
	SC18CNX.2	104H8866	195B0489		244	384	531	689	863	1057	1273							417	541	682		17.69	F ₂			F ₂		
	SC21CNX.2	104H8166	195B0459		339	492	654	828	1020	1233	1471							491	623	855		20.95	F ₂			F ₂		
	SLV15CNK.2	104L8541	195B0505		325	460	615	792	996	1228	1494							436	583	771		15.28	F ₂			F ₂		

SLV = SC Variable speed Compressor. Performances are displayed at 4.000 rpm

Test condition
EN 12900/CECOMAF LBP
 Condensing temperature: 45 °C
 Ambient temperature: 32 °C
 Suction gas temperature: 32 °C
 Liquid temperature no subcooling

Reciprocating compressors R600a

⚠ Restricted range currently stocked in Australia

Application	Compressor	Code numbers		EN 12900 (CECOMAF) Capacity [W]																Power consumption (W)				Displacement	Recommended at ambient (* = Run capacitor)			
		Compressor	Compressor single pack with LST equipment	Evaporating temperature [°C]																Evap temp. (°C)					32°C		38°C	
				-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	-35	-25	-10	5	[cm ³]	LBP		MBP	HBP	LBP	
MBP	PLE35K	101H0360	195B0542					27.2	38.4	51.7	67.7	86.6	109					40.1	53.1			3.00	S*	S		S*		
LBP / MBP	TLES4KK.2	102H4435	on request			18	28	40	55	74	96	123	154					35	45	61		3.86	S			S		
	TLES5KK.2	102H4535	on request			28	41	57	76	99	126	159	196					44	57	80		5.08	S			S		
LBP	TLX4.8KK.3	102H4541	195B0565			29	42.1	57	74.2	94.2	117							34.5	46.5	65.5		4.78	S*			S*		
	TLES5.7KK.3	102H4638	195B0366			36.4	50.7	68	89	114	144							50.1	66.5	93.4		5.70	S			S		
	TLX8.7KK.3	102H4947	195B0361			64.8	87.9	115	146	184	227							65.7	87.7	123		8.67	S*			S*		
	NLX10KK.2	105H6101	195B0405			74.5	101	133	171	217	271							63.5	89.5	134		10.09	S*			S*		
	NLE10KK.2	105H6851	195B0409			67	91	120	155	198	249							82	109	157		10.09	S			S		
	NLE10KK.4	105H6867	195B0517			73.9	98.3	128	164	207	257							81.3	108	161		10.09	S			S		

Test condition
EN 12900/CECOMAF LBP
 Condensing temperature: 45 °C
 Ambient temperature: 32 °C
 Suction gas temperature: 20 °C
 Liquid temperature no subcooling

compressor cooling temperature compulsory)					Voltage and frequencies	Electrical Equipment										Dimensions					
						LST (RSIR)		LST (RSCR)		Run capacitor		HST (CSIR)		HST (CSR)	LST/HST		Height [mm]		Connectors location/I.D. [mm]		
PTC Starting device w/o run capacitor connector		PTC device with run capacitor connector		1 optional 2 compulsory		Starting relay	Starting capacitor	Starting unit	Cord relief	Cover											
spades		spades		spades		spades		spades													
38°C		43°C			6.3 mm	4.8 mm	6.3 mm	4.8 mm	6.3 mm	6.3 mm	6.3 mm	A	B	C	D	E					
MBP	HBP	LBP	MBP	HBP																	
F ₁		F ₁	F ₁		1	103N0011	103N0018				117U7004	117U5014		103N1010	103N2010	163	159	6.2	6.2	5.0	
F ₁		F ₁	F ₁		1	103N0011	103N0018				117U7004	117U5014		103N1010	103N2010	173	169	6.2	6.2	5.0	
F ₁		F ₁	F ₁		1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹	117U7000	117U5014		103N1010	103N2010	173	169	6.2	6.2	5.0
F ₁		F ₁	F ₂		1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹	117U7002	117U5015		103N1010	103N2010	203	197	8.2	6.2	6.2
F ₁		F ₂	F ₂		1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹	117U7002	117U5015		103N1010	103N2010	203	197	8.2	6.2	6.2
F ₂		F ₂	F ₂		1								117-7049	103N1004	103N2009	209	203	8.2	6.2	6.2	
F ₂		F ₂	F ₂		1								117-7049	103N1004	103N2009	209	203	8.2	6.2	6.2	
F ₂		F ₂	F ₂		1								117-7051	103N1004	103N2009	209	203	8.2	6.2	6.2	
F ₂		F ₂	F ₂		1								117-7034	103N1004	103N2009	219	213	10.2	6.2	6.2	
		F ₂			1								103N1004	103N2009	209	203	8.2	6.2	6.2		
		F ₂			1								103N1004	103N2009	209	203	8.2	6.2	6.2		
		F ₂			1								103N1004	103N2009	219	213	10.2	6.2	6.2		
		F ₂			1								103N1004	103N2009	219	213	10.2	6.2	6.2		
		F ₂			1								103N1004	103N2009	199	193	10.2	6.2	6.2		
105N46xx series controllers													103N1004	103N2009	199	193	10.2	6.2	6.2		

compressor cooling temperature compulsory)					Voltage and frequencies	Electrical Equipment										Dimensions				
						LST (RSIR)		LST (RSCR)		Run capacitor		HST (CSIR)		HST (CSR)	LST/HST		Height [mm]		Connectors location/I.D. [mm]	
PTC Starting device w/o run capacitor connector		PTC device with run capacitor connector		1 optional 2 compulsory		Starting relay	Starting capacitor	Starting unit	Cord relief	Cover										
spades		spades		spades		spades		spades												
38°C		43°C			6.3 mm	4.8 mm	6.3 mm	4.8 mm	6.3 mm	6.3 mm	6.3 mm	A	B	C	D	E				
MBP	HBP	LBP	MBP	HBP																
S					1			103N0016	103N0021	117-7117 ²	117-7119 ²			103N1010	103N0491	137	135	6.2	6.2	5.0
					1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹			103N1010	103N2010	173	169	6.2	6.2	5.0
					1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹			103N1010	103N2010	173	169	6.2	6.2	5.0
		S*			1			103N0016	103N0021	117-7131 ²	117-7132 ²			103N1010	103N2010	173	169	6.2	6.2	5.0
		S			1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹			103N1010	103N2010	163	159	6.2	6.2	5.0
		S*			1			103N0016	103N0021	117-7117 ²	117-7119 ²			103N1010	103N2010	173	169	6.2	6.2	5.0
		S*			1			103N0016	103N0021		117-7136 ²			103N1010	103N2010	203	197	6.2	6.2	5.0
		S			1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹			103N1010	103N2010	197	191	6.2	6.2	5.0
		S			1	103N0011	103N0018	103N0016	103N0021	117-7117 ¹	117-7119 ¹			103N1010	103N2010	190	183	6.2	6.2	5.0

⚠ Please contact Danfoss product specialist for R290 (propane) or R600a (isobutane) compressors.

PL/PLE	TL	TLS/TLES/TLX	SLV
NL/NLE/NLX	NF	FR	
SC	GS	BD	
	<p>Note: On GS34CLX compressors suction and process connectors are interchanged.</p>		

Mounting accessories

Bolt joint for one compressor: 118-1917
in quantities: 118-1918

Bolt joint for one GS compressor: 107B9150
 (M8 x 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.

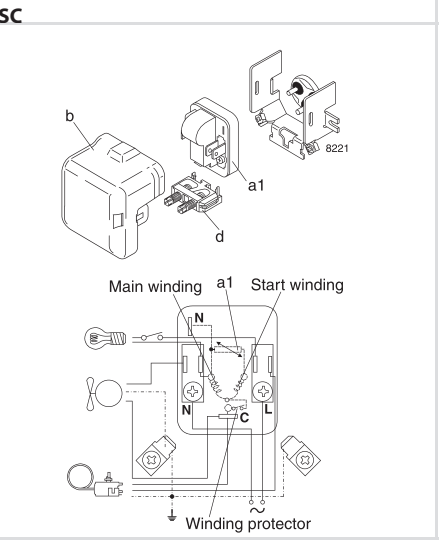
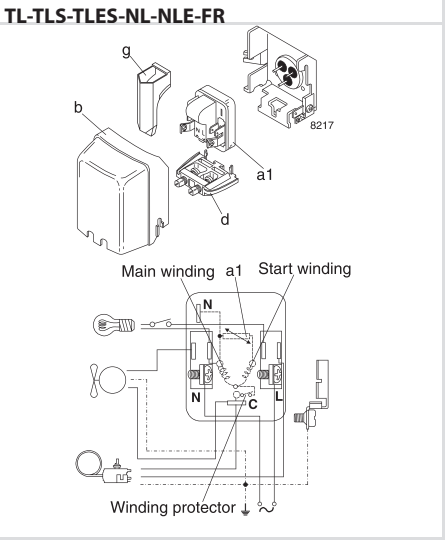
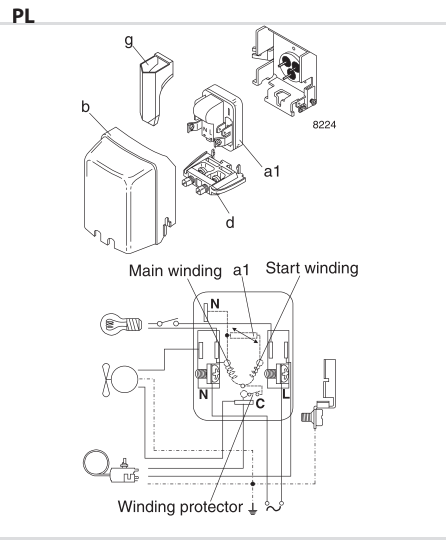
Model designation

Compressor design	Optimization level	Compressor size	Application range	Start characteristics	Generation
PL			CL R404A/ R507 LBP		
TL			CN R290 LBP (MBP)		
	Blank Standard energy level	Nominal displacement in cm ³	F R134a LBP/(MBP)		Blank => first generation
NL	S Semi-direct intake	Exception: For PL compressors the capacity at rating point is stated.	FT R134a LBP tropical	Blank => universal (principal rule)	.2 => second generation
FR	E Energy- optimized		G R134a LBP/ MBP/HBP	X = HST characteristics (expansion valve)	.3 => third generation
			GH R134a Heat Pumps		
			GHH R134a Heat Pumps optimized		etc.
SC			K R600a, LBP/(MBP)		
			MF R134a MBP		
GS			ML R404A/ R507 MBP		

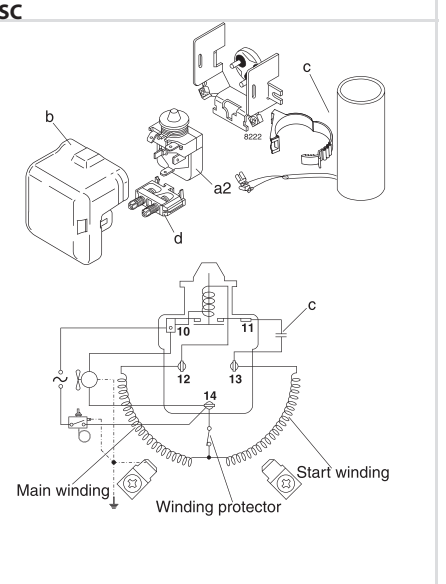
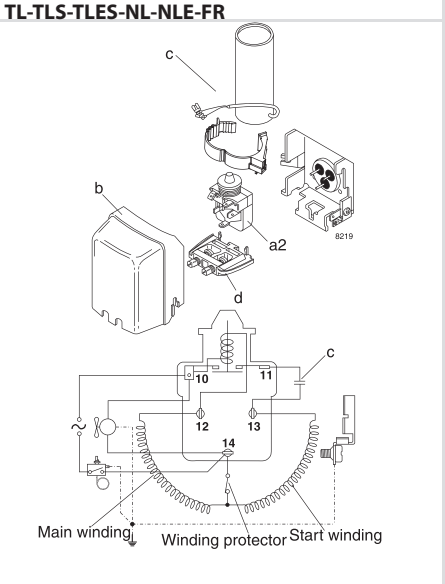
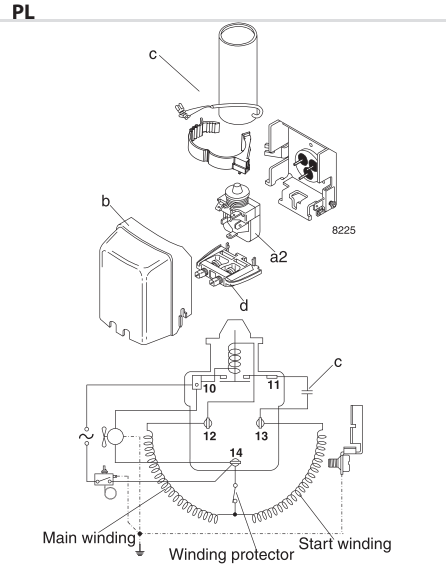
Examples

TL	ES	5.7	FT		.3
NL	E	10	MF		
SC		15	CN	X	.2

LST - RSIR

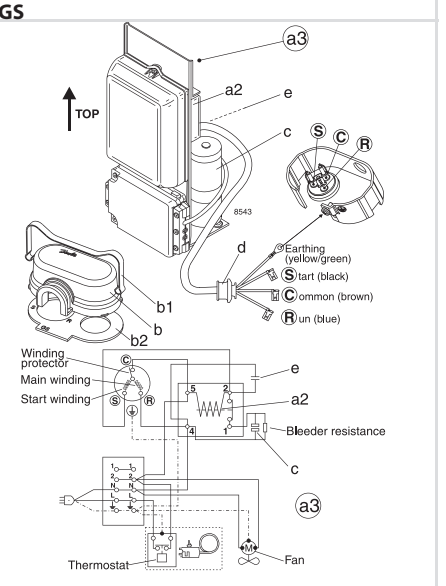
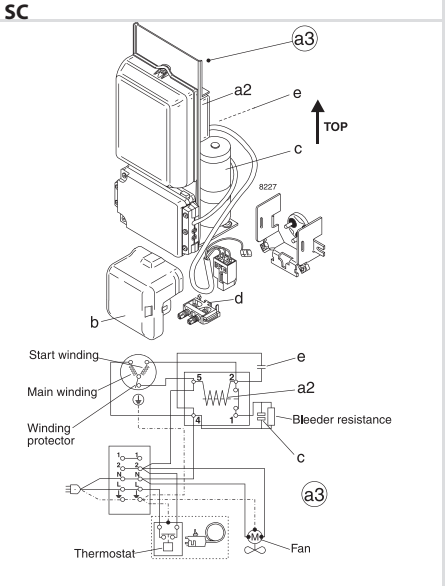
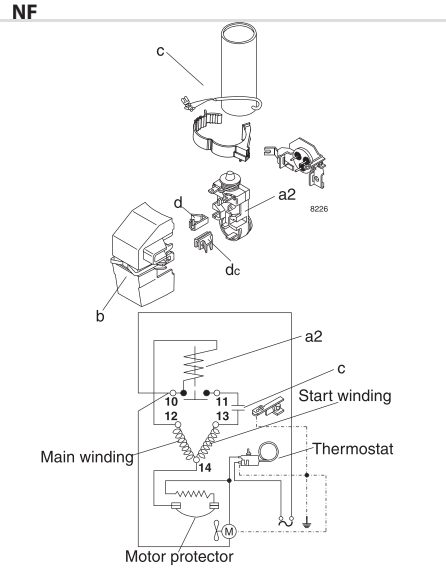


HST - CSIR



HST - CSIR

HST - CSIR

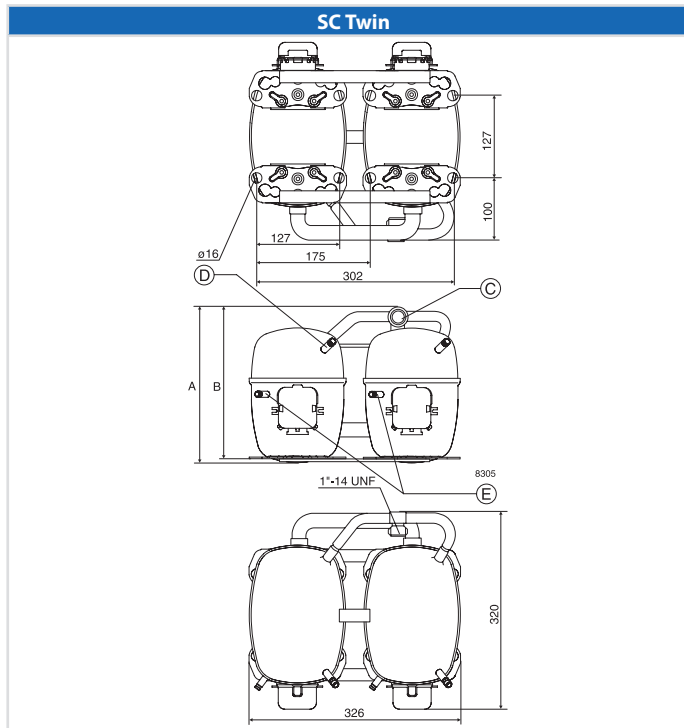


Legend

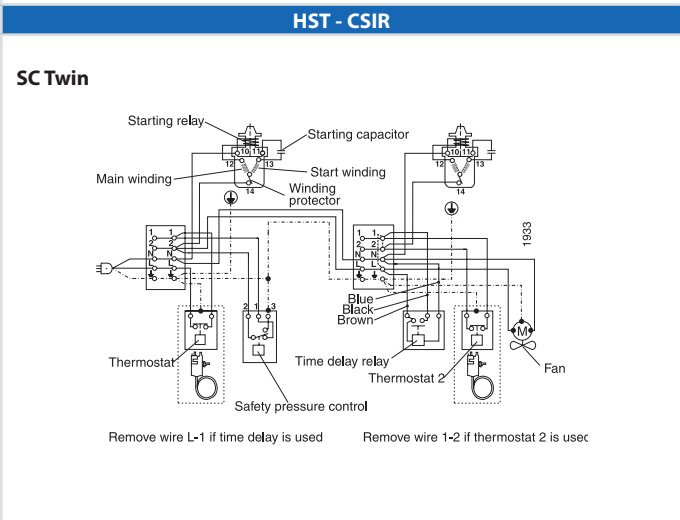
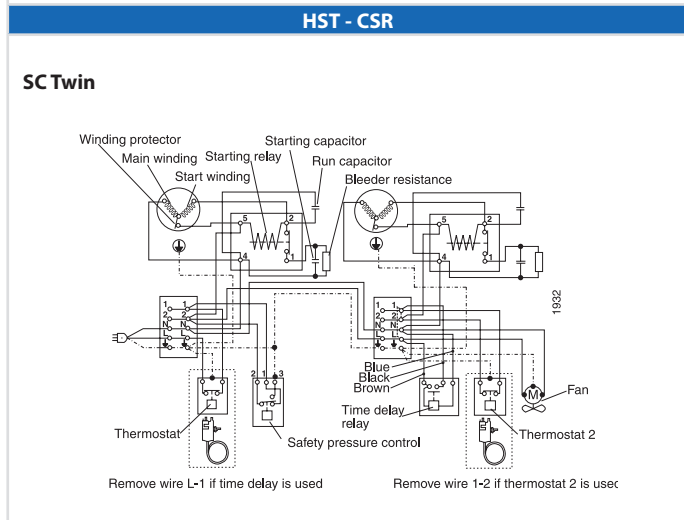
- a1:** PTC starting device
- a2:** Starting relay
- a3:** Starting device

- 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



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



Applications

- LBP:** Low Back Pressure
- MBP:** Medium Back Pressure
- HBP:** High Back Pressure

Motor types

- RSIR:** Resistant Start Induction Run
- RSR:** 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)

Application	R134a	R404A/R507
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, 24V or 56 V DC	

Test conditions ASHRAE

Application	R600a	R404A/R507
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, 24V or 56 V DC	

Test conditions EN 12900

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
- F₁ = Fan cooling 1.5 m/s (compressor compartment temp. equal to ambient temperature)
- F₂ = 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



Compressors MT/Z series

Danfoss Compressors - Commercial reciprocating



Constant innovation, constant progress

Throughout the last 50 years Danfoss Compressors has built a strong position as a global leader in the refrigeration and air conditioning industry. By constantly listening to the needs of our customers and the daily users of our products, we continue to develop innovative solutions that are energy-efficient and environmentally responsible.

With the most complete range of products for virtually any refrigeration or air-conditioning application, we are proud to offer solutions that are famous and trusted by customers all over the world for their reliability, efficiency and high quality.

Extensive product and application range

Our product range covers all common HC, HFC and HCFC refrigerants. Customers can choose from small, direct current hermetic compressors for mobile applications to large scroll compressors for commercial air conditioning or industrial applications.

Pushing technology further

We were the first to market with R134a. We can also cater for needs with energy optimised, including models with variable speed and monitoring as well as models developed for the solar energy industry. Proof of our constant focus on providing value through maximum efficiency, environmental safety and low noise levels.

- ⚠ Note:
- For commercial range of compressors refer to Application guidelines
 - Selection and Application guideline manuals available for MTZ & NTZ
 - Contact Danfoss product specialist for guideline manuals

MTZ Reciprocating Compressor Quick ordering guide

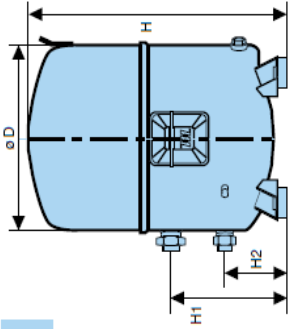
Model Number	Ordering Code		Nom HP	Cylinder No	Swept Volume cm3/rev	Displacement m3/h @ 2900	Oil charge Litres	Oil Sight Glass	Oil Type	Rotolock (Thread)		Rotolock (Pipe/Type)		Net weight kg	Comments
	Code 4 3 Phase	Code 5 1 Phase								Suction	Discharge	Suction	Discharge		
MTZ018	MTZ18-4VI	MTZ18-5VI	1.5	1	30	5.3	0.95	Yes	160PZ	1"	1"	1/2" (V06)	3/8" (V01)	21	
MTZ022	MTZ22-4VI	MTZ22-5VI	1.75	1	38	6.6	0.95	Yes	160PZ	1"	1"	1/2" (V06)	3/8" (V01)	21	
MTZ028	MTZ28-4VI	MTZ28-5VI	2	1	48	8.4	0.95	Yes	160PZ	1"	1"	1/2" (V06)	3/8" (V01)	23	
MTZ032	MTZ32-4VI	MTZ32-5VI	2.5	1	54	9.4	0.95	Yes	160PZ	1 1/4"	1"	5/8" (V09)	1/2" (V06)	25	
MTZ036	MTZ36-4VI	MTZ36-5VI	3	1	60	10.5	0.95	Yes	160PZ	1 1/4"	1"	5/8" (V09)	1/2" (V06)	26	
MTZ040	MTZ40-4VI	-	3.5	1	68	11.8	0.95	Yes	160PZ	-	-	-	-	-	
MTZ044	MTZ44-4VI	-	3.75	2	76	13.3	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	35	
MTZ045	MTZ45-4VI	-	3.75	2	76	13.3	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	37	Use MTZ44-4VI
MTZ050	MTZ50-4VI	-	4	2	86	14.9	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	35	
MTZ051	MTZ51-4VI	-	4	2	86	14.9	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	37	Use MTZ50-4VI
MTZ056	MTZ56-4VI	-	4.5	2	96	16.7	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	37	
MTZ057	MTZ57-4VI	-	4.5	2	96	16.7	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	39	Use MTZ56-4VI
MTZ064	MTZ64-4VI	-	5.5	2	108	18.7	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	37	
MTZ065	MTZ65-4VI	-	5.5	2	108	18.7	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	39	Use MTZ64-4VI
MTZ072	MTZ72-4VI	-	6	2	121	21	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	40	
MTZ073	MTZ73-4VI	-	6	2	121	21	1.8	Yes	160PZ	1 3/4"	1 1/4"	7/8" (V07)	3/4" (V04)	41	Use MTZ72-4VI
MTZ080	MTZ80-4VI	-	6.5	2	136	23.6	1.8	Yes	160PZ	1 3/4"	1 1/4"	1 1/8" (V02)	3/4" (V04)	40	
MTZ081	MTZ81-4VI	-	6.5	2	136	23.6	1.8	Yes	160PZ	1 3/4"	1 1/4"	1 1/8" (V02)	3/4" (V04)	41	Use MTZ80-4VI
MTZ100	MTZ100-4VI	-	8.5	4	171	29.8	3.9	Yes	160PZ	1 3/4"	1 1/4"	1 1/8" (V02)	3/4" (V04)	60	
MTZ125	MTZ125-4VI	-	10	4	215	37.5	3.9	Yes	160PZ	1 3/4"	1 1/4"	1 1/8" (V02)	3/4" (V04)	64	
MTZ144	MTZ144-4VI	-	12	4	242	42.1	3.9	Yes	160PZ	1 3/4"	1 1/4"	1 1/8" (V02)	3/4" (V04)	67	
MTZ160	MTZ160-4VI	-	13.5	4	272	47.3	3.9	Yes	160PZ	1 3/4"	1 1/4"	1 1/8" (V02)	3/4" (V04)	69	

Crankcase Heater	
Code	
PTC 35 Watt	120Z0459
Terminal Cover & Clamp	
Code	
MTZ 18-45	8156134
MTZ 50-160	8156135

Oil 160PZ (POE)	
Code	
1 Litre	7754019
2 Litre	7754020
Oil 160P (Mineral)	
Code	
2 Litre	7754001
5 Litre	7754002

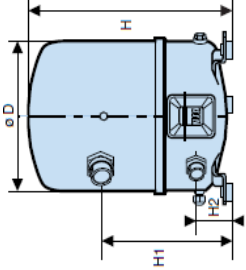
Rubber Mounting Kits	
Code	
MTZ 18-81	8156001
MTZ 100-125	8156007
MTZ 144-160	8156007
Oil Sight Glass Incl. Gasket	
Code	
1-2-4 Cylinder/VE	8156019

Rotolock Service Valve:	
Code	
V01	8168027
V02	8168028
V04	8168029
V06	8168031
V07	8168032



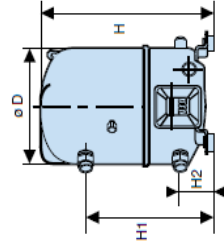
4 cylinders

D : 352 mm
H : 519/540 mm
H1 : 233 mm
H2 : 125 mm



2 cylinders

D : 288 mm
H : 415 mm
H1 : 266 mm
H2 : 75 mm



1 cylinder

D : 225 mm
H : 333/358 mm
H1 : 263 mm
H2 : 68 mm

Note: For additional spares see page 267.

Reciprocating compressors – Commercial

Performance data - NTZ, MT and MTZ

NTZ R404A / R507A	Model	To	-45			-40		-35		-30		-25		-20		-15		-10	
		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	1 290	1.54	2 110	1.81	2 785	2.09	3 570	2.38	4 490	2.68	5 540	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	-	-	1 120	1.57	1 770	2.03	3 010	2.49	4 080	2.95	5 340	3.40	6 80	3.85	8 530	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		

Legend: To: Evaporating temperature in °C Qo: Cooling capacity in W Superheat = 10K; Subcooling = 0 K Voltage: 400 V / 3 / 50 Hz
 Tc: Condensing temperature in °C Pe: Power input in kW Suction temp. = 20°C; Subcooling = 0 K

MT R22	Model	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	1 920	1.70	2 760	1.97	3 850	2.22	5 210	2.46	6 890	2.68	8 880	2.88	11 200	3.07	14 000	3.23	17 100	3.38	
MT050	45	2 170	1.93	3 300	2.31	4 660	2.65	6 290	2.94	8 210	3.20	10 500	3.42	13 000	3.61	16 000	3.77	19 400	3.92	
MT056	45	2 680	2.20	3 770	2.55	5 170	2.88	6 910	3.18	9 020	3.46	11 500	3.72	14 500	3.96	17 900	4.18	21 900	4.38	
MT064	45	3 140	2.40	4 580	2.85	6 290	3.27	8 310	3.64	10 700	3.98	13 400	4.27	16 600	4.53	20 200	4.76	24 300	4.94	
MT072	45	3 240	2.61	4 950	3.20	6 960	3.72	9 340	4.19	12 100	4.60	15 300	4.96	19 000	5.27	23 300	5.54	28 100	5.78	
MT080	45	4 230	3.32	6 180	3.89	8 450	4.41	11 100	4.89	14 200	5.33	17 700	5.72	21 700	6.09	26 300	6.42	31 500	6.72	
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	

MTZ R407C	Model	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	3 570	1.97	4 920	2.28	6 590	2.54	8 610	2.76	11 000	2.94	13 800	3.10	17 100	3.24	
MTZ050	45	4 200	2.34	5 780	2.70	7 650	3.00	9 860	3.24	12 500	3.45	15 500	3.61	19 000	3.75	
MTZ056	45	4 540	2.50	6 310	2.90	8 440	3.24	11 000	3.53	13 900	3.77	17 400	3.98	21 400	4.16	
MTZ064	45	5 550	2.91	7 480	3.35	9 820	3.73	12 600	4.05	15 900	4.32	19 800	4.57	24 300	4.79	
MTZ072	45	6 300	3.49	8 540	3.96	11 200	4.39	14 400	4.77	18 200	5.11	22 600	5.39	27 700	5.63	
MTZ080	45	7 290	4.08	9 860	4.64	12 900	5.12	16 400	5.54	20 600	5.89	25 300	6.19	30 800	6.45	
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	

Legend: To: Evaporating temperature in °C Qo: Cooling capacity in W Superheat = 11.1 K Voltage: 400 V / 3 / 50 Hz
 Tc: Condensing temperature in °C Pe: Power input in kW Subcooling = 8.3 K

⚠ Note: Qo = cooling capacity (watts)
 Pe = motor/power input (KW)

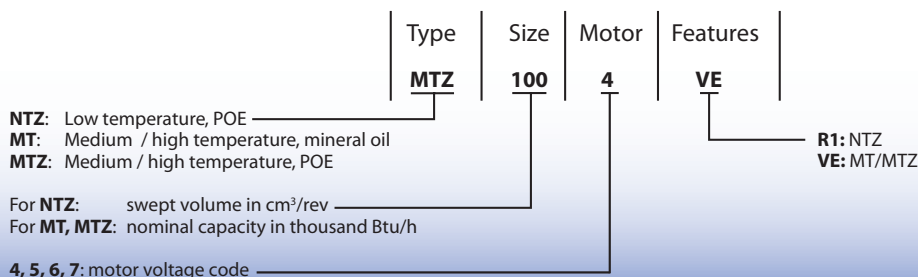
Reciprocating compressors – Commercial

Performance data - NTZ, MT and MTZ

Model	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
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	2 080	1.29	2 910	1.49	3 940	1.67	5 190	1.83	6 710	1.95	8 540	2.05	10 710	2.13	13 270	2.17	
MTZ050	45	2 360	1.57	3 340	1.80	4 560	2.00	6 040	2.17	7 820	2.31	9 950	2.42	12 470	2.51	15 410	2.57	
MTZ056	45	2 290	1.64	3 380	1.88	4 730	2.11	6 400	2.31	8 420	2.49	10 820	2.64	13 650	2.77	16 940	2.86	
MTZ064	45	2 700	1.87	4 010	2.17	5 600	2.43	7 510	2.67	9 780	2.87	12 440	3.04	15 550	3.18	19 130	3.27	
MTZ072	45	3 200	2.16	4 660	2.50	6 430	2.81	8 560	3.08	11 090	3.33	14 070	3.54	17 540	3.74	21 560	3.92	
MTZ080	45	4 130	2.59	5 700	2.93	7 620	3.24	9 950	3.54	12 740	3.80	16 040	4.05	19 920	4.27	24 430	4.48	
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	

Model	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
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	1 360	1.60	2 100	1.94	2 990	2.25	4 070	2.52	5 370	2.77	6 910	3.00	8 740	3.20	10 890	3.38	13 370	3.54	
MTZ050	45	1 700	1.94	2 500	2.29	3 510	2.62	4 750	2.93	6 260	3.22	8 070	3.48	10 220	3.71	12 740	3.91	15 680	4.07	
MTZ056	45	1 730	2.04	2 620	2.43	3 710	2.81	5 060	3.17	6 710	3.51	8 690	3.83	11 060	4.11	13 840	4.36	17 090	4.57	
MTZ064	45	2 160	2.32	3 200	2.83	4 480	3.32	6 060	3.78	7 980	4.20	10 300	4.60	13 070	4.96	16 330	5.28	20 150	5.55	
MTZ072	45	2 550	2.74	3 670	3.25	5 080	3.75	6 810	4.23	8 920	4.69	11 450	5.11	14 450	5.51	17 970	5.87	22 050	6.19	
MTZ080	45	3 170	3.15	4 530	3.85	6 170	4.48	8 130	5.07	10 470	5.61	13 230	6.11	16 470	6.57	20 240	7.01	24 580	7.41	
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	

Legend: To: Evaporating temperature in °C Qo: Cooling capacity in W Superheat = 10 K Voltage: 400 V / 3 / 50 Hz
 Tc: Condensing temperature in °C Pe: Power input in kW Subcooling = 0 K



Reciprocating compressors – Commercial

Ordering - NTZ (low temperature range)

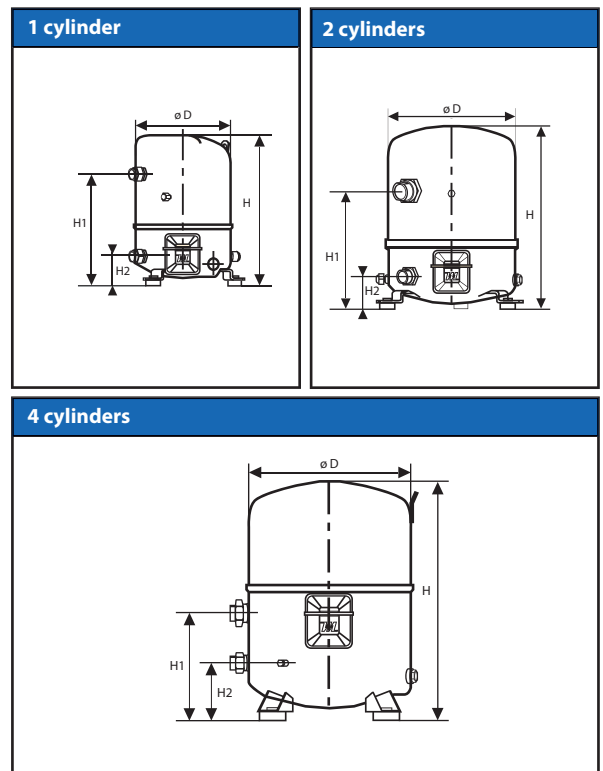
Model	4	5	6	7	Swept volume cm ³ /rev	Displacement m ³ /h at 2900 rpm	Cylinder number	Oil charge dm ³	Net weight kg
	460/3/60 400/3/50	230/1/50	230/3/50	575/3/60 500/3/50					
Low back pressure Applications	NTZ048	120F0001	120F0087		48	8.4	1	0.95	21
	NTZ068	120F0002	120F0088		68	11.8	1	0.95	23
	NTZ096	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	

Cross reference list LTZ to NTZ (new) - dimensions, pipe connections and foot print of NTZ is similar to the corresponding LTZ

Type LTZ	Type NTZ	Code No. - Single pack NTZ
LTZ22-5VI	NTZ48-5VI	120F0087
LTZ28-5VI	NTZ68-5VI	120F0088
LTZ22-4VI	NTZ48-4VI	120F0001
LTZ28-4VI	NTZ68-4VI	120F0002
LTZ40-4VI	NTZ96-4VI	120F0003
LTZ44-4VI	NTZ108-4VI	120F0004
LTZ50-4VI	NTZ136-4VI	120F0005
LTZ88-4VI	NTZ215-4VI	120F0006
LTZ100-4VI	NTZ271-4VI	120F0007

Model		Nominal voltage		Height			Diameter
		400/3/50 460/3/60	230/1/50	H	H1	H2	D
		Motor voltage code		mm	mm	mm	mm
		4	5				
NTZ048	1 cylinder	●	●	333	263	68	224
NTZ068		●	●				
NTZ096	2 cylinders	●		413	265	74	288
NTZ108		●					
NTZ136	4 cylinders	●		519	233	125	352
NTZ215		●					
NTZ271		●					

M-HBP: Medium High Back Pressure - LBP: Low Back Pressure



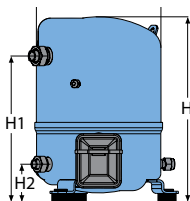
⚠ Note: NTZ series replaced old LTZ compressors.

Reciprocating compressors – Commercial

Spare Parts

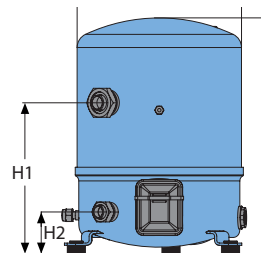
Dimensions

**MT / MTZ / NTZ
1 cylinder**



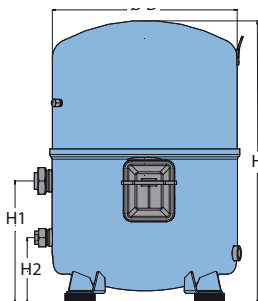
D : 224 mm
H : 333/358 mm
H1 : 263 mm
H2 : 68 mm

**MT / MTZ / NTZ
2 cylinders**



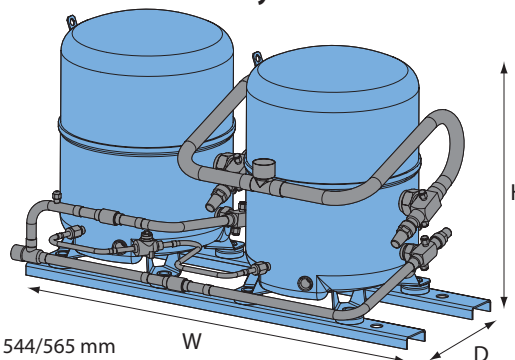
D : 288 mm
H : 413 mm
H1 : 265 mm
H2 : 74 mm

**MT / MTZ / NTZ
4 cylinders**



D : 352 mm
H : 519 / 540mm
H1 : 233 mm
H2 : 125 mm

**MT / MTZ / NTZ Tandem
2 x 4 cylinders**



H : 544/565 mm
D : 515 mm
W : 925 mm

Reciprocating Compressors - Commercial

Common Spare Parts

Type	Description	Comp Model/s	Ordering Code	Old code
Sump Heater	PTC Insertion Sump Heater 27 Watt	All Models	120Z0459	7773001
	Belt Type 65W, 230V	MT(Z)044-081, NTZ096-136	7773107	7773003
	Belt Type 75W, 230V	MT(Z)100-160, NTZ215-271	7773108	7773004
	Belt Type 65W, 400V	MT(Z)044-081, NTZ096-136	7773117	-
	Belt Type 75W, 400V	MT(Z)100-160, NTZ215-271	7773118	-
1 Ph Electrics	CSR Electrics Kit-Relay & Capacitors	MT(Z)18-28, NTZ48-68	7701022	-
		MT(Z)32 & 36	7701023	-
Terminal Cover	Terminal Box Cover and Spring	MT(Z)18-45, NTZ048-136	8156134	-
		MT(Z)50-160, NTZ215-271	8156135	-
Mounting Kit	Rubber Mounts, Washers & Screws	MT(Z)18-81, NTZ048-136	8156001	-
		MT(Z)100-160, NTZ215-271	8156007	-
Gaskets	Sight Glass Gasket	MT(Z)18-160, NTZ048-271	8156129	-
	1" Rotolock Connection Gasket	1" Gasket	8156130	-
	1 1/4" Rotolock Connection Gasket	1 1/4" Gasket	8156131	-
	1 3/4" Rotolock Connection Gasket	1 3/4" Gasket	8156132	-
Hoods	Compressor Acoustic Hood	MT(Z)18-40, NTZ048-068	120Z0471	7755001
		MT(Z)44-81, NTZ096-136	120Z0472	7755002
		MT(Z)100-160, NTZ215-271	120Z0473	7755003
Solder Sleeves	P01 1" Rotolock 3/8" ODF	1" Rotolock - 3/8" ODF	7953004	-
	P02 1 3/4" Rotolock 1 1/8" ODF	1 3/4" Rotolock - 1 1/8" ODF	8153005	-
	P04 1 1/4" Rotolock 3/4" ODF	1 1/4" Rotolock - 3/4" ODF	8153008	-
	P06 1" Rotolock 1/2" ODF	1" Rotolock 1/2" ODF	8153007	-
	P07 1 3/4" Rotolock 7/8" ODF	1 3/4" Rotolock 7/8" ODF	8153013	-
Lubricants	Mineral Oil 160P - 2 Litre	MT Old R22/R502	7754001	-
	Mineral Oil 160P - 5 Litre	MT Old R22/R502	7754002	-
	POE Oil 160PZ - 1 Litre	MTZ & NTZ	7754019	-
	POE Oil 160PZ - 2 Litre	MTZ & NTZ	7754020	-



Compressors - Performer H series

Danfoss Compressors - Scroll Compressors



Constant innovation, constant progress

Throughout the last 50 years Danfoss Compressors has built a strong position as a global leader in the refrigeration and air conditioning industry. By constantly listening to the needs of our customers and the daily users of our products, we continue to develop innovative solutions that are energy-efficient and environmentally responsible.

With the most complete range of products for virtually any refrigeration or air-conditioning application, we are proud to offer solutions that are famous and trusted by customers all over the world for their reliability, efficiency and high quality.

Extensive product and application range

Our product range covers all common HC, HFC and HCFC refrigerants. Customers can choose from small, direct current hermetic compressors for mobile applications to large scroll compressors for commercial air conditioning or industrial applications.

