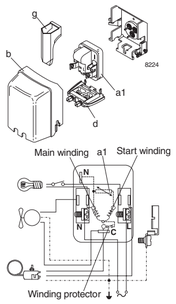
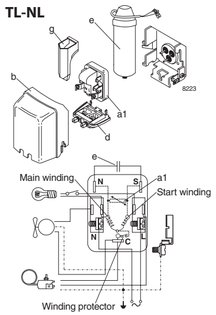
LST - RSCR

PL

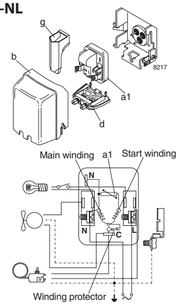


TL-NL



LST - RSIR

TL-NL



Motor Types

Compressors with the motor type **R**esistant **S**tart **I**nduction **R**un (**RSIR**) have a starting device for **L**ow **S**tarting **T**orque (LST).
This starting device consists of a PTC, a cord relief and a cover.

Compressors with the motor type **R**esistant **S**tart **C**apacitor **R**un (**RSCR**) have a starting device for **L**ow **S**tarting **T**orque (LST).
This starting device consists of a PTC, a cord relief and a cover. A run capacitor has to be connected to the PTC unit.

LST Starting Device

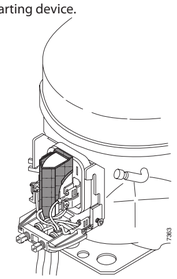
The **LST** starting device (**L**ow **S**tarting **T**orque) is used in well-designed refrigerating systems with capillary tube as throttling device and pressure equalizing. Pressure equalizing may exceed 10 minutes.
The PTC needs a compressor standstill period of 5 minutes to cool down before each start.

Legend

a1: PTC starting device
b: Cover
d: Cord relief
e: Run capacitor
g: Protection screen for PTC

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.



Electronically controlled PTC

Introduction

The asynchronous motor of a single phase AC powered compressor has two windings, a main and an auxiliary winding. The auxiliary winding is powered high at start by means of a starting device, then powered down, often still utilized continuously by means of a run capacitor. The starting device of our standard PTC-starters is a "Positive Temperature Coefficient" resistor, PTC. When heated up during the start phase, the PTC almost cuts off the current to the auxiliary winding, leaving only enough current to keep itself heated to this closing level. The heat loss for this amount to approximately 2.5 W. With the ePTC this loss can be reduced down to approximately 0.4 W by an extra electronic circuit.
The ePTC solution is an easy way to save energy in existing and future freezer and refrigerator designs. It is fully interchangeable with the conventional PTC types 103N0018 and 103N0021 with 4.8 mm spade connectors.

Advantages:

- 2 watt power consumption reduction
- Short recovery time (re-start possible