Pushing technology further

We were the first to market with R134a. We can also cater for needs with energy optimised, including models with variable speed and monitoring as well as models developed for the solar energy industry. Proof of our constant focus on providing value through maximum efficiency, environmental safety and low noise levels.

- ⚠ Note:** - For commercial range of Scroll compressors refer to Selection and Application guideline manuals for Performer H, SM, SY, SZ & SH
- Contact Danfoss product specialist for guideline manuals

Performer H Series

Ordering - cross referencing - spare parts

Danfoss model R407c/R22	Danfoss Code R407c/R22	HP/R	PH	KW	Bristol	Copeland	Carlyle	Old Danfoss model R22
HRP034T5LP6	120U2019	2.8	1	8.1	H20C343ABKA	ZR34K3-PFJ	SCE340AC	HRM032U5LP6
HRP038T5LP6	120U0961	3.0	1	8.9	H20C373ABKA	ZR36K3-PFJ	SCH370AC	HRM038U5LP6
HRP040T5LP6	120U1929	3.3	1	9.5	H20C403ABKA	ZR40K3-PFJ	SCE400AC	HRM042U5LP6
HRP045T5LP6	120U0976	3.5	1	10.7	H20R453ABKA	ZR45K3-PFJ	SRE450AC	HRM045U5LP6
HRP058T5LP6	120U1596	4.5	1	13.8	H20R583ABKA		SRE580AC	HRM058U5LP6
HRP060T5LP6	120U1606	5.0	1	14.3	H20R603ABKA	ZR61KC-PFZ	SRE600AC	HRM060U5LP6
HRP068T5LP6	120U1621	5.7	1	16.0		ZR68KC-PFJ		HLM068U5LP6
HRP038T4LP6	120U1006	3.0	3	8.9	H20C373DBEA	ZR36K3-TFD	SCE370AC	HRM038U4LP6
HRP040T4LP6	120U1016	3.3	3	9.7	H20C403DBEA	ZR40K3-TFD	SCH402AC	HRM040U4LP6
HRP045T4LP6	120U1036	3.5	3	10.9	H20R453DBEA	ZR46KC-TFD	SRH452AC	HRM045U4LP6
HRP047T4LP6	120U1046	3.8	3	11.6	H20R483DBEA	ZR49KC-TFD	SRH482AC	HRM048U4LP6
HRP058T4LP6	120U1701	4.5	3	14.0	H20R583DBEA	ZR57KC-TFD	SRH582AC	HRM058U4LP6
HRP060T4LP6	120U1726	5.0	3	14.5	H20R603DBEA	ZR61KC-TFD	SRH600AC	HRM060U4LP6
HLP068T4LP6	120U2014	5.7	3	16.0		ZR68KC-TFD		HLM068U4LP6
HLP072T4LC6	120U1756	6.0	3	17.5	H20R723DBEA	ZR72KC-TFD	SRH722AE	HLM072T4LC6
HLP075T4LC6	120U1766	6.5	3	18.4	H20R753DBEA		SRH752AE	HLM075T4LC6
HLP081T4LC6	120U1781	7.5	3	20.0	H20R813DBEA	ZR81KC-TFD	SRH812AC	HLM081T4LC6
HCP094T4LC6	120U0601	8.3	3	23.1	H20R943DBEA	ZR94KC-TFD	SRH942AE	HCM0943DBEA
HCP109T4LC6	120U0376	9.0	3	27.0		ZR108KC-TFD		
HCP120T4LC6	120U0401	10.0	3	29.0	H20R124DBEA	ZR125KC-TFD	SRH120AE	HCM120T4LC6

⚠ Nom ARI Conditions @ +7.2 S.S.T.

Adaptive compliant orbiting Scroll

It uses the intermediate gas pocket pressure to energise the back chamber below the orbiting scroll, in order to lift it up and seal the scrolls together, and realize a dynamic seal via two gaskets on the upper crank-case (no metal-to-metal contact).

Design features

- Higher R22/407C efficiency
- Almost no startup or shutdown sound
- 1/3 fewer parts
- No threaded fasteners
- Half the hermetic welds of competitive scrolls
- Self aligned scroll sets
- Very simple press-fit assembly technique
- Automatic oil injection on scrolls
- Thermal fault protection

Accessories

Crankcase Heaters 1PH (belt type)

HRP034-047	40W/230V	120Z0055
HRP048-HLP075	50W/230V	120Z0057
HRP081-HCP120	65W/230V	120Z0059

Lubricant - all P Series

PVE oil 1 litre	120Z5034
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Mounting Kit(Grommets, sleeve, bolts, washers)

All models	120Z5005
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PSC 1 Phase electrics (Permanent split cap)

HRP034-042	70uF	Run cap	120Z0051
HRP045-047	60uF	Run cap	120Z0050
HRP054-060	55uF	Run cap	8173234
HLP068	55uF	Run cap	8173234

CSR 1 Phase electrics (HST)

HRP058-060, HLP068	Start relay	120Z0395
HRP058-060, HLP068	Start cap	8173001
HRP058-060, HLP068	Run cap	8173234

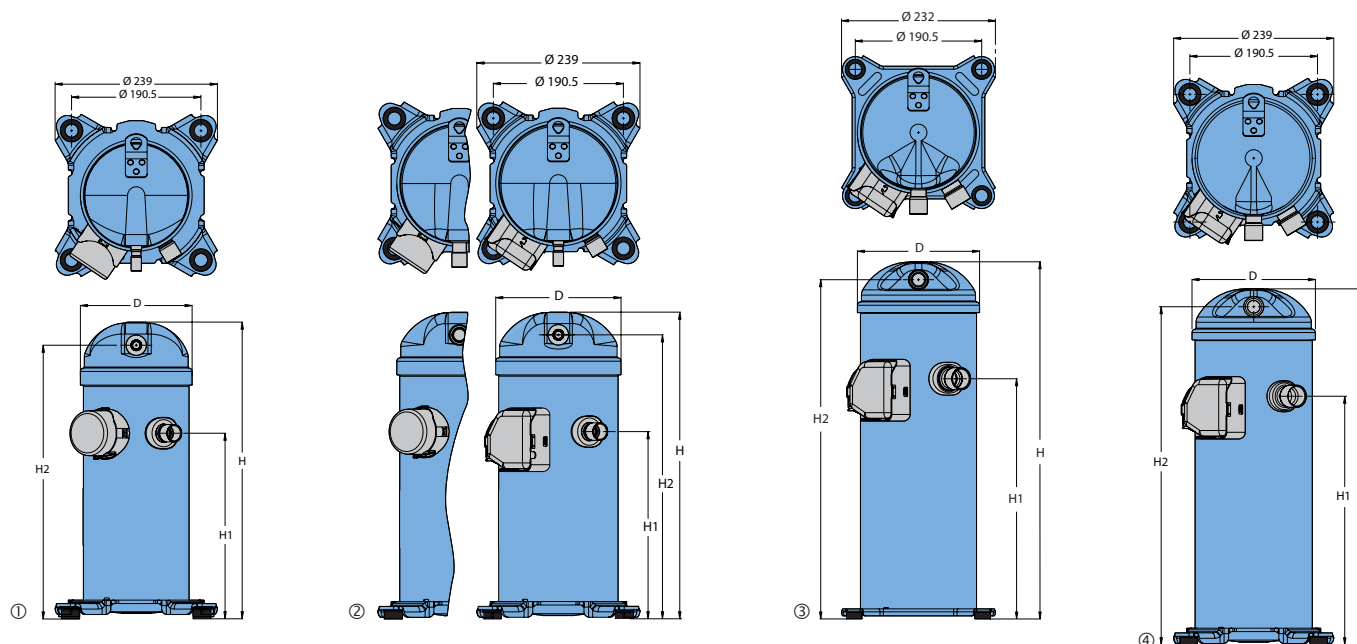
⚠ Other CSR options contact Danfoss.

⚠ Note: Standard single phase electrics (PSC) run capacitor only required.

⚠ Note: Crankcase heaters not supplied with compressors, order separately.

Scroll compressors – H series

Dimensions



Outline	R22	R407C	R410A	D	H	H1	H2
①	HRM032-034-038-040-042	HRP034-038-040-042	HRH029-031-032-034-036-038	165	413	250	379
①	HRM045-047	HRP045-047	HRH040	165	439	275	405
②	HRM048-051-054-058-060- HLM068-072-075-078-081	HRP048-051-054-058-060- HLP068-072-075-081	HRH041-044-049-051-054-056- HLH061-068-072-083	184	455	280	422
③	HCM094	HCP094		184	536	369	509
③	HCM109-120	HCP109-120		184	545	369	519
④			HCM109-120	184	537	377	510

All dimensions in mm

Nomenclature

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: R22/R417A, 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 equalisation 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~/50Hz & 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

* When H*M compressors are used with R417A, the factory charged oil must be replaced by PVE oil 320HV (120Z5034)

Scroll compressors R407C/R22 · HRP/HLP/HCP

	Te	-25	-25	-20	-20	-15	-15	-10	-10	-5	-5	0	0	5	5	10	10
	Tc	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)
HRP025T4	35	1900	1.11	2400	1.15	3000	1.18	3700	1.21	4600	1.24	5500	1.26	6500	1.29	7600	1.32
	45	-	-	2100	1.38	2700	1.43	3400	1.47	4100	1.51	4900	1.53	5900	1.55	6900	1.57
	55	-	-	-	-	-	-	3000	1.76	3700	1.81	4400	1.85	5300	1.88	6200	1.89
HRP034T4	35	2500	1.73	3200	1.71	4100	1.70	5100	1.69	6300	1.68	7700	1.67	9300	1.64	11200	1.59
	45	-	-	2800	2.19	3500	2.18	4500	2.16	5600	2.15	6800	2.14	8300	2.12	10000	2.08
	55	-	-	-	-	-	-	3800	2.77	4800	2.76	5900	2.75	7200	2.73	8700	2.71
HRP038T4	35	2700	1.85	3500	1.83	4400	1.82	5500	1.82	6900	1.80	8400	1.79	10200	1.76	12200	1.71
	45	-	-	3100	2.32	3900	2.31	4900	2.30	6100	2.29	7500	2.27	9100	2.25	11000	2.21
	55	-	-	-	-	-	-	4200	2.91	5300	2.90	6600	2.89	8000	2.87	9700	2.84
HRP040T4	35	2900	2.03	3700	2.01	4700	2.00	5800	1.99	7200	1.97	8900	1.95	10700	1.92	12900	1.87
	45	-	-	3200	2.57	4100	2.55	5100	2.54	6400	2.52	7800	2.51	9500	2.48	11500	2.44
	55	-	-	-	-	-	-	4300	3.24	5500	3.23	6800	3.22	8300	3.20	10000	3.17
HRP042T4	35	3000	2.13	3900	2.11	4900	2.10	6100	2.09	7600	2.08	9300	2.06	11300	2.02	13600	1.97
	45	-	-	3300	2.70	4300	2.68	5400	2.67	6700	2.65	8300	2.64	10000	2.61	12100	2.56
	55	-	-	-	-	-	-	4600	3.41	5700	3.40	7100	3.38	8700	3.36	10500	3.33
HRP045T4	35	3300	2.19	4200	2.16	5300	2.15	6700	2.14	8300	2.13	10100	2.11	12300	2.07	14700	2.01
	45	-	-	3700	2.86	4700	2.83	6000	2.81	7400	2.80	9100	2.78	11100	2.75	13400	2.70
	55	-	-	-	-	-	-	5200	3.70	6500	3.69	8000	3.68	9800	3.66	11900	3.62
HRP047T4	35	3400	2.30	4400	2.28	5600	2.26	7000	2.25	8700	2.24	10600	2.22	12900	2.18	15500	2.12
	45	-	-	3900	2.97	4900	2.94	6200	2.93	7700	2.91	9500	2.89	11600	2.86	13900	2.81
	55	-	-	-	-	-	-	5300	3.81	6700	3.80	8300	3.78	10100	3.76	12300	3.73
HRP048T4	35	3500	2.39	4400	2.38	5600	2.37	7100	2.36	8800	2.35	10700	2.32	13000	2.28	15600	2.23
	45	-	-	3900	2.88	4900	2.87	6200	2.86	7800	2.85	9500	2.83	11600	2.80	14000	2.75
	55	-	-	-	-	-	-	5300	3.44	6700	3.44	8200	3.42	10100	3.40	12200	3.37
HRP051T4	35	3700	2.33	4800	2.36	6100	2.39	7600	2.42	9400	2.46	11500	2.50	14000	2.54	16800	2.60
	45	-	-	4200	3.18	5400	3.15	6800	3.13	8400	3.12	10300	3.11	12600	3.11	15100	3.12
	55	-	-	-	-	-	-	5800	4.00	7300	3.95	9000	3.91	11000	3.89	13400	3.87
HRP054T4	35	3900	2.44	5000	2.46	6400	2.50	8000	2.53	9800	2.57	12100	2.61	14600	2.66	17600	2.72
	45	-	-	4400	3.32	5600	3.29	7000	3.26	8700	3.25	10800	3.24	13100	3.24	15800	3.25
	55	-	-	-	-	-	-	6100	4.15	7600	4.10	9400	4.06	11400	4.03	13800	4.01
HRP058T4	35	4200	2.61	5400	2.64	6800	2.68	8500	2.71	10600	2.75	12900	2.80	15700	2.85	18800	2.91
	45	-	-	4700	3.56	6000	3.52	7500	3.50	9400	3.48	11500	3.47	14000	3.48	16900	3.49
	55	-	-	-	-	-	-	6500	4.45	8100	4.39	10000	4.35	12300	4.32	14800	4.30
HRP060T4	35	4300	2.71	5600	2.74	7000	2.78	8800	2.81	10900	2.85	13400	2.90	16200	2.95	19500	3.02
	45	-	-	4800	3.65	6200	3.61	7800	3.58	9700	3.55	11900	3.54	14500	3.54	17400	3.56
	55	-	-	-	-	-	-	6700	4.50	8400	4.42	10300	4.36	12600	4.32	15300	4.31
HLP068T4	35	5300	3.37	6800	3.42	8600	3.46	10800	3.50	13300	3.55	16300	3.60	19800	3.67	23900	3.77
	45	-	-	5800	4.50	7400	4.44	9200	4.38	11400	4.34	14000	4.32	17100	4.33	20600	4.36
	55	-	-	-	-	-	-	7800	5.43	9500	5.31	11700	5.22	14200	5.16	17300	5.15
HLP072T4	35	5600	3.57	7200	3.66	9100	3.71	11300	3.75	14000	3.78	17200	3.83	20800	3.89	25000	4.00
	45	-	-	6100	4.83	7800	4.73	9700	4.64	12000	4.58	14800	4.55	18000	4.57	21700	4.65
	55	-	-	-	-	-	-	8200	5.76	10100	5.56	12400	5.42	15100	5.35	18300	5.37
HLP075T4	35	5500	3.84	7100	3.81	9000	3.80	11300	3.78	14000	3.76	17200	3.72	20800	3.65	25000	3.56
	45	-	-	6300	4.69	8000	4.67	10100	4.65	12500	4.63	15400	4.60	18700	4.55	22500	4.47
	55	-	-	-	-	-	-	8600	5.70	10800	5.69	13400	5.67	16400	5.64	19900	5.58
HLP081T4	35	5700	4.16	7300	4.15	9300	4.13	11600	4.11	14400	4.07	17700	4.02	21400	3.95	25700	3.85
	45	-	-	6600	5.13	8400	5.10	10600	5.07	13200	5.03	16200	4.99	19700	4.92	23700	4.84
	55	-	-	-	-	-	-	9300	6.26	11700	6.21	14500	6.16	17800	6.10	21500	6.02
HCP094T4	35	6600	4.61	8500	4.59	10800	4.57	13500	4.55	16700	4.52	20400	4.47	24800	4.40	29800	4.29
	45	-	-	7500	5.63	9500	5.61	12000	5.58	14900	5.56	18300	5.52	22300	5.46	26900	5.37
	55	-	-	-	-	-	-	10300	6.83	13000	6.81	16000	6.78	19600	6.74	23800	6.68
HCP109T4	35	8100	4.80	10200	4.93	13000	5.02	16400	5.09	20300	5.15	24700	5.21	29500	5.26	34800	5.32
	45	-	-	9300	6.01	11500	6.19	14400	6.31	18000	6.39	22200	6.42	26900	6.43	32100	6.41
	55	-	-	-	-	-	-	12600	7.84	15600	7.98	19300	8.05	23700	8.06	28700	8.01
HCP120T4	35	9000	5.49	11300	5.64	14400	5.75	18100	5.81	22300	5.86	27200	5.91	32500	5.98	38400	6.07
	45	-	-	10300	6.85	12600	7.03	15800	7.14	19600	7.21	24200	7.24	29400	7.26	35200	7.28
	55	-	-	-	-	-	-	13700	8.82	16800	8.94	20800	8.99	25600	9.01	31000	8.99

To: Evaporating temperature in °C
Tc: Condensing temperature in °C

Qo: Cooling capacity in W
Pe: Power input in kW

Superheat = 11.1 K
Subcooling = 8.3 K

Voltage: 400 V / 3 / 50 Hz
*: Voltage: 220-240 V / 1 / 50 Hz

⚠ Example HLP075T4 Cooling capacity +55 TC (condensing) and +5 Te (evaporating) = 16400 watts



Compressors - SM, SZ & SY

Danfoss Compressors - Scroll Compressors



Constant innovation, constant progress

Throughout the last 50 years Danfoss Compressors has built a strong position as a global leader in the refrigeration and air conditioning industry. By constantly listening to the needs of our customers and the daily users of our products, we continue to develop innovative solutions that are energy-efficient and environmentally responsible.

With the most complete range of products for virtually any refrigeration or air-conditioning application, we are proud to offer solutions that are famous and trusted by customers all over the world for their reliability, efficiency and high quality.

Extensive product and application range

Our product range covers all common HC, HFC and HCFC refrigerants. Customers can choose from small, direct current hermetic compressors for mobile applications to large scroll compressors for commercial air conditioning or industrial applications.

Pushing technology further

We were the first to market with R134a. We can also cater for needs with energy optimised, including models with variable speed and monitoring as well as models developed for the solar energy industry. Proof of our constant focus on providing value through maximum efficiency, environmental safety and low noise levels.

SM-SZ-SY Scroll Compressor Quick Guide R22, 2407C & R134a

Model Number	Ordering Code Code 4 Single Pack	Refrig Type	Connection Type	Nom HP	Max Amps	Nom Cooling Watts	Swept Volume cm3/rev	Displacement m3/h @ 2900	Oil charge Litres	Oil Sight Glass	Oil Type	Brazed Disc/Suct	Rotolock (Thread)		Rotolock (Pipe/Type)		Net weight kg	Comments
													Suction	Discharge	Suction	Discharge		
SM084	SM084-4V1	R22	Brazed	7.0	17.0	20 400	114.5	19.92	3.3	Yes	160P	3/4"-11/8"	-	-	-	-	64	
SM090	SM090-4V1	R22	Brazed	7.5	17.0	21 800	120.5	20.97	3.3	Yes	160P	3/4"-11/8"	-	-	-	-	65	
SM100	SM100-4V1	R22	Brazed	8.0	18.0	23 100	127.2	22.13	3.3	Yes	160P	3/4"-11/8"	-	-	-	-	66	
SM110	SM110-4V1	R22	Brazed	9.0	20.0	25 900	144.2	25.09	3.3	Yes	160P	7/8"-13/8"	-	-	-	-	73	
SM115	SM115-4RI	R22	Roblock	9.5	22.0	28 000	155.0	26.97	3.8	Yes	160P	7/8"-13/8"	-	-	11/4"	11/8"	78	
SM115	SM115-4V1	R22	Brazed	9.5	22.0	28 000	155.0	26.97	3.3	Yes	160P	7/8"-13/8"	-	-	-	-	78	Use SM115-4RI
SM120	SM120-4V1	R22	Brazed	10.0	24.0	30 100	166.6	28.99	3.3	Yes	160P	7/8"-13/8"	-	-	-	-	78	
SM125	SM125-4RI	R22	Roblock	10.0	24.0	30 100	166.6	28.99	3.3	Yes	160P	7/8"-13/8"	-	-	11/4"	11/8"	78	
SM148	SM148-4VAI	R22	Brazed	12	29.0	36 100	199.0	34.60	3.6	Yes	160P	7/8"-13/8"	-	-	-	-	88	
SM160	SM160-4RAI	R22	Roblock	13.0	29.0	39 100	216.6	37.69	4.0	Yes	160P	7/8"-13/8"	-	-	13/4"	13/8"	90	
SM161	SM161-4VAI	R22	Brazed	13.0	31.0	39 000	216.6	37.69	3.6	Yes	160P	7/8"-13/8"	-	-	21/4"	13/8"	88	
SM175	SM175-4RI	R22	Roblock	14.0	34.0	42 000	233.0	40.54	6.2	Yes	160P	7/8"-13/8"	-	-	21/4"	13/8"	100	Use SM185-4RI
SM185	SM185-4CAI	R22	Brazed	15.0	35.0	45 500	249.9	43.48	6.2	Yes	160P	11/8"-15/8"	-	-	-	-	100	
SM185	SM185-4RI	R22	Roblock	15.0	35.0	45 500	249.9	43.48	6.2	Yes	160P	7/8"-13/8"	-	-	21/4"	13/8"	100	
SY240	SY240A4PBI	R22	Roblock	20.0	47.0	61 200	347.8	60.50	8.0	Yes	320SZ	-	-	-	21/4"	13/8"	150	
SY300	SY300A4MBI	R22	Roblock	25.0	58.0	78 200	437.5	76.10	8.0	Yes	320SZ	-	-	-	21/4"	13/8"	157	
SY300	SY300A4BBI	R22	Brazed	25.0	69.0	78 200	437.5	76.10	8.0	Yes	320SZ	11/8"-15/8"	-	-	-	-	157	
SZ084	SZ084-4V1	R407C/R134a	Brazed	7.0	17.0	19 300	114.5	19.92	3.3	Yes	160SZ	3/4"-11/8"	-	-	-	-	64	
SZ090	SZ090-4V1	R407C/R134a	Brazed	7.5	17.0	20 400	120.5	20.97	3.3	Yes	160SZ	3/4"-11/8"	-	-	-	-	65	
SZ100	SZ100-4V1	R407C/R134a	Brazed	8.0	18.0	21 600	127.2	22.13	3.3	Yes	160SZ	3/4"-11/8"	-	-	-	-	66	
SZ110	SZ110-4V1	R407C/R134a	Brazed	9.0	20.0	24 600	144.2	25.09	3.3	Yes	160SZ	7/8"-13/8"	-	-	-	-	73	
SZ115	SZ115-4RI	R407C/R134a	Roblock	9.5	22.0	26 900	155.0	26.97	3.8	Yes	160SZ	-	-	-	13/4"	11/4"	78	
SZ120	SZ120-4V1	R407C/R134a	Brazed	10.0	24.0	28 600	166.6	28.99	3.3	Yes	160SZ	7/8"-13/8"	-	-	-	-	73	
SZ125	SZ125-4RI	R407C/R134a	Roblock	10.0	24.0	28 600	166.6	28.99	3.8	Yes	160SZ	7/8"-13/8"	-	-	13/4"	11/4"	78	
SZ148	SZ148-4VAI	R407C/R134a	Brazed	12.0	29.0	35 100	199.0	34.60	3.6	Yes	160SZ	7/8"-13/8"	-	-	-	-	88	
SZ160	SZ160-4RAI	R407C/R134a	Roblock	13.0	29.0	37 600	216.6	37.69	4.0	Yes	160SZ	7/8"-13/8"	-	-	21/4"	13/8"	90	
SZ161	SZ161-4VAI	R407C/R134a	Brazed	13.0	31.0	37 900	216.6	37.69	3.6	Yes	160SZ	7/8"-13/8"	-	-	-	-	88	
SZ175	SZ175-4RI	R407C/R134a	Roblock	14.0	34.0	40 100	233.0	40.54	6.2	Yes	160SZ	7/8"-13/8"	-	-	21/4"	13/8"	100	Use SZ185-4RI
SZ185	SZ185-4RI	R407C/R134a	Roblock	15.0	35.0	43 100	249.9	43.48	6.2	Yes	160SZ	-	-	-	21/4"	13/4"	100	
SZ185	SZ185-4CAI	R407C/R134a	Brazed	15.0	35.0	43 100	249.9	43.48	6.2	Yes	160SZ	11/8"-15/8"	-	-	-	-	100	
SZ240	SZ240A4PBI	R407C/R134a	Roblock	20.0	47.0	59 100	347.8	60.50	8.0	Yes	160SZ	-	-	-	21/4"	13/4"	150	Replaces SZ240A4MBI
SZ300	SZ300A4PBI	R407C/R134a	Roblock	25.0	58.0	72 800	437.5	76.10	8.0	Yes	160SZ	-	-	-	21/4"	13/4"	157	Replaces SZ300A4MBI
SZ380	SZ380A4CAI	R407C/R134a	Brazed	30.0	69.0	89 600	531.2	92.40	8.4	Yes	160SZ	11/8"21/8"	-	-	-	-	158	

Crankcase Heater	
Models	Watt/Voltage Code
SM/Z084-161	65W 230V 7773107
SM/Z084-161	65W 400V 7773117
SM/Z175-185	75W 230V 7773108
SM/Z175-185	75W 400V 7773118
SY/SZ240-380	130W 230V 7773122
SY/SZ240-380	130W 400V 7773123
Discharge Thermostat	
All models	Kit 7750009

Oil 160P (Mineral)	
SM Models	Code
2 Litre	7754001
5 Litre	7754002
Oil 320SZ (POE)	
SY (R22) Models	Code
2 Litre	7754122
Oil 160SZ (POE)	
SZ Models	Code
2 Litre	7754024
Oil Sight Glass	
SM/SY/SZ/SH	Code
Oil Sight Glass Inl. Gkt	8156019
Gasket Oil Sight Glass	8156129

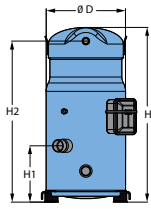
Rubber Mounting Kits	
Models	Code
SM/SZ 084-185	8156138
SY/SZ 240-300	8156144
Terminal Box Cover	
Models	Code
SM/SZ084-110	8156135
SM/SZ 115-185	8156139
SY/SZ 240-300	8156142

Rotolock Adaptor Kit:		Rotolock Service Valve:		Rotolock Spare Gasket:		
Comp	Code	Code	Code	Code	Code	
084-090-100	7765005	V02	7703009	11/4"	8156131	
110-161	7765006	V10	7703392	13/4"	8156132	
160-175-185	7765028	V03	7703383	21/4"	8156133	
SY/SZ 240-300	7765028	V03	7703383	-	-	
Acoustic Hoods/Compressor Sound Covers						
Model/Application						
Code						
SM/SZ084,090,100						7755011
SM/SZ110 & 120						7755010
SM/SZ115 & 125						7755009
SM/SZ148 & 161						7755017
SM/SZ160						7755008
SM/SZ175 & 185						7755007
SY/SZ240 & 300						7755016

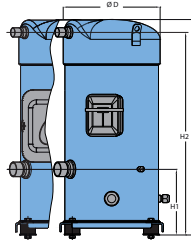
* Not currently stocked

▲ Note: R410A refer to SH Scroll compressor range

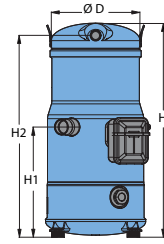
Product range single compressors – Air Conditioning Performer® scroll compressors S series



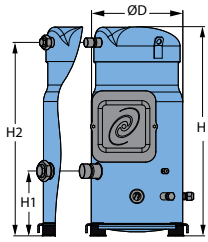
	D	H	H1	H2
S084-090-100	254	508	142	465
S110-120	254	558	178	515



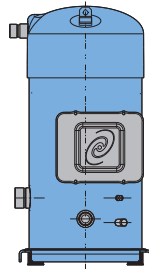
	D	H	H1	H2
S148-161	266	591	180	556



	D	H	H1	H2
S112	243	535	278	504
S124-147	243	540	278	509



	D	H	H1	H2
S115-125	254	581	180	537
S160	266	631	180	596
S175-185	316	678	180	641



	D	H	H1	H2
S240	344	727	196	654
S300	344	738	196	665
S380	344	762	196	689

All dimensions in mm

Model	Motor voltage code		
	400 V/3/50Hz - 460V/3/60Hz	230/3/50	500/3/50 - 575/3/60
	4	6	7
SM/SZ084-090-100-110-120	●	●	●
SM/SZ148-161	●	●	●
SM112-124-147	●		
SM/SZ115-125-160-175-185	○ ●	○ ●	○ ●
SY185	○ ●		
SY/SZ240-300	○ ●	○ ●	○ ●
SY/SZ380 *	●		

○ Rotolock version ● Brazed version * SY380 only available for 400/3/50Hz

Family, lubricant & refrigerant	Nominal capacity	Voltage	Version	Evolution index	
SZ SY	185 300	- 4 7	R CA	C A	Single compressors Single compressors

Family, lubricant & refrigerant
SM: Scroll, Mineral oil, R22/R417A**
SY: Scroll, POE lubricant, R22/R417A (and R407C for SY185-240-300)
SZ: Scroll, POE lubricant, R407C - R134a (and R404A, R507A for SZ084 to SZ185)

Nominal capacity
 in thousand Btu/h at 60 Hz, R22, ARI conditions

Motor voltage code
3: 200-230V/3~/60 Hz
4: 380-400V/3~/50 - 460V/3~/60 Hz
6: 230V/3~/50 Hz
7: 500V/3~/50 Hz - 575V/3~/60 Hz
9: 380V/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 115-125-160-175-185
	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: 24V AC	S 240 - 300
	CB : P: rotolock	B: 115/230V	
	PA : P: rotolock	A: 24V AC	
	PB : C: brazed	B: 115/230V	S 380 *
	CA : C: brazed	A: 24V AC	
	CB : P: rotolock	B: 115/230V	

* SY380 only available for 400V/3~/50 Hz, SZ380 available for both 400V/3~/50 Hz and 460V/3~/60 Hz
 ** When SM compressors are used with R417A, the factory charged mineral oil 160P must be replaced by polyolester oil 160SZ

Scroll compressors SM / SY R22

Model	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	7 700	4.0	9 900	4.0	12 500	4.0	15 500	4.0	18 900	4.0	22 800	4.0	27 200	3.9	32 100	3.9
	55	-	-	-	-	-	-	12 000	6.4	15 000	6.3	18 500	6.2	22 500	6.2	26 900	6.1
SM090	35	8 600	4.3	10 900	4.4	13 600	4.4	16 700	4.4	20 200	4.4	24 300	4.4	28 900	4.4	34 100	4.4
	55	-	-	-	-	-	-	13 300	6.7	16 400	6.7	19 900	6.6	23 900	6.6	28 400	6.5
SM100	35	9 000	4.6	11 500	4.6	14 400	4.7	17 700	4.7	21 500	4.7	25 800	4.7	30 700	4.7	36 200	4.7
	55	-	-	-	-	-	-	14 200	7.1	17 400	7.1	21 200	7.1	25 400	7.0	30 200	7.0
SM110	35	10 200	5.2	13 000	5.2	16 200	5.2	20 000	5.2	24 200	5.2	29 000	5.2	34 400	5.2	40 400	5.2
	55	-	-	-	-	-	-	15 900	8.0	19 600	8.0	23 800	7.9	28 400	7.9	33 700	7.8
SM112	35	11 300	5.1	14 100	5.1	17 400	5.2	21 200	5.3	25 500	5.4	30 500	5.5	36 100	5.6	42 500	5.7
	55	-	-	-	-	-	-	17 500	7.8	21 200	7.9	25 400	8.0	30 200	8.1	35 700	8.2
SM115	35	11 200	5.4	13 900	5.4	17 100	5.4	20 800	5.5	25 100	5.5	30 000	5.4	35 600	5.4	41 800	5.4
	55	-	-	-	-	-	-	16 500	8.6	20 700	8.5	25 500	8.5	31 000	8.4	37 100	8.3
SM120	35	11 800	6.0	15 200	6.0	19 000	6.0	23 300	5.9	28 200	5.9	33 700	5.9	39 900	5.9	46 700	5.9
	55	-	-	-	-	-	-	18 600	9.2	22 800	9.2	27 600	9.1	33 000	9.0	38 900	9.0
SM124	35	13 100	5.4	16 200	5.5	19 800	5.7	23 900	5.8	28 700	6.0	34 100	6.1	40 300	6.2	47 200	6.4
	55	-	-	-	-	-	-	19 800	8.4	24 000	8.6	28 700	8.8	34 100	9.0	40 200	9.2
SM125	35	12 000	5.8	15 000	5.8	18 400	5.9	22 400	5.9	27 000	5.9	32 300	5.9	38 200	5.8	45 000	5.8
	55	-	-	-	-	-	-	17 700	9.3	22 300	9.2	27 400	9.1	33 300	9.0	39 900	8.9
SM147	35	14 900	6.3	18 600	6.4	22 900	6.5	27 800	6.7	33 500	6.9	40 000	7.1	47 300	7.2	55 600	7.4
	55	-	-	-	-	-	-	22 700	9.8	27 500	9.9	33 100	10.1	39 400	10.3	46 600	10.5
SM148	35	14 800	7.0	18 500	7.0	22 900	7.1	27 800	7.1	33 600	7.2	40 100	7.2	47 500	7.3	55 900	7.3
	55	-	-	-	-	-	-	22 600	10.9	27 500	10.9	33 100	10.9	39 500	11.0	46 800	11.0
SM160	35	15 500	7.6	19 600	7.7	24 300	7.8	29 700	7.9	35 900	8.0	43 000	8.1	50 900	8.1	59 800	8.2
	55	-	-	-	-	-	-	11.5	24 100	11.6	29 600	11.6	35 800	11.7	42 900	11.8	50 800
SM161	35	16 000	7.5	20 100	7.6	24 700	7.6	30 100	7.6	36 300	7.7	43 400	7.7	51 400	7.8	60 500	7.8
	55	-	-	-	-	-	-	24 400	11.7	29 700	11.7	35 800	11.7	42 800	11.8	50 600	11.8
SM175	35	17 000	8.1	21 300	8.1	26 400	8.2	32 300	8.3	39 000	8.4	46 600	8.4	55 200	8.5	64 800	8.5
	55	-	-	-	-	-	-	26 200	12.4	32 000	12.5	38 500	12.6	46 000	12.6	54 400	12.7
SM185	35	18 400	8.8	23 100	8.9	28 600	9.0	35 000	9.1	42 200	9.1	50 500	9.2	59 800	9.3	70 200	9.3
	55	-	-	-	-	-	-	13.5	28 400	13.6	34 600	13.7	41 800	13.8	49 800	13.8	58 900
SY185	35	17 600	8.7	22 500	8.7	28 100	8.7	34 500	8.8	42 000	8.9	50 400	9.0	60 000	9.1	70 900	9.2
	55	-	-	-	-	-	-	13.3	28 600	13.3	34 800	13.3	41 900	13.4	49 800	13.5	58 600
SY240	35	25 100	11.7	31 400	11.8	38 800	12.0	47 300	12.1	57 100	12.4	68 300	12.6	81 000	13.0	95 300	13.3
	55	-	-	-	-	-	-	38 400	17.8	46 600	18.0	56 100	18.3	67 000	18.6	79 300	18.9
SY300	35	31 900	14.2	39 900	14.5	49 300	14.8	60 300	15.1	73 100	15.6	87 900	16.1	104 800	16.7	124 100	17.4
	55	-	-	-	-	-	-	48 600	22.0	59 200	22.4	71 600	22.8	85 900	23.4	102 300	24.1
SY380	35	40 100	17.3	49 500	17.6	60 500	18.0	73 300	18.4	88 100	18.8	104 900	19.2	124 100	19.8	145 800	20.4
	55	-	-	-	-	-	-	59 700	26.8	72 300	27.1	86 800	27.5	103 400	27.9	122 300	28.4
SM170	35	15 200	8.0	19 500	8.0	24 600	8.0	30 500	8.0	37 200	8.0	44 900	7.9	53 500	7.9	63 200	7.8
	55	-	-	-	-	-	-	23 600	12.7	29 600	12.6	36 500	12.5	44 300	12.3	53 100	12.1
SM180	35	16 900	8.6	21 400	8.7	26 700	8.8	32 800	8.8	39 900	8.8	47 900	8.8	56 900	8.8	67 100	8.7
	55	-	-	-	-	-	-	26 200	13.4	32 300	13.3	39 300	13.3	47 100	13.2	56 000	13.1
SM200	35	17 700	9.2	22 600	9.3	28 300	9.3	34 800	9.3	42 300	9.4	50 900	9.4	60 500	9.4	71 300	9.4
	55	-	-	-	-	-	-	27 900	14.3	34 400	14.2	41 700	14.1	50 000	14.0	59 400	13.9
SM220	35	20 000	10.4	25 500	10.4	32 000	10.4	39 300	10.4	47 700	10.5	57 100	10.5	67 700	10.4	79 500	10.4
	55	-	-	-	-	-	-	31 400	16.0	38 600	16.0	46 800	15.9	56 000	15.8	66 300	15.6
SM230	35	22 000	10.8	27 400	10.9	33 700	10.9	41 000	10.9	49 500	10.9	59 100	10.9	70 100	10.9	82 400	10.8
	55	-	-	-	-	-	-	32 500	17.2	40 800	17.1	50 200	16.9	61 000	16.7	73 100	16.5
SM242	35	23 300	12.0	29 900	11.9	37 400	11.9	45 900	11.9	55 600	11.9	66 400	11.9	78 500	11.8	92 000	11.8
	55	-	-	-	-	-	-	36 600	18.4	45 000	18.3	54 400	18.2	64 900	18.1	76 600	17.9
SM248	35	26 300	10.9	32 500	11.1	39 600	11.3	47 900	11.6	57 400	11.9	68 200	12.2	80 500	12.5	94 400	12.7
	55	-	-	-	-	-	-	39 700	16.9	47 900	17.2	57 400	17.5	68 100	17.9	80 300	18.4
SM250	35	23 700	11.6	29 500	11.7	36 200	11.7	44 100	11.7	53 200	11.7	63 500	11.7	75 300	11.7	88 600	11.6
	55	-	-	-	-	-	-	35 000	18.5	43 800	18.4	54 000	18.2	65 600	18.0	78 600	17.7
SM268	35	26 600	13.0	33 700	13.0	41 800	13.0	51 100	13.1	61 700	13.1	73 700	13.2	87 300	13.2	102 400	13.2
	55	-	-	-	-	-	-	40 700	20.1	49 800	20.1	60 100	20.0	71 700	20.0	84 800	20.0
SM271	35	25 800	12.7	32 500	12.8	40 300	12.8	49 300	12.9	59 600	12.9	71 300	13.0	84 500	13.0	99 300	13.0
	55	-	-	-	-	-	-	39 700	19.7	48 600	19.7	58 700	19.7	70 100	19.6	83 000	19.6
SM272	35	28 000	11.7	34 800	11.9	42 600	12.2	51 700	12.5	62 100	12.8	73 900	13.2	87 400	13.5	102 600	13.8
	55	-	-	-	-	-	-	41 700	18.3	50 500	18.5	60 600	18.9	72 100	19.3	85 200	19.7
SM281	35	27 500	13.5	34 700	13.5	43 000	13.6	52 600	13.6	63 600	13.6	75 900	13.7	89 900	13.7	105 500	13.7
	55	-	-	-	-	-	-	42 300	20.9	51 800	20.9	62 500	20.8	74 600	20.8	88 200	20.8
SM285	35	27 100	13.4	34 000	13.5	42 100	13.6	51 400	13.7	62 000	13.8	74 100	13.9	87 800	14.0	103 200	14.1
	55	-	-	-	-	-	-	41 200	20.8	51 100	20.8	62 300	20.8	75 000	20.8	89 300	20.7
SM290	35	27 700	13.5	34 700	13.6	42 900	13.7	52 300	13.8	63 100	13.8	75 400	13.9	89 400	13.9	105 100	13.9
	55	-	-	-	-	-	-	42 000	21.0	51 900	21.1	63 100	21.1	75 800	21.0	90 100	20.9
SM294	35	29 900	12.5	37 200	12.7	45 800	13.0	55 600	13.4	67 000	13.7	79 900	14.1	94			

Scroll compressors SZ R134a

Model	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	6 200	2.8	8 000	2.8	10 100	2.8	12 600	2.8	15 400	2.7	18 700	2.7	22 400	2.6
	55	-	-	6 100	4.3	7 900	4.3	9 900	4.3	12 400	4.3	15 100	4.3	18 300	4.2
SZ090	35	6 700	2.9	8 600	2.9	10 900	3.0	13 400	2.9	16 400	2.9	19 800	2.9	23 600	2.8
	55	-	-	6 600	4.5	8 500	4.6	10 700	4.6	13 200	4.6	16 000	4.5	19 300	4.5
SZ100	35	7 300	3.1	9 400	3.1	11 700	3.1	14 400	3.1	17 500	3.1	21 000	3.1	25 000	3.1
	55	-	-	7 300	4.8	9 300	4.8	11 500	4.9	14 100	4.9	17 100	4.9	20 400	4.8
SZ110	35	8 200	3.5	10 500	3.5	13 200	3.5	16 200	3.5	19 800	3.5	23 800	3.5	28 400	3.5
	55	-	-	8 100	5.4	10 400	5.4	13 000	5.5	16 000	5.5	19 400	5.5	23 300	5.4
SZ115	35	9 000	3.8	11 600	3.8	14 500	3.8	17 900	3.8	21 800	3.8	26 300	3.7	31 200	3.7
	55	-	-	8 900	5.9	11 400	5.9	14 300	5.9	17 600	5.9	21 400	5.9	25 700	5.9
SZ120	35	9 400	4.0	12 000	4.0	15 100	4.1	18 700	4.1	22 800	4.1	27 500	4.1	32 900	4.0
	55	-	-	9 300	6.2	11 900	6.3	14 900	6.3	18 400	6.3	22 400	6.3	27 000	6.2
SZ125	35	9 600	4.1	12 300	4.1	15 500	4.1	19 100	4.1	23 300	4.0	28 000	4.0	33 300	3.9
	55	-	-	9 500	6.3	12 100	6.3	15 200	6.3	18 800	6.3	22 800	6.3	27 400	6.2
SZ148	35	11 200	5.0	14 400	5.0	18 100	5.0	22 600	5.0	27 900	5.0	34 000	5.0	41 100	5.0
	55	-	-	11 200	7.7	14 200	7.7	17 800	7.7	22 100	7.7	27 100	7.8	32 800	7.8
SZ160	35	12 400	5.3	15 900	5.3	20 000	5.4	24 700	5.4	30 200	5.4	36 400	5.4	43 500	5.4
	55	-	-	12 300	7.9	15 800	8.0	19 800	8.0	24 500	8.1	29 800	8.1	35 900	8.1
SZ161	35	12 000	5.2	15 300	5.2	19 200	5.3	23 800	5.3	29 200	5.4	35 500	5.4	42 700	5.4
	55	-	-	12 100	8.0	15 300	8.0	19 200	8.1	23 700	8.1	28 900	8.1	35 000	8.1
SZ175	35	13 200	5.7	16 900	5.8	21 200	5.8	26 200	5.9	32 100	5.9	38 700	5.9	46 200	5.8
	55	-	-	13 100	8.6	16 700	8.6	21 000	8.7	26 000	8.7	31 700	8.8	38 100	8.8
SZ185	35	14 000	6.1	18 000	6.1	22 600	6.2	27 900	6.2	34 100	6.3	41 200	6.3	49 200	6.2
	55	-	-	13 900	9.1	17 800	9.2	22 400	9.3	27 700	9.3	33 700	9.3	40 600	9.3
SZ240	35	18 900	8.4	23 900	8.5	29 900	8.6	37 100	8.7	45 700	8.7	56 000	8.8	68 200	8.9
	55	-	-	18 800	12.3	23 800	12.5	29 700	12.6	36 700	12.7	45 000	12.9	54 700	13.0
SZ300	35	23 700	10.2	30 000	10.4	37 500	10.5	46 300	10.6	56 700	10.7	68 900	10.8	82 800	11.0
	55	-	-	23 600	15.2	29 700	15.4	37 100	15.6	45 800	15.9	55 900	16.1	67 800	16.4
SZ380	35	30 200	12.3	38 000	12.5	47 300	12.7	58 200	12.9	71 000	13.1	85 800	13.4	102 900	13.6
	55	-	-	30 100	18.1	37 800	18.4	46 900	18.7	57 600	19.0	70 000	19.2	84 400	19.4
SZ170	35	12 200	5.5	15 700	5.6	19 900	5.6	24 800	5.5	30 400	5.5	36 800	5.4	44 000	5.3
	55	-	-	11 900	8.6	15 500	8.6	19 600	8.6	24 300	8.6	29 800	8.5	36 000	8.4
SZ180	35	13 300	5.9	17 000	5.9	21 400	5.9	26 500	5.9	32 300	5.8	39 000	5.8	46 500	5.7
	55	-	-	13 100	9.1	16 800	9.1	21 100	9.1	26 000	9.1	31 600	9.1	38 000	9.0
SZ200	35	14 500	6.2	18 400	6.2	23 000	6.3	28 400	6.3	34 500	6.2	41 400	6.2	49 200	6.1
	55	-	-	14 400	9.6	18 200	9.7	22 700	9.7	27 800	9.7	33 600	9.7	40 200	9.7
SZ220	35	16 300	7.0	20 700	7.0	25 900	7.1	32 000	7.1	39 000	7.1	46 900	7.0	56 000	6.9
	55	-	-	16 100	10.8	20 500	10.9	25 600	10.9	31 400	10.9	38 200	10.9	45 900	10.9
SZ230	35	17 800	7.6	22 800	7.6	28 600	7.6	35 300	7.6	43 000	7.6	51 700	7.5	61 600	7.4
	55	-	-	17 500	11.7	22 500	11.8	28 200	11.8	34 800	11.8	42 200	11.8	50 700	11.7
SZ242	35	18 600	8.0	23 700	8.1	29 700	8.1	36 800	8.1	44 900	8.1	54 200	8.1	64 900	8.0
	55	-	-	18 300	12.5	23 400	12.5	29 300	12.5	36 200	12.5	44 200	12.5	53 300	12.4
SZ250	35	19 000	8.1	24 300	8.1	30 500	8.1	37 600	8.1	45 800	8.1	55 100	8.0	65 600	7.9
	55	-	-	18 600	12.5	23 900	12.5	30 000	12.6	37 000	12.6	45 000	12.5	54 000	12.5
SZ268	35	20 600	9.0	26 400	9.1	33 200	9.1	41 200	9.1	50 600	9.1	61 400	9.1	73 900	9.0
	55	-	-	20 100	13.9	25 700	14.0	32 300	14.0	39 900	14.0	48 800	14.0	59 100	14.0
SZ271	35	20 200	8.7	25 800	8.7	32 300	8.8	40 000	8.9	48 900	8.9	59 200	8.9	71 000	8.9
	55	-	-	19 900	13.4	25 300	13.5	31 600	13.5	39 000	13.6	47 600	13.6	57 400	13.6
SZ281	35	21 400	9.2	27 300	9.3	34 300	9.3	42 400	9.4	51 900	9.4	62 900	9.4	75 500	9.4
	55	-	-	21 000	14.2	26 800	14.3	33 500	14.3	41 500	14.4	50 600	14.4	61 200	14.3
SZ285	35	21 700	9.3	27 800	9.4	34 900	9.4	43 100	9.5	52 600	9.5	63 400	9.4	75 600	9.3
	55	-	-	21 400	14.2	27 500	14.2	34 500	14.3	42 600	14.4	51 900	14.4	62 400	14.3
SZ290	35	21 900	9.5	28 000	9.6	35 200	9.6	43 500	9.7	53 100	9.7	64 000	9.6	76 300	9.5
	55	-	-	21 600	14.4	27 700	14.5	34 800	14.6	43 000	14.6	52 300	14.7	62 900	14.6
SZ296	35	22 100	10.0	28 300	10.0	35 700	10.0	44 500	10.0	54 900	10.0	67 000	10.0	80 900	10.0
	55	-	-	22 000	15.4	28 000	15.4	35 200	15.4	43 500	15.5	53 300	15.5	64 700	15.6
SZ310	35	23 300	10.1	29 800	10.2	37 500	10.3	46 300	10.3	56 500	10.3	68 100	10.2	81 200	10.1
	55	-	-	23 000	15.4	29 500	15.5	37 100	15.5	45 800	15.6	55 700	15.6	67 000	15.6
SZ320	35	24 400	10.5	31 300	10.6	39 300	10.7	48 700	10.8	59 400	10.8	71 700	10.8	85 700	10.8
	55	-	-	24 200	15.8	31 000	15.9	39 000	16.0	48 200	16.1	58 700	16.2	70 700	16.2
SZ322	35	23 600	10.4	30 100	10.5	37 800	10.5	46 900	10.6	57 600	10.7	69 900	10.8	84 100	10.8
	55	-	-	23 800	15.9	30 200	16.0	37 800	16.1	46 600	16.2	56 900	16.2	68 900	16.2
SZ350	35	26 000	11.4	33 200	11.5	41 800	11.6	51 700	11.7	63 100	11.8	76 200	11.7	91 100	11.7
	55	-	-	25 700	17.1	33 000	17.3	41 400	17.4	51 200	17.5	62 400	17.5	75 100	17.5
SZ370	35	27 600	12.1	35 400	12.3	44 500	12.4	55 000	12.5	67 200	12.5	81 100	12.5	96 900	12.4
	55	-	-	27 400	18.2	35 100	18.4	44 100	18.5	54 500	18.6	66 400	18.7	79 900	18.6

↓
Tandem Models

To: Evaporating temperature in °C
Tc: Condensing temperature in °C

Qo: Cooling capacity in W
Pe: Power input in kW

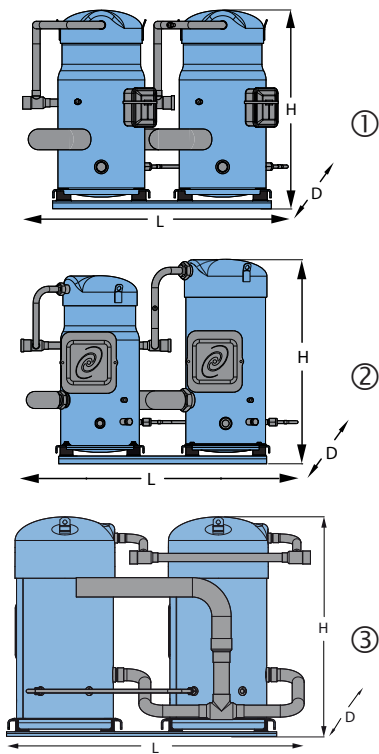
Superheat = 11.1 K
Subcooling = 8.3 K

Voltage: 400 V / 3 / 50 Hz

Scroll compressors SZ R407C

Model	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	Qo	Pe	Qo	Pe	Qo	Pe		
SZ084	35	7 200	3.9	9 300	3.9	11 800	4.0	14 800	4.0	18 300	4.0	22 300	4.0	27 000	4.0	32 300	3.9								
	55	-	-	-	-	-	-	11 300	6.2	14 200	6.2	17 500	6.2	21 400	6.2	25 800	6.2								
SZ090	35	7 600	4.1	9 800	4.1	12 500	4.2	15 600	4.2	19 300	4.2	23 600	4.2	28 500	4.2	34 100	4.1								
	55	-	-	-	-	-	-	12 000	6.5	15 000	6.5	18 500	6.5	22 500	6.5	27 200	6.5								
SZ100	35	8 100	4.3	10 500	4.4	13 300	4.4	16 600	4.4	20 500	4.5	25 000	4.4	30 100	4.4	36 000	4.4								
	55	-	-	-	-	-	-	12 700	6.9	15 900	6.9	19 600	6.9	23 800	6.9	28 700	6.9								
SZ110	35	9 300	4.9	12 000	5.0	15 200	5.0	19 000	5.0	23 400	5.0	28 500	5.0	34 300	5.0	40 900	4.9								
	55	-	-	-	-	-	-	14 500	7.9	18 100	7.9	22 300	7.9	27 200	7.8	32 700	7.8								
SZ115	35	10 100	5.4	13 100	5.4	16 600	5.4	20 800	5.5	25 600	5.4	31 100	5.4	37 400	5.4	44 500	5.3								
	55	-	-	-	-	-	-	15 800	8.7	19 800	8.7	24 400	8.6	29 600	8.6	35 600	8.5								
SZ120	35	11 000	5.7	14 200	5.7	17 900	5.8	22 200	5.8	27 300	5.8	33 200	5.8	39 900	5.7	47 600	5.6								
	55	-	-	-	-	-	-	17 000	9.2	21 200	9.2	26 100	9.2	31 600	9.1	38 000	9.0								
SZ125	35	10 800	5.7	14 000	5.7	17 700	5.7	22 100	5.7	27 200	5.7	33 100	5.7	39 800	5.7	47 400	5.6								
	55	-	-	-	-	-	-	16 800	9.2	21 000	9.1	25 900	9.1	31 500	9.0	37 900	9.0								
SZ148	35	13 500	6.9	17 300	7.0	21 700	7.0	27 000	7.0	33 100	7.1	40 300	7.1	48 500	7.1	57 800	7.2								
	55	-	-	-	-	-	-	21 200	11.1	26 200	11.1	32 100	11.1	38 900	11.1	46 700	11.1								
SZ160	35	14 800	7.3	19 000	7.4	23 900	7.5	29 700	7.6	36 400	7.6	44 300	7.6	53 300	7.6	63 600	7.6								
	55	-	-	-	-	-	-	23 200	11.8	28 800	11.9	35 200	11.9	42 700	11.9	51 400	11.9								
SZ161	35	14 600	7.4	18 700	7.5	23 500	7.5	29 200	7.6	35 800	7.6	43 500	7.6	52 400	7.7	62 600	7.8								
	55	-	-	-	-	-	-	22 900	12.0	28 400	12.0	34 700	12.0	42 100	12.0	50 600	12.0								
SZ175	35	15 500	8.0	19 800	8.0	25 000	8.1	31 100	8.2	38 100	8.2	46 300	8.2	55 600	8.2	66 200	8.2								
	55	-	-	-	-	-	-	24 000	12.7	29 800	12.8	36 500	12.8	44 200	12.8	53 000	12.8								
SZ185	35	16 600	8.6	21 300	8.6	26 900	8.7	33 400	8.8	41 000	8.8	49 700	8.8	59 700	8.8	71 100	8.8								
	55	-	-	-	-	-	-	25 700	13.7	32 000	13.7	39 200	13.8	47 500	13.8	56 900	13.8								
SZ240	35	22 400	11.7	28 900	11.8	36 500	11.9	45 400	12.1	55 900	12.2	68 000	12.4	82 000	12.5	98 000	12.6								
	55	-	-	21 900	17.9	28 100	18.0	35 500	18.2	44 000	18.4	54 000	18.7	65 500	18.9	78 800	19.2								
SZ300	35	28 700	13.7	36 200	13.9	45 100	14.1	55 500	14.3	67 600	14.5	81 700	14.7	98 000	14.9	116 600	15.2								
	55	-	-	28 500	21.2	35 900	21.6	44 600	22.1	54 800	22.5	66 600	22.9	80 400	23.2	96 300	23.6								
SZ380	35	36 000	16.9	45 300	17.3	56 400	17.6	69 400	18.0	84 600	18.3	102 200	18.6	122 400	18.9	145 400	19.4								
	55	-	-	35 000	26.1	44 200	26.6	55 000	27.0	67 500	27.4	82 100	27.8	98 900	28.1	118 200	28.5								
SZ170	35	14 200	7.8	18 300	7.9	23 200	8.0	29 100	8.0	36 000	8.0	44 000	8.0	53 200	8.0	63 700	7.9								
	55	-	-	-	-	-	-	22 300	12.3	27 900	12.4	34 500	12.4	42 100	12.4	50 900	12.4								
SZ180	35	15 000	8.2	19 400	8.3	24 600	8.3	30 800	8.4	38 000	8.4	46 400	8.4	56 100	8.3	67 100	8.2								
	55	-	-	-	-	-	-	23 600	13.0	29 500	13.0	36 400	13.1	44 400	13.0	53 600	13.0								
SZ200	35	16 000	8.7	20 600	8.8	26 100	8.8	32 700	8.9	40 300	8.9	49 200	8.9	59 300	8.8	70 900	8.7								
	55	-	-	-	-	-	-	25 000	13.8	31 300	13.9	38 600	13.9	47 000	13.8	56 600	13.8								
SZ220	35	18 400	9.9	23 700	9.9	30 000	10.0	37 400	10.1	46 100	10.1	56 100	10.0	67 500	10.0	80 600	9.8								
	55	-	-	-	-	-	-	28 600	15.8	35 800	15.8	44 000	15.8	53 500	15.7	64 400	15.5								
SZ230	35	20 000	10.8	25 800	10.8	32 800	10.9	40 900	10.9	50 400	10.9	61 200	10.9	73 700	10.8	87 700	10.7								
	55	-	-	-	-	-	-	31 100	17.4	38 900	17.3	48 000	17.3	58 400	17.2	70 200	17.0								
SZ242	35	21 600	11.4	27 900	11.5	35 200	11.6	43 800	11.6	53 800	11.6	65 400	11.5	78 600	11.4	93 700	11.2								
	55	-	-	-	-	-	-	33 600	18.3	41 800	18.4	51 300	18.3	62 300	18.1	74 800	17.9								
SZ250	35	21 200	11.4	27 500	11.4	34 900	11.5	43 500	11.5	53 600	11.5	65 200	11.4	78 300	11.4	93 300	11.3								
	55	-	-	-	-	-	-	33 100	18.3	41 400	18.3	51 100	18.2	62 100	18.1	74 700	17.9								
SZ268	35	24 100	12.6	31 000	12.7	39 000	12.8	48 500	12.9	59 500	12.9	72 300	12.9	87 000	12.9	103 800	12.8								
	55	-	-	-	-	-	-	37 600	20.3	46 700	20.3	57 300	20.3	69 400	20.2	83 400	20.1								
SZ271	35	23 900	12.4	30 600	12.5	38 700	12.6	48 100	12.6	59 100	12.6	71 900	12.7	86 600	12.7	103 400	12.7								
	55	-	-	-	-	-	-	36 700	19.9	45 700	19.9	56 000	19.9	68 000	19.9	81 800	19.8								
SZ281	35	25 200	13.1	32 300	13.2	40 800	13.3	50 700	13.4	62 200	13.4	75 600	13.4	90 900	13.4	108 500	13.4								
	55	-	-	-	-	-	-	39 300	21.2	48 800	21.2	59 900	21.2	72 600	21.1	87 200	21.0								
SZ285	35	25 500	13.0	32 900	13.2	41 500	13.3	51 700	13.3	63 500	13.3	77 200	13.3	92 900	13.3	110 800	13.2								
	55	-	-	-	-	-	-	39 300	21.0	48 900	21.0	60 100	21.0	73 100	21.0	87 900	20.9								
SZ290	35	25 200	13.4	32 500	13.5	41 000	13.5	51 100	13.6	62 800	13.7	76 200	13.7	91 600	13.6	109 000	13.5								
	55	-	-	-	-	-	-	39 100	21.4	48 800	21.5	59 900	21.5	72 700	21.4	87 300	21.3								
SZ296	35	26 600	13.8	34 000	13.9	42 800	14.0	53 200	14.1	65 300	14.2	79 300	14.2	95 500	14.3	114 000	14.4								
	55	-	-	-	-	-	-	41 700	22.2	51 700	22.3	63 200	22.3	76 600	22.3	92 000	22.3								
SZ310	35	27 000	14.2	34 700	14.4	43 900	14.5	54 700	14.5	67 200	14.6	81 600	14.6	98 000	14.5	116 700	14.4								
	55	-	-	-	-	-	-	41 900	22.9	52 200	22.9	64 100	22.9	77 800	22.9	93 400	22.8								
SZ320	35	29 200	14.7	37 300	14.9	47 000	15.0	58 400	15.1	71 800	15.2	87 200	15.2	105 000	15.2	125 400	15.2								
	55	-	-	-	-	-	-	45 700	23.6	56 700	23.7	69 400	23.8	84 200	23.8	101 300	23.9								
SZ322	35	28 700	14.9	36 800	15.0	46 300	15.1	57 500	15.1	70 600	15.2	85 800	15.3	103 300	15.4	123 300	15.5								
	55	-	-	-	-	-	-	45 100	23.9	55 900	24.0	68 400	24.0	82 900	24.0	99 600	24.0								
SZ350	35	30 500	15.9	39 100	16.1	49 300	16.2	61 200	16.3	75 200	16.4	91 200	16.4	109 500	16.4	130 300	16.4								
	55	-	-	-	-	-</																			

Scroll compressors – tandem



Outline n°	Model	Composition	Voltage code			Dimensions (mm)		
			4	6	7	L	D	H
			400/3/50 460/3/60	230/3/50	500/3/50 575/3/60			
①	SM/SZ170	S084 + S084	●	●	●	757	432	532
	SM/SZ180	S090 + S090	●	●	●	757	432	532
	SM/SZ200	S100 + S100	●	●	●	757	432	532
	SM/SZ220	S110 + S110	●	●	●	777	443	582
	SM/SZ230	S115 + S115	●	●	●	836	480	603
	SM/SZ242	S120 + S120	●	●	●	777	443	582
	SM248	S124 + S124	○			844	445	564
	SM/SZ250	S125 + S125	●	●	●	836	480	603
	SM272	S124 + S147	○			844	445	564
	SM294	S147 + S147	○			844	445	564
	SM/SZ296	S148 + S148	●	●	●	924	438	614
	SM/SZ320	S160 + S160	●	●	●	911	480	657
	SM/SZ322	S161 + S161	●	●	●	924	438	614
	SM/SZ350	S175 + S175	●	●	●	1004	495	717
②	SM/SZ370	S185 + S185	●	●	●	1004	495	717
	SM/SZ268	S148 + S120	●	●	●	930	441	614
	SM/SZ271	S161 + S110	●	●	●	930	441	614
	SM/SZ281	S161 + S120	●	●	●	930	441	614
	SM/SZ285	S160 + S125	●	●	●	884	480	657
	SM/SZ290	S175 + S115	●	●	●	924	496	705
	SM/SZ310	S185 + S125	●	●	●	924	496	705
	SY/SZ425	S240 + S185	○	○	○	1029	552	729
	SY/SZ485	S300 + S185	○	○	○	1029	552	740
	SY/SZ482	S240 + S240	○	○	○	984	510	730
③	SY/SZ540	S300 + S240	○	○	○	984	510	740
	SY/SZ600	S300 + S300	○	○	○	984	510	740
	SY/SZ620	S240 + S380	○			1058	595	770
	SY/SZ680	S300 + S380	○			1058	595	770
	SY/SZ760	S380 + S380	○			1063	595	770

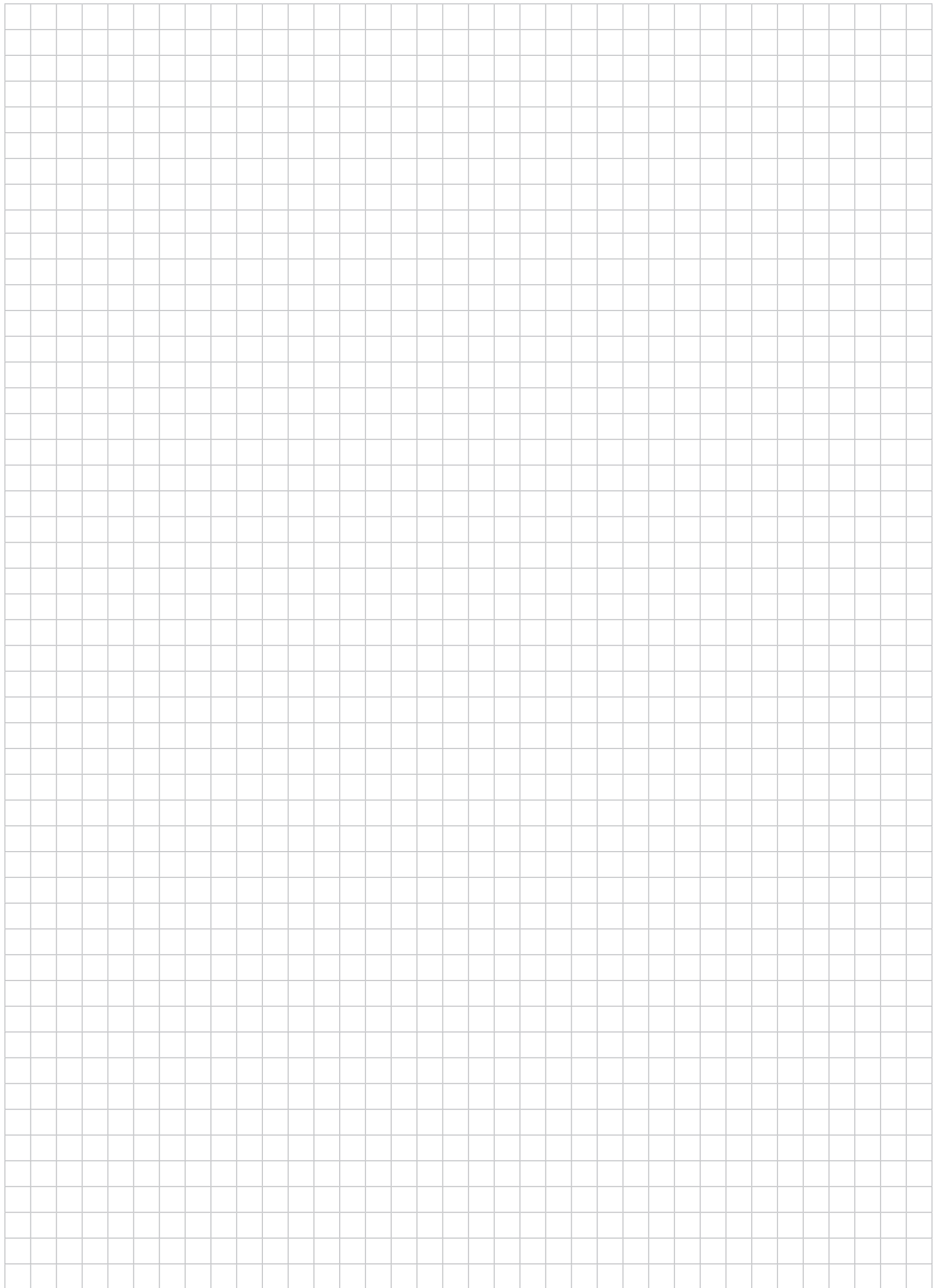
● Factory built tandems

○ Tandems to be achieved by assembly of individual compressors. Specific outline drawings of tandems, trio and quadro units are available, refer to FRCC.PC.005.

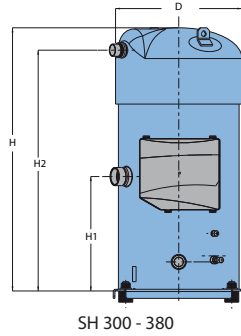
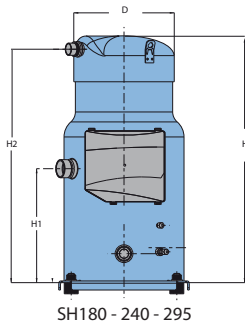
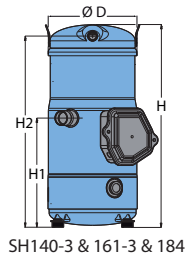
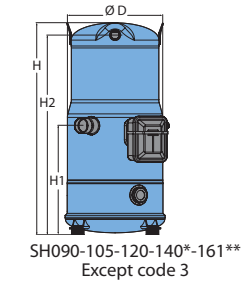
⚠ Note: Contact Danfoss product specialist for tandem compressor inquiries

⚠ Note: Factory built tandems not currently stocked in Australia

Notes



Scroll compressors – SH R410A



Model	D	H	H1	H2
SH090	243	482	235	451
SH105	243	540	278	509
SH120	243	540	278	509
SH140	243	540	278	509
SH161	243	540	278	509
SH184	243	555	300	525
SH180	318	682	331	647
SH240	318	682	331	647
SH295	318	682	331	647
SH300	333	723	331	664
SH380	333	755	331	696

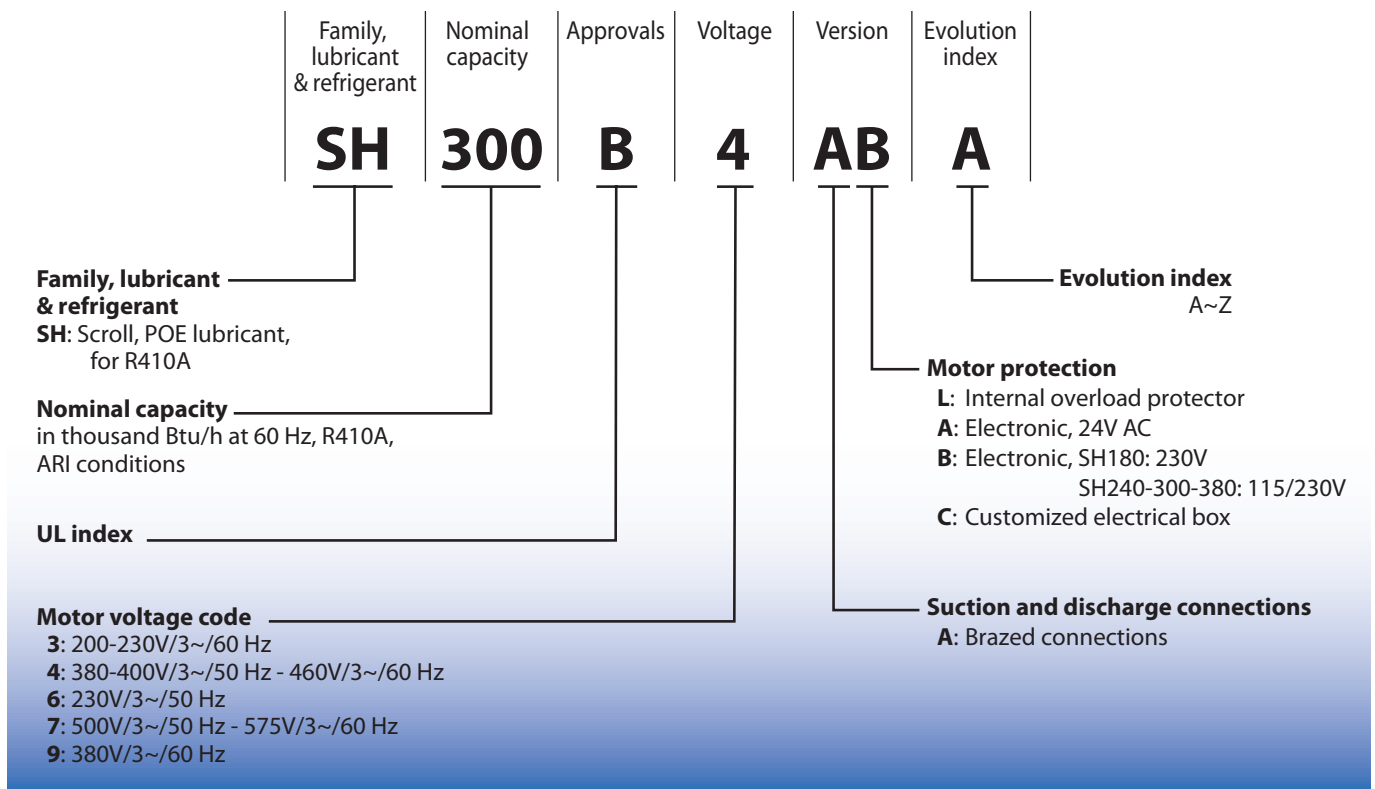
All dimensions in mm

Motor voltage code	Code 4	Code 6	Code 7
Nominal voltage	380-400V - 3 ph	230V - 3 ph	500V - 3 ph
Voltage range	340-440 V	207-253 V	450 - 550 V

⚠ Note: Limited number of codes currently stocked in Australia

⚠ Note: SH300A4ACA/I special junction box version code: 120H0123

Nameplate reference



Scroll compressors – SH series - R410A

Scroll compressors R410A · SH · 50 Hz

	Te	-20	-20	-15	-15	-10	-10	-5	-5	0	0	5	5	10	10	15	15
	Tc	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)	Cooling (W)	Pe (kW)
SH090-4	35	9600	4.97	12100	4.86	14900	4.78	18200	4.71	22000	4.66	26300	4.64	31300	4.64	36900	4.68
	45	8500	5.60	10500	6.08	13100	5.99	16100	5.91	19600	5.85	23500	5.82	28000	5.81	33200	5.83
	55	-	-	-	-	11300	7.09	13900	7.44	17000	7.38	20500	7.35	24500	7.33	29200	7.35
SH105-4	35	11800	5.93	14700	5.83	18000	5.74	21900	5.67	26300	5.62	31400	5.59	37100	5.58	43700	5.58
	45	10200	6.66	12900	7.24	15900	7.15	19400	7.08	23400	7.02	28100	6.99	33400	6.97	39400	6.97
	55	-	-	-	-	13900	8.35	16800	8.82	20400	8.77	24600	8.73	29400	8.72	34800	8.73
SH120-4	35	13400	6.56	16700	6.48	20500	6.38	24900	6.28	30000	6.20	35800	6.17	42400	6.21	49900	6.32
	45	11400	7.35	14600	8.05	18100	8.00	22100	7.92	26700	7.84	32000	7.77	38000	7.75	44900	7.78
	55	-	-	-	-	15200	9.34	19100	9.82	23200	9.79	27900	9.74	33300	9.71	39500	9.70
SH140-4	35	15500	7.38	19200	7.30	23400	7.20	28400	7.11	34000	7.06	40500	7.04	47800	7.09	56100	7.22
	45	13700	8.53	16900	9.12	20800	9.04	25200	8.93	30400	8.83	36200	8.73	42900	8.68	50500	8.67
	55	-	-	-	-	18000	10.75	21700	11.20	26200	11.08	31400	10.95	37400	10.83	44200	10.72
SH161-4	35	17600	7.78	21700	7.77	26500	7.79	32100	7.83	38500	7.88	45800	7.92	54100	7.93	63600	7.91
	45	15100	9.80	19100	9.72	23500	9.72	28600	9.75	34400	9.79	41000	9.83	48700	9.87	57300	9.88
	55	-	-	-	-	19900	12.37	24600	12.16	29700	12.17	35700	12.20	42500	12.23	50300	12.25
SH180-4	35	19200	9.09	24000	9.12	29600	9.14	36000	9.16	43500	9.19	52100	9.23	61800	9.30	72700	9.38
	45	16600	11.26	21000	11.30	26200	11.33	32100	11.34	39000	11.34	46800	11.34	55700	11.35	65800	11.37
	55	-	-	-	-	22300	14.12	27600	14.12	33700	14.10	40700	14.07	48700	14.03	57800	13.99
SH184-4	35	19800	9.25	24500	9.16	29900	9.09	36200	9.04	43400	9.04	51700	9.08	61200	9.20	71900	9.39
	45	17800	10.65	21600	11.43	26500	11.34	32200	11.25	38700	11.20	46300	11.18	54800	11.21	64600	11.31
	55	-	-	-	-	23400	13.36	27800	13.98	33600	13.89	40200	13.82	47900	13.78	56600	13.80
SH240-4	35	26700	11.95	33200	12.02	40700	12.06	49200	12.11	59000	12.17	70200	12.27	82800	12.43	97100	12.65
	45	23300	14.80	29300	14.90	36100	14.97	43900	15.02	52800	15.06	63000	15.12	74500	15.21	87400	15.34
	55	-	-	-	-	30900	18.57	37800	18.64	45800	18.69	54800	18.72	65100	18.77	76800	18.85
SH295-4	35	33300	14.42	40900	14.61	49800	14.77	60200	14.95	72100	15.19	85700	15.53	101200	16.03	118600	16.72
	45	29400	17.53	36300	17.83	44400	18.05	53800	18.23	64600	18.41	76900	18.64	91000	18.96	107000	19.42
	55	-	-	-	-	38500	22.00	46700	22.27	56200	22.48	67200	22.68	79800	22.91	94100	23.22
SH300-4	35	34000	14.96	42000	15.13	51300	15.30	62100	15.49	74400	15.70	88500	15.96	104600	16.27	122700	16.66
	45	29800	18.35	37100	18.51	45500	18.67	55200	18.84	66500	19.03	79300	19.26	93900	19.55	110500	19.91
	55	-	-	-	-	39000	22.98	47600	23.13	57500	23.30	68900	23.50	82000	23.75	96900	24.07
SH380-4	35	40400	18.41	50000	18.58	61100	18.70	74000	18.83	88900	18.99	105900	19.24	125300	19.61	147200	20.15
	45	35500	22.35	44200	22.65	54300	22.85	66000	22.99	79600	23.12	95100	23.26	112900	23.48	133000	23.80
	55	-	-	-	-	46600	27.95	57000	28.19	69000	28.35	82900	28.47	98900	28.61	117100	28.79

To: Evaporating temperature in °C
Tc: Condensing temperature in °C

Qo: Cooling capacity in W
Pe: Power input in kW

Superheat = 11.1 K
Subcooling = 8.3 K

Voltage: 400 V / 3 / 50 Hz

Further reference - Ordering



Compressor model	Connections	Mounting feet	Motor protection	Nbr	Code no. for Industrial pack		Code no. for Single pack		
					4	4	6	7	
					460/3/60 380-400/3/50	460/3/60 380-400/3/50	230/3/50	575/3/60 500/3/50	
SH090	Brazed	Flexible	Internal	8	120H0004	120H0003	120H0005	120H0007	
SH105	Brazed	Flexible	Internal	8	120H0212	120H0211	120H0213	120H0215	
SH120	Brazed	Flexible	Internal	8	120H0014	120H0013	120H0015	120H0017	
SH140	Brazed	Flexible	Internal	8	120H0202	120H0201	120H0203	120H0205	
SH161	Brazed	Flexible	Internal	8	120H0024	120H0023	120H0025	120H0027	
SH184	Brazed	Flexible	Internal	8	120H0362	120H0361	120H0363	120H0365	
SH180 ①	Brazed	rigid	Module 24V AC *	6	120H0268	120H0267	-	120H0269	
	Brazed	rigid	Module 230 V *	6	120H0276	120H0275	-	120H0459	
SH240 ①	Brazed	rigid	Module 24V AC *	6	120H0292	120H0291	-	120H0293	
	Brazed	rigid	Module 115-230 V *	6	120H0300	120H0299	-	120H0467	
SH245 ①	Brazed	rigid	Module 24V AC *	6	120H0292	120H0825	-	120H0293	
	Brazed	rigid	Module 115-230 V *	6	120H0300	120H0827	-	120H0467	
SH300 ①	Brazed	rigid	Module 24V AC *	4	120H0238	120H0237	-	120H0241	
	Brazed	rigid	Module 115-230 V *	4	120H0240	120H0239	-	120H0475	
SH380 ①	Brazed	rigid	Module 24V AC *	4	120H0254	120H0253	-	120H0257	
	Brazed	rigid	Module 115-230 V *	4	120H0256	120H0255	-	120H0483	

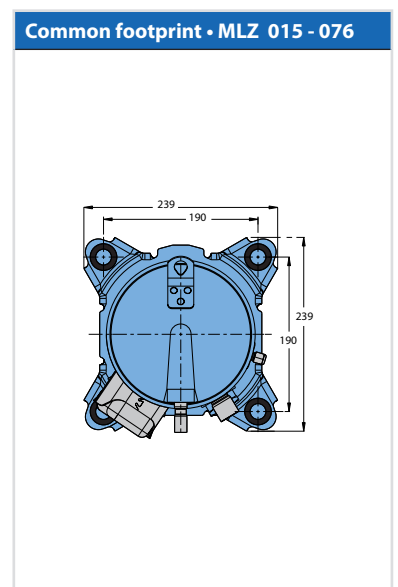
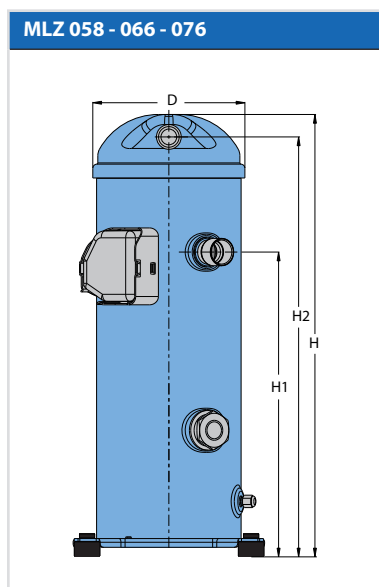
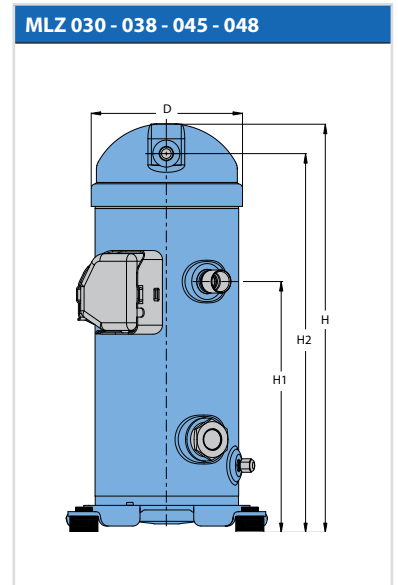
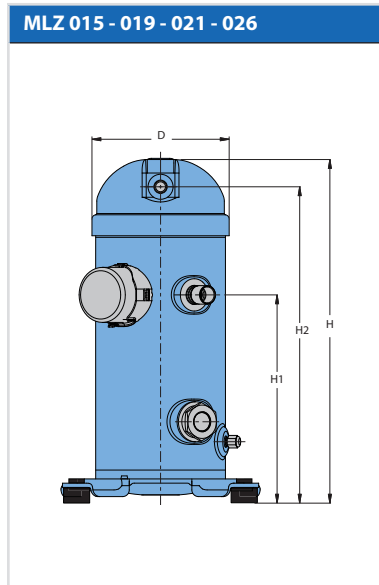
① models with rigid mounting feet are for parallel mounting only. For single mounting use flexible grommet kit ref 8156138

* Electronic motor protection, module located in terminal box

⚠ Note: SH240A4ABC/I/P03 Single pack code 120H0076

Scroll compressors · MLZ - Refrigeration Scrolls

Model	Dimensions (mm)			
	D	H	H1	H2
MLZ 015	165	412	250	379
MLZ 019	165	412	250	379
MLZ 021	165	412	250	379
MLZ 026	165	412	250	379
MLZ 030	184	455	280	422
MLZ 038	184	455	280	422
MLZ 045	184	455	280	422
MLZ 048	184	455	280	422
MLZ 058	185	536	369	509
MLZ 066	185	545	369	518
MLZ 076	185	545	369	518



Nomenclature

	Type	Size	Motor	Features	Other features										
Application M: medium temperature refrigeration	MLZ	021	T 4 L	P 9	<table border="1"> <tr> <td>Oil sight glass</td> <td>Oil equalisation</td> <td>Oil drain</td> <td>LP gauge port</td> <td>Gas equalisation port</td> </tr> <tr> <td>9 Threaded</td> <td>None</td> <td>Schrader</td> <td>None</td> <td>None</td> </tr> </table>	Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalisation port	9 Threaded	None	Schrader	None	None
Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalisation port											
9 Threaded	None	Schrader	None	None											
Family, Refrigerant & lubricant LZ: R404A - R507 - R134a - R22, PVE lubricant															
Nominal capacity In thousand Btu/h at 60 Hz, ARI, MBP conditions															
Model variation T: design optimised for refrigeration															
					Tubing and electrical connections P: brazed connections, spade terminals C: brazed connections, screw terminals										
					Motor protection L: internal motor protection										
					Motor voltage code 1: 208-230V/1~/60 Hz 2: 200-220V/3~/50 Hz & 208-230V/3~/60 Hz 4: 380-400V/3~/50 Hz & 460V/3~/60 Hz 5: 220-240V/1~/50 Hz 7: 500V/3~/50 Hz & 575V/ 3~/60 Hz 9: 380V/3~/60 Hz										

Scroll compressors · MLZ - Refrigeration Scrolls

50 Hz

Model	HP	Nominal cooling capacity *		Power input *	Efficiency *		Swept volume	Displacement	Oil charge	Net weight (with oil)	
		W	Btu/h		COP	EER					
				kW	W/W	Btu/h/W	cm ³ /rev	m ³ /h	Litres	kg	
R404A **	MLZ015	2	3300	11300	1.75	1.89	6.44	33.8	5.9	1.1	31
	MLZ019	2 ½	4500	15200	2.16	2.06	7.05	43.5	7.6	1.1	31
	MLZ021	3	4700	16100	2.27	2.08	7.08	46.2	8.0	1.1	31
	MLZ026	3 ½	5900	20100	2.82	2.09	7.12	57.1	9.9	1.1	31
	MLZ030	4	7100	24200	3.34	2.12	7.25	68.8	12.0	1.6	37
	MLZ038	5	8500	28800	3.97	2.13	7.27	81.0	14.1	1.6	37
	MLZ042	5.5	8900	30300	4.72	1.88	6.43	93.1	16.2	1.6	37
	MLZ045	6	10200	34700	4.81	2.11	7.21	98.6	17.2	1.6	37
	MLZ048	7	11100	37900	5.17	2.14	7.32	107.5	18.7	1.6	37
	MLZ058	7 ½	12800	43800	6.21	2.07	7.05	126.0	21.9	2.7	44
	MLZ066	9	15200	51800	6.92	2.19	7.49	148.8	25.9	2.7	45
	MLZ076	10	17300	59100	7.93	2.18	7.46	162.4	28.3	2.7	45
R134a	MLZ015	2	2000	7000	1.02	2.01	6.87	33.8	5.9	1.1	31
	MLZ019	2 ½	2600	9000	1.28	2.05	7.01	43.5	7.6	1.1	31
	MLZ021	3	2800	9600	1.33	2.11	7.20	46.2	8.0	1.1	31
	MLZ026	3 ½	3400	11800	1.62	2.13	7.26	57.1	9.9	1.1	31
	MLZ030	4	4200	14200	1.93	2.16	7.38	68.8	12.0	1.6	37
	MLZ038	5	4900	16700	2.34	2.09	7.13	81.0	14.1	1.6	37
	MLZ042	5.5	5300	18200	2.74	1.95	6.64	93.1	16.2	1.6	37
	MLZ045	6	6000	20600	2.69	2.24	7.66	98.6	17.2	1.6	37
	MLZ048	7	6400	21900	2.90	2.21	7.54	107.5	18.7	1.6	37
	MLZ058	7 ½	7700	26100	3.61	2.12	7.25	126.0	21.9	2.7	44
	MLZ066	9	8900	30400	4.10	2.17	7.41	148.8	25.9	2.7	45
	MLZ076	10	9900	33900	4.67	2.13	7.25	162.4	28.3	2.7	45

* at EN12900 conditions: To= -10°C, Tc= 45°C, RGT= 20°C, SC= 0K

** R507 performance data are nearly identical to R404A performance data

Motor voltage code 4: 400V/3~/50 Hz & 460V/3~/60 Hz

MLZ/MLM042: motor voltage code 5: 220-240V/1~/50 Hz

 Note: Ordering codes see next page.


Scroll compressors MLZ - Ordering

Single pack

	Compressors	Model variation	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	-	121U8036	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	-	-	-

Industrial pack - Pallet 12 compressors (no individual packing)

	Compressors	Model variation	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	-	121U8035	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	-	-	-

 Note: Only select codes currently stocked in Australia.
 Motor voltage code 4: 400V/3/50Hz
 code 5: 220 - 240V/1/50Hz

Scroll compressors MLZ - R404A/R507

Model	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	Qo	Pe	Qo	Pe	
50Hz	MLZ015T4	30	2 300	1.2	2 900	1.2	3 500	1.2	4 300	1.2	5 200	1.2	6 200	1.2	7 400	1.1	8 700	1.1				
		40	1 900	1.6	2 400	1.6	3 000	1.6	3 700	1.5	4 400	1.5	5 300	1.5	6 300	1.5	7 400	1.5				
		50	-	-	1 800	2.1	2 400	2.0	2 900	2.0	3 600	1.9	4 300	1.9	5 100	1.9	6 000	1.9				
	MLZ019T4	30	3 000	1.5	3 800	1.5	4 600	1.5	5 600	1.5	6 700	1.5	8 000	1.5	9 500	1.5	11 200	1.6				
		40	2 600	1.9	3 300	1.9	4 000	1.9	4 800	1.9	5 800	1.9	6 900	1.9	8 200	1.9	9 700	1.9				
		50	-	-	2 700	2.4	3 300	2.4	4 000	2.4	4 800	2.4	5 800	2.4	6 800	2.4	8 100	2.3				
	MLZ021T4	30	3 200	1.6	4 000	1.6	4 900	1.6	5 900	1.6	7 100	1.6	8 500	1.6	10 000	1.7	11 800	1.7				
		40	2 800	2.0	3 500	2.0	4 300	2.0	5 100	2.0	6 200	2.0	7 300	2.0	8 700	2.0	10 300	2.0				
		50	-	-	2 900	2.5	3 500	2.5	4 300	2.6	5 100	2.5	6 100	2.5	7 300	2.5	8 600	2.4				
	MLZ026T4	30	4 100	2.0	5 000	2.0	6 100	2.0	7 400	2.0	8 900	2.0	10 600	2.0	12 500	2.0	14 700	2.0				
		40	3 500	2.5	4 300	2.5	5 300	2.5	6 400	2.5	7 700	2.5	9 200	2.5	10 900	2.5	12 800	2.5				
		50	-	-	3 600	3.2	4 400	3.2	5 300	3.2	6 400	3.2	7 700	3.1	9 100	3.1	10 700	3.2				
	MLZ030T4	30	4 900	2.3	6 000	2.4	7 300	2.4	8 900	2.4	10 700	2.4	12 700	2.4	15 100	2.4	17 700	2.3				
		40	4 200	2.9	5 200	3.0	6 400	3.0	7 700	3.0	9 300	3.0	11 100	3.0	13 100	3.0	15 400	2.9				
		50	-	-	4 300	3.7	5 300	3.7	6 400	3.7	7 700	3.7	9 200	3.7	11 000	3.7	12 900	3.7				
	MLZ038T4	30	5 800	2.8	7 200	2.8	8 800	2.8	10 600	2.9	12 800	2.9	15 200	2.9	18 000	2.8	21 200	2.7				
		40	5 000	3.6	6 200	3.5	7 600	3.5	9 200	3.6	11 100	3.6	13 200	3.6	15 600	3.6	18 400	3.5				
		50	-	-	5 100	4.5	6 300	4.4	7 700	4.4	9 200	4.4	11 000	4.5	13 100	4.4	15 400	4.4				
	MLZ042T4	30	6 300	3.2	7 900	3.3	9 800	3.4	12 000	3.5	14 500	3.6	17 500	3.6	20 900	3.6	24 800	3.5				
		40	5 500	4.1	6 900	4.1	8 500	4.2	10 400	4.2	12 500	4.3	15 100	4.3	18 000	4.3	21 500	4.3				
50		-	-	5 800	5.3	7 100	5.3	8 600	5.3	10 400	5.3	12 600	5.3	15 100	5.3	18 100	5.3					
MLZ045T4	30	7 000	3.4	8 600	3.4	10 600	3.4	12 800	3.5	15 400	3.5	18 300	3.5	21 600	3.4	25 300	3.2					
	40	6 100	4.3	7 500	4.3	9 100	4.3	11 100	4.3	13 300	4.3	15 900	4.3	18 800	4.3	22 000	4.2					
	50	-	-	6 200	5.5	7 600	5.4	9 200	5.4	11 100	5.4	13 200	5.4	15 700	5.4	18 500	5.3					
MLZ048T4	30	7 600	3.7	9 400	3.7	11 500	3.7	13 900	3.7	16 700	3.7	19 900	3.7	23 600	3.7	27 900	3.6					
	40	6 600	4.6	8 200	4.6	10 000	4.6	12 100	4.6	14 500	4.6	17 300	4.6	20 500	4.6	24 200	4.6					
	50	-	-	6 800	5.8	8 300	5.8	10 100	5.8	12 100	5.8	14 400	5.8	17 100	5.8	20 300	5.7					
MLZ058T4	30	9 300	4.3	11 300	4.4	13 800	4.5	16 900	4.5	20 400	4.5	24 400	4.6	28 900	4.6	33 700	4.7					
	40	7 600	5.5	9 300	5.6	11 600	5.6	14 300	5.6	17 400	5.5	20 900	5.6	24 800	5.6	29 000	5.8					
	50	-	-	7 100	7.2	9 000	7.1	11 300	7.0	14 000	6.9	17 000	6.9	20 300	6.9	23 900	7.1					
MLZ066T4	30	10 400	4.9	12 900	5.0	15 700	5.0	19 000	5.1	22 800	5.2	27 200	5.3	32 300	5.5	38 000	5.8					
	40	9 000	6.1	11 200	6.1	13 600	6.2	16 500	6.2	19 800	6.3	23 600	6.4	27 900	6.5	32 800	6.7					
	50	-	-	9 200	7.7	11 400	7.7	13 800	7.7	16 600	7.7	19 700	7.8	23 300	7.8	27 400	7.9					
MLZ076T4	30	12 200	5.7	15 200	5.7	18 500	5.7	22 400	5.8	26 800	5.9	31 900	6.1	37 800	6.2	44 600	6.3					
	40	10 600	7.0	13 100	7.0	15 900	7.1	19 100	7.1	22 900	7.2	27 200	7.3	32 300	7.4	38 200	7.5					
	50	-	-	11 000	8.7	13 000	8.7	15 400	8.8	18 300	8.9	21 800	8.9	25 900	9.0	30 800	9.0					
60Hz	MLZ015T4	30	2 800	1.5	3 500	1.5	4 300	1.5	5 200	1.5	6 200	1.5	7 500	1.4	8 900	1.4	10 500	1.4				
		40	2 300	1.9	2 900	1.9	3 600	1.9	4 500	1.9	5 400	1.9	6 400	1.8	7 600	1.8	9 000	1.8				
		50	-	-	2 300	2.3	3 000	2.3	3 700	2.4	4 400	2.3	5 300	2.3	6 300	2.3	7 500	2.3				
	MLZ019T4	30	3 800	1.8	4 600	1.8	5 700	1.8	6 800	1.8	8 200	1.8	9 700	1.8	11 500	1.9	13 500	1.9				
		40	3 200	2.2	4 000	2.3	4 900	2.3	5 900	2.3	7 100	2.3	8 400	2.3	10 000	2.3	11 700	2.3				
		50	-	-	3 300	2.8	4 100	2.8	5 000	2.9	6 000	2.9	7 100	2.9	8 400	2.8	9 900	2.8				
	MLZ021T4	30	4 000	1.8	4 900	1.9	6 000	2.0	7 300	2.0	8 700	2.0	10 400	2.0	12 200	2.0	14 200	2.1				
		40	3 400	2.3	4 300	2.4	5 200	2.4	6 300	2.5	7 600	2.4	9 000	2.4	10 600	2.4	12 400	2.5				
		50	-	-	3 600	3.0	4 400	3.1	5 300	3.1	6 400	3.0	7 600	3.0	9 000	3.0	10 500	3.0				
	MLZ026T4	30	5 000	2.3	6 100	2.4	7 500	2.5	9 100	2.5	10 900	2.5	12 900	2.5	15 200	2.5	17 800	2.5				
		40	4 300	2.9	5 300	3.0	6 500	3.1	7 900	3.1	9 400	3.1	11 200	3.1	13 200	3.1	15 400	3.1				
		50	-	-	4 400	3.7	5 400	3.8	6 600	3.8	7 900	3.8	9 400	3.8	11 100	3.8	13 000	3.8				
	MLZ030T4	30	5 800	2.7	7 200	2.8	8 800	2.8	10 700	2.8	12 800	2.9	15 200	2.9	17 800	2.8	20 800	2.8				
		40	5 100	3.5	6 300	3.5	7 600	3.5	9 300	3.5	11 100	3.5	13 200	3.5	15 500	3.5	18 200	3.5				
		50	-	-	5 200	4.3	6 400	4.3	7 700	4.3	9 300	4.4	11 100	4.4	13 100	4.4	15 400	4.4				
	MLZ038T4	30	7 000	3.4	8 600	3.3	10 500	3.4	12 700	3.4	15 300	3.4	18 100	3.4	21 400	3.4	25 100	3.3				
		40	6 000	4.2	7 500	4.2	9 200	4.2	11 100	4.2	13 300	4.2	15 800	4.3	18 600	4.2	21 800	4.2				
		50	-	-	6 200	5.2	7 700	5.2	9 300	5.2	11 200	5.3	13 300	5.3	15 600	5.3	18 300	5.2				
	MLZ042T4	30	8 100	3.9	10 100	4.0	12 300	4.1	14 800	4.1	17 700	4.0	21 100	4.0	24 800	4.0	29 100	4.1				
		40	7 000	5.0	8 700	5.1	10 700	5.1	12 900	5.1	15 400	5.1	18 300	5.1	21 600	5.0	25 300	5.1				
50		-	-	7 200	6.4	8 900	6.4	10 800	6.4	12 900	6.4	15 400	6.3	18 200	6.3	21 400	6.3					
MLZ045T4	30	8 500	4.0	10 500	4.0	12 800	4.0	15 500	4.1	18 600	4.1	22 100	4.1	26 000	4.1	30 400	4.1					
	40	7 400	4.9	9 100	5.0	11 100	5.0	13 500	5.0	16 100	5.0	19 100	5.0	22 600	5.1	26 400	5.1					
	50	-	-	7 600	6.3	9 300	6.3	11 300	6.3	13 500</												

Scroll compressors MLZ - R134a

Model	To	-10			-5		0		5		10		15	
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe
50Hz	MLZ015T4	30	2 400	0.7	3 000	0.7	3 700	0.8	4 500	0.8	5 400	0.8	-	-
		40	-	-	2 700	0.9	3 300	0.9	4 100	0.9	4 900	0.9	5 900	1.0
		50	-	-	2 400	1.1	3 000	1.1	3 600	1.2	4 400	1.2	5 200	1.2
	MLZ019T4	30	3 100	0.9	3 800	1.0	4 700	1.0	5 800	1.0	7 000	1.0	-	-
		40	-	-	3 500	1.2	4 300	1.2	5 200	1.2	6 300	1.2	7 600	1.2
		50	-	-	3 100	1.4	3 800	1.5	4 700	1.5	5 600	1.5	6 700	1.5
	MLZ021T4	30	3 300	1.0	4 100	1.0	5 000	1.0	6 100	1.0	7 400	1.0	-	-
		40	-	-	3 700	1.2	4 600	1.2	5 600	1.2	6 700	1.3	8 000	1.3
		50	-	-	3 300	1.5	4 000	1.5	4 900	1.5	6 000	1.5	7 200	1.6
	MLZ026T4	30	4 100	1.2	5 100	1.2	6 200	1.2	7 600	1.2	9 100	1.3	-	-
		40	-	-	4 600	1.5	5 600	1.5	6 900	1.5	8 300	1.5	9 900	1.6
		50	-	-	4 100	1.8	5 000	1.8	6 100	1.9	7 400	1.9	8 900	1.9
	MLZ030T4	30	4 900	1.4	6 100	1.4	7 500	1.4	9 100	1.5	11 000	1.5	-	-
		40	-	-	5 500	1.8	6 800	1.8	8 300	1.8	10 000	1.8	12 000	1.8
		50	-	-	4 900	2.2	6 000	2.2	7 400	2.2	8 900	2.2	10 700	2.3
	MLZ038T4	30	5 800	1.7	7 200	1.7	8 800	1.8	10 700	1.8	12 900	1.8	-	-
		40	-	-	6 500	2.2	8 000	2.2	9 700	2.2	11 700	2.2	14 000	2.2
		50	-	-	5 700	2.6	7 100	2.7	8 700	2.7	10 500	2.7	12 500	2.7
	MLZ042T5	30	6 600	2.1	8 200	2.2	10 100	2.2	12 100	2.3	14 400	2.4	-	-
		40	-	-	7 500	2.6	9 200	2.6	11 100	2.7	13 200	2.7	15 700	2.8
50		-	-	6 500	3.1	8 100	3.1	9 900	3.2	11 800	3.2	14 100	3.2	
MLZ045T4	30	7 100	2.0	8 900	2.0	11 000	2.0	13 300	2.0	16 000	2.0	-	-	
	40	-	-	8 000	2.5	9 900	2.5	12 100	2.5	14 600	2.5	17 400	2.6	
	50	-	-	7 100	3.0	8 800	3.1	10 800	3.1	13 000	3.1	15 600	3.2	
MLZ048T4	30	7 600	2.1	9 500	2.1	11 600	2.2	14 100	2.2	16 900	2.2	-	-	
	40	-	-	8 500	2.7	10 500	2.7	12 800	2.7	15 400	2.7	18 300	2.7	
	50	-	-	7 500	3.3	9 300	3.3	11 400	3.4	13 800	3.4	16 400	3.4	
MLZ058T4	30	9 100	2.6	11 300	2.7	13 800	2.8	16 600	2.8	20 000	2.9	-	-	
	40	-	-	10 100	3.3	12 400	3.4	15 100	3.4	18 100	3.4	21 500	3.4	
	50	-	-	9 000	4.1	11 100	4.1	13 400	4.2	16 100	4.2	19 200	4.1	
MLZ066T4	30	10 500	3.0	13 100	3.1	16 000	3.1	19 300	3.2	23 200	3.2	-	-	
	40	-	-	11 800	3.8	14 500	3.8	17 500	3.9	21 100	3.9	25 000	3.9	
	50	-	-	10 400	4.6	12 800	4.7	15 600	4.7	18 800	4.8	22 300	4.7	
MLZ076T4	30	11 800	3.4	14 600	3.5	17 900	3.6	21 600	3.7	25 800	3.7	-	-	
	40	-	-	13 100	4.3	16 100	4.4	19 600	4.4	23 500	4.4	28 000	4.4	
	50	-	-	11 600	5.3	14 300	5.4	17 400	5.4	21 000	5.4	25 000	5.3	
60Hz	MLZ015T4	30	3 000	0.9	3 700	0.9	4 600	0.9	5 500	0.9	6 600	1.0	-	-
		40	-	-	3 400	1.1	4 200	1.1	5 100	1.1	6 100	1.2	7 200	1.2
		50	-	-	3 000	1.3	3 700	1.4	4 600	1.4	5 500	1.4	6 500	1.4
	MLZ019T4	30	3 800	1.2	4 800	1.2	5 900	1.2	7 100	1.2	8 500	1.3	-	-
		40	-	-	4 300	1.4	5 400	1.5	6 500	1.5	7 800	1.5	9 300	1.5
		50	-	-	3 900	1.7	4 800	1.8	5 900	1.8	7 100	1.8	8 400	1.8
	MLZ021T4	30	4 100	1.2	5 100	1.2	6 200	1.2	7 600	1.2	9 100	1.3	-	-
		40	-	-	4 600	1.5	5 700	1.5	6 900	1.5	8 300	1.5	9 900	1.6
		50	-	-	4 100	1.8	5 100	1.8	6 200	1.9	7 500	1.9	8 900	1.9
	MLZ026T4	30	5 000	1.4	6 300	1.5	7 700	1.5	9 300	1.5	11 200	1.6	-	-
		40	-	-	5 700	1.8	7 000	1.8	8 600	1.9	10 300	1.9	12 200	1.9
		50	-	-	5 100	2.2	6 300	2.2	7 700	2.3	9 300	2.3	11 000	2.3
	MLZ030T4	30	6 000	1.8	7 500	1.8	9 300	1.8	11 300	1.8	13 500	1.9	-	-
		40	-	-	6 800	2.2	8 500	2.2	10 300	2.2	12 400	2.3	14 700	2.3
		50	-	-	6 100	2.6	7 600	2.7	9 300	2.7	11 200	2.8	13 300	2.8
	MLZ038T4	30	7 100	2.1	8 800	2.1	10 900	2.2	13 200	2.2	15 900	2.3	-	-
		40	-	-	8 000	2.6	9 900	2.6	12 100	2.7	14 600	2.7	17 300	2.8
		50	-	-	7 200	3.1	8 900	3.2	10 900	3.2	13 200	3.3	15 700	3.3
	MLZ042T1	30	8 000	2.6	9 900	2.6	12 100	2.7	14 600	2.8	17 300	2.8	-	-
		40	-	-	9 000	3.1	11 000	3.2	13 400	3.2	16 000	3.3	19 000	3.4
50		-	-	7 900	3.7	9 800	3.8	11 900	3.8	14 400	3.9	17 200	4.0	
MLZ045T4	30	8 800	2.4	11 000	2.5	13 500	2.5	16 300	2.6	19 500	2.6	-	-	
	40	-	-	9 900	3.0	12 200	3.1	14 800	3.1	17 800	3.2	21 100	3.3	
	50	-	-	8 600	3.7	10 700	3.8	13 100	3.8	15 800	3.9	18 900	3.9	
MLZ048T4	30	9 300	2.6	11 600	2.7	14 200	2.7	17 200	2.8	20 600	2.9	-	-	
	40	-	-	10 400	3.3	12 900	3.3	15 600	3.4	18 800	3.4	22 200	3.5	
	50	-	-	9 200	4.0	11 300	4.1	13 900	4.1	16 700	4.2	19 900	4.2	
MLZ058T4	30	11 100	3.1	13 700	3.2	16 800	3.3	20 200	3.5	24 000	3.6	-	-	
	40	-	-	12 400	4.0	15 200	4.1	18 300	4.2	21 900	4.2	25 900	4.3	
	50	-	-	11 000	4.8	13 500	5.0	16 300	5.1	19 600	5.1	23 300	5.1	
MLZ066T4	30	12 700	3.6	15 700	3.7	19 200	3.8	23 200	4.0	27 600	4.1	-	-	
	40	-	-	14 200	4.5	17 400	4.7	21 100	4.8	25 200	4.9	29 800	4.9	
	50	-	-	12 600	5.5	15 500	5.7	18 800	5.8	22 500	5.9	26 700	5.9	
MLZ076T4	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	

Legend: To: Evaporating temperature in °C
Tc: Condensing temperature in °C
Capacity data at other conditions are available in the datasheets at: www.danfoss.com/odsg

Qo: Cooling capacity in W
Pe: Power input in kW

RGT = 20°C
Subcooling = 0 K

Scroll compressors MLZ - spare parts

Run capacitors for PSC wiring

Type	Code n°	Description	Application	Packaging	Pack size
40 µF	8173231	PSC wiring 40 µF	MLZ015	Multipack	10
70 µF	120Z0051	PSC wiring Run Capacitor 70 µF, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ019-021-026	Multipack	10
50 µF	8173233	PSC wiring Run Capacitor 50 µF, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ030	Multipack	10
55 µF	8173234	PSC wiring Run Capacitor 55 µF, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ038-042 -045-048	Multipack	10

Start capacitors and starting relay for CSR wiring

Type	Code n°	Description	Application	Packaging	Pack size
145-175 µF	120Z0399	CSR wiring Start Capacitor 145-175 µF, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ015-019-021-026	Multipack	10
161-193 µF	120Z0400	CSR wiring Start Capacitor 161-193 µF, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ030	Multipack	10
88-108 µF	8173001	CSR wiring Start Capacitor 88-108 µF, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ038-042-045-048	Multipack	10
RVA9CKL	120Z0393	CSR wiring Starting Relay, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ015-019-021-026	Multipack	10
RVA3EKL	120Z0394	CSR wiring Starting Relay, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ030	Multipack	10
RVA4GKL	120Z0395	CSR wiring Starting Relay, motor voltage code 5 - 220-240V / 1 / 50Hz	MLZ038-042-045-048	Multipack	10

Rotolock adaptor set

Type	Code n°	Description	Application	Packaging	Pack size
	120Z0126	Rotolock adaptor set (1-1/4" ~ 3/4") , (1" ~ 1/2")	MLZ 015-019-021-026	Multipack	6
	120Z0127	Rotolock adaptor set (1-1/4" ~ 7/8") , (1" ~ 1/2")	MLZ 030-038-042-045	Multipack	6
	120Z0128	Rotolock adaptor set (1-1/4" ~ 7/8") , (1-1/4" ~ 3/4")	MLZ 048	Multipack	6
	120Z0129	Rotolock adaptor set (1-3/4" ~ 1-1/8") , (1-1/4" ~ 7/8")	MLZ 058-066-076	Multipack	6

Rotolock adaptor

Type	Code n°	Description	Application	Packaging	Pack size
	120Z0366	Rotolock adaptor (1-1/4" ~ 3/4")	MLZ 015-019-021-026 suction	Multipack	10
	120Z0367	Rotolock adaptor (1-1/4" ~ 7/8")	MLZ 030-038-042-045-048 suction	Multipack	10
	120Z0364	Rotolock adaptor (1-3/4" ~ 1-1/8")	MLZ 058-066-076 suction	Multipack	10
	120Z0365	Rotolock adaptor (1" ~ 1/2")	MLZ 015-019-021-026-030-038-042-045 discharge	Multipack	10
	120Z0366	Rotolock adaptor (1-1/4" ~ 3/4")	MLZ 048 discharge	Multipack	10
	120Z0367	Rotolock adaptor (1-1/4" ~ 7/8")	MLZ 058-066-076 discharge	Multipack	10

Crankcase heater

Type	Code No	Description	Application	Packaging	Pack Size
	120Z5040	Belt type crankcase heater, 70 W, 240 V, CE mark, UL (Wire length: 1270 mm)	MLZ/MLM 015-019-021-026	Multipack	4
	120Z5041	Belt type crankcase heater, 70 W, 400/460 V, CE mark, UL (Wire length: 1270 mm)	MLZ/MLM 015-019-021-026-030-038-045-048-058-066-076	Multipack	4
	120Z5042	Belt type crankcase heater, 70 W, 575 V, CE mark, UL (Wire length: 1270 mm)	MLZ/MLM 015-019-021-026-030-038-045-048-058-066-076	Multipack	4
	120Z0059	Belt type crankcase heater, 65 W, 230V, CE mark, UL (Wire length: 1000 mm)	MLZ/MLM 030-038-042-045-048-058-066-076	Multipack	6
	120Z0060	Belt type crankcase heater, 65 W, 400 V, CE mark, UL (Wire length: 1000 mm)	MLZ/MLM 030-038-045-048-058-066-076	Multipack	6

 Note: Limited codes currently stocked in Australia.

Scroll compressors MLZ - spare parts

Discharge temperature protection

Type	Code No	Description	Application	Packaging	Pack Size
	7750009	Discharge thermostat kit	All models	Multipack	10
	7973008	Discharge thermostat kit	All models	Industry pack	50

Magnetic discharge non return valve

Type	Code No	Description	Application	Packaging	Pack Size
	120Z5046	Magnetic discharge non return valve	MLZ/MLM058-066-076	Multipack	6

Lubricant

Type	Code No	Description	Application	Packaging	Pack Size
320HV	120Z5034	PVE lubricant, 0.95 litre can	MLZ	Multipack	12

Mounting hardware

Type	Code No	Description	Application	Packaging	Pack Size
	120Z5005	Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	All models	Single pack	1

IP54 upgrade kit

Type	Code No	Description	Application	Packaging	Pack Size
	118U0056	IP54 upgrade kit	MLZ015 - 019 - 021 - 026	Multipack	6
	118U0057	IP54 upgrade kit	MLZ030 - 038 - 042-045 - 048 - 058 - 066 - 076	Multipack	6

Acoustic hood

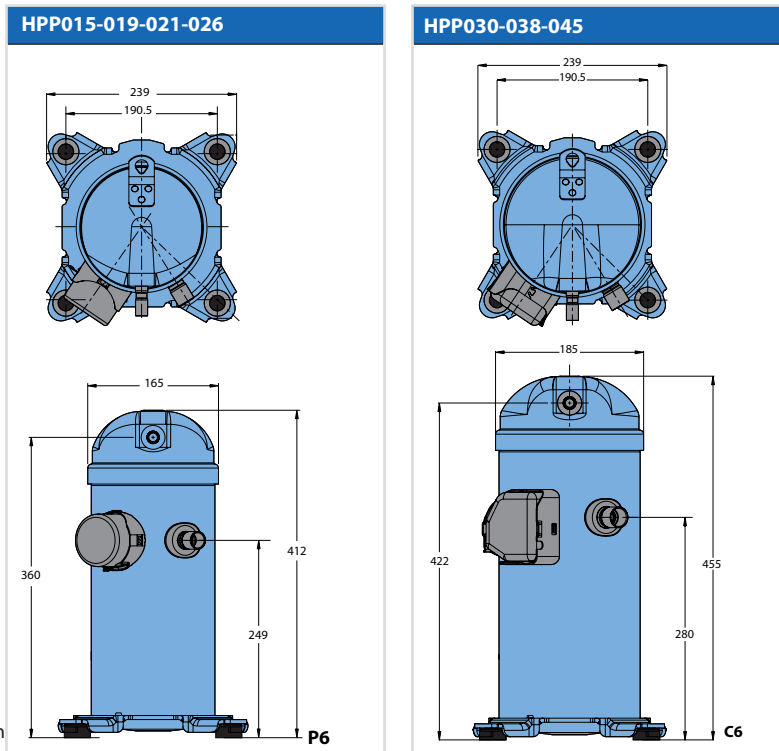
Type	Code No	Description	Application	Packaging	Pack Size
	120Z5043	Acoustic hood	MLZ015 - 019 - 021 - 026	Single pack	1
	120Z5044	Acoustic hood	MLZ030 - 038 - 042 - 045 - 048	Single pack	1
	120Z5045	Acoustic hood	MLZ058 - 066 - 076	Single pack	1

Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

Performer® heat pump - HHP scroll compressors

⚠ Note: Not currently stocked in Australia R407C



All dimensions in mm

P6

C6

Performance table R407C

Model	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

Legend:

To: Evaporating temperature in °C
Tc: Condensing temperature in °C

H: Heating capacity in W
Pe: Power input in kW

Superheat = 5 K
Subcooling = 5 K

Nomenclature	Type	Size	Motor	Features	Other features
Application: H: high temperature	HHP	030	T4L	P6	Oil sight glass Oil equalisation Oil drain LP gauge port Gas equalisation port
Family: HP: heat pump R407C PVE					6 None None None None None
Nominal capacity:					Tubing and electrical connections P: brazed connections, spade terminals C: brazed connections, screw terminals
Model variation T motor design					Motor protection L: internal motor protection
					Motor voltage code 4: 380-400V/3~/50 Hz 5: 220-240V/1~/50 Hz

Performer® heat pump - HHP

50-Hz data

Model	Heating capacity	Power input	Max. A.	Heating efficiency	Swept volume	Displacement	Oil charge	Net weight
	W	W	A	COP W/W	(cm ³ /rev)	m ³ /hr @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: 400V/3ph/50Hz (motor T4), 230V/1ph/50 Hz (motor T5)
 For full data details and capacity tables refer to Online Datasheet Generator : www.danfoss.com/odsg

Performance table

Model	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

Legend: To: Evaporating temperature in °C H: Heating capacity in W Superheat = 5 K
 Tc: Condensing temperature in °C Pe: Power input in kW Subcooling = 5 K

Ordering information and packaging

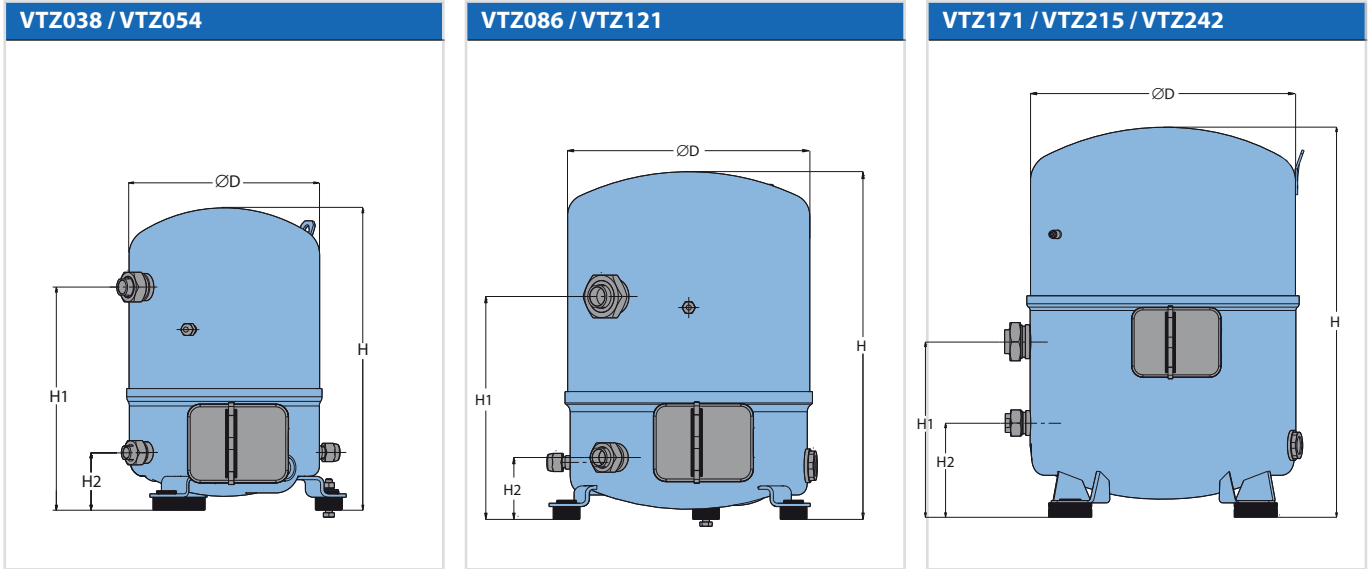


Model	Model Variation	Connections	Features	Single pack		Industrial pack	
				4	5	4	5
HHP015	T	P	6	121U9002	121U9004	121U9001	121U9003
HHP019	T	P	6	121U9006	121U9008	121U9005	121U9007
HHP021	T	P	6	121U9010	121U9012	121U9009	121U9011
HHP026	T	P	6	121U9014	121U9016	121U9013	121U9015
HHP030	T	C	6	121U9018	121U9020	121U9017	121U9019
HHP038	T	C	6	121U9022	121U9024	121U9021	121U9023
HHP045	T	C	6	121U9026	-	121U9025	-

⚠ Note: Not currently stocked in Australia.

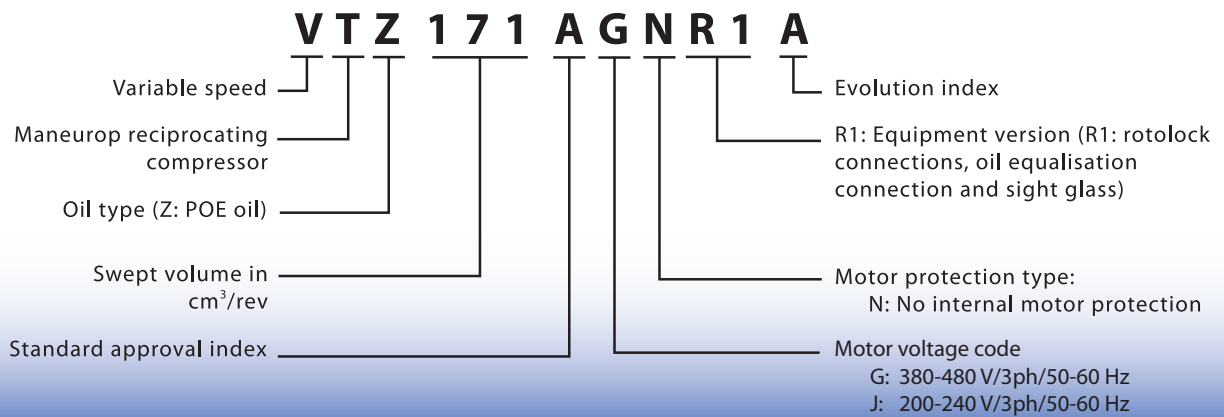
Scroll compressors

Reciprocating compressors – Variable speed - VTZ

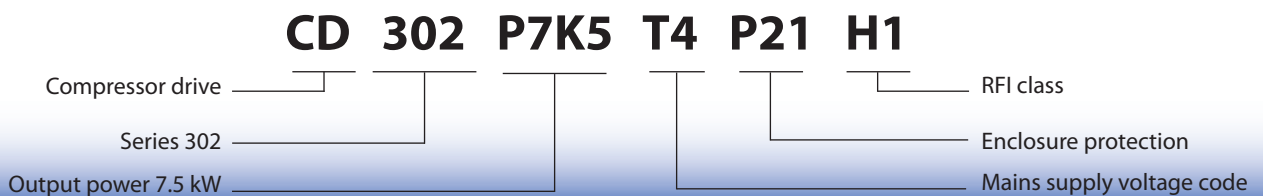


Type	Cylinders	Dimensions (mm)			
		D	H	H1	H2
VTZ038 / VTZ054	1	224	356	263	68
VTZ086 / VTZ121	2	288	413	265	74
VTZ171 / VTZ215 / VTZ242	4	352	518	233	125

Compressor nomenclature



Frequency converter nomenclature



Reciprocating compressors – Variable speed - VTZ

Drive supply voltage	Drive power (kW)	Compressor voltage code	Compressor model	IP20			IP21			IP55		
				Drive enclosure	Overall dimension (h×w×d) mm	Weight (kg)	Drive enclosure	Overall dimension (h×w×d) mm	Weight (kg)	Drive enclosure	Overall dimension (h×w×d) mm	Weight (kg)
T4 : 380-480/3/50-60	4	G	VTZ038	A2	268×90×205	4.9	-	-	-	A5	420×242×200	13.5
	5.5		VTZ054	A3	268×130×205	6.6	-	-	-	A5	420×242×200	13.5
	7.5		VTZ086	A3	268×130×205	6.6	-	-	-	A5	420×242×200	13.5
	11		VTZ121	B3	399×165×248	12	B1	494×242×260	23	B1	480×242×260	23
	15		VTZ171	B3	399×165×248	12	B1	494×242×260	23	B1	480×242×260	23
	18.5		VTZ215	B4	518×231×242	23	B2	664×242×260	27	B2	650×242×260	27
	22		VTZ242	-	-	-	B2	664×242×260	27	B2	650×242×260	27

Code numbers for ordering single pack compressors and frequency converters

Compressor		Frequency converter				
Model	Code No.	Model & power	IP class	RFI class*	LCP**	Code No.
VTZ038-G	120B0001	CD302 4.0 kW	IP20	H1	yes	131B3543
			IP55	H1	yes	131B3547
VTZ054-G	120B0002	CD302 5.5 kW	IP20	H1	yes	131B3552
			IP55	H1	yes	131B3556
VTZ086-G	120B0003	CD302 7.5 kW	IP20	H1	yes	131B3560
			IP55	H1	yes	131B3564
VTZ121-G	120B0004	CD302 11.0 kW	IP21	H1	yes	131B3568
			IP55	H1	yes	131B3572
VTZ171-G	120B0005	CD302 15.0 kW	IP21	H1	yes	131B3576
			IP55	H1	yes	131B3580
VTZ215-G	120B0006	CD302 18.5 kW	IP21	H1	yes	131B3584
			IP55	H1	yes	131B3588
VTZ242-G	120B0007	CD302 22.0 kW	IP21	H1	yes	131B3592
			IP55	H1	yes	131B3596

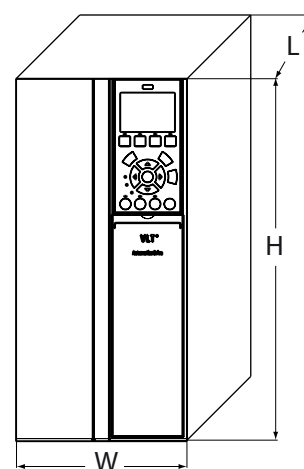
Listed code numbers are for compressors with voltage code G and frequency converters with supply voltage code T4 (380-400 V/3ph/50-60Hz). VTZ038 to VTZ121 are available with voltage code J (200-240V/3ph/50-60Hz) on request.

* RFI class H2 available on request

** Models without LCP available on request

⚠ Note: Contact Danfoss product specialist for further details

⚠ Note: Nominal operation range 30Hz (1800RPM) to 90Hz (5400RPM)



Reciprocating compressors – variable speed - VTZ

R404A

		To	-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																			
2100	Min rpm	20	1 090	0.61	1 430	0.67	1 850	0.71	2 350	0.74	2 950	0.76	3 650	0.77	-	-	-	-	-
		40	610	0.64	850	0.75	1 140	0.85	1 500	0.94	1 920	1.02	2 430	1.09	3 030	1.14	3 730	1.18	-
		60	-	-	-	-	530	0.92	750	1.08	1 010	1.23	1 320	1.37	1 700	1.50	2 160	1.61	-
5400	Max rpm	20	2 200	1.75	3 080	2.01	4 160	2.22	5 450	2.39	6 990	2.51	8 790	2.57	-	-	-	-	-
		40	1 140	1.60	1 860	2.03	2 710	2.43	3 740	2.78	4 960	3.10	6 400	3.37	8 070	3.60	10 010	3.78	-
		60	-	-	-	-	1 190	2.11	1 860	2.66	2 670	3.17	3 640	3.65	4 810	4.09	6 190	4.49	-
VTZ054																			
2100	Min rpm	20	1 480	0.88	1 970	0.97	2 590	1.05	3 370	1.11	4 310	1.16	5 450	1.18	-	-	-	-	-
		40	920	0.96	1 260	1.11	1 690	1.25	2 220	1.38	2 890	1.50	3 700	1.60	4 670	1.69	5 820	1.76	-
		60	-	-	-	-	900	1.37	1 220	1.57	1 610	1.77	2 110	1.96	2 730	2.13	3 490	2.29	-
5400	Max rpm	20	3 740	2.45	4 870	2.76	6 250	3.06	7 910	3.34	9 880	3.61	12 210	3.84	-	-	-	-	-
		40	2 170	2.43	3 090	2.84	4 190	3.28	5 520	3.72	7 110	4.15	9 000	4.59	11 210	5.02	13 800	5.43	-
		60	-	-	-	-	1 950	3.15	2 800	3.73	3 850	4.32	5 150	4.94	6 720	5.56	8 600	6.19	-
VTZ086																			
2100	Min rpm	20	1 840	1.18	2 580	1.31	3 520	1.42	4 660	1.49	6 030	1.54	7 650	1.56	-	-	-	-	-
		40	930	1.16	1 420	1.42	2 040	1.66	2 800	1.85	3 720	2.02	4 830	2.16	6 140	2.27	7 670	2.35	-
		60	-	-	-	-	950	1.67	1 390	2.03	1 930	2.36	2 580	2.65	3 380	2.91	4 330	3.14	-
5400	Max rpm	20	6 160	3.89	8 310	4.34	10 950	4.74	14 130	5.09	17 890	5.40	22 290	5.66	-	-	-	-	-
		40	3 640	3.91	5 360	4.66	7 440	5.35	9 920	5.99	12 830	6.58	16 250	7.11	20 190	7.60	24 730	8.03	-
		60	-	-	-	-	3 420	5.16	5 060	6.15	6 990	7.08	9 280	7.96	11 970	8.78	15 110	9.55	-
VTZ121																			
1800	Min rpm	20	2 750	1.89	3 660	2.05	4 810	2.19	6 230	2.30	7 940	2.39	9 980	2.46	-	-	-	-	-
		40	1 770	2.10	2 480	2.38	3 360	2.64	4 430	2.86	5 730	3.06	7 280	3.24	9 120	3.39	11 280	3.51	-
		60	-	-	-	-	1 650	2.82	2 300	3.21	3 090	3.57	4 070	3.90	5 270	4.20	6 700	4.48	-
5400	Max rpm	20	8 060	5.47	10 760	6.11	14 150	6.73	18 330	7.32	23 400	7.85	29 440	8.31	-	-	-	-	-
		40	4 870	5.67	6 870	6.50	9 350	7.38	12 420	8.29	16 170	9.20	20 690	10.10	26 100	10.99	32 470	11.84	-
		60	-	-	-	-	4 860	7.52	6 750	8.62	9 120	9.79	12 070	11.02	15 690	12.29	20 070	13.58	-
VTZ171																			
1800	Min rpm	20	3 900	2.31	5 360	2.59	7 180	2.83	9 400	3.04	12 050	3.20	15 160	3.31	-	-	-	-	-
		40	2 090	2.31	3 090	2.72	4 340	3.11	5 870	3.47	7 720	3.81	9 910	4.10	12 500	4.36	15 500	4.57	-
		60	-	-	-	-	2 070	3.24	2 940	3.84	4 010	4.41	5 320	4.97	6 900	5.49	8 790	5.98	-
5100	Max rpm	20	11 310	7.31	15 890	8.35	21 460	9.26	28 030	10.05	35 630	10.73	44 290	11.32	-	-	-	-	-
		40	6 400	7.24	9 960	9.03	14 240	10.66	19 260	12.14	25 040	13.50	31 610	14.73	38 980	15.87	47 190	16.93	-
		60	-	-	-	-	6 470	9.78	9 910	12.09	13 850	14.25	18 310	16.27	23 310	18.16	28 870	19.95	-
VTZ215																			
1800	Min rpm	20	4 790	3.00	6 690	3.31	9 050	3.58	11 940	3.79	15 400	3.95	19 490	4.04	-	-	-	-	-
		40	2 690	3.24	4 070	3.78	5 760	4.28	7 820	4.74	10 310	5.15	13 270	5.51	16 750	5.80	20 820	6.03	-
		60	-	-	-	-	2 800	4.52	4 060	5.30	5 600	6.03	7 450	6.72	9 670	7.36	12 330	7.95	-
5400	Max rpm	20	15 190	9.71	20 520	11.10	27 020	12.40	34 830	13.62	44 110	14.73	54 990	15.73	-	-	-	-	-
		40	9 030	9.79	13 430	11.78	18 700	13.76	25 000	15.73	32 450	17.67	41 210	19.58	51 430	21.44	63 230	23.24	-
		60	-	-	-	-	8 910	13.17	12 970	15.77	17 900	18.43	23 830	21.13	30 910	23.85	39 290	26.60	-
VTZ242																			
1800	Min rpm	20	5 250	3.37	7 200	3.70	9 630	4.00	12 580	4.26	16 110	4.47	20 280	4.65	-	-	-	-	-
		40	3 100	3.56	4 540	4.08	6 320	4.57	8 480	5.04	11 070	5.46	14 150	5.85	17 780	6.19	21 990	6.48	-
		60	-	-	-	-	3 100	4.97	4 380	5.76	5 950	6.53	7 870	7.26	10 180	7.95	12 940	8.60	-
5100	Max rpm	20	14 950	9.71	20 550	11.09	27 650	12.42	36 470	13.62	47 190	14.64	60 020	15.42	-	-	-	-	-
		40	9 100	10.23	13 060	11.98	18 020	13.87	24 160	15.83	31 690	17.79	40 800	19.70	51 700	21.50	64 590	23.12	-
		60	-	-	-	-	9 700	14.41	13 510	16.74	18 180	19.27	23 920	21.93	30 930	24.67	39 410	27.42	-

To: Evaporating temperature in °C
Superheat = 10 K

Tc: Condensing temperature in °C
Subcooling = 0 K

Qo: Cooling capacity in W

Pe: Power input in kW

Min rpm: Minimum rotation speed
Max rpm: Maximum rotation speed

Reciprocating compressors – variable speed - VTZ

R407C

		To	-17.5		-15		-10		-5		0		5		10		15		
		Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	
VTZ038																			
2100	Min rpm	20	1 780	0.66	2 030	0.68	2 610	0.71	3 310	0.72	4 140	0.72	-	-	-	-	-	-	-
		40	1 150	0.76	1 340	0.82	1 790	0.93	2 330	1.01	2 980	1.08	3 730	1.13	4 620	1.17	5 640	1.20	
		60	-	-	-	-	-	-	1 390	1.18	1 840	1.34	2 390	1.48	3 030	1.61	3 780	1.73	
5400	Max rpm	20	4 050	1.68	4 620	1.79	5 970	2.00	7 650	2.19	9 720	2.35	-	-	-	-	-	-	-
		40	2 780	1.91	3 260	2.06	4 360	2.37	5 700	2.68	7 350	2.98	9 360	3.26	11 790	3.51	14 700	3.73	
		60	-	-	-	-	-	-	3 580	2.98	4 760	3.40	6 230	3.81	8 020	4.21	10 210	4.59	
VTZ054																			
2100	Min rpm	20	2 350	0.87	2 680	0.90	3 460	0.94	4 400	0.97	5 530	0.99	-	-	-	-	-	-	-
		40	1 590	1.06	1 850	1.13	2 460	1.26	3 190	1.36	4 080	1.44	5 150	1.51	6 400	1.56	7 870	1.60	
		60	-	-	-	-	-	-	1 910	1.65	2 520	1.86	3 270	2.04	4 170	2.20	5 250	2.33	
5400	Max rpm	20	5 770	2.54	6 620	2.70	8 650	3.01	11 180	3.28	14 300	3.51	-	-	-	-	-	-	-
		40	4 080	2.81	4 740	3.05	6 290	3.53	8 220	4.01	10 590	4.48	13 490	4.93	17 000	5.33	21 180	5.69	
		60	-	-	-	-	-	-	5 410	4.26	7 080	4.93	9 140	5.62	11 670	6.29	14 740	6.96	
VTZ086																			
1800	Min rpm	20	3 140	1.10	3 680	1.14	4 970	1.19	6 550	1.22	8 450	1.24	-	-	-	-	-	-	-
		40	1 800	1.36	2 180	1.47	3 050	1.66	4 100	1.81	5 350	1.93	6 850	2.02	8 610	2.09	10 670	2.14	
		60	-	-	-	-	-	-	2 390	2.13	3 270	2.45	4 280	2.71	5 440	2.93	6 790	3.12	
5400	Max rpm	20	8 900	3.71	10 190	3.86	13 360	4.11	17 450	4.31	22 630	4.44	-	-	-	-	-	-	-
		40	6 700	4.48	7 660	4.72	9 910	5.19	12 710	5.65	16 230	6.07	20 650	6.45	26 130	6.76	32 830	7.00	
		60	-	-	-	-	-	-	8 910	6.66	11 330	7.35	14 270	8.03	17 900	8.69	22 400	9.31	
VTZ121																			
1800	Min rpm	20	4 520	1.58	5 230	1.66	6 890	1.77	8 890	1.84	11 260	1.85	-	-	-	-	-	-	-
		40	2 990	1.96	3 550	2.11	4 830	2.39	6 370	2.62	8 200	2.80	10 360	2.94	12 890	3.02	15 820	3.04	
		60	-	-	-	-	-	-	4 070	3.23	5 370	3.58	6 910	3.89	8 740	4.15	10 890	4.35	
5100	Max rpm	20	13 480	5.40	15 370	5.71	19 760	6.33	25 030	6.98	31 290	7.64	-	-	-	-	-	-	-
		40	9 440	6.08	10 940	6.48	14 430	7.28	18 690	8.09	23 800	8.92	29 860	9.77	36 960	10.64	45 210	11.52	
		60	-	-	-	-	-	-	12 430	9.03	16 140	10.13	20 670	11.23	26 120	12.35	32 570	13.49	
VTZ171																			
1800	Min rpm	20	5 980	2.20	6 880	2.27	9 030	2.38	11 660	2.45	14 850	2.47	-	-	-	-	-	-	-
		40	4 150	2.83	4 890	3.00	6 630	3.31	8 760	3.59	11 350	3.84	14 460	4.03	18 140	4.19	22 460	4.28	
		60	-	-	-	-	-	-	5 310	4.38	7 120	4.93	9 340	5.44	12 040	5.92	15 290	6.34	
5400	Max rpm	20	18 360	7.46	21 080	7.82	27 350	8.46	34 810	9.00	43 610	9.43	-	-	-	-	-	-	-
		40	13 130	8.82	15 560	9.47	21 090	10.71	27 620	11.87	35 290	12.95	44 230	13.96	54 570	14.89	66 440	15.73	
		60	-	-	-	-	-	-	18 270	13.52	24 250	15.29	31 300	17.01	39 550	18.67	49 150	20.29	
VTZ215																			
1800	Min rpm	20	8 120	2.86	9 230	2.96	11 840	3.13	15 050	3.26	18 950	3.37	-	-	-	-	-	-	-
		40	5 820	3.70	6 760	3.93	8 930	4.34	11 550	4.70	14 730	5.00	18 540	5.26	23 070	5.47	28 430	5.64	
		60	-	-	-	-	-	-	7 390	5.87	9 680	6.54	12 480	7.14	15 870	7.68	19 930	8.15	
5400	Max rpm	20	24 800	10.30	28 360	10.93	36 500	12.14	46 160	13.25	57 500	14.22	-	-	-	-	-	-	-
		40	17 530	11.38	20 580	12.27	27 520	14.11	35 690	15.96	45 260	17.81	56 390	19.60	69 250	21.30	84 000	22.87	
		60	-	-	-	-	-	-	24 100	17.85	31 600	20.42	40 380	23.06	50 610	25.73	62 450	28.40	
VTZ242																			
1800	Min rpm	20	8 590	3.14	10 010	3.26	13 380	3.44	17 490	3.57	22 450	3.63	-	-	-	-	-	-	-
		40	5 950	3.89	7 030	4.14	9 570	4.59	12 670	5.00	16 420	5.35	20 900	5.65	26 180	5.89	32 360	6.06	
		60	-	-	-	-	-	-	8 430	6.25	11 020	6.97	14 150	7.64	17 900	8.26	22 360	8.82	
5100	Max rpm	20	25 910	10.61	29 800	11.26	38 790	12.50	49 510	13.63	62 150	14.62	-	-	-	-	-	-	-
		40	18 310	11.71	21 550	12.65	28 870	14.52	37 510	16.37	47 620	18.15	59 390	19.84	72 980	21.41	88 590	22.84	
		60	-	-	-	-	-	-	25 460	18.18	33 080	20.70	41 910	23.20	52 140	25.66	63 940	28.05	

To: Evaporating temperature in °C
Superheat = 10 K

Tc: Condensing temperature in °C
Subcooling = 0 K

Qo: Cooling capacity in W

Pe: Power input in kW

Min rpm: Minimum rotation speed
Max rpm: Maximum rotation speed

Reciprocating compressors – variable speed - VTZ

R134a

To	-15		-10		-5		0		5		10		15	
Tc	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe	Qo	Pe

VTZ038

2100	Min rpm	35	840	0.51	1 110	0.58	1 460	0.64	1 900	0.69	2 430	0.72	3 090	0.74	3 880	0.74
		45	660	0.52	920	0.61	1 230	0.68	1 620	0.75	2 100	0.81	2 690	0.85	3 420	0.88
		65	-	-	-	-	-	-	1 040	0.84	1 400	0.93	1 850	1.01	2 420	1.09
5400	Max rpm	35	2 340	1.37	3 130	1.54	4 110	1.69	5 340	1.81	6 850	1.90	8 700	1.97	10 930	2.00
		45	1 860	1.41	2 560	1.63	3 440	1.83	4 530	2.00	5 890	2.15	7 560	2.27	9 580	2.35
		65	-	-	-	-	-	-	2 920	2.23	3 930	2.48	5 200	2.71	6 780	2.92

VTZ054

2100	Min rpm	35	1 280	0.71	1 720	0.79	2 250	0.86	2 880	0.93	3 620	1.00	4 490	1.06	5 490	1.11
		45	1 050	0.74	1 440	0.84	1 910	0.93	2 470	1.03	3 140	1.12	3 910	1.20	4 800	1.28
		65	-	-	-	-	-	-	1 670	1.18	2 170	1.31	2 750	1.45	3 430	1.59
5400	Max rpm	35	3 590	1.88	4 820	2.09	6 300	2.29	8 070	2.48	10 160	2.66	12 600	2.81	15 410	2.94
		45	2 940	1.98	4 040	2.23	5 360	2.49	6 940	2.74	8 790	2.98	10 970	3.21	13 480	3.42
		65	-	-	-	-	-	-	4 680	3.13	6 070	3.49	7 720	3.86	9 640	4.23

VTZ086

1800	Min rpm	35	1 660	0.96	2 280	1.08	3 030	1.17	3 930	1.24	4 990	1.30	6 240	1.33	7 690	1.36
		45	1 330	0.99	1 880	1.15	2 550	1.27	3 350	1.38	4 290	1.48	5 410	1.56	6 700	1.63
		65	-	-	-	-	-	-	2 150	1.57	2 850	1.73	3 670	1.88	4 650	2.02
5400	Max rpm	35	5 430	2.99	7 440	3.38	9 900	3.67	12 860	3.88	16 380	4.03	20 500	4.12	25 300	4.17
		45	4 370	3.06	6 170	3.56	8 350	3.98	10 970	4.32	14 080	4.61	17 740	4.84	22 000	5.04
		65	-	-	-	-	-	-	7 050	4.90	9 340	5.37	12 050	5.80	15 230	6.22

VTZ121

1800	Min rpm	35	2 620	1.33	3 360	1.46	4 250	1.59	5 330	1.71	6 610	1.83	8 130	1.93	9 900	2.02
		45	2 240	1.44	2 900	1.61	3 710	1.78	4 690	1.93	5 860	2.08	7 240	2.23	8 860	2.36
		65	-	-	-	-	-	-	3 190	2.29	4 070	2.53	5 130	2.76	6 400	2.99
5100	Max rpm	35	7 850	3.88	10 050	4.27	12 730	4.65	15 960	5.01	19 810	5.33	24 350	5.61	29 640	5.84
		45	6 690	4.21	8 680	4.69	11 100	5.17	14 030	5.64	17 530	6.09	21 680	6.52	26 540	6.90
		65	-	-	-	-	-	-	9 550	6.67	12 170	7.36	15 350	8.05	19 160	8.73

VTZ171

1800	Min rpm	35	3 220	2.04	4 460	2.22	5 980	2.36	7 800	2.48	9 970	2.57	12 520	2.66	15 470	2.76
		45	2 500	2.12	3 600	2.39	4 940	2.61	6 550	2.79	8 470	2.94	10 730	3.07	13 370	3.19
		65	-	-	-	-	-	-	4 070	3.26	5 470	3.60	7 150	3.90	9 130	4.16
5400	Max rpm	35	11 120	6.17	15 050	7.09	19 760	7.89	25 350	8.55	31 900	9.05	39 520	9.39	48 310	9.54
		45	8 810	6.21	12 420	7.31	16 730	8.35	21 830	9.32	27 830	10.20	34 820	10.99	42 900	11.66
		65	-	-	-	-	-	-	14 050	10.01	18 690	11.25	24 160	12.53	30 570	13.83

VTZ215

1800	Min rpm	35	4 680	2.68	6 190	2.94	8 010	3.17	10 160	3.38	12 690	3.60	15 630	3.84	19 030	4.11
		45	3 880	2.84	5 260	3.19	6 910	3.49	8 860	3.75	11 160	4.01	13 830	4.26	16 930	4.52
		65	-	-	-	-	-	-	6 000	4.34	7 770	4.79	9 850	5.20	12 290	5.58
5400	Max rpm	35	15 310	8.39	20 250	9.17	26 180	9.90	33 210	10.60	41 480	11.30	51 110	12.05	62 220	12.86
		45	12 700	8.86	17 230	9.89	22 630	10.83	29 030	11.70	36 560	12.55	45 340	13.39	55 480	14.26
		65	-	-	-	-	-	-	19 640	13.47	25 450	14.83	32 290	16.11	40 280	17.34

VTZ242

1800	Min rpm	35	5 530	2.59	7 080	2.86	8 970	3.11	11 250	3.35	13 970	3.58	17 160	3.79	20 890	3.99
		45	4 710	2.83	6 110	3.16	7 820	3.48	9 880	3.78	12 350	4.08	15 260	4.36	18 680	4.62
		65	-	-	-	-	-	-	6 730	4.49	8 570	4.96	10 810	5.42	13 470	5.86
5100	Max rpm	35	16 550	7.61	21 180	8.40	26 840	9.15	33 670	9.84	41 810	10.49	51 420	11.08	62 640	11.60
		45	14 120	8.30	18 300	9.28	23 410	10.23	29 590	11.14	36 980	11.99	45 740	12.80	56 020	13.55
		65	-	-	-	-	-	-	20 170	13.15	25 710	14.50	32 410	15.81	40 430	17.08

To: Evaporating temperature in °C
Superheat = 10 K

Tc: Condensing temperature in °C
Subcooling = 0 K

Qo: Cooling capacity in W

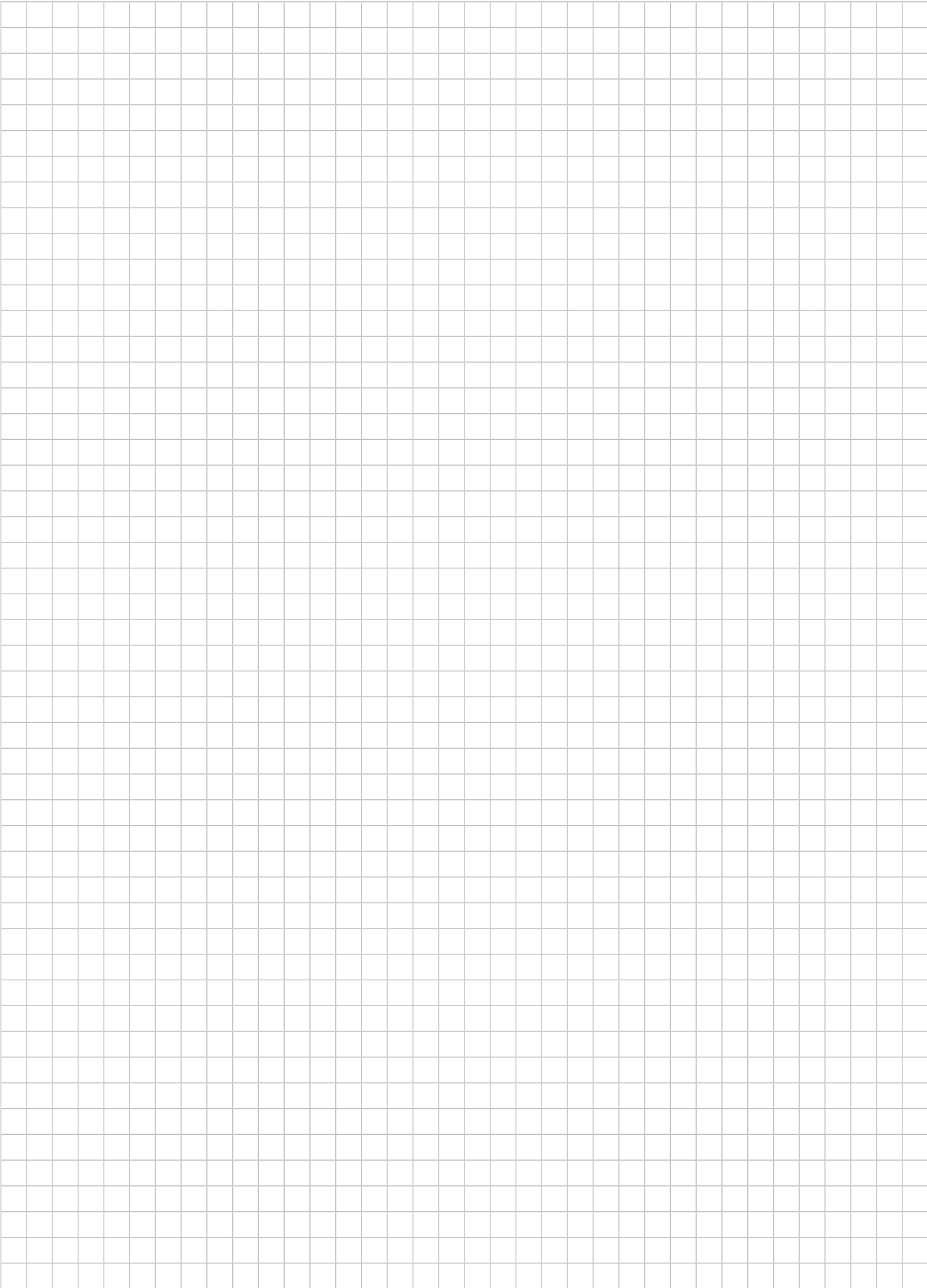
Pe: Power input in kW

Min rpm: Minimum rotation speed
Max rpm: Maximum rotation speed

Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

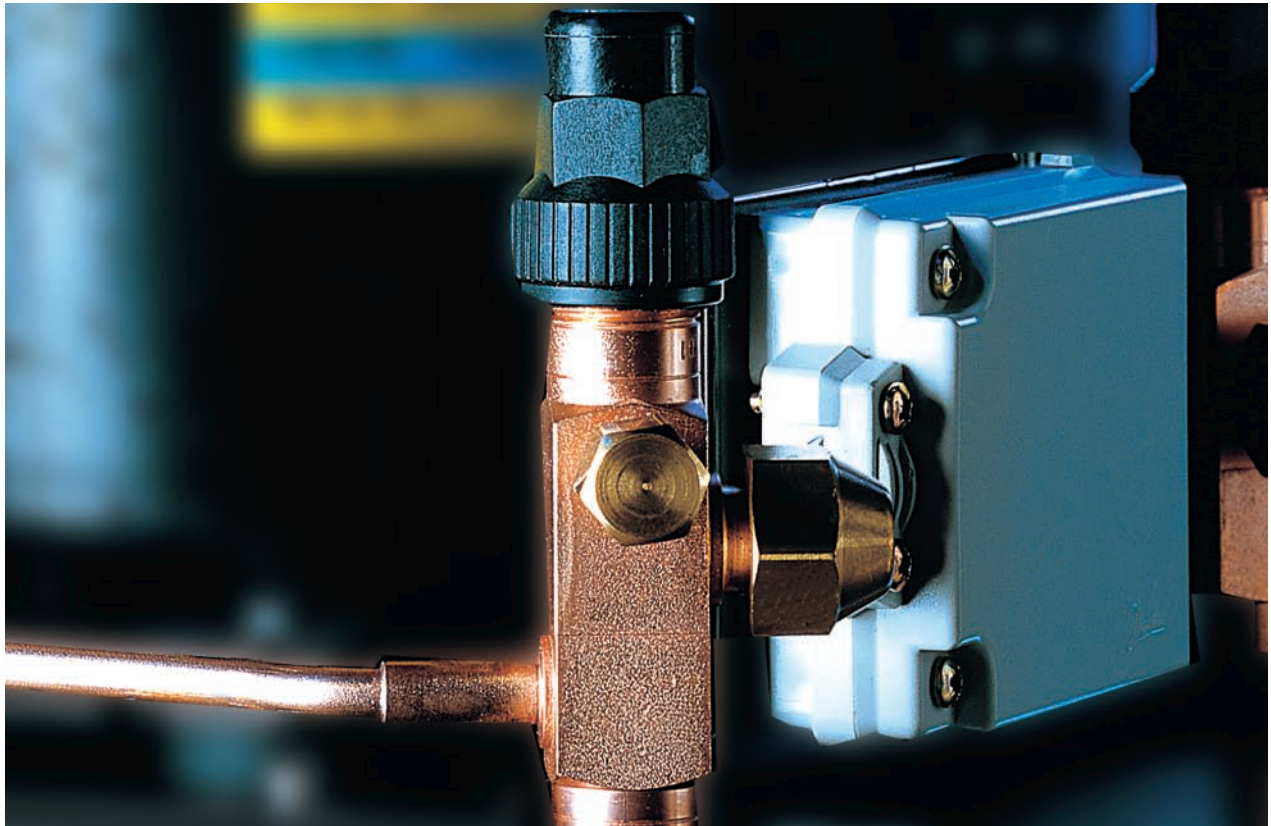
Notes





Condensing Units

Danfoss Condensing units provide new levels of user-friendliness, efficiency and reliability.



Black Star™ Range

- Black Star™ range is the standard product currently stocked in Australia.
- Fractional HP models available on R134a and R404A/R507
- Receiver models - Standard range however versions without receiver are available on special request.

Optyma™ Range

- New series of both fractional and larger models up to 20KW (R404A)
- Currently only a limited range of select units stocked in Australia
- Reciprocating & Scroll compressors used on the larger range
- Please contact your Danfoss product specialist for further information.

Fan-cooled Condensing Units 220 - 240V

Application	Unit	Frequency	Code number Ordering			Capacity [W]													
						Evaporating temperature [°C]													
			N0	N2	T2	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	
R134a LBP/HBP -35/15°C	PL35GX	3	114G0503							51	68	87	108	131	156	183	212		
	TL3GX	1,4		114G1605	114G1705				37	52	69	91	117	147	181	220	263	309	359
	TL4GX	1,4			114G1706				49	67	89	115	146	182	222	269	320	377	439
	TL5GX	1,4	114G1508		114G1708				62	83	108	139	175	217	264	317	374	436	502
	FR6GX	1,4	114G2515		114G2715				74	106	142	185	235	294	361	437	522	617	
	FR7.5GX	1,4	114G2518		114G2718				81	114	154	201	257	321	395	478	571	674	
	FR8.5GX	1,4		114G2616	114G2716				103	141	186	240	303	376	458	550	652	762	
	FR10GX	1,4	114G2519		114G2719				108	149	197	254	320	396	483	580	688	805	
	FR11GX	1,4	114G3517	114G3617	114G3717				89	168	246	327	414	510	616	737	875		
	SC12GX	1,4	114G3526	114G3626	114G3726				136	202	285	381	490	610	741	880	1029	1185	1349
	SC15GX	1,4	114G4527	114G4627	114G4727						348	463	591	731	882	1045	1220	1405	1603
	SC18GX	1,4	114G5528		114G5728						404	531	673	833	1011	1210	1432	1682	1962
	SC21GX	1,4	114G5530		114G5730						474	622	792	981	1189	1414	1652	1902	2160
	SC12/12GX	1	⊗	⊗	114G6780				271	404	569	761	979	1218	1478	1756	2052	2363	2692
	SC15/15GX	1	⊗	⊗	114G7781						692	921	1174	1451	1750	2072	2416	2782	3170
	SC18/18GX	1	⊗	⊗	114G7782						790	1036	1309	1615	1957	2340	2772	3261	3822
SC21/21GX	1	⊗	⊗	114G7783						935	1218	1539	1896	2283	2698	3137	3595		
R22 LBP -45/-5°C	SC10CMX	1			114H3701	101	149	209	281	367	466	579	706	846					
	SC12CMX	1			114H4702	126	190	266	357	465	590	733	894	1074					
	SC15CMX	1			114H5703	169	243	333	440	566	711	877	1063	1271					
	SC18CMX	1			114H5709	189	278	379	497	631	784	957	1150	1364					
	SC10/10CMX	1	⊗	⊗	114H6715	201	298	417	561	732	930	1155	1408	1688					
	SC12/12CMX	1	⊗	⊗	114H7716	252	378	528	710	924	1171	1454	1772	2127					
	SC15/15CMX	1	⊗	⊗	114H7717	331	476	650	858	1101	1381	1698	2054	2448					
	SC18/18CMX	1	⊗	⊗	114H7723	368	543	742	971	1231	1526	1857	2226						
R22 HBP -15/10°C	SC10DMX	1			114H5705							571	711	871	1052	1251			
	SC12DMX	1			114H5706							703	878	1067	1269	1481			
	SC15DMX	1			114H6707							862	1091	1337	1598	1872			
	SC10/10DMX	1	⊗	⊗	114H7719							1110	1376	1679	2018	2390			
	SC12/12DMX	1	⊗	⊗	114H7720							1363	1692	2048	2425				
	SC15/15DMX	1	⊗	⊗	114H7721							1588	1995	2413	2831				
R404A (R507) LBP -45/-5°C	TL4CLX	1	114H2506		114H2706	64	85	110	141	177	218	265	318	378					
	FR6CLX	1			114H2726	91	128	171	219	273	332	397	468	542					
	NL7CLX	1	114H3545																
	FR8.5CLX	1			114H3728	130	161	208	268	340	420	508	599	692					
	SC10CLX	3	114H3530		114H3740			216	300	393	496	609	730	860					
	SC12CLX	1	114H4531		114H4731	129	220	320	429	547	672	804	943	1088					
	SC15CLX	1	114H5532		114H5732	198	292	400	521	654	799	955	1122	1298					
	SC18CLX	1	114H5533		114H5733	232	349	475	610	751	899	1052	1212	1379					
	SC21CLX	1			114H5734	291	405	535	680	840	1014	1202	1407						
	SC10/10CLX	1	⊗	⊗	114H6735			431	598	785	990	1214	1455	1714					
	SC12/12CLX	1	⊗	⊗	114H7736	258	437	635	850	1082	1327	1586	1858	2142					
	SC15/15CLX	1	⊗	⊗	114H7737	390	571	777	1007	1259	1532	1832	2135	2466					
	SC18/18CLX	1	⊗	⊗	114H7738	457	680	917	1167	1426	1696	1976	2268						
	SC21/21CLX	1	⊗	⊗	114H7739	567	783	1027	1297	1593	1914	2263	2643						
R404A (R507) HBP/MBP	SC10DLX	3	114H5543		114H5743							661	811	977	1159	1351			
	SC12DLX	1	114H5544		114H5744							831	1015	1210	1415				
	SC15DLX	3	114H6545		114H6745							961	1167	1395	1641	1901			
	SC18MLX	1			114X2757							1062	1287	1538	1816	2116	2437		
R404A (R507) HBP/MBP	TL4DLX	1	114G1506		114H2729							265	314	377	450	528	588		
	FR6DLX	1	114G1508		114H3727							428	511	603	705	812	923		
	SC10/10DLX	1	⊗	⊗	114H7747							1288	1570	1882	2215	2563			
	SC12/12DLX	1	⊗	⊗	114H7748							1600	1945	2305	2672				
	SC15/15DLX	1	⊗	⊗	114H7749							1759	2100	2461	2830				

Model denomination

PL = compressor type
 TL = compressor type
 FR = compressor type
 NL = compressor type
 SC = compressor type
 3 = Displacement in cm³
 (not valid for PL)

CL = R404A/R507, LBP
 CM = R22, LBP
 DL = R404A/R507, HBP
 DM = R22, HBP
 FT = R134a, LBP
 G = R134a, HBP/LBP
 ML = R404A/R507, MBP
 X = High starting torque

N0 = for capillary tube - without stop valves
 N2 = for capillary tube - with 2 stop valves
 T2 = for expansion valve - with receiver and 2 stop valves
 T0 = for expansion valve - with receiver. On request

⊗ = on request

Frequency code

1 = 50 Hz
 2 = 60 Hz
 3 = 50/60 Hz
 4 = 60 Hz LBP only

1 watt = 0.86 kcal/h
 1 watt = 3.41 Btu/h

⚠ Note: Only units highlighted in bold are listed on Australian IM

⚠ Note: PL50FXN0 (R134a) condensing unit (114G0502) on request only

Fan-cooled Condensing Units 220 - 240V



Application range in 43°C ambient temp. [°C]	Power consumption [W]		Current consumption [A]		Receiver volume [cm³]	Dimensions (T2 model) [mm]						Weight T2 model [kg]	Unit
	Evaporating temperature [°C]					Height H	Width W	Length D	Dist. a	Suction line	Disch. line		
	-25	5	-25	5									
-25 to +10	64	96	0.54	0.63	800	152	170	300	175	6	5	7.1	PL35GX
-35 to +15	93	151	0.88	1.03	800	197	289	410	310	6	6	11.2	TL3GX
-35 to +15	110	167	1.03	1.19	800	197	289	410	310	6	6	12.1	TL4GX
-35 to +5	123	222	1.16	1.43	800	197	289	410	310	6	6	13.0	TL5GX
-35 to +10	145	240	1.07	1.40	800	226	304	432	310	10	6	16.2	FR6GX
-35 to +10	159	278	1.11	1.61	800	226	304	432	310	10	6	16.2	FR7.5GX
-35 to +10	181	334	1.41	1.91	800	226	304	432	310	10	6	16.2	FR8.5GX
-35 to +5	207	373	1.77	2.29	800	226	304	432	310	10	6	16.2	FR10GX
-35 to +5	236	464	1.87	2.60	1100	256	321	444	325	10	6	18.3	FR11GX
-35 to +5	261	506	2.07	2.83	1100	256	321	444	325	10	6	20.5	SC12GX
-35 to +5	323	625	2.54	3.39	1100	296	331	451	325	10	6	20.9	SC15GX
-35 to +5	367	714	2.91	3.96	1100	296	331	473	325	10	6	21.4	SC18GX
-35 to 0	437	834	2.64	4.22	1100	296	331	513	365	10	6	22.2	SC21GX
-35 to +5	538	1033	4.20	5.73	1650	350	442	610	370	12	10	41.3	SC12/12GX
-35 to +5	625	1238	4.88	6.59	1650	350	442	610	370	12	10	45.0	SC15/15GX
-35 to 0	713	1444	5.60	7.85	1650	350	442	610	370	16	10	47.9	SC18/18GX
-35 to 0	855	1673	5.06	8.31	1650	350	442	610	370	16	10	48.9	SC21/21GX
-45 to -15	335		2.34		1100	256	321	444	325	10	6	21.5	SC10CMX
-45 to -15	431		2.84		1100	296	331	451	325	10	6	25.1	SC12CMX
-45 to -15	509		3.46		1100	296	331	473	325	10	6	25.1	SC15CMX
38°C:-45 to -10	545		2.88		1100	296	331	513	365	10	6	26.3	SC18CMX
-45 to -10	687		4.75		1650	350	442	610	370	12	10	44.8	SC10/10CMX
-45 to -10	843		5.47		1650	350	442	610	370	12	10	45.2	SC12/12CMX
-45 to -10	1002		6.73		1650	350	442	610	370	12	10	47.2	SC15/15CMX
38°C:-45 to -15	1081		5.59		1650	350	442	610	370	16	10	47.6	SC18/18CMX
-15 to -5		613		3.74	1100	296	331	473	365	10	6	25.2	SC10DMX
-15 to -10		0°C:692		0°C:4.24	1100	296	331	473	365	10	6	25.3	SC12DMX
-15 to -5		833		4.71	1100	350	331	610	370	10	6	38.2	SC15DMX
38°C:-15 to -0		1232		7.40	1650	350	442	610	370	12	10	47.2	SC10/10DMX
-15 to -10		0°C:1394		0°C:8.40	1650	350	442	610	370	16	10	47.2	SC12/12DMX
38°C:-15 to -10		0°C:1538		0°C:8.76	1650	350	442	610	370	16	10	48.2	SC15/15DMX
-45 to -5	162		1.24		800	226	304	432	310	10	6	13.2	TL4CLX
-45 to -10	267		1.64		800	226	304	432	310	10	6	16.2	FR6CLX
-45 to -10	336		2.17		1100	256	321	444	325	10	6	18.2	NL7CLX
-45 to -10	336		2.17		1100	256	321	444	325	10	6	18.2	FR8.5CLX
38°C:-35 to -10	373		2.39		1100	256	321	444	325	10	6	21.5	SC10CLX
-45 to -15	479		3.06		1100	296	331	451	325	10	6	25.1	SC12CLX
38°C:-45 to -10	558		3.45		1100	296	331	473	325	10	6	25.1	SC15CLX
38°C:-45 to -15	649		3.76		1100	296	331	513	365	10	6	26.3	SC18CLX
38°C:-45 to -15	754		4.09		1100	296	331	513	365	10	6	27.1	SC21CLX
-35 to -10	764		4.86		1650	350	442	610	370	12	10	45.2	SC10/10CLX
-45 to -10	939		5.92		1650	350	442	610	370	12	10	45.2	SC12/12CLX
-45 to -15	1103		6.72		1650	350	442	610	370	12	10	47.2	SC15/15CLX
38°C:-45 to -15	1291		7.36		1650	350	442	610	370	16	10	47.6	SC18/18CLX
38°C:-45 to -15	1504		8.02		1650	350	442	610	370	16	10	49.2	SC21/21CLX
		625		4.70	1100	296	331	473	325	10	6	25.2	SC10DLX
		777		5.40	1100	296	331	473	325	10	6	25.5	SC12DLX
		903		6.60	1100	350	442	610	370	10	6	37.5	SC15DLX
		1235		6.40	1100	350	442	610	370	10	6	40.0	SC18MLX
38°C:-15 to +5		284		1.73	800	226	304	432	310	10	6	13.2	TL4DLX
38°C:-15 to 0		502		2.77	1100	256	321	444	325	10	6	18.2	FR6DLX
38°C:-15 to 0		1297		7.48	1650	350	442	610	370	12	10	47.2	SC10/10DLX
38°C:-15 to -5		0°C:1637		0°C:9.22	1650	350	442	610	370	16	10	47.2	SC12/12DLX
38°C:-15 to -10		0°C:1848		0°C:9.24	1650	350	442	610	370	16	10	48.2	SC15/15DLX

Test conditions (CECOMAF)

Ambient temperature 32°C
 Suction gas temperature 32°C
 Temperature of refrigerant at condenser outlet is subcooled within the condensing limits of the unit.
 Voltage range 198-254 V, 50 Hz

Further programmes

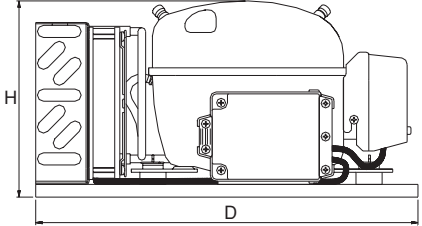
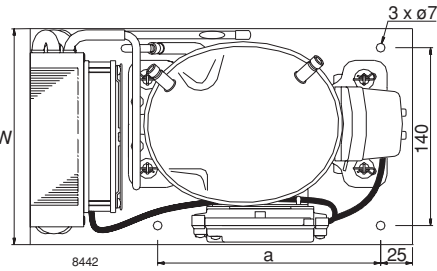
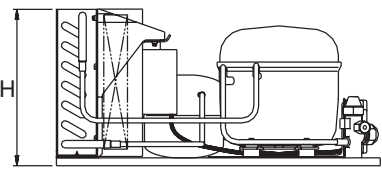
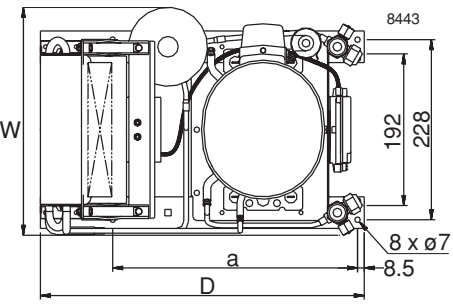
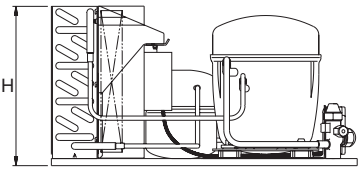
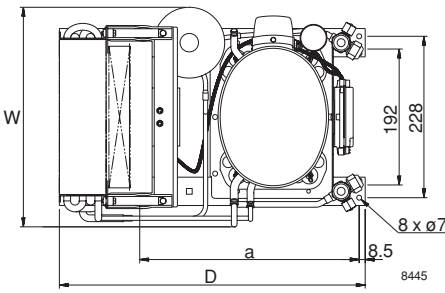
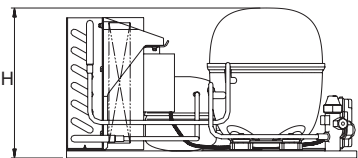
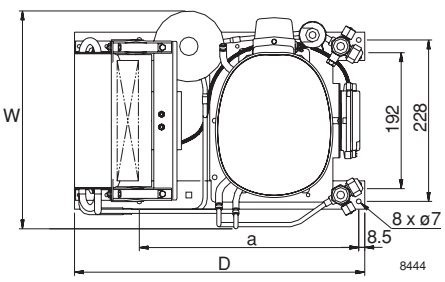
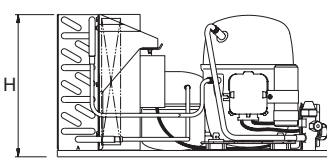
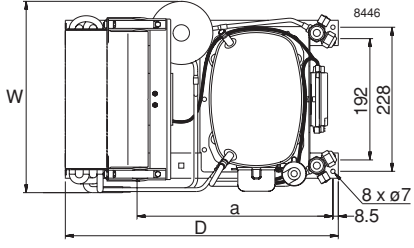
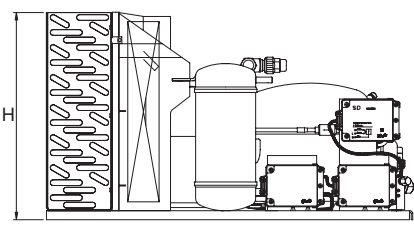
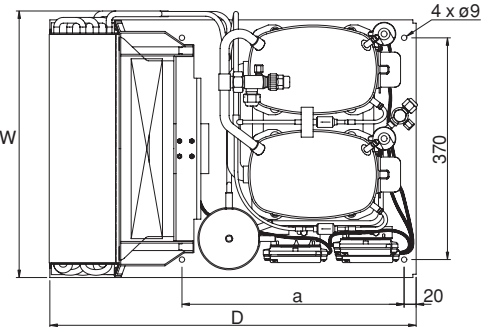
- 230 V 60 Hz
- 115 V 60 Hz standard
- 115 V 60 Hz according to UL and CSA
- According to DIN 8971
- With fusible plug according to British Standard 1608
- Outdoor units

All condensing units according to DIN 8971 comply with the German safety standards VBG20

Fan Motor (Spare Part)

Motor (W)	Unit Models	Old Code (Ref)	Ordering
5	TL3G, TL4G, TL6G, FR7.5G, FR8.5G, FR10G, TL4C/D	118U0200	118U0032
11	FR6CL, FR6DL, FR8.5CL, FR11G, SC12G	118U0201	118U0033
16	SC10CL, SC10DL, SC12CL, SC15CL, SC15G, SC18G		118U0202
20	SC15DL, SC18ML	118U0219	118U0035

Dimensions - Black Star™ Condensing Units

PL	
	
TL	
	
FR	
	
NL	
	
SC	
	
Twin	
	



Optyma™ condensing units

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
- Air driers
- Residential air conditioning

⚠ Note: Currently only a limited range listed in Australia

Optyma™ the most reliable and efficient condensing units for the widest application range

Optyma™ is the widest range of hermetic condensing units on the market.

Optyma™ condensing unit is available with high capacity models of reciprocating and scroll compressors so 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. Thanks to scroll compressors, Optyma™ offers also the best solution for applications where noise and vibration are relevant for the system and the environment where it is installed.

Optyma™ with scroll is a real multi refrigerant condensing unit. It can be used with R404A/R507/R134a/R407C refrigerants, so that you can really optimize your stock.

In addition to the wide Optyma™ range we also include local support and guidance if needed. A network of partner wholesalers and local Danfoss teams can offer you help and will do their utmost to fulfil your needs. At Danfoss we simply believe it is important to offer an "Optimum service".

Features	Customer benefits
<ul style="list-style-type: none"> · HFC refrigerants R134a, R404A and R507 (MCZC and MGZC are suitable for use with R407C) · Capacity: from a few to 20000 Watt (R404A) · High COP · Low noise and low vibration (Scroll compressors) · 100% factory tested for leakage · High efficient compressors (MBP + LBP) · 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 	<ul style="list-style-type: none"> · High-efficiency condensers allowing an extended application envelope in higher ambient conditions as standard · Low electrical consumption and low running cost · 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 · More reliable and silent system due to less vibration and less noise of scroll compressor

⚠ Note: Refer to Black Star™ range for fractional HP units

⚠ Note: For SC18MLX, GS21MLX, GS26 & GS34 condensing unit models refer to this range.

Optyma™ condensing units – R404A/R507 LBP Reciprocating

⚠ Note: Limited codes listed for Australia

Nbr of fans	Test conditions	Unit	Version					Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]				Power consumption (W) at -25 evap temp	Application range [°C]	
			A00	A01	A02	A04	A05				-35°C	-30°C	-25°C	-20°C			
CECOMAF	OP-LCHC004	114X1208	114X1209			114X1211	114X1210	G	TL4CLX	32°C	110	141	177	218	162	38°C: -45°C till -5°C 43°C: -45°C till -15°C	
	OP-LCHC006	114X1216	114X1217			114X1219	114X1218	G	FR6CLX	32°C	171	219	273	332	267	38°C: -45°C till -15°C 43°C: -45°C till -30°C	
	OP-LCHC008	114X1324	114X1325			114X1327	114X1326	G	FR8.5CLX	32°C	208	268	340	420	336	38°C: -45°C till -10°C 43°C: -45°C till -23.3°C	
	OP-LCHC007	114X1328	114X1329			114X1331	114X1330	G	NL7CLX	32°C	234	302	380	497	336	38°C: -45°C till -10°C 43°C: -45°C till -25°C	
	OP-LCHC008	114X1304	114X1305			114X1307	114X1306	G	NL8.4CLX	32°C	252	325	407	498	295	38°C: -45°C till -15°C 43°C: -45°C till -25°C	
	OP-LCHC010	114X1332	114X1333			114X1335	114X1334	G	SC10CLX	32°C	216	300	393	496	373	38°C: -35°C till -15°C 43°C: -35°C till -25°C	
	OP-LCHC012	114X1440	114X1441			114X1443	114X1442	G	SC12CLX	32°C	320	429	547	672	479	38°C: -45°C till -20°C 43°C: -45°C till -30°C	
	OP-LCHC012	114X1444	114X1445			114X1447	114X1446	G	SC12CLX.2	32°C	342	438	545	663	473	38°C: -45°C till -20°C 43°C: -45°C till -35°C	
	OP-LCHC015	114X1548	114X1549			114X1551	114X1550	G	SC15CLX	32°C	400	521	654	799	558	38°C: -45°C till -15°C 43°C: -45°C till -30°C	
	OP-LCHC015	114X1552	114X1553			114X1555	114X1554	G	SC15CLX.2	32°C	413	528	657	798	563	38°C: -45°C till -15°C 43°C: -45°C till -35°C	
	OP-LCHC018	114X1556	114X1557			114X1559	114X1558	G	SC18CLX	32°C	475	610	751	899	649	38°C: -45°C till -25°C 43°C: -45°C till -35°C	
	OP-LCHC018	114X1560	114X1561			114X1563	114X1562	G	SC18CLX.2	32°C	486	618	764	921	683	38°C: -45°C till -25°C 43°C: -45°C till -35°C	
	OP-LCHC021	114X1564	114X1565			114X1567	114X1566	G	SC21CLX	32°C	535	680	840	1014	754	38°C: -45°C till -30°C	
	RGT20	OP-LCHC026	114X1672	114X1673			114X1675	114X1674	G	GS26CLX	32°C	670	860	1070	1290	1023	38°C: -45°C till -23.3°C 43°C: -45°C till -35°C
		OP-LCHC034	114X1780	114X1781			114X1783	114X1782	G	GS34CLX	32°C	850	1100	1350	1625	1170	38°C: -45°C till -30°C
SH10	OP-LCHC048			114X5044				G	NTZ048	27°C	1120	1490	1900	2320	887	46°C: -20°C till -35°C 43°C: -15°C till -40°C	
				114X5030				D		38°C	840	1150	1470	1810	835		
				114X5037				E		43°C	710	990	1280	1580	795		
	OP-LCHC068			114X5045					G	NTZ068	27°C	1980	2560	3200	3890		1483
				114X5031				D	38°C		1530	2020	2540	3110	1543		
				114X5038				E	43°C		1350	1790	2270	2780	1563		
	OP-LCHC096			114X5032					D	NTZ096	27°C	2280	3000	3820	4750		1771
				114X5039				E	38°C		1690	2270	2950	3700	1674		
	OP-LCHC108			114X5033					D	NTZ108	43°C	1410	1940	2540	3220		1607
				114X5040				E	27°C		2780	3640	4600	5640	2097		
	OP-LCHC136			114X5034					D	NTZ136	38°C	2090	2810	3590	4430		2031
				114X5041				E	43°C		1780	2430	3140	3890	1966		
				114X5042					D		27°C	3560	4600	5770	7050		2910
	OP-LCHC215			114X5035					E	NTZ215	38°C	2740	3610	4570	5610		2857
				114X5042				E	43°C		2370	3160	4020	4960	2824		
				114X5036				D	27°C		5480	7080	8850	10750	4159		
	OP-LCHC271			114X5036					D	NTZ271	38°C	4090	5440	6900	8450		4059
				114X5043				E	43°C		3430	4660	5980	7380	3929		
				114X5043				E	27°C		7390	9450	11700	14100	5584		
	OP-LGHC048			114X5096					G	NTZ048	38°C	5760	7450	9270	11180		5661
			114X5089				E	43°C	4990		6520	8140	9820	5632			
			114X5097				G	27°C	1160		1550	1990	2450	891			
OP-LGHC068			114X5085					D	NTZ068	38°C	870	1200	1550	1920	842		
			114X5083				D	43°C		740	1030	1350	1680	804			
			114X5090				E	27°C		1940	2500	3120	3780	1488			
OP-LGHC096			114X5084					D	NTZ096	38°C	1510	1970	2480	3020	1546		
			114X5091				E	43°C		1330	1750	2210	2700	1565			
			114X5084				D	27°C		2290	3020	3850	4790	1772			
OP-LGHC108			114X5085					E	NTZ108	38°C	1700	2290	2970	3730	1676		
			114X5085				D	43°C		1420	1950	2560	3250	1610			
			114X5085				D	27°C		2840	3730	4740	5840	2097			
OP-LGHC136			114X5092					E	NTZ136	38°C	2140	2890	3710	4610	2039		
			114X5086				D	43°C		1830	2510	3250	4050	1977			
			114X5086				D	27°C		3660	4750	5980	7350	2911			
OP-LGHC215			114X5093					E	NTZ215	38°C	2830	3740	4760	5890	2865		
			114X5087				D	43°C		2450	3280	4200	5220	2831			
			114X5087				D	27°C		5770	7520	9490	11670	4147			
OP-LGHC271			114X5094					E	NTZ271	38°C	4370	5860	7520	9330	4098		
			114X5088				D	43°C		3690	5050	6570	8210	3986			
			114X5088				D	27°C		7570	9730	12110	14690	5564			
		114X5095					E	38°C	5930	7710	9660	11730	5662				
		114X5095					E	43°C	5150	6770	8510	10350	5642				

Test condition

EN13215

Ambient temperature
Suction gas temperature
Superheat

SH10

32°C

10K

RGT 20

32°C

20°C

CECOMAF

32°C

32°C

Electrical code

D Compressor 400 V/3 phase/50 Hz, fan 400 V/3 phase/50 Hz
E Compressor 400 V/3 phase/50 Hz, fan 230 V/1 phase/50 Hz
G Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz

Version: **A00:** Without valves and receiver for capillary tubes
A01: With receiver, 2 stop valves, brackets and copper pipes for KP
A02: With receiver, stop valve, universal pressure switch, (KP17WB), flexible hoses and electrical box
A04: A01 + KP17WB + FSA-kit + power cord (except LCH034)
A05: A01 but solder valve for inch tubes

⚠ Note: Only codes in bold currently listed in Australia


Optyma™ condensing units – R404A/R507 LBP Reciprocating

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions [mm]						Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	Gross	Net
OP-LCHC004	BG2	231	0.25	1 × 200	0.8	1	226	304	446	1/4"	1/4"	16	13.8
OP-LCHC006	BG2	231	0.25	1 × 200	0.8	2	226	304	446	3/8"	1/4"	22	16.7
OP-LCHC008	BG3	518	0.31	1 × 230	1.1	2	256	321	458	3/8"	1/4"	23	17.9
OP-LCHC007	BG3	518	0.31	1 × 230	1.1	3	256	321	458	3/8"	1/4"	23	17.9
OP-LCHC008	BG3	518	0.31	1 × 230	1.1	3	256	321	458	3/8"	1/4"	23	17.9
OP-LCHC010	BG3	518	0.31	1 × 230	1.1	4	256	321	458	3/8"	1/4"	23	17.9
OP-LCHC012	BG4	631	0.40	1 × 254	1.1	4	296	331	465	3/8"	1/4"	25	22.0
OP-LCHC012	BG4	631	0.40	1 × 254	1.1	4	296	331	465	3/8"	1/4"	25	22.0
OP-LCHC015	BG5	583	0.53	1 × 254	1.1	4	296	331	465	3/8"	1/4"	26	23.4
OP-LCHC015	BG5	583	0.53	1 × 254	1.1	4	296	331	465	3/8"	1/4"	26	23.4
OP-LCHC018	BG5	583	0.53	1 × 254	1.1	4	296	331	465	1/2"	1/4"	26	23.4
OP-LCHC018	BG5	583	0.53	1 × 254	1.1	4	296	331	465	1/2"	1/4"	26	23.4
OP-LCHC021	BG5	583	0.53	1 × 254	1.1	4	296	331	465	1/2"	1/4"	26	23.4
OP-LCHC026	BG6	1150	0.63	1 × 300	2.4	7	340	430	480	1/2"	3/8"	45	39
OP-LCHC034	BG7	990	0.84	1 × 300	2.4	7	340	430	480	1/2"	3/8"	48	42
OP-LCHC048	A4	1200	1.2	1 × 300	3	5	402	500	600	5/8"	3/8"	54	45
OP-LCHC068	C4	2150	2.3	1 × 350	6	5	555	630	650	5/8"	1/2"	64	57
OP-LCHC096	D4	2000	3.1	1 × 350	6	5	555	630	650	7/8"	1/2"	78	71
OP-LCHC108	E4	3150	2.5	1 × 400	6	5	605	630	650	7/8"	1/2"	92	80
OP-LCHC136	G4	3150	4.1	1 × 400	8	5	656	755	700	7/8"	1/2"	95	83
OP-LCHC215	J4	6000	4.4	1 × 500	14	5	708	900	900	1 1/8"	5/8"	151	136
OP-LCHC271	L4	5850	6.3	1 × 500	14	5	759	900	900	1 1/8"	5/8"	166	151
OP-LGHC048	C3	1450	1.6	2 × 254	3	6	392	700	500	5/8"	3/8"	55	45
OP-LGHC068	D3	2800	1.5	2 × 300	6	6	442	800	600	5/8"	1/2"	62	55
OP-LGHC096	E3	2100	2.2	2 × 300	6	6	442	800	600	7/8"	1/2"	78	71
OP-LGHC108	G3	4600	2.3	2 × 355	8	6	555	1000	700	7/8"	1/2"	102	89
OP-LGHC136	H3	3600	4.7	2 × 355	8	6	555	1000	700	7/8"	1/2"	107	94
OP-LGHC215	L3	9000	5.1	2 × 450	14	6	671	1200	800	1 1/8"	5/8"	152	138
OP-LGHC271	L3	8600	5.1	2 × 450	14	6	671	1200	800	1 1/8"	5/8"	158	144

⚠ Note: A01 version includes receiver, service valves and bracket and pipes for KP15 dual pressure control fitting (KP15 not included)

Optyma™ condensing units – R404A/R507 MBP Reciprocating

⚠ Note: Limited codes listed for Australia

Nbr of fans	Test conditions	Unit	Version				Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]					Power consumption (W)	Application range [°C]
			A00	A01	A04	A05				-15°C	-10°C	-5°C	0°C	+5°C		
	CECOMAF	OP-MCHC004	114X2208	114X2209	114X2211	114X2210	G	TL4DLX	32°C	265	314	377	450	528	284	38°C: -20°C till 0°C
		OP-MCHC006	114X2316	114X2317	114X2319	114X2318	G	FR6DLX	32°C	428	511	603	705	812	502	38°C: -20°C till 0°C
		OP-MCHC007	114X2424	114X2425	114X2427	114X2426	G	NF7MLX	32°C	577	688	810	941	1080	624	38°C: -23.3°C till -6.7°C
		OP-MCHC010	114X2532	114X2533	114X2535	114X2534	A	SC10MLX	32°C	736	884	1046	1220	1403	728	38°C: -23.3°C till -15°C
		OP-MCHC012	114X2540	114X2541	114X2543	114X2542	G	SC12MLX	32°C	863	1027	1205	1392	1586	890	38°C: -23.3°C till -20°C
		OP-MCHC015	114X2648	114X2649	114X2651	114X2650	G	SC15MLX	32°C	1081	1290	1519	1765	2026	1145	38°C: -23.3°C till -10°C
		OP-MCHC018	114X2756	114X2757	114X2759	114X2758	G	SC18MLX	32°C	1287	1538	1816	2116	2437	1235	38°C: -23.3°C till -6.70°C
		OP-MCHC021	114X2764	114X2765	114X2767	114X2766	G	GS21MLX	32°C	1410	1665	1925	2195	2460	1250	38°C: -20°C till -15°C
		OP-MCHC026	114X2772	114X2773	114X2775	114X2774	G	GS26MLX	32°C	1575	1870	2175	2470	2765	1500	38°C: -20°C till -10°C
		OP-MCHC034	114X2880	114X2881	114X2883	114X2882	G	GS34MLX	32°C	2350	2800	3250	3725	4200	2220	38°C: -20°C till -150°C

Test condition EN13215

Ambient temperature
Suction gas temperature

CECOMAF
32°C
32°C

Electrical code

A - Compressor 230 V/1 phase/50 & 60 Hz, fan 230 V/1 phase/50 & 60 Hz
G - Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz

Version: **A00:** Without valves and receiver for capillary tubes
A01: With receiver, 2 stop valves, brackets and copper pipes for KP
A04: A01 + KP17WB + FSA-kit + power cord (except MCHC021, 26 and 034)
A05: A01 but solder valve for inch tubes

⚠ Note: Only codes in bold currently listed in Australia

⚠ Note: Version includes receiver, service valves and bracket and pipes for KP15 dual pressure control fitting (KP control not included)

Optyma™ condensing units – R404A/R507 MBP Reciprocating

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions [mm]						Weight [kg]
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	
OP-MCHC004	BG2	231	0.25	1 × 200	0.8	1	226	304	446	3/8"	1/4"	13.8
OP-MCHC006	BG3	518	0.31	1 × 230	1.1	2	256	321	458	3/8"	1/4"	17.9
OP-MCHC007	BG4	631	0.40	1 × 254	1.1	3	296	331	478	3/8"	1/4"	18.3
OP-MCHC010	BG5	583	0.53	1 × 254	1.1	4	296	331	478	3/8"	1/4"	22.0
OP-MCHC012	BG5	583	0.53	1 × 254	1.1	4	296	331	478	3/8"	1/4"	22.0
OP-MCHC015	BG6	1132	1.1	1 × 300	1.1	4	350	442	610	1/2"	1/4"	40.6
OP-MCHC018	BG7	827	1.8	1 × 300	1.1	4	350	442	610	1/2"	1/4"	43.6
OP-MCHC021	BG7	990	0.84	1 × 300	1.6	7	340	430	480	5/8"	3/8"	36.0
OP-MCHC026	BG7	990	0.84	1 × 300	1.6	7	340	430	480	5/8"	3/8"	39.0
OP-MCHC034	BG8	2300	1.36	1 × 350	2.4	8	450	500	600	5/8"	3/8"	44.0

Optyma™ condensing units – R404A/R507 MBP Reciprocating

⚠ Note: Not currently listed in Australia

Nbr of fans	Test conditions	Unit	Version	Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]					Power consumption (W)	Application range [°C]
							-15°C	-10°C	-5°C	-0°C	+5°C		
							A02						
SH=10K	EN13215 Superheat	OP-MCZC030	114X5024	G	MTZ18	27°C	1576	2071	2624	3228	3877	1200	43°C: -30°C till 0°C 46°C: -25°C till -5°C
			114X5000	D		38°C	1217	1608	2049	2537	3070	1300	
			114X5012	E		43°C	1068	1411	1801	2237	2700	1400	
		OP-MCZC038	114X5025	G	MTZ22	27°C	2426	3050	3741	4494	5294	1500	
			114X5001	D		38°C	1863	2369	2934	3550	4215	1600	
			114X5013	E		43°C	1615	2066	2572	3127	3700	1700	
		OP-MCZC048	114X5026	G	MTZ28	27°C	3254	4063	4957	5924	6967	2000	
			114X5002	D		38°C	2514	3195	3944	4760	5641	2100	
			114X5014	E		43°C	2192	2813	3496	4246	5000	2200	
		OP-MCZC054	114X5027	G	MTZ32	27°C	3687	4546	5481	6488	7549	2200	
			114X5003	D		38°C	2876	3582	4356	5187	6074	2400	
			114X5015	E		43°C	2513	3150	3849	4602	5400	2400	
		OP-MCZC060	114X5028	G	MTZ36	27°C	4247	5201	6225	7318	8448	2600	
			114X5004	D		38°C	3356	4134	4968	5853	6786	2822	
			114X5016	E		43°C	2950	3649	4401	5197	6029	2892	
		OP-MCZC068	114X5005	D	MTZ40	27°C	4918	5990	7148	8384	9676	3001	
			114X5017	E		38°C	3919	4792	5734	6729	7786	3254	
			114X5029	G		43°C	3456	4238	5081	5974	6900	3369	
		OP-MCZC086	114X5006	D	MTZ50	27°C	5701	7040	8499	10077	11735	3287	
			114X5018	E		38°C	4446	5540	6741	8044	9444	3494	
			114X5007	D		43°C	3901	4884	5971	7152	8400	3580	
		OP-MCZC096	114X5007	D	MTZ56	27°C	6128	7629	9276	11074	12978	3562	
			114X5019	E		38°C	4811	6049	7418	8914	10534	3797	
			114X5008	D		43°C	4240	5359	6605	7969	9400	3897	
		OP-MCZC108	114X5008	D	MTZ64	27°C	7382	9145	11102	13247	15535	4770	
			114X5020	E		38°C	5787	7242	8866	10646	12589	5014	
			114X5009	D		43°C	5074	6387	7860	9482	11200	5104	
		OP-MCZC121	114X5009	D	MTZ72	27°C	8382	10353	12536	14916	17482	5227	
			114X5021	E		38°C	6591	8225	10052	12055	14224	5505	
			114X5010	D		43°C	5816	7299	8956	10786	12700	5627	
		OP-MCZC136	114X5010	D	MTZ80	27°C	9612	11730	14037	16540	19178	6152	
			114X5022	E		38°C	7652	9399	11312	13387	15621	6546	
			114X5011	D		43°C	6779	8359	10098	11985	14000	6711	
		OP-MCZC171	114X5011	D	MTZ100	27°C	11053	13656	16464	19472	22596	7281	
			114X5023	E		38°C	8726	10843	13129	15568	18151	7761	
			114X5058	D		43°C	7654	9562	11617	13822	16100	7915	
		OP-MGZC215	114X5058	D	MTZ125	27°C	14823	18259	22060	26206	30661	9497	
			114X5073	E		38°C	11644	14483	17638	21097	24845	10092	
			114X5059	D		43°C	10273	12833	15689	18840	22300	10343	
		OP-MGZC242	114X5059	D	MTZ144	27°C	16884	20555	24538	28839	33349	10936	
			114X5074	E		38°C	13357	16362	19639	23173	26956	11573	
			114X5060	D		43°C	11776	14478	17440	20638	24100	11826	
		OP-MGZC271	114X5060	D	MTZ160	27°C	18832	22958	27470	32351	37485	12137	
			114X5075	E		38°C	14977	18384	22124	26156	30475	12894	
			114X5076	G		43°C	13249	16321	19705	23366	27200	13215	
		OP-MGZD030	114X5076	G	MTZ18	27°C	1636	2168	2771	3438	4167	1306	
			114X5046	D		38°C	1264	1683	2166	2707	3302	1392	
			114X5061	E		46°C	1021	1361	1757	2206	2700	1457	
		OP-MGZD038	114X5077	G	MTZ22	27°C	2557	3241	4009	4856	5776	1541	
			114X5047	D		38°C	1972	2531	3162	3864	4631	1643	
114X5062	E		46°C	1562		2027	2558	3152	3750	1708			
OP-MGZD048	114X5078	G	MTZ28	27°C	3327	4177	5119	6151	7267	2003			
	114X5048	D		38°C	2570	3283	4076	4949	5897	2129			
	114X5063	E		46°C	2047	2659	3344	4099	4870	2212			
OP-MGZD054	114X5079	G	MTZ32	27°C	3783	4687	5686	6765	7930	2217			
	114X5049	D		38°C	2951	3700	4525	5424	6392	2354			
	114X5064	E		46°C	2359	2991	3691	4460	5250	2434			
OP-MGZD060	114X5080	G	MTZ36	27°C	4512	5582	6757	8030	9392	2674			
	114X5050	D		38°C	3586	4469	5435	6486	7609	2883			
	114X5065	E		46°C	2911	3658	4477	5364	6270	3006			
OP-MGZD068	114X5051	D	MTZ40	27°C	5285	6511	7867	9345	10937	2991			
	114X5066	E		38°C	4261	5275	6396	7615	8936	3247			
	114X5081	G		46°C	3494	4351	5299	6334	7400	3441			
OP-MGZD086	114X5081	G	MTZ50	27°C	6069	7564	9232	11053	13028	3308			
	114X5052	D		38°C	4739	5971	7346	8866	10516	3531			
	114X5067	E		46°C	3828	4865	6033	7330	8750	3677			
OP-MGZD096	114X5053	D	MTZ56	27°C	6348	7938	9713	11648	13750	3651			
	114X5068	E		38°C	4987	6308	7782	9405	11174	3894			
	114X5054	D		46°C	4055	5177	6436	7840	9300	4057			
OP-MGZD108	114X5054	D	MTZ64	27°C	7724	9640	11791	14172	16777	4298			
	114X5069	E		38°C	6077	7667	9457	11456	13648	4565			
	114X5055	D		46°C	4901	6251	7779	9501	11200	4717			
OP-MGZD121	114X5055	D	MTZ72	27°C	8491	10508	12757	15209	17875	4806			
	114X5070	E		38°C	6676	8356	10231	12299	14553	5088			
	114X5056	D		46°C	5434	6859	8462	10256	12100	5286			
OP-MGZD136	114X5056	D	MTZ80	27°C	10146	12476	15057	17880	20948	6233			
	114X5071	E		38°C	8102	10042	12194	14566	17139	6650			
	114X5057	D		46°C	6659	8312	10158	12194	14300	6928			
OP-MGZD171	114X5057	D	MTZ100	27°C	11709	14606	17800	21268	24996	7292			
	114X5072	E		38°C	9309	11688	14303	17153	20210	7846			
	114X5115	D		46°C	7532	9550	11760	14178	16800	8127			
OP-MGZD215	114X5115	D	MTZ125	27°C	15416	19070	23137	27599	32426	9363			
	114X5118	E		38°C	12139	15166	18553	22308	26396	9987			
	114X5116	D		46°C	9905	12465	15362	18587	22000	10399			
OP-MGZD242	114X5116	D	MTZ144	27°C	17606	21519	25832	30487	35497	10432			
	114X5119	E		38°C	13988	17228	20789	24659	28826	11110			
	114X5117	D		46°C	11406	14140	17156	20470	24000	11529			
OP-MGZD271	114X5117	D	MTZ160	27°C	19694	24176	29133	34542	40372	11938			
	114X5120	E		38°C	15721	19448	23575	28112	33009	12744			
	114X5120	E		46°C	12878	16041	19569	23450	27500	13278			

Test condition
EN13215
Superheat

SH10K
10K

Electrical code

D - Compressor 400 V/3 phase/50 Hz, fan 400 V/3 phase/50 Hz
E - Compressor 400 V/3 phase/50 Hz, fan 230 V/1 phase/50 Hz
G - Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz


Version: A02: With receiver, stop valve, universal pressure switch, (KP17WB), flexible hoses and electrical box

Optyma™ condensing units – R404A/R507 MBP Reciprocating

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions						Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	Gross	Net
OP-MCZC030	A4	1200	1.2	1 × 300	3	5	408	500	600	1 1/2"	3/8"	54	45
OP-MCZC038	B4	1750	1.3	1 × 350	3	5	451	500	620	1 1/2"	3/8"	56	47
OP-MCZC048	C4	2150	2.3	1 × 350	6	5	555	630	650	1 1/2"	1 1/2"	64	57
OP-MCZC054	C4	2150	2.3	1 × 350	6	5	555	630	650	5/8"	1 1/2"	65	58
OP-MCZC060	D4	2000	3.1	1 × 350	6	5	555	630	650	5/8"	1 1/2"	68	61
OP-MCZC068	E4	3150	2.5	1 × 400	6	5	605	630	650	5/8"	1 1/2"	72	65
OP-MCZC086	F4	3300	3.1	1 × 400	8	5	656	755	700	7/8"	1 1/2"	95	83
OP-MCZC096	G4	3150	4.1	1 × 400	8	5	656	755	700	7/8"	1 1/2"	100	88
OP-MCZC108	H4	4300	4.1	1 × 500	8	5	656	755	700	7/8"	1 1/2"	113	101
OP-MCZC121	J4	6000	4.4	1 × 500	10	5	708	900	900	1 1/8"	1 1/2"	127	113
OP-MCZC136	K4	6200	4.7	1 × 500	10	5	759	900	900	1 1/8"	1 1/2"	140	126
OP-MCZC171	L4	5850	6.3	1 × 500	14	5	759	900	900	1 1/8"	5/8"	162	147
OP-MGZC215	M4	11000	7.4	2 × 500	14	6	759	1350	820	1 1/8"	5/8"	191	176
OP-MGZC242	M4	11000	7.4	2 × 500	14	6	759	1350	820	1 1/8"	5/8"	194	179
OP-MGZC271	N4	9200	12.3	2 × 500	14	6	759	1350	820	1 1/8"	5/8"	199	184
OP-MGZD030	C3	1300	1.7	2 × 254	3	6	392	700	500	1 1/2"	3/8"	56	46
OP-MGZD038	D3	2800	1.5	2 × 300	6	6	442	800	600	1 1/2"	1 1/2"	60	53
OP-MGZD048	E3	2600	2.2	2 × 300	6	6	442	800	600	1 1/2"	1 1/2"	64	57
OP-MGZD054	E3	2600	2.2	2 × 300	6	6	442	800	600	5/8"	1 1/2"	65	58
OP-MGZD060	G3	4600	2.3	2 × 355	8	6	555	1000	700	5/8"	1 1/2"	88	75
OP-MGZD068	H3	3600	4.7	2 × 355	8	6	555	1000	700	5/8"	1 1/2"	96	82
OP-MGZD086	H3	3600	4.7	2 × 355	8	6	555	1000	700	7/8"	1 1/2"	107	93
OP-MGZD096	H3	3600	4.7	2 × 355	8	6	555	1000	700	7/8"	1 1/2"	109	95
OP-MGZD108	J3	5400	4.7	2 × 400	10	6	555	1000	700	7/8"	1 1/2"	113	99
OP-MGZD121	J3	5400	4.7	2 × 400	10	6	555	1000	700	7/8"	1 1/2"	115	101
OP-MGZD136	L3	8600	5.1	2 × 450	10	6	671	1200	800	1 1/8"	1 1/2"	133	118
OP-MGZD171	M3	8200	6.8	2 × 450	14	6	671	1200	800	1 1/8"	5/8"	158	144
OP-MGZD215	N4	9200	12.25	2 × 500	14	6	759	1350	820	1 1/8"	5/8"	196	180
OP-MGZD242	N4	9200	12.25	2 × 500	14	6	759	1350	820	1 1/8"	5/8"	199	183
OP-MGZD271	U	14000	14.2	2 × 600	14	6	975	1500	870	1 1/8"	5/8"	230	212

Optyma™ condensing units – R404A/R507 MBP Scroll

⚠ Note: Not currently listed in Australia

Nbr of fans	Test conditions	Unit	Version	Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]					Power consumption (W)	Application range [°C]
			A02				-15°C	-10°C	-5°C	-0°C	+5°C		
	SH = 10K	OP-MCUC034	114X5564	G	MLZ015	27°C	2635	3087	3549	4020	4491	1911	38°C: -25°C till 10°C 43°C: -20°C till 5°C
			114X5576	D		38°C	1911	2281	2654	3027	3402	2506	
			114X5568	E		43°C	1538	1876	2213	2547	2884	2851	
		OP-MCUC043	114X5565	G	MLZ019	27°C	3258	3716	4179	4653	5133	2624	
			114X5577	D		38°C	2472	2815	3162	3524	3891	3186	
			114X5569	E		43°C	2090	2384	2679	2972	3274	3463	
		OP-MCUC057	114X5566	G	MLZ026	27°C	5305	6226	7222	8286	9408	2667	
			114X5578	D		38°C	4332	5082	5890	6753	7666	3382	
			114X5570	E		43°C	3845	4520	5243	6017	6838	3787	
		OP-MCUC068	114X5567	G	MLZ030	27°C	6278	7357	8517	9748	11044	3224	
			114X5579	D		38°C	5108	5974	6907	7903	8958	4043	
			114X5571	E		43°C	4533	5300	6131	7021	7970	4483	
		OP-MCUC080	114X5580	D	MLZ038	27°C	7744	9116	10604	12202	13901	3652	
			114X5572	E		38°C	6371	7491	8703	10005	11400	4584	
						E	43°C	5698	6703	7791	8961	10219	
		OP-MCUC107	114X5581	D	MLZ048	27°C	10047	11785	13663	15685	17857	4844	
			114X5573	E		32°C	8232	9647	11170	12811	14579	6122	
						E	43°C	7345	8612	9973	11445	13036	
		OP-MGUC148	114X5582	D	MLZ066	27°C	13608	15956	18471	21138	23944	6586	
			114X5574	E		38°C	11188	13126	15175	17335	19609	8233	
						E	43°C	9988	11746	13591	15529	17571	
		OP-MGUC162	114X5583	D	MLZ076	27°C	16241	18945	21853	24995	28365	7297	
			114X5575	E		38°C	13236	15217	17383	19748	22344	8967	
						E	43°C	11809	13422	15219	17218	19454	
		OP-MGUD034	114X5507	G	MLZ015	27°C	3097	3681	4309	4979	5689	1545	
			114X5512	D		38°C	2437	2926	3442	3986	4560	2020	
			114X5523	E		46°C	1888	2314	2755	3214	3697	2479	
		OP-MGUD043	114X5508	G	MLZ019	27°C	4115	4844	5637	6496	7420	1952	
			114X5513	D		38°C	3398	3994	4639	5338	6095	2454	
			114X5524	E		46°C	2816	3317	3856	4442	5084	2871	
OP-MGUD057	114X5510	G	MLZ026	27°C	5433	6398	7449	8582	9788	2571			
	114X5515	D		38°C	4472	5264	6124	7050	8038	3258			
	114X5526	E		46°C	3693	4360	5082	5861	6695	3909			
OP-MGUD068	114X5511	G	MLZ030	27°C	6637	7844	9164	10591	12113	2961			
	114X5516	D		38°C	5495	6483	7566	8740	9999	3728			
	114X5527	E		46°C	4582	5406	6314	7305	8379	4412			
OP-MGUD080	114X5517	D	MLZ038	27°C	8038	9516	11141	12907	14811	3446			
	114X5528	E		38°C	6685	7906	9244	10700	12273	4330			
				E	46°C	5610	6641	7771	9003	10340	5139		
OP-MGUD107	114X5519	D	MLZ048	27°C	10534	12444	14542	16837	19333	4497			
	114X5530	E		38°C	8754	10331	12057	13948	16012	5686			
				E	46°C	7341	8674	10128	11726	13482	6791		
OP-MGUD148	114X5521	D	MLZ066	27°C	14006	16492	19185	22072	25144	6310			
	114X5532	E		38°C	11617	13683	15893	18249	20756	7883			
				E	46°C	9694	11466	13338	15322	17425	9352		
OP-MGUD162	114X5522	D	MLZ076	27°C	16760	19669	22835	26293	30042	6995			
	114X5533	E		38°C	13765	15950	18362	21018	23954	8622			
				E	46°C	11465	13043	14840	16877	19196	10046		

Test condition

EN13215
Superheat

SH10K
10K

Electrical code

D - Compressor 400 V/3 phase/50 Hz, fan 400 V/3 phase/50 Hz
E - Compressor 400 V/3 phase/50 Hz, fan 230 V/1 phase/50 Hz
G - Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz

Version: A02: With receiver, stop valve, universal pressure switch, (KP17WB), flexible hoses and electrical box

Optyma™ condensing units – R404A/R507 MBP Scroll

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions						Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	Gross	Net
OP-MCUC034	C4	2150	2.3	1 x 350	6	9	555	630	650	3/4"	1/2"	72	65
OP-MCUC043	C4	2150	2.3	1 x 350	6	9	555	630	650	3/4"	1/2"	72	65
OP-MCUC057	E4	3150	2.5	1 x 400	6	9	605	630	650	3/4"	1/2"	77	70
OP-MCUC068	F4	3300	3.1	1 x 400	8	9	656	755	700	7/8"	1/2"	95	83
OP-MCUC080	H4	4300	4.1	1 x 500	8	9	656	755	700	7/8"	1/2"	111	99
OP-MCUC107	K4	6200	4.7	1 x 500	10	9	759	900	900	7/8"	1/2"	136	122
OP-MGUC148	L3	8600	5.1	2 X 450	10	9	671	1200	800	1 1/8"	1/2"	139	125
OP-MGUC162	M4	11000	7.4	2 x 500	14	9	759	1350	820	1 1/8"	5/8"	172	157
OP-MGUD034	D3	2800	1.5	2 x 300	6	9	442	800	600	3/4"	1/2"	70	63
OP-MGUD043	E3	2600	2.2	2 x 300	6	9	442	800	600	3/4"	1/2"	72	65
OP-MGUD057	G3	4600	2.3	2 x 355	8	9	555	1000	700	3/4"	1/2"	72	63
OP-MGUD068	H3	3600	4.7	2 x 355	8	9	555	1000	700	7/8"	1/2"	107	93
OP-MGUD080	J3	5400	4.7	2 x 400	8	9	555	1000	700	7/8"	1/2"	108	95
OP-MGUD107	L3	8600	5.1	2 x 450	10	9	671	1200	800	7/8"	1/2"	129	114
OP-MGUD148	M3	8200	6.8	2 x 450	10	9	671	1200	800	1 1/8"	1/2"	141	126
OP-MGUD162	N4	9200	12.3	2 x 500	14	9	750	1350	870	1 1/8"	5/8"	177	161

Optyma™ condensing units – R134a LBP/MBP/HBP Reciprocating

⚠ Note: Not currently listed in Australia

Nbr of fans	Test conditions	Unit	Version				Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]						Power consumption (W)	Application range [°C]		
			A00	A01	A04	A05				-30°C	-20°C	-10°C	0°C	+5°C	+10°C				
1	CECOMAF	OP-UCGC003	114X0104	114X0105	114X0107	114X0106	G	TL3GX	32°C	52	91	147	220	263	309	93	-30°C till +15°C		
		OP-UCGC004	114X0108	114X0109	114X0111	114X0110	G	TL4GX	32°C	67	115	182	269	320	377	110	-30°C till +7.2°C		
		OP-UCGC005	114X0112	114X0113	114X0115	114X0114	G	TL5GX	32°C	83	139	217	317	374	436	123	-30°C till +0°C		
		OP-UCGC006	114X0200	114X0201	114X0203	114X0202	G	FR6GX	32°C	106	185	294	437	522	617	145	-30°C till +10°C		
		OP-MCGC006	114X0228	114X0229	114X0231	114X0230	A	NL6.1MF	32°C		192	306	453	537	628	142	-20°C till +10°C		
		OP-MCGC007	114X0244	114X0245	114X0247	114X0246	A	NL7.3MF	32°C		237	372	541	638	742	173	-20°C till +5°C		
		OP-UCGC007	114X0216	114X0217	114X0219	114X0218	G	FR7.5GX	32°C	114	201	321	478	571	674	159	-30°C till +10°C		
		OP-UCGC008	114X0224	114X0225	114X0227	114X0226	G	FR8.5GX	32°C	141	240	376	550	652	762	181	-30°C till +5°C		
		OP-MCGC008	114X0352	114X0353	114X0355	114X0354	A	NL8.4MF	32°C		283	446	657	780	915	198	-20°C till +15°C		
		OP-MCGC010	114X0360	114X0361	114X0363	114X0362	A	NL10MF	32°C		347	536	780	922	1076	243	-20°C till +7.25°C		
		OP-UCGC010	114X0232	114X0233	114X0235	114X0234	G	FR10GX	32°C	149	254	396	580	688	805	207	-30°C till +5°C		
		OP-UCGC011	114X0336	114X0337	114X0339	114X0338	G	FR11GX	32°C	168	327	510	737	875		236	-30°C till +5°C		
		OP-MCGC011	114X0376	114X0377	114X0379	114X0378	G	NL11MF	32°C		378	582	842	992	1154	265	-20°C till +5°C		
		OP-UCGC012	114X0340	114X0341	114X0343	114X0342	G	SC12GX	32°C	202	381	610	880	1029	1185	261	-35°C till +0°C		
		OP-UCGC015	114X0448	114X0449	114X0451	114X0450	G	SC15GX	32°C		463	731	1045	1220	1405	323	-25°C till +0°C		
		OP-UCGC018	114X0556	114X0557	114X0559	114X0558	G	SC18GX	32°C		531	833	1210	1432	1682	367	-25°C till +0.5°C		
		OP-MCGC021	114X0568	114X0569	114X0571	114X0570	G	SC21MF	32°C		628	947	1344	1568	1808	463	-23.5°C till -5°C		
		OP-UCGC021	114X0564	114X0565	114X0567	114X0566	G	SC21GX	32°C		622	981	1414	1652	1902	437	-25°C till -5°C		
		1	RGT20	OP-UCGC026	114X0772	114X0773	114X0775	114X0774	G	GS26MFX	32°C		820	1290	1890	2230		(-20°C) 660	-20°C till +7.2°C
				OP-UCGC034	114X0780	114X0781	114X0783	114X0782	G	GS34MFX	32°C		990	1500	2100	2450		(-20°C) 700	-20°C till +0°C

Test condition

EN13215

Ambient temperature
Suction gas temperature

RGT20

32°C
20°C

CECOMAF

32°C
32°C

Electrical code

A: Compressor 230 V/1 phase/50+60 Hz, fan 230 V/1 phase/50+60 Hz
G: Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz

Version: **A00:** Without valves and receiver for capillary tubes

A01: With receiver, 2 stop valves, brackets and copper pipes for KP

A04: A01 + KP17WB + FSA-kit + power cord (except LCH034)

A05: A01 but solder valve for inch tubes

Optyma™ condensing units – R134a LBP/MBP/HBP Reciprocating

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions						Weight
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	
OP-UCGC003	BG1	243	0.13	1x172	0.8	1	197	289	410	1/4"	1/4"	13.2
OP-UCGC004	BG1	243	0.13	1x172	0.8	1	197	289	410	1/4"	1/4"	13.2
OP-UCGC005	BG1	243	0.13	1x172	0.8	1	197	289	410	1/4"	1/4"	13.2
OP-UCGC006	BG2	231	0.25	1x200	0.8	2	226	304	432	3/8"	1/4"	16.7
OP-UCGC007	BG2	231	0.25	1x200	0.8	2	226	304	432	3/8"	1/4"	16.7
OP-UCGC008	BG2	231	0.25	1x200	0.8	2	226	304	432	3/8"	1/4"	16.7
OP-UCGC010	BG2	231	0.25	1x200	0.8	4	226	304	432	3/8"	1/4"	16.7
OP-UCGC011	BG3	518	0.31	1x230	1.1	4	256	321	444	3/8"	1/4"	17.9
OP-UCGC012	BG3	518	0.31	1x230	1.1	4	256	321	444	3/8"	1/4"	17.9
OP-UCGC015	BG4	631	0.40	1x254	1.1	4	296	331	451	3/8"	1/4"	22
OP-UCGC018	BG5	583	0.53	1x254	1.1	4	296	331	473	3/8"	1/4"	23.4
OP-UCGC021	BG5	583	0.53	1x254	1.1	4	296	331	513	3/8"	1/4"	23.4
OP-UCGC026	BG7	990	0.84	1x300	2.4	7	340	430	480	3/8"	1/4"	34.5
OP-UCGC034	BG7	990	0.84	1x300	2.4	7	340	430	480	1/2"	3/8"	36

Optyma™ condensing units – R134a MBP Reciprocating

⚠ Note: Not currently listed in Australia

Nbr of fans	Test conditions	Unit	Version	Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]					Power consumption (W)	Application range [°C]
							-15°C	-10°C	-5°C	0°C	+5°C		
SH=10K	Superheat	OP-MCZC030	114X5024	G	MTZ18	27°C	991	1350	1768	2238	2757	714	46°C: -15°C till +10°C 43°C: -15°C till +15°C
			114X5000	D		38°C	736	1054	1417	1820	2259	756	
			114X5012	E		43°C	643	938	1270	1638	2038	767	
		114X5025	G	MTZ22	27°C	1293	1745	2280	2895	3589	883		
		114X5001	D		38°C	994	1394	1858	2388	2981	933		
		114X5013	E		43°C	879	1249	1676	2164	2708	947		
		OP-MCZC048	114X5026	G	MTZ28	27°C	1631	2167	2824	3609	4517	1054	
			114X5002	D		38°C	1314	1783	2355	3031	3814	1135	
			114X5014	E		43°C	1197	1628	2153	2774	3494	1166	
		OP-MCZC054	114X5027	G	MTZ32	27°C	1882	2502	3250	4124	5123	1296	
			114X5003	D		38°C	1497	2044	2695	3452	4313	1369	
			114X5015	E		43°C	1344	1850	2450	3149	3942	1392	
		OP-MCZC060	114X5028	G	MTZ36	27°C	2513	3217	4040	4978	6029	1471	
			114X5004	D		38°C	2099	2725	3448	4265	5176	1588	
			114X5016	E		43°C	1917	2502	3174	3932	4771	1630	
		OP-MCZC068	114X5005	D	MTZ40	27°C	2918	3654	4496	5446	6499	1606	
			114X5017	E		38°C	2509	3174	3926	4766	5691	1774	
			114X5018	E		43°C	2313	2940	3645	4430	5293	1838	
		OP-MCZC086	114X5029	G	MTZ50	27°C	3168	4150	5319	6672	8201	2058	
			114X5006	D		38°C	2472	3348	4378	5558	6884	2158	
			114X5018	E		43°C	2210	3025	3979	5069	6294	2187	
		OP-MCZC096	114X5007	D	MTZ56	27°C	3534	4644	5958	7473	9181	2243	
			114X5019	E		38°C	2770	3761	4922	6251	7743	2349	
			114X5008	D		43°C	2465	3393	4476	5712	7100	2380	
		OP-MCZC108	114X5020	E	MTZ64	27°C	4049	5329	6847	8601	10589	2996	
			114X5009	D		38°C	3173	4327	5680	7234	8982	3114	
			114X5009	D		43°C	2818	3905	5171	6623	8254	3148	
		OP-MCZC121	114X5021	E	MTZ72	27°C	4846	6306	8020	9985	12197	3227	
			114X5010	D		38°C	3825	5141	6671	8410	10363	3341	
			114X5010	D		43°C	3375	4617	6054	7689	9514	3323	
		OP-MCZC136	114X5010	D	MTZ80	27°C	5635	7264	9168	11341	13778	3647	
			114X5022	E		38°C	4561	6027	7719	9634	11772	3808	
			114X5011	D		43°C	4092	5468	7052	8841	10827	3858	
		OP-MCZC171	114X5011	D	MTZ100	27°C	6081	7995	10264	12879	15833	4100	
			114X5023	E		38°C	4826	6539	8543	10836	13404	4351	
			114X5058	D		43°C	4347	5950	7810	9936	12313	4435	
		OP-MGZC215	114X5058	D	MTZ125	27°C	7985	10401	13258	16562	20303	5303	
			114X5073	E		38°C	6248	8434	10980	13904	17196	5519	
			114X5059	D		43°C	5533	7588	9972	12704	15774	5566	
		OP-MGZC242	114X5059	D	MTZ144	27°C	9716	12466	15663	19289	23328	6441	
			114X5074	E		38°C	7842	10281	13079	16218	19688	6822	
			114X5060	D		43°C	7038	9307	11897	14787	17968	6967	
		OP-MGZC271	114X5060	D	MTZ160	27°C	11030	14146	17804	21989	26687	6839	
			114X5075	E		38°C	9080	11859	15067	18716	22776	7231	
			114X5076	G		43°C	8271	10856	13827	17197	20940	7389	
		OP-MGZD030	114X5076	G	MTZ18	27°C	1020	1395	1832	2333	2892	769	
			114X5046	D		38°C	755	1087	1468	1898	2376	815	
			114X5061	E		46°C	607	897	1228	1599	2009	832	
		OP-MGZD038	114X5077	G	MTZ22	27°C	1334	1806	2369	3024	3772	887	
			114X5047	D		38°C	1025	1442	1933	2500	3145	942	
114X5062	E		46°C	840		1206	1635	2130	2692	965			
OP-MGZD048	114X5078	G	MTZ28	27°C	1650	2197	2872	3680	4626	1062			
	114X5048	D		38°C	1327	1806	2393	3093	3911	1145			
	114X5063	E		46°C	1145	1560	2069	2678	3391	1195			
OP-MGZD054	114X5079	G	MTZ32	27°C	1910	2546	3316	4225	5271	1303			
	114X5049	D		38°C	1518	2079	2751	3541	4447	1379			
	114X5064	E		46°C	1275	1767	2356	3047	3843	1415			
OP-MGZD060	114X5080	G	MTZ36	27°C	2585	3321	4188	5193	6335	1558			
	114X5050	D		38°C	2161	2821	3591	4474	5475	1683			
	114X5065	E		46°C	1866	2457	3143	3927	4814	1752			
OP-MGZD068	114X5051	D	MTZ40	27°C	3009	3778	4669	5684	6828	1650			
	114X5066	E		38°C	2600	3303	4108	5021	6042	1829			
	114X5081	G		46°C	2283	2926	3658	4484	5406	1936			
OP-MGZD086	114X5081	G	MTZ50	27°C	3313	4347	5589	7050	8725	2126			
	114X5052	D		38°C	2572	3498	4598	5883	7352	2236			
	114X5067	E		46°C	2142	2964	3939	5071	6366	2287			
OP-MGZD096	114X5053	D	MTZ56	27°C	3929	5168	6649	8374	10339	2321			
	114X5068	E		38°C	3093	4212	5531	7060	8794	2434			
	114X5054	D		46°C	2577	3585	4768	6136	7687	2483			
OP-MGZD108	114X5054	D	MTZ64	27°C	4172	5505	7094	8954	11082	2571			
	114X5069	E		38°C	3266	4471	5892	7545	9432	2700			
	114X5055	D		46°C	2692	3779	5059	6540	8231	2756			
OP-MGZD121	114X5055	D	MTZ72	27°C	4895	6378	8125	10139	12414	2814			
	114X5070	E		38°C	3865	5203	6765	8552	10562	2940			
	114X5056	D		46°C	3144	4359	5769	7379	9184	2896			
OP-MGZD136	114X5056	D	MTZ80	27°C	5809	7509	9508	11821	14443	3818			
	114X5071	E		38°C	4708	6245	8033	10089	12412	3994			
	114X5057	D		46°C	3944	5333	6941	8784	10864	4078			
OP-MGZD171	114X5057	D	MTZ100	27°C	6301	8310	10707	13516	16727	4251			
	114X5072	E		38°C	4984	6786	8917	11387	14209	4522			
	114X5115	D		46°C	4207	5815	7708	9897	12397	4662			
OP-MGZD215	114X5115	D	MTZ125	27°C	8171	10657	13602	17035	20957	5266			
	114X5118	E		38°C	6393	8644	11285	14331	17801	5502			
	114X5116	D		46°C	5246	7277	9650	12378	15482	5576			
OP-MGZD242	114X5116	D	MTZ144	27°C	9956	12800	16121	19933	24213	6377			
	114X5119	E		38°C	8046	10581	13505	16832	20538	6774			
	114X5117	D		46°C	6749	9003	11583	14504	17737	7008			
OP-MGZD271	114X5117	D	MTZ160	27°C	11302	14534	18348	22770	27784	6789			
	114X5120	E		38°C	9293	12184	15561	19433	23814	7197			
	114X5120	E		46°C	7987	10554	13539	16951	20810	7454			

Test condition
EN13215
Superheat

SH10K
10K

Electrical code
D: Compressor 400 V/3 phase/50 Hz, fan 400 V/3 phase/50 Hz
E: Compressor 400 V/3 phase/50 Hz, fan 230 V/1 phase/50 Hz
G: Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz

Version: A02: With receiver, stop valve, universal pressure switch, (KP17WB), flexible hoses and electrical box

Optyma™ condensing units – R134a MBP Reciprocating

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions						Weight [kg]	
	Type	Air flow [m ³ /h]	Int. volume [dm ³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	Gross	Net
OP-MCZC030	A4	1200	1.2	1 × 300	3	5	408	500	600	1/2"	3/8"	54	45
OP-MCZC038	B4	1750	1.3	1 × 350	3	5	451	500	620	1/2"	3/8"	56	47
OP-MCZC048	C4	2150	2.3	1 × 350	6	5	555	630	650	1/2"	1/2"	64	57
OP-MCZC054	C4	2150	2.3	1 × 350	6	5	555	630	650	5/8"	1/2"	65	58
OP-MCZC060	D4	2000	3.1	1 × 350	6	5	555	630	650	5/8"	1/2"	68	61
OP-MCZC068	E4	3150	2.5	1 × 400	6	5	605	630	650	5/8"	1/2"	72	65
OP-MCZC086	F4	3300	3.1	1 × 400	8	5	656	755	700	7/8"	1/2"	95	83
OP-MCZC096	G4	3150	4.1	1 × 400	8	5	656	755	700	7/8"	1/2"	100	88
OP-MCZC108	H4	4300	4.1	1 × 500	8	5	656	755	700	7/8"	1/2"	113	101
OP-MCZC121	J4	6000	4.4	1 × 500	10	5	708	900	900	1"1/8"	1/2"	127	113
OP-MCZC136	K4	6200	4.7	1 × 500	10	5	759	900	900	1"1/8"	1/2"	140	126
OP-MCZC171	L4	5850	6.3	1 × 500	14	5	759	900	900	1"1/8"	5/8"	162	147
OP-MGZC215	M4	11000	7.4	2 × 500	14	6	759	1350	820	1"1/8"	5/8"	191	176
OP-MGZC242	M4	11000	7.4	2 × 500	14	6	759	1350	820	1"1/8"	5/8"	194	179
OP-MGZC271	N4	9200	12.3	2 × 500	14	6	759	1350	820	1"1/8"	5/8"	199	184
OP-MGZD030	C3	1300	1.7	2 × 254	3	6	392	700	500	1/2"	3/8"	56	46
OP-MGZD038	D3	2800	1.5	2 × 300	6	6	442	800	600	1/2"	1/2"	60	53
OP-MGZD048	E3	2600	2.2	2 × 300	6	6	442	800	600	1/2"	1/2"	64	57
OP-MGZD054	E3	2600	2.2	2 × 300	6	6	442	800	600	5/8"	1/2"	65	58
OP-MGZD060	G3	4600	2.3	2 × 355	8	6	555	1000	700	5/8"	1/2"	88	75
OP-MGZD068	H3	3600	4.7	2 × 355	8	6	555	1000	700	5/8"	1/2"	96	82
OP-MGZD086	H3	3600	4.7	2 × 355	8	6	555	1000	700	7/8"	1/2"	107	93
OP-MGZD096	H3	3600	4.7	2 × 355	8	6	555	1000	700	7/8"	1/2"	109	95
OP-MGZD108	J3	5400	4.7	2 × 400	10	6	555	1000	700	7/8"	1/2"	113	99
OP-MGZD121	J3	5400	4.7	2 × 400	10	6	555	1000	700	7/8"	1/2"	115	101
OP-MGZD136	L3	8600	5.1	2 × 450	10	6	671	1200	800	1"1/8"	1/2"	133	118
OP-MGZD171	M3	8200	6.8	2 × 450	14	6	671	1200	800	1"1/8"	5/8"	158	144
OP-MGZD215	N4	9200	12.25	2 × 500	14	6	759	1350	820	1"1/8"	5/8"	196	180
OP-MGZD242	N4	9200	12.25	2 × 500	14	6	759	1350	820	1"1/8"	5/8"	199	183
OP-MGZD271	U	14000	14.2	2 × 600	14	6	975	1500	870	1"1/8"	5/8"	230	212

Optyma™ condensing units – R134a MBP scroll

⚠ Note: Not currently listed in Australia

Nbr of fans	Test conditions	Unit	Version	Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]					Power consumption (W)	Application range [°C]
			A02				-15°C	-10°C	-5°C	-0°C	+5°C		
SH=10K	Superheat	OP-MCUC034	114X5564	G	MLZ015	27°C	1843	2313	2860	3488	4201	809	38°C: -15°C till 15°C 48°C: -10°C till 15°C
			114X5576	D		38°C	1625	2040	2528	3093	3737	1015	
			114X5568	E		43°C	1528	1914	2373	2905	3515	1123	
		OP-MCUC043	114X5565	G	MLZ019	27°C	2349	2920	3594	4368	5241	1075	
			114X5577	D		38°C	2058	2565	3164	3856	4637	1330	
			114X5569	E		43°C	1921	2397	2960	3612	4351	1459	
		OP-MCUC057	114X5566	G	MLZ026	27°C	3058	3832	4725	5742	6885	1349	
			114X5578	D		38°C	2666	3360	4160	5071	6097	1679	
			114X5570	E		43°C	2486	3140	3893	4753	5722	1851	
		OP-MCUC068	114X5567	G	MLZ030	27°C	3667	4580	5639	6846	8201	1626	
			114X5579	D		38°C	3224	4028	4965	6040	7252	2023	
			114X5571	E		43°C	3022	3770	4647	5656	6799	2232	
		OP-MCUC080	114X5580	D	MLZ038	27°C	4361	5478	6766	8232	9883	1923	
			114X5572	E		38°C	3796	4803	5962	7280	8765	2385	
			114X5572	E		43°C	3533	4486	5581	6828	8235	2625	
		OP-MCUC107	114X5581	D	MLZ048	27°C	5754	7187	8863	10774	12907	2394	
			114X5573	E		32°C	5008	6277	7776	9494	11421	2990	
			114X5573	E		43°C	4668	5851	7259	8881	10705	3299	
		OP-MGUC148	114X5582	D	MLZ066	27°C	7978	9914	12153	14692	17525	3439	
			114X5574	E		38°C	6900	8645	10661	12946	15496	4261	
			114X5574	E		43°C	6396	8049	9957	12121	14538	4664	
		OP-MGUC162	114X5583	D	MLZ076	27°C	8960	11210	13793	16719	19997	3803	
			114X5575	E		38°C	7807	9804	12117	14754	17725	4744	
			114X5575	E		43°C	7299	9163	11336	13827	16643	5214	
		OP-MGUD034	114X5507	G	MLZ015	27°C	1830	2294	2834	3452	4151	822	
			114X5512	D		38°C	1613	2022	2502	3055	3686	1030	
			114X5523	E		46°C	1457	1820	2251	2753	3328	1212	
		OP-MGUD043	114X5508	G	MLZ019	27°C	2372	2954	3642	4436	5335	1052	
			114X5513	D		38°C	2082	2600	3214	3925	4732	1304	
			114X5524	E		46°C	1862	2330	2886	3533	4270	1513	
OP-MGUD057	114X5510	G	MLZ026	27°C	3088	3875	4785	5826	7001	1321			
	114X5515	D		38°C	2696	3403	4221	5157	6214	1647			
	114X5526	E		46°C	2409	3050	3793	4645	5610	1925			
OP-MGUD068	114X5511	G	MLZ030	27°C	3749	4698	5807	7083	8527	1550			
	114X5516	D		38°C	3305	4146	5137	6281	7583	1932			
	114X5527	E		46°C	2981	3733	4626	5665	6855	2263			
OP-MGUD080	114X5517	D	MLZ038	27°C	4431	5577	6903	8425	10148	1861			
	114X5528	E		38°C	3867	4905	6103	7477	9034	2312			
	114X5528	E		46°C	3445	4395	5492	6750	8180	2697			
OP-MGUD107	114X5519	D	MLZ048	27°C	5871	7353	9094	11093	13341	2293			
	114X5530	E		38°C	5123	6445	8013	9824	11869	2873			
	114X5530	E		46°C	4578	5762	7183	8839	10719	3367			
OP-MGUD148	114X5521	D	MLZ066	27°C	8082	10058	12353	14967	17899	3349			
	114X5532	E		38°C	7007	8793	10865	13226	15873	4163			
	114X5532	E		46°C	6199	7834	9733	11897	14328	4811			
OP-MGUD162	114X5521	D	MLZ076	27°C	9076	11374	14018	17028	20412	3701			
	114X5533	E		38°C	7917	9965	12343	15067	18147	4630			
	114X5533	E		46°C	7105	8937	11087	13573	16404	5385			

Test condition
EN13215
Superheat

SH10K
10K


Electrical code
D: Compressor 400 V/3 phase/50 Hz, fan 400 V/3 phase/50 Hz
E: Compressor 400 V/3 phase/50 Hz, fan 230 V/1 phase/50 Hz
G: Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz



Version: A02: With receiver, stop valve, universal pressure switch, (KP17WB), flexible hoses and electrical box

Optyma™ condensing units – R134a MBP scroll

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions						Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	Gross	Net
OP-MCUC034	C4	2150	2.3	1 x 350	6	9	555	630	650	3/4"	1/2"	72	65
OP-MCUC043	C4	2150	2.3	1 x 350	6	9	555	630	650	3/4"	1/2"	72	65
OP-MCUC057	E4	3150	2.5	1 x 400	6	9	605	630	650	3/4"	1/2"	77	70
OP-MCUC068	F4	3300	3.1	1 x 400	8	9	656	755	700	7/8"	1/2"	95	83
OP-MCUC080	H4	4300	4.1	1 x 500	8	9	656	755	700	7/8"	1/2"	111	99
OP-MCUC107	K4	6200	4.7	1 x 500	10	9	759	900	900	7/8"	1/2"	136	122
OP-MGUC148	L3	8600	5.1	2 X 450	10	9	671	1200	800	1"1/8	1/2"	139	125
OP-MGUC162	M4	11000	7.4	2 x 500	14	9	759	1350	820	1"1/8	5/8"	172	157
OP-MGUD034	D3	2800	1.5	2 x 300	6	9	442	800	600	3/4"	1/2"	70	63
OP-MGUD043	E3	2600	2.2	2 x 300	6	9	442	800	600	3/4"	1/2"	72	65
OP-MGUD057	G3	4600	2.3	2 x 355	8	9	555	1000	700	3/4"	1/2"	72	63
OP-MGUD068	H3	3600	4.7	2 x 355	8	9	555	1000	700	7/8"	1/2"	107	93
OP-MGUD080	J3	5400	4.7	2 x 400	8	9	555	1000	700	7/8"	1/2"	108	95
OP-MGUD107	L3	8600	5.1	2 x 450	10	9	671	1200	800	7/8"	1/2"	129	114
OP-MGUD148	M3	8200	6.8	2 x 450	10	9	671	1200	800	1"1/8	1/2"	141	126
OP-MGUD162	N4	9200	12.3	2 x 500	14	9	750	1350	870	1"1/8	5/8"	177	161

Optyma™ condensing units – R407C MBP Reciprocating

 Note: Not currently listed in Australia

Nbr of fans	Test conditions	Unit	Version	Electrical code	Compressor	Amb. temp. °C	Capacity range in [W] at evaporating temperature [°C]					Power consumption (W)	Application range [°C]
							-15°C	-10°C	-5°C	0°C	+5°C		
							SH = 10K						
		OP-MCZC030	114X5024	G	MTZ18	27°C	1323	1810	2357	2960	3605	985	38°C: -10°C till 10°C 43°C: -5°C till 0°C
			114X5000	D		38°C		1404	1879	2398	2955	1025	
			114X5012	E		43°C			1676	2157			
		114X5025	G		27°C	1891	2494	3167	3907	4702	1342		
		OP-MCZC038	114X5001	D	MTZ22	38°C		1962	2538	3165	3841	1380	
			114X5013	E		43°C			2264	2838			
			114X5026	G		27°C	2408	3228	4150	5172	6277	1603	
		OP-MCZC048	114X5002	D	MTZ28	38°C		2562	3363	4239	5187	1664	
			114X5014	E		43°C			3007	3818			
			114X5027	G		27°C	2888	3747	4698	5737	6844	1834	
		OP-MCZC054	114X5003	D	MTZ32	38°C		2997	3816	4703	5640	1909	
			114X5015	E		43°C			3423	4236			
			114X5028	G		27°C	3420	4353	5379	6489	7658	2185	
		OP-MCZC060	114X5004	D	MTZ36	38°C		3538	4428	5377	6367	2301	
			114X5016	E		43°C			3987	4864			
			114X5005	D		MTZ40	27°C	3973	5037	6214	7502	8871	
		114X5017	E	38°C			4143	5164	6264	7419	2743		
				43°C				4668	5686				
		OP-MCZC086	114X5029	G	MTZ50	27°C	4410	5712	7172	8784	10518	2797	
			114X5006	D		38°C		4559	5806	7177	8648	2916	
			114X5018	E		43°C			5195	6451			
		OP-MCZC096	114X5007	D	MTZ56	27°C	4848	6334	8018	9886	11910	2986	
			114X5019	E		38°C		5088	6534	8131	9866	3111	
						43°C			5874	7344			
		OP-MCZC108	114X5008	D	MTZ64	27°C	5888	7547	9442	11568	13896	3949	
			114X5020	E		38°C		6129	7744	9547	11549	4124	
						43°C			7002	8658			
		OP-MCZC121	114X5009	D	MTZ72	27°C	6682	8615	10817	13284	15970	4546	
			114X5021	E		38°C		7013	8902	10995	13307	4759	
						43°C			8045	9971			
		OP-MCZC136	114X5010	D	MTZ80	27°C	7494	9659	12088	14774	17669	5241	
			114X5022	E		38°C		7906	9906	12296	14763	5517	
						43°C			9050	11160			
		OP-MCZC171	114X5011	D	MTZ100	27°C	8314	10939	13891	17162	20680	6067	
			114X5023	E		38°C		8668	11183	13957	16945	6316	
						43°C			9996	12524			
		OP-MGZC215	114X5058	D	MTZ125	27°C	12154	15528	19327	23540	28116	8139	
			114X5073	E		38°C		12579	15864	19477	23419	8567	
						43°C			14298	17635			
		OP-MGZC242	114X5059	D	MTZ144	27°C	13280	17003	21176	25802	30818	9141	
			114X5074	E		38°C		13957	17609	21661	26068	9678	
						43°C			16051	19844			
		OP-MGZC271	114X5060	D	MTZ160	27°C	15857	19931	24522	29611	35128	10356	
			114X5075	E		38°C		16441	20394	24738	29478	10980	
						43°C			18528	22536			
		OP-MGZD030	114X5076	G	MTZ18	27°C	1483	2003	2592	3241	3945	894	
			114X5046	D		38°C	1116	1574	2088	2652	3261	946	
			114X5061	E		46°C			1748	2251	2791		
OP-MGZD038	114X5077	G	MTZ22	27°C	2145	2801	3541	4361	5252	1180			
	114X5047	D		38°C	1674	2249	2891	3596	4360	1251			
	114X5062	E		46°C			2432	3054	3724				
OP-MGZD048	114X5078	G	MTZ28	27°C	2625	3486	4460	5538	6713	1445			
	114X5048	D		38°C	2054	2818	3670	4605	5615	1534			
	114X5063	E		46°C			3094	3924	4816				
OP-MGZD054	114X5079	G	MTZ32	27°C	3140	4045	5053	6156	7340	1667			
	114X5049	D		38°C	2490	3286	4161	5108	6117	1774			
	114X5064	E		46°C			3521	4355	5238				
OP-MGZD060	114X5080	G	MTZ36	27°C	3756	4782	5927	7184	8537	1978			
	114X5050	D		38°C	3051	3958	4957	6036	7191	2136			
	114X5065	E		46°C			4239	5201	6218				
OP-MGZD068	114X5051	D	MTZ40	27°C	4430	5614	6957	8449	10078	2285			
	114X5066	E		38°C	3679	4732	5903	7191	8587	2506			
				46°C			5110	6257	7490				
OP-MGZD086	114X5081	G	MTZ50	27°C	4932	6370	8006	9830	11824	2542			
	114X5052	D		38°C	3932	5184	6594	8157	9865	2734			
	114X5067	E		46°C			5579	6957	8458				
OP-MGZD096	114X5053	D	MTZ56	27°C	5261	6841	8640	10644	12829	2762			
	114X5068	E		38°C	4190	5573	7133	8860	10740	2944			
				46°C			6050	7576	9233				
OP-MGZD108	114X5054	D	MTZ64	27°C	6439	8242	10314	12648	15229	3150			
	114X5069	E		38°C	5208	6763	8549	10563	12796	3391			
				46°C			7312	9083	11053				
OP-MGZD121	114X5055	D	MTZ72	27°C	7126	9136	11421	13973	16769	3777			
	114X5070	E		38°C	5775	7524	9504	11703	14103	4033			
				46°C			8123	10054	12163				
OP-MGZD136	114X5056	D	MTZ80	27°C	8286	10636	13310	16290	19550	4344			
	114X5071	E		38°C	6793	8874	11210	13790	16600	4713			
				46°C			9658	11942	14420				
OP-MGZD171	114X5057	D	MTZ100	27°C	9362	12248	15537	19203	23212	5159			
	114X5072	E		38°C	7368	9877	12715	15868	19312	5539			
				46°C			10721	13490	16513				
OP-MGZD215	114X5115	D	MTZ125	27°C	13245	16843	20912	25448	30413	6505			
	114X5118	E		38°C	10710	13885	17443	21377	25667	7077			
				46°C			14890	18385	22184				
OP-MGZD242	114X5116	D	MTZ144	27°C	14269	18160	22555	27424	32727	7507			
	114X5119	E		38°C	11570	14999	18830	23049	27631	8106			
				46°C			16136	19873	23922				
OP-MGZD271	114X5117	D	MTZ160	27°C	17185	21568	26558	32126	38232	8618			
	114X5120	E		38°C	14184	18042	22383	27198	32464	9388			
				46°C			19325	23588	28239				

Test condition
EN13215
Superheat

SH10K
10K

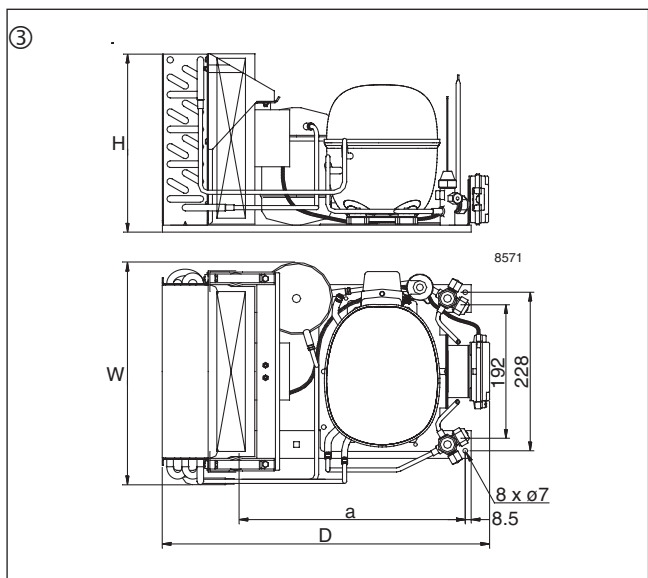
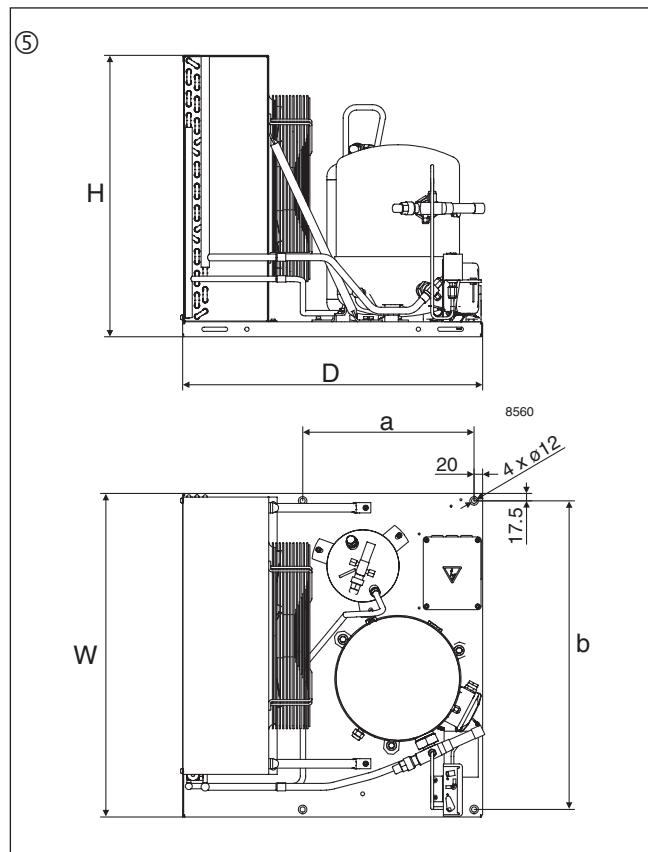
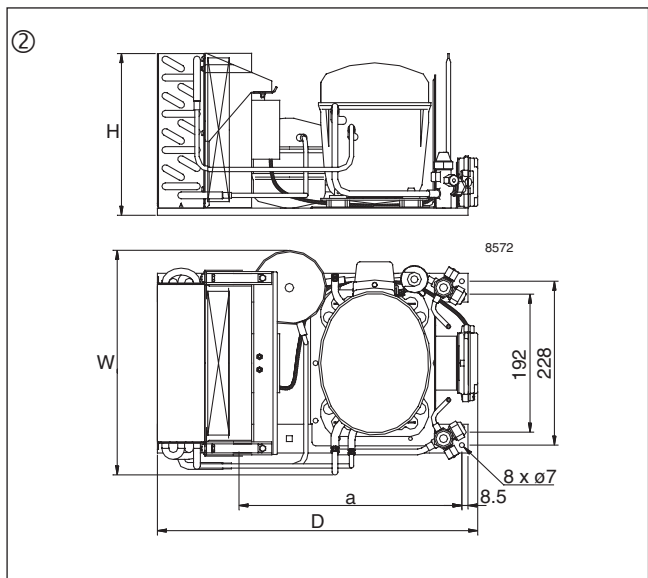
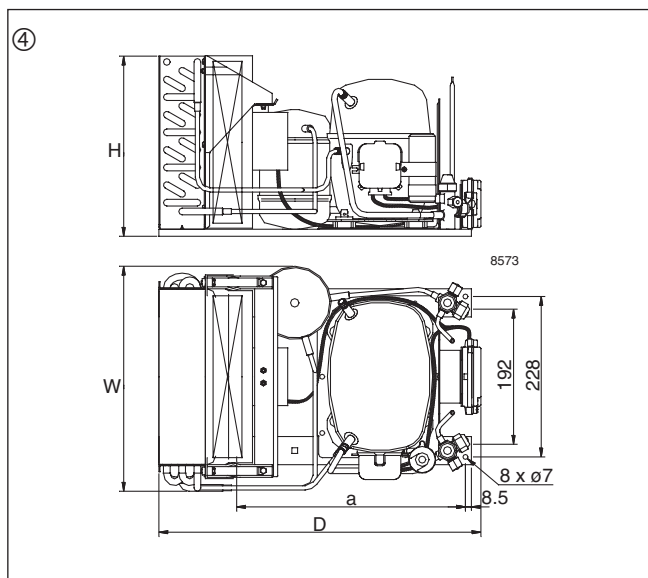
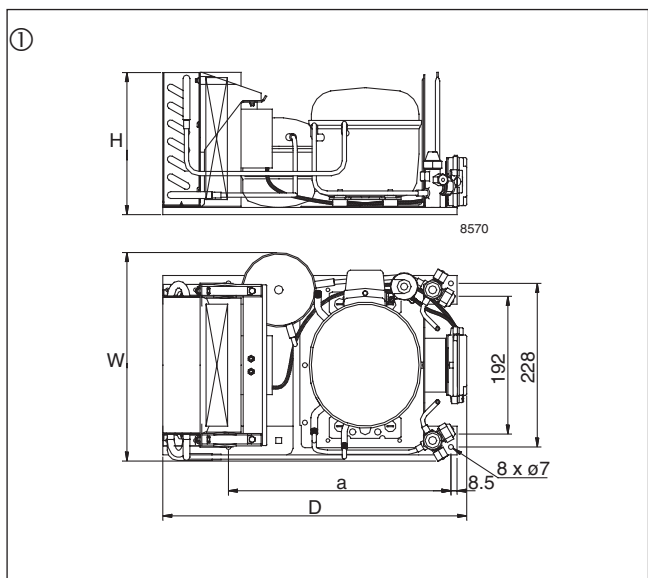
Electrical code
D: Compressor 400 V/3 phase/50 Hz, fan 400 V/3 phase/50 Hz
E: Compressor 400 V/3 phase/50 Hz, fan 230 V/1 phase/50 Hz
G: Compressor 230 V/1 phase/50 Hz, fan 230 V/1 phase/50 Hz

Version: A02: With receiver, stop valve, universal pressure switch, (KP17WB), flexible hoses and electrical box

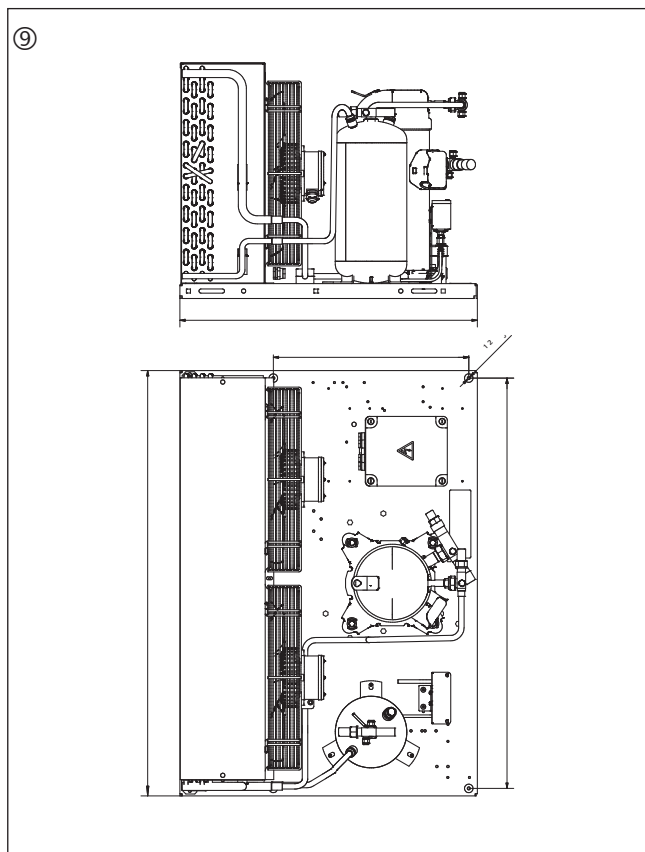
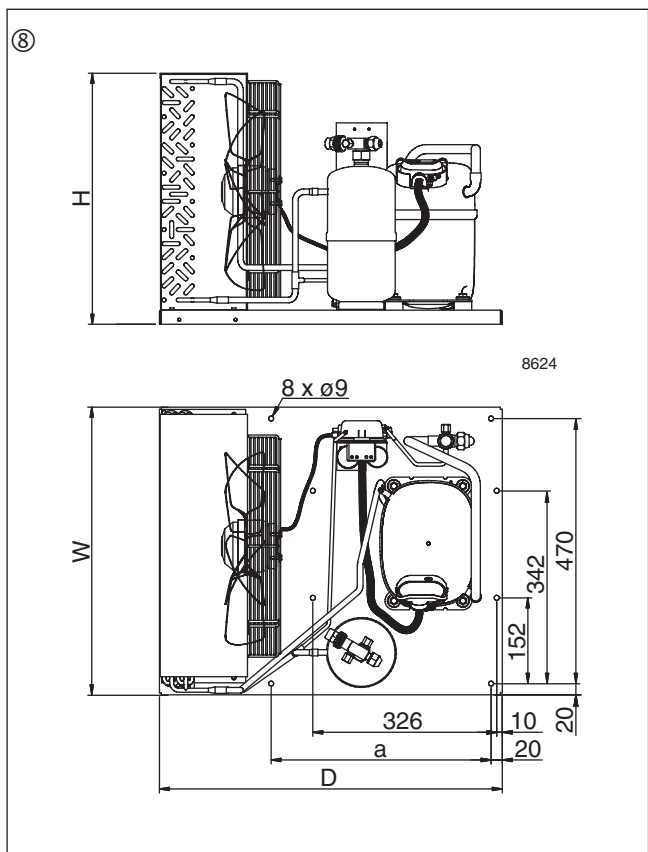
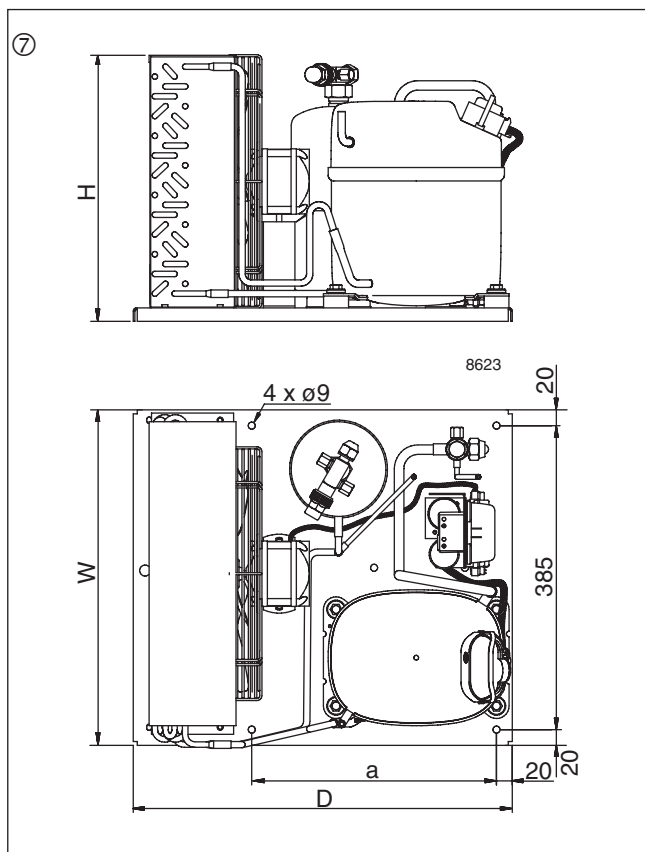
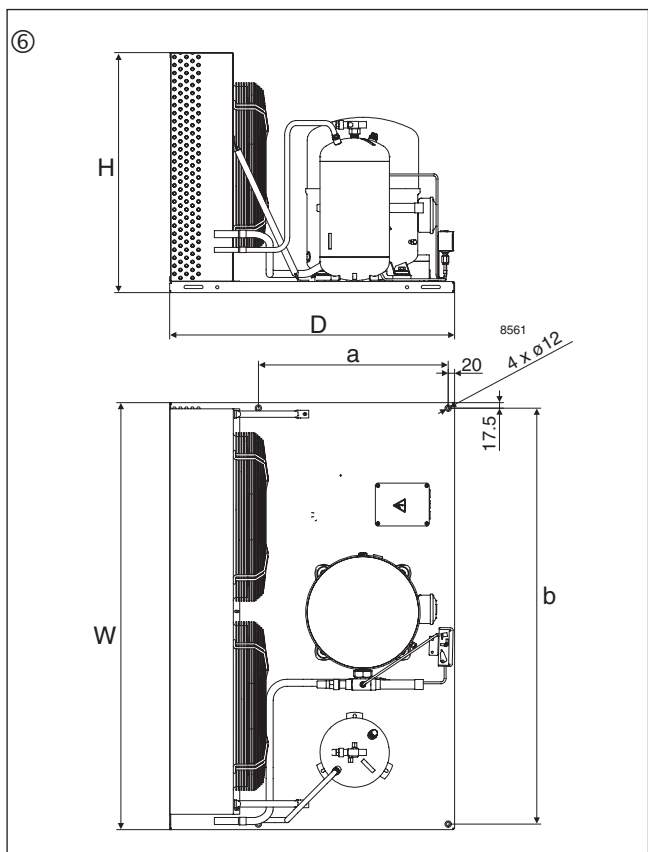
Optyma™ condensing units – R407C MBP Reciprocating

Unit	Condenser coil			Condenser fan	Receiver volume [L]	Dimensions						Weight [kg]	
	Type	Air flow [m³/h]	Int. volume [dm³]	Fan blade Ø [mm]		Fig.	Height H [mm]	Width W [mm]	Length D [mm]	Suction line	Liquid line	Gross	Net
OP-MCZC030	A4	1200	1.2	1 × 300	3	5	408	500	600	1½"	3⁄8"	54	45
OP-MCZC038	B4	1750	1.3	1 × 350	3	5	451	500	620	1½"	3⁄8"	56	47
OP-MCZC048	C4	2150	2.3	1 × 350	6	5	555	630	650	1½"	1½"	64	57
OP-MCZC054	C4	2150	2.3	1 × 350	6	5	555	630	650	5⁄8"	1½"	65	58
OP-MCZC060	D4	2000	3.1	1 × 350	6	5	555	630	650	5⁄8"	1½"	68	61
OP-MCZC068	E4	3150	2.5	1 × 400	6	5	605	630	650	5⁄8"	1½"	72	65
OP-MCZC086	F4	3300	3.1	1 × 400	8	5	656	755	700	7⁄8"	1½"	95	83
OP-MCZC096	G4	3150	4.1	1 × 400	8	5	656	755	700	7⁄8"	1½"	100	88
OP-MCZC108	H4	4300	4.1	1 × 500	8	5	656	755	700	7⁄8"	1½"	113	101
OP-MCZC121	J4	6000	4.4	1 × 500	10	5	708	900	900	1"1⁄8"	1½"	127	113
OP-MCZC136	K4	6200	4.7	1 × 500	10	5	759	900	900	1"1⁄8"	1½"	140	126
OP-MCZC171	L4	5850	6.3	1 × 500	14	5	759	900	900	1"1⁄8"	5⁄8"	162	147
OP-MGZC215	M4	11000	7.4	2 × 500	14	6	759	1350	820	1"1⁄8"	5⁄8"	191	176
OP-MGZC242	M4	11000	7.4	2 × 500	14	6	759	1350	820	1"1⁄8"	5⁄8"	194	179
OP-MGZC271	N4	9200	12.3	2 × 500	14	6	759	1350	820	1"1⁄8"	5⁄8"	199	184
OP-MGZD030	C3	1300	1.7	2 × 254	3	6	392	700	500	1½"	3⁄8"	56	46
OP-MGZD038	D3	2800	1.5	2 × 300	6	6	442	800	600	1½"	1½"	60	53
OP-MGZD048	E3	2600	2.2	2 × 300	6	6	442	800	600	1½"	1½"	64	57
OP-MGZD054	E3	2600	2.2	2 × 300	6	6	442	800	600	5⁄8"	1½"	65	58
OP-MGZD060	G3	4600	2.3	2 × 355	8	6	555	1000	700	5⁄8"	1½"	88	75
OP-MGZD068	H3	3600	4.7	2 × 355	8	6	555	1000	700	5⁄8"	1½"	96	82
OP-MGZD086	H3	3600	4.7	2 × 355	8	6	555	1000	700	7⁄8"	1½"	107	93
OP-MGZD096	H3	3600	4.7	2 × 355	8	6	555	1000	700	7⁄8"	1½"	109	95
OP-MGZD108	J3	5400	4.7	2 × 400	10	6	555	1000	700	7⁄8"	1½"	113	99
OP-MGZD121	J3	5400	4.7	2 × 400	10	6	555	1000	700	7⁄8"	1½"	115	101
OP-MGZD136	L3	8600	5.1	2 × 450	10	6	671	1200	800	1"1⁄8"	1½"	133	118
OP-MGZD171	M3	8200	6.8	2 × 450	14	6	671	1200	800	1"1⁄8"	5⁄8"	158	144
OP-MGZD215	N4	9200	12.25	2 × 500	14	6	759	1350	820	1"1⁄8"	5⁄8"	196	180
OP-MGZD242	N4	9200	12.25	2 × 500	14	6	759	1350	820	1"1⁄8"	5⁄8"	199	183
OP-MGZD271	U	14000	14.2	2 × 600	14	6	975	1500	870	1"1⁄8"	5⁄8"	230	212

Optyma™ condensing units – Dimensions



Optyma™ condensing units – Dimensions





Contactors & Overloads

Contactors - CI

Type	240V Coil Single Pack	24 Va.c Coil Single Pack	415V Coil Single Pack	AC 3 Load 380/690 V KW	Amps (A)	Main Contacts	Aux Contacts	Weight KG	Replaces
CI6	037H001531	037H001513	037H001538	2.2	6.0	3	1 - 4	0.280	037H001533 - 037H001516
CI9	037H002131	037H002113	037H002138	4.0	9.0	3	1 - 4	0.305	037H002133 - 037H002116
CI12	037H003131	037H003113	037H003138	5.5	12.0	3	1 - 4	0.350	037H003133 - 037H003116
CI15	037H004931	037H004913	037H004938	7.5	16.0	3	1 - 4	0.355	037H004933 - 037H004916
CI16	037H004131	037H004113	037H004138	7.5	16.0	3	1 - 4	0.320	037H004133 - 037H004116
CI20	037H004531	037H004513	037H004538	10.0	20.0	3	1 - 4	0.365	037H004533 - 037H004516
CI25	037H005131	037H005113	037H005138	11.0	25.0	3	1 - 4	0.365	037H005133 - 037H005116
CI30	037H005531	037H005513	037H005538	15.0	30.0	3	1 - 4	0.365	037H005533 - 037H005516
CI32	037H006131	037H006113	037H006138	15.0	32.0	3	1 - 4	0.365	037H006133 - 037H006116
CI37	037H005631	037H005613	037H005638	18.5	37.0	3	1 - 4	0.350	037H005633 - 037H005616
CI45	037H007131	037H007113	037H007138	22.0	45.0	3	1 - 4	0.365	037H007133 - 037H007116
CI50	037H008031	037H008013	037H008038	25.0	52.0	3	1 - 4	0.365	037H008033 - 037H008016

⚠ Note: Coil voltage suffix "13" = 24V, "31" = 220/240V, "38" = 415V (16 and 33 Deleted)

Contactor Coils - Spare Parts

Coils for CI 6-30 Code No.	Coils for CI 32-50 Code No.	Coil Voltages 50Hz	Coil Voltages 60Hz	Suffix No.	Weight Kg.
037H6484	037H6084	24	24	13	0.043
037H6462	037H6062	24	29	16	0.055
037H6472	037H6072	220/240	-	31	0.055
037H6473	037H6073	240	288	33	0.055
037H6478		380/400	440	37	0.055
037H6479	037H6079	415	500	38	0.055

Auxiliary Contacts - CB

Code No.	Function	Type	Amps	Volts Ac.	Colour Code.	Weight Kg.
037H0110	Start	CB - S	6.0	500	Green	0.012
037H0111	Make	CB - NO	6.0	500	Green	0.012
037H0112	Break	CB - NC	6.0	500	Red	0.012
037H0113	Early Make	CB - EM	6.0	500	White	0.012
037H0114	Late Break	CB - LB	6.0	500	Blue	0.012
037H0115	Ext. late break	CB - DC	6.0	500	Black	0.012
037H0117	Start Pulse	CB - I	6.0	500	Green	0.012

Auxiliary Contact Blocks CB for CI 6-50

Contact Function	Load				Colour Code	Code No.	Type
	I _e (AC - 15)	I _{th} ¹⁾ (AC - 1) Open A	I _{th} ²⁾ (AC - 1) Enc. V	U _e			
start	6	10	10	500	green	037H0110	CB-S
start pulse 3)	6	10	10	500	green	037H0117	CB-I
make	6	10	10	500	green	037H0111	CB-NO
break	6	10	10	500	red	037H0112	CB-NC
early make	6	10	10	500	white	037H0113	CB-EM
late break	6	10	10	500	blue	037H0114	CB-LB

- 1) The thermal current value gives the maximum load at 40°, which corresponds to installing the contactor in air (open)
- 2) The thermal current value gives the maximum load at 60°, corresponding installing the contactor inside an enclosure.
- 3) Without self-holding function.

Please Note:

1. The AC3 value of the contactor should be larger than the RLA value of the compressor (AC3 > RLA)
2. Six (6) x the AC3 value for the contactor shall be larger than the LRA value for the compressor (6 x AC3 > LRA)
3. The normal recommended setting on the thermal overload relay is 1.25 x RLA for the compressor
4. RLA = MCC/1.4

Overload Relays - TI 16C

New Type Code No.	Old Type Code No.	Industry Pack Code No.	Current Amps	Type	Weight Kg.
047HO200	047H0100		0.13 - 0.20	TI 16C	0.120
047HO201	047H0101		0.19 - 0.42	TI 16C	0.120
047HO202	047H0102		0.27 - 0.42	TI 16C	0.120
047HO203	047H0103		0.40 - 0.62	TI 16C	0.120
047HO204	047H0104		0.60 - 0.92	TI 16C	0.120
047HO205	047H0105		0.85 - 1.3	TI 16C	0.120
047HO206	047H0106		1.2 - 1.9	TI 16C	0.120
047HO207	047H0107		1.8 - 2.8	TI 16C	0.120
047HO208	047H0108		2.7 - 4.2	TI 16C	0.120
047HO209	047H0109	047H4209	4.0 - 6.2	TI 16C	0.120
047HO210	047H0110		6.0 - 9.2	TI 16C	0.120
047HO211	047H0111	047H4211	8 - 12	TI 16C	0.120
047HO212	047H0112	047H4212	11 - 16	TI 16C	0.120
047HO213	047H0113	047H4213	15 - 20	TI 25C	0.120
047HO214	047H0114		19 - 25	TI 25C	0.120
047HO215	047H0115		24 - 32	TI 25C	0.120

Mechanical Interlock

- 037H010066 - CI32 - 50
- 037H010666 - CI6 - 30

Danfoss CO₂ product range

Product Grouping	Product	Product Description
Transcritical Expansion Valves	CCMT	Electrically operated high pressure expansion valve
	ICMTS	Motorized transcritical control valves
Pressure Regulating & Gas-Bypass Valves	ICS with CVP-HP/XP	Mechanical backpressure regulators
	CCM	Standstill capable electronic backpressure regulators
Electronic Expansion Valves	AKVH	Standstill capable pulse width modulating expansion valves
	AKV	Pulse width modulating expansion valves
	AKVA	Industrial pulse width modulating expansion valves
	ICM	Industrial motorized expansion valves
	CCM	Standstill capable motorized expansion valves
Valve Stations	ICF	Industrial valve stations
Solenoid Valves	EVR 2-8	Small solenoids
	EVRH 10-40	Large solenoids
	EVRS	Industrial solenoids
	EVRST	Industrial solenoids capable of opening at 0 differential
	ICS + EVM	Industrial solenoid valves for large capacities
Line Components	SVA-S and SVA-L	Industrial stop valves
	SCA-X and CHV-X	Industrial stop/check and check valves
	SNV-ST and SVA-SS	Industrial stop needle valves
	GBC for CO ₂	Ball valves
	NRV	Check valves
	SG	Sight glasses - inline and socket versions
	DCRH	Exchangeable core filter driers
	DML	Filter driers
	DMT	Transcritical oil and refrigerant driers
FIA	Filters	
Regulating Valves	REG-SA and REG-SB	Regulating valves for pump recirculated systems
Liquid Level Controls	AKS 4100	Liquid Level Sensors
	EKC 347	PI controllers
Safety valves	SFA 15	Safety relief valves
	DSV	Industrial double safety relief valve manifolds
Pressure Switches	RT	Differential pressure switches
	MBS 5000	Transcritical pressure switches
	KP 6	Pressure switches
Pressure Sensors	AKS 2050	Radiometric transcritical pressure transmitters
	AKS 32	Pressure transmitters (0-5V signal)
	AKS 32R	Radiometric pressure transmitters
	AKS 33	Pressure transmitters (4-20mA signal)
Temperature Sensors	AKS 11	Suction side sensor
	AKS 21A	Discharge side sensor
Gas Detection	GD	Gas detectors
Electronic HP Controls	EKC326A	Controllers for transcritical operation and gas bypass
Electronic Evaporator Controllers	AK CC 450	CO ₂ "brine" case controllers
	AK CC 550	Single case controllers
	AK CC 750	Multi-case controllers
Cascade HX controller	EKC 313	CO ₂ /CO ₂ cascade heat exchanger controllers
	EKC 316A	X-refrigerant/CO ₂ expansion valve controllers
Pack Controllers	AK PC 740	Pack controllers (up to 4 compressors)
	AK PC 780	Pack controllers (up to 8 compressors)
	XM 205A	8 analog input/ 8 output relay extension module
System Manager	AK SC 255	CO ₂ supermarket system manager
Service Tool	MIMIC	Graphical system monitoring software
	AKM	Service technician software

For more information on Danfoss CO₂ products visit www.danfoss.com/co2

Use of flammable refrigerants such as hydrocarbons

The use of low GWP flammable refrigerants is increasing so flammable refrigerants, whether natural or chemical substances, are now used at an increasing rate in general refrigeration applications globally.

The increasing use of hydrocarbons means that refrigeration contractors and service technicians without prior experience of flammable refrigerants are now starting to work with these substances. There is therefore an increased risk of hazardous situations and to limit the risks for customers and end-users, Danfoss requires a formal agreement to be signed when our customers buy products applicable for flammable refrigerants in non-industrial refrigeration applications.

The agreement works as a guide. It builds on the most important international standards to improve safety.

The main points include:

- Follow the relevant norms and legislation.
- Ensure that only competent people are working with flammable refrigerants, including technicians servicing the refrigeration system.
- Have business liability insurance.
- Where Danfoss products are used, only components and spare parts approved for flammable refrigerants shall be used.

Refrigeration Controls

Thermostatic expansion valves type TUBE and TUCE

- Bi-flow function.
- Capacities up to 20 kW.
- Max. working pressure 34 bar.
- Stainless steel, hermetically tight solde version.
- Bimetal connections for fast and safe soldering.
- Connections 1/4" and 3/8" inlet, 1/2" outlet.
- External pressure equalization
- Adjustable superheat type (TUBE) available for laboratory use.

Expansion valves type TGE

- Bi-flow with expansion in both directions.
- Capacities up to 130 kW
- Head pressure independent.
- Balance port (BP).
- Max. working pressure 46 bar.
- Cylindrical bulb design, with new bulb strap.
- Inlet in 5/8" or 7/8", outlet 7/8".
- External pressure equalization.
- Adjustable superheat setting.

Solenoid valve type EVR

- Direct or servo operated solenoid valve especially designed for liquid, suction, and hot gas lines.
- Media temperatures up to 105 °C.
- Solder connections up to 7/8 in.
- Extended ends for soldering make installation easy. It is not necessary to dismantle the valve when soldering.
- Wide choice of coils for a.c. and d.c.
- Fast and safe mounting of "Clip-on"-coil.
- MOPD up to 25 bar with 14 W coil.

Shut-off valve type BML

- Manual shut-off valve for installation in liquid, suction and hot gas lines.
- Connections size up to 22mm (7/8") ODF.
- Capacities (K_v) 0.3 -2.9 m³/h.

Check valves type NRV and NR VH

- Non-return valves for liquid, hot-gas and suction lines.
- NR VH with stronger spring to avoid resonance problems with compressors connected in parallel.
- Connections size up to 22 mm (7/8") ODF.
- Capacities (K_v) 0.56 -5.5 m³/h.

Filter driers type DCL and DML

- Protects refrigeration and air-conditioning systems from moisture, acids and solid particles.
- Connections size up to 22 mm (7/8") ODF.
- Capacities up to 100 kW.

Sight glasses type SGI and SGN

- Sight glasses for monitoring condition and moisture content of refrigerant and the flow in oil return lines.
- SGI for R290, R600 and R600a, and SGN for R1270.
- Connections size up to 22mm (7/8") ODF.

Thermostat type RT

- 2 m capillary tubes.
- Range -5°C to 30°C.
- High temperature versions available up to 250°C.

Pressure control type RT

- Connection G 3/8A + welded nipple Ø6.5/10 mm.
- Range RT 5E: 4 to 17 bar.
- Regulating ranges available from -0.8 bar as minimum up to 30 bar as maximum.

Electronic Refrigeration Controller type ERC

- Manages all energy consuming parts in the refrigeration appliance
- Designed to cut energy consumption
- IP rated body for high moisture resistance
- Internationally approved hardware (CE, UL, GOST, and many more)
- For use in all climates, indoors as well as outdoors.
- IECEx approved for use with hydrocarbon refrigerants
- Can be used on all light commercial applications.

Pressure controls type KP

- Protects against excessively low suction or high discharge pressure.
- The high pressure controls are equipped with failsafe double bellows, and low pressure controls with reduced bellow travel to enhance life time
- Manual and automatic reset available
- Regulating ranges -0.2 to 7.5 bar and 8 to 32 bar.
- Connection 1/4" ODF.

Differential pressure control type RT 260 AE and RT 262 AE

- Connection G 3/8A + welded nipple Ø6.5/10 mm.
- Regulating range 0.1 to 4 bar.

Differential pressure controls type MP 55E

- Protects refrigeration compressors against low lubricating oil pressure.
- Wide regulating range (ΔP 0.3 to 4.5 bar).
- Connections 1/4" ODF.

Compressors and Condensing Units for R290

Running with R290 for light commercial refrigeration in LMBP applications

- Such as bottle coolers and vending machines, water and beer coolers, display freezers, food and delicatessen
- Small dimensions make compact cabinets
- Low sound emission
- Reduced installation and running costs

Fix speed Compressors and Condensing Units range

- Available in T, N, SC platforms (3-21 cm³)
- Application at high ambient temperature possible
- High appliance and system robustness at rough operating conditions
- Insensitive towards unstable electric power supply
- Prewired and ready to braze Condensing Units

Variable Speed SLV15CNK.2 Compressor and Controller

- Variable speed 2000 – 4000 rpm, with permanent magnet motor
- Intelligent controller for whole appliance will save up to 40% energy
- Monitor system performance, intelligent controller for ultimate control and alarm management, HACCP compliance easy
- Built-in data logging function allows food quality and safety
- Protection: current, speed, temperature; electronic thermostat

Direct Current Compressors for R290 and R600a

BD running with R290 or R600a for stationary LMBP applications, freezers and solar powered systems






- Such as ice cream freezers and boxes, pharmaceutical applications up to 200 litres
- 10-45 V and 12-24 V DC

- Electronic control unit with built-in speed control, thermostats signal, thermal protection, safety against destructive battery discharge, electronic thermostat and fan speed control on selected models

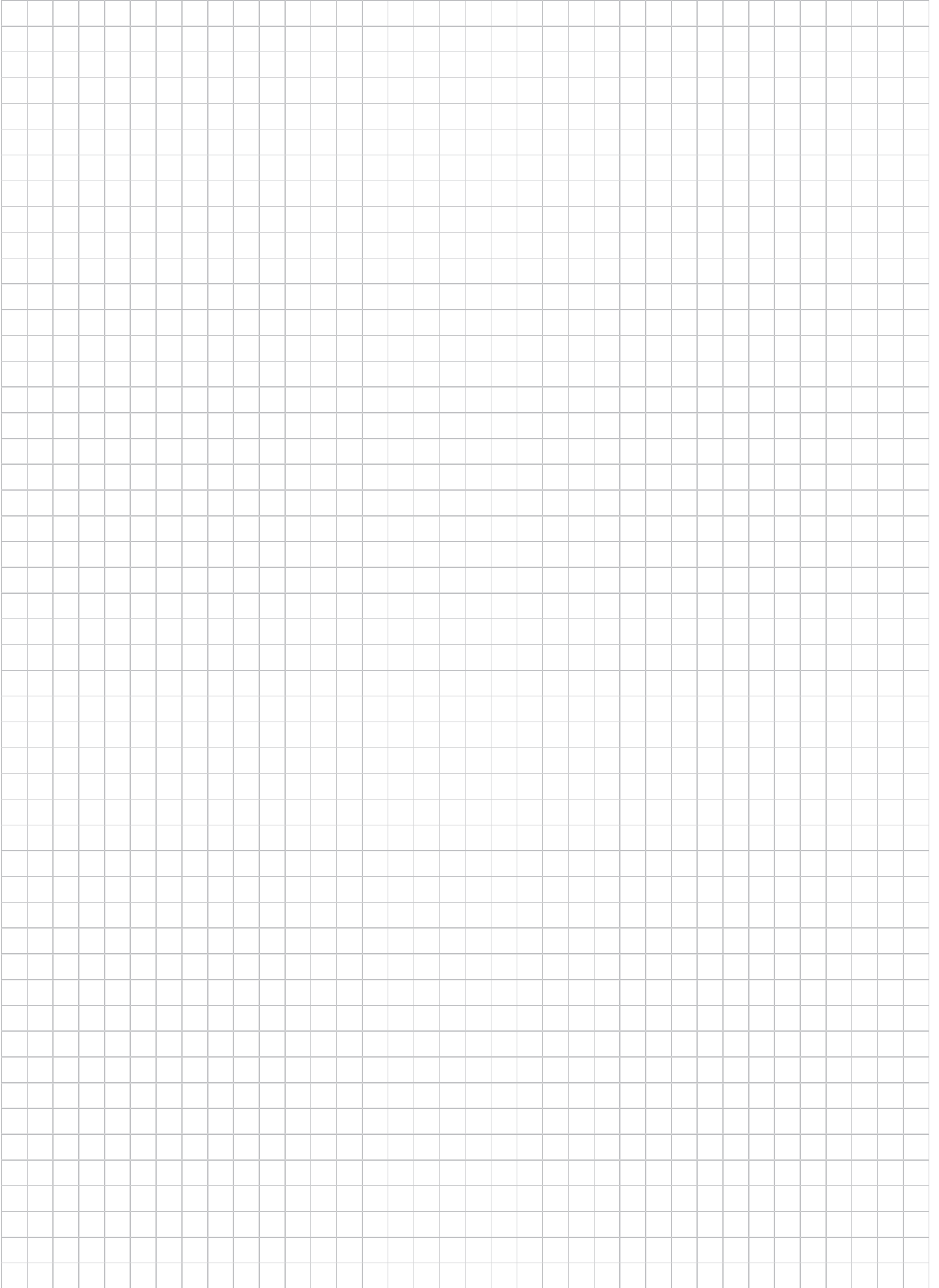


Industrial Automation Quick Overview

Type	Technical Details				Code No
	Solenoid Valves - Water, Air, Oil & Steam	Configuration	Connection	Seal Material	Code No
	EV210B 1.5	Direct-operated NC	G1/4"	NBR	032U1205
	EV210B 1.5	Direct-operated NC	G1/8"	EPDM	032U5701
	EV210B 1.5	Direct-operated NC	G1/8"	FKM	032U5702
	EV210B 3.0	Direct-operated NC	G1/4"	EPDM	032U5709
	EV210B 3.0	Direct-operated NC	G1/4"	FKM	032U5710
	EV210B 3.0	Direct-operated NC	G3/8"	FKM	032U3643
	EV210B 8.0	Direct-operated NC	G1/2"	EPDM	032U3615
	EV210B 10.0	Direct-operated NC	G1/2"	FKM	032U3618
	EV220B 10.0	Servo-operated NC	G1/2"	EPDM	032U1251
	EV220B 12.0	Servo-operated NC	G1/2"	EPDM	032U1256
	EV220B 15.0	Servo-operated NC	G1/2"	EPDM	032U7115
	EV220B 20.0	Servo-operated NC	G3/4"	EPDM	032U7120
	EV220B 32.0	Servo-operated NC	G1 1/4"	EPDM	032U7132
	EV220B 50.0	Servo-operated NC	G2"	EPDM	032U7150
	EV310B 2.0 3/2-way	Direct-operated NO	G1/4"	FKM	032U4944
		Solenoid Coils	Configuration	Voltage/Watts/Hz	Cable Plug
BA024A - EV210B & EV220B		DIN Spade	24V a.c 9 Watt 50Hz	Not included	042N7508
BA240A - EV210B & EV220B		DIN Spade	240V a.c 9 Watt 50Hz	Not included	042N7502
BA024D - EV210B & EV220B		DIN Spade	24V d.c 15 Watt	Not included	042N7551
BA400A - EV201B & EV220B		DIN Spade	380-400V 9 Watt 50Hz	Not included	042N7504
Cable Plug (IP65)		DIN Spade Plug (BA)	Accessory		042N0156
AB Coil - EV210A (Special)		DIN Spade (9mm Actuator)	240V a.c 4.5 Watt 50/60Hz	Not Included	042N0801
AM Coil - EV210A (Special)	DIN Spade (9mm Actuator)	240V a.c 7.5 Watt 50/60Hz	Not Included	042N0841	
	Thermostatic Water Valve	Connection	Temperature Range	Capillary /Bulb Dimensions	Code No
	AVTA 15.0 (Universal Charge)	G1/2"	0-30 C	2 metre (18 x 210)	003N2132
	AVTA 25.0 (Universal Charge)	G1.0"	0-30 C	2 metre (18 x 210)	003N4132
	AVTA 15.0 (Universal Charge)	G1/2"	25-65 C	2 metre (18 x 210)	003N2162
	AVTA 20.0 (Universal Charge)	G3/4"	25-65 C	2 metre (18 x 210)	003N3162
	AVTA 25.0 (Universal Charge)	G1.0"	25-65 C	2 metre (18 x 210)	003N4162
AVTA Pocket (Brass) -220mm	G3/4"	Accessory	18 x 210	003N0050	
AVTA Pocket (Stainless Steel) - 220mm	G3/4"	Accessory	18 x 210	003N0192	
	RT Pressure Switch	Range	Connection	Reset	Code No
	RT 5	4.0 - 17.0 bar	G3/8"	Auto	017-525566
	RT 121 (Vacuum)	-1.0 - 0.0 bar	G3/8"	Auto	017-521566
	RT 113	0.0 - 0.3 bar	G3/8"	Auto	017-519666
	RT 112	0.1 - 1.1 bar	G3/8"	Auto	017-519166
	RT 110	0.2 - 3.0 bar	G3/8"	Auto	017-529166
	RT 200	0.2 - 6.0 bar	G3/8"	Auto	017-523766
	RT 200	0.2 - 6.0 bar	G3/8"	Manual (Max)	017-523866
	RT 116	1.0 - 10.0 bar	G3/8"	Auto	017-520366
	RT 117	10.0 - 30.0 bar	G3/8"	Auto	017-529566
	KPS Pressure Switch (Heavy-Duty)	Range	Connection	Max Working Pressure (bar)	Code No
	KPS 31	0.0 - 2.5 bar	G1/4"	6	060-311066
	KPS 33	0.0 - 3.5 bar	G3/8"	10	060-310366
	KPS 33	0.0 - 3.5 bar	G1/4"	10	060-310466
	KPS 35	0.0 - 8.0 bar	G3/8"	12	060-310066
	KPS 35	0.0 - 8.0 bar	G1/4"	12	060-310566
	KPS 43	1.0 - 10.0 bar	G1/4"	120	060-312066
	KPS 45	4.0 - 40 bar	G1/4"	120	060-312166
	KPS 37	6.0 - 18 bar	G3/8"	22	060-310166
	KPS 37	6.0 - 18.0 bar	G1/4"	22	060-310666
	KPS 47	6.0 - 60.0 bar	G1/4"	120	060-312266
	KPS 39	10.0 - 35.0 bar	G3/8"	45	060-310266
		KP-KPI Pressure Switch (Light Industrial)	Range	Connection	Differential (bar)
KP 35		-0.2 - 7.5 bar	G1/4"	0.7 - 4	060-113391
KP 36 (Gold Plated Contacts)		2.0 - 14.0 bar	G1/4"	0.7 - 4	060-113766
KP 36		2.0 - 14.0 bar	G1/4"	0.7 - 4	060-110891
KP 36		4.0 - 12 bar	G1/4"	0.5 - 1.6	060-122166
KPI 36 (Gold Plated Contacts)		4.0 - 12 bar	G1/4"	0.5 - 1.6	060-113866
KPI 36		4.0 - 12 bar	G1/4"	0.5 - 1.6	060-118966
KPI 35		-0.2 - 8 bar	G1/4"	0.4 - 1.5	060-121766
KPI 35		-0.2 - 8 bar	G1/4"	0.5 - 2	060-121966
KPI 38	8.0 - 28 bar	G1/4"	1.8 - 6	060-508166	
	CS Pressure Switch (Air Compressor)	Range	Connection	Differential Min & Max (bar)	Code No
	CS Switch	2.0 - 6.0 bar	G1/2"	0.72 - 1 / 1 - 2	031E021566
	CS Switch	4.0 - 12.0 bar	G1/2"	1 - 1.5 / 2 - 4	031E023066
	CS Switch	7.0 - 20.0 bar	G1/2"	2 - 3.5 / 3.5 - 7	031E025066
Note:	Contact Danfoss Product Specialist for further technical details on range of Industrial Automation products				

Type		Technical Details			Code No
	RT Temperature Switch	Range	Max Sensor Temp	Differential Min & Max (C)	Code No
	RT 3 (2mtr Capillary)	-25 to +15 C	150	1 - 4 / 2.8 - 10	017-501466
	RT 4 (Room Sensor)	-5 to +30 C	75	2.8 - 10 / 1 - 4	017-503666
	RT 7 (2mtr Capillary)	-25 to +15 C	150	2 - 10 / 2.5 - 14	017-505366
	RT 14 (2mtr Capillary)	-5 to +30	150	2 - 8 / 2 - 10	017-509966
	RT 103 (Room Sensor)	+10 to 45 C	100	1.3 - 7 / 1 - 5	017-515566
	RT 101 (2mtr Capillary)	+25 to 90 C	300	2.4 - 10 / 3.5 - 20	017-500366
	RT 101 (3mtr Capillary)	+25 to 90 C	300	2.4 - 10 / 3.5 - 20	017-500666
	RT 106 (2mtr Capillary)	+20 to 90 C	120	4 - 20 / 2 - 7	017-504866
	RT 107 (2mtr Capillary)	+70 to 150 C	215	6 - 25 / 1.8 - 8	017-513566
RT 107 (3 mtr Capillary)	+70 to 150 C	215	6 - 25 / 1.8 - 8	017-513966	
	KPS Temperature Switch (Heavy Duty)	Range	Max Sensor Temp	Differential	Code No
	KPS 77 (2mtr Arm Capillary)	+20 to 60 C	130	3 - 14	060L310166
	KPS 79 (Rigid Sensor)	+50 to 100 C	200	4 - 16	060L310366
	KPS 79 (2mtr Arm Capillary)	+50 to 100 C	200	4 - 16	060L310466
	KPS 81 (2mtr Arm Capillary)	+60 to 150 C	250	5 - 25	060L310666
	KPS 80 (2mtr Arm Capillary)	+70 to 120 C	220	4.5 - 18	060L312866
	KPS 80 (5mtr Arm Capillary)	+70 to 120 C	220	4.5 - 18	060L313066
	KPS 80 (3mtr Arm Capillary)	+70 to 120 C	220	4.5 - 18	060L315666
	KPS 83 (2mtr Arm Capillary)	+100 to 200 C	300	6.5 - 30	060L310866
	Sensor Pocket (Brass) KP & RT	G1/2" A 112mm	Accessory	Pocket	017-437066
Sensor Pocket (Brass) CAS & KPS	NPT 1/2" 75mm	Accessory	Pocket	060L326466	
Sensor Pocket (Stainless) CAS & KPS	G1/2" A 110mm	Accessory	Pocket	060L326866	
	Pressure Transmitters	Range / Output	Connection	Notes	Code No
	MBS33	0-1 bar 4-20mA	G1/2"	Gauge / Relative	060G3006
	MBS33	0-10 bar 4-20mA	G1/2"	Gauge / Relative	060G3011
	MBS33	0-16 bar 4-20mA	G1/2"	Gauge / Relative	060G3012
	MBS33	0-25 bar 4-20mA	G1/2"	Gauge / Relative	060G3013
	MBS3000 (Compact)	0-1 bar 4-20mA	G1/4"	Gauge / Relative	060G1113
	MBS3000 (Compact)	0-6 bar 4-20mA	G1/4"	Gauge / Relative	060G1124
	MBS3000 (Compact)	0-10 bar 4-20mA	G1/4"	Gauge / Relative	060G1125
	MBS3000 (Compact)	0-16 bar 4-20mA	G1/4"	Gauge / Relative	060G1133
	MBS3000 (Compact)	0-25 bar 4-20mA	G1/4"	Gauge / Relative	060G1430
	MBS3000 (Compact)	0-60 bar 4-20mA	G1/4"	Gauge / Relative	060G1106
	MBS3000 (060G1102 Single Code) ***	0-10 bar 4-20mA (14pcs)	G1/4"	Gauge / Relative	060G4061
	MBS3000 (060G1100 Single Code) ***	0-4 bar 4-20mA (14pcs)	G1/4"	Gauge / Relative	060G4062
	MBS3000 (060G1101 Single Code) ***	0-6 bar 4-20mA (14pcs)	G1/4"	Gauge / Relative	060G4063
	MBS3000 (060G1103 Single Code) ***	0-16 bar 4-20mA (14pcs)	G1/4"	Gauge / Relative	060G4064
	*** OEM Pack of 14 pcs ***				
	MBS3050 (Compact)	0-100 bar 4-20mA	G1/4"	Gauge/Relative - Snubber	060G1151
	MBS3050 (Compact)	0-160 bar 4-20mA	G1/4"	Gauge/Relative - Snubber	060G1152
	MBS3050 (Compact)	0-250 bar 4-20mA	G1/4"	Gauge/Relative - Snubber	060G1153
	MBS3050 (Compact)	0-400 bar 4-20mA	G1/4"	Gauge/Relative - Snubber	060G1154
MBS3050 (Compact)	0-600 bar 4-20mA	G1/4"	Gauge/Relative - Snubber	060G1408	
MBS3050 (Compact)	0-60 bar 4-20mA	G1/4"	Gauge/Relative - Snubber	060G1411	
MBS3050 (Compact) - Special Version	0-50 bar -0.5 - 4.5V	G1/4"	Gauge/Relative - Snubber	060G3600	
MBS3050 (Compact) - Special Version	0-350 bar -0.5 - 4.5V	G1/4"	Gauge/Relative - Snubber	060G3601	
	Temperature Sensors & Transmitters	Range	Connection	Sensor/ Output	Code No
	MBT 5250 50mm Probe - Pg 11 Plug	-50 to +200 C	G1/2"	PT100	084Z8011
	MBT 5250 50mm Probe - Pg 9 Plug	-50 to +200 C	G1/2"	PT100	084Z8036
	MBT 5250 100mm Probe - Pg 11 Plug	-50 to +200 C	G1/2"	PT100	084Z8039
	MBT 5250 100mm Probe - Pg 11 Plug	-50 to +200 C	G3/4"	PT100	084Z8006
	MBT 5252 50mm Probe	-50 to +200 C	G1/2"	PT100	084Z8210
	MBT 5252 100mm Probe	-50 to +200 C	G1/2"	PT100	084Z8211
	MBT 5252 50mm Probe	0 to +100 C	G1/2"	4 - 20mA Output	084Z8214
	MBT 5252 100mm Probe	0 to +100 C	G1/2"	4 - 20mA Output	084Z8215
	MBT 5252 150mm Probe	0 to +100 C	G1/2"	4 - 20mA Output	084Z8216
MBT 9110 Transm/Convert	-50 to +50 4-20mA Insert	Accessory		084Z8115	
MBT 9110 Transm/Convert	0 to +150 4-20mA Insert	Accessory		084Z8121	
Convert B Head MBT5252	Fit to 084Z8210 50mm Probe	Accessory			
	Block Pressure & Temp Switches	Range	Connection	Notes	Code No
	MBC 5000	25-250 bar	G1/4"		061B500166
	MBC 5100	-0.2 to 10 bar	G1/4"		061B000266
	MBC 5100	-0.2 to 4 bar	G1/4"		061B000466
	MBC 5100	-0.2 to 1 bar	G1/4"		061B000566
	MBC 5100	5 to 20 bar	G1/4" Flange		061B100266
	MBC 5100	10 to 100 bar	G1/4" Flange		061B100366
	MBC 5100	1 to 10 bar	G1/4" Flange		061B100466
	MBC 5100	5 to 40 bar	G1/4" Flange		061B100566
	MBC 5100	1 to 10 bar	G1/4"		061B100866
	MBC 5100	5 to 25 bar	G1/4" Flange		061B102466
	MBC 5100	1 to 10 bar	G1/4" Female		061B110866
	MBV 3000	Test Valve for Transmitters			061B6101
	MBV 5000-1111 x 1 Output	Test Valve for Transmitters			061B7000
	MBV 5000-1211 x 2 Outputs	Test Valve for Transmitters			061B7001
	MBV5000-2311 X 3 Outputs	Test Valve for Transmitters			061B7006
	MBV5000-3211 X 2 Outputs	Test Valve for Transmitters			061B7009
	MBC 8100 (Temp Switch) - Rigid Sensor 13 x 50mm	+70 to 120	Fixed Diff 5	Max temp +220 C	061B800466
MBC 8100 (Temp Switch)- 2 Metre Armoured Sensor	+70 to 120	Fixed Diff 5	Max +220 C / Bulb 13 x 50mm	061B810466	
MBC 8100 (Temp Switch)- 2 Metre Armoured Sensor	+60 to 150	Fixed Diff 6	Max +250 C / Bulb 13 x 50mm	061B810566	
MBC8100 Brass Pocket Excl. Stuffing Box	G1/2"	Accessory	75mm Pocket Length	060L326266	
MBC8100 Brass Pocket Excl. Stuffing Box	G1/2"	Accessory	110mm Pocket Length	060L327166	
MBC8100 Stainless Pocket Excl. Stuffing Box	G1/2"	Accessory	75mm Pocket Length	060L326766	
MBC8100 Stainless Pocket Excl. Stuffing Box	G1/2"	Accessory	110mm Pocket Length	060L326866	
Stuffing Box Kits without Armoured Capillary		Accessory	Top of Pocket fixing	060L327366	
Stuffing Box Kits with Armoured Capillary		Accessory	Top of Pocket fixing	060L366666	
Note:	Contact Danfoss Product Specialist for further technical details on range of Industrial Automation products				

Notes



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Convenient and easy to use, the new mobile application from Danfoss.

KoolApp™ is the new Danfoss App and features a library of several practical tools for the refrigeration professional on the go. KoolApp will continue to expand in the future so please keep yourself updated by visiting: <http://www.danfoss.com/KoolApp>

Currently, KoolApp features the electronic version of the well-known Danfoss **Refrigerant Slider!** KoolApp™ turns your smartphone into a user-friendly, quick pressure-to-temperature refrigerant converter. It is designed for installers, distributors and producers of air conditioning and refrigeration equipment, but will also be useful for other industry professionals and students. In the current version there are 48 different refrigerants including both "natural" and "traditional" refrigerants, covering almost all media normally used in air conditioning and refrigeration systems. More will be added via updates pending user requests – so please do not hesitate to give us your feedback in order for us improve the app to suit your needs!

CoolGame is now also a part of the KoolApp™: Enjoy yourself for a while and test your refrigeration know-how compared to colleagues around the world. The gaming concept is that you build a specific refrigeration circuit as fast as possible by placing the components in the correct place in the system.

You can establish your own leagues to compete against your local colleagues or classmates, and at the same time get the chance to secure your own place in the Danfoss? Hall of Fame!

You have only got limited time to build the circuit! Any remaining time is converted to points and added to your score. Therefore, the faster you are the higher score!



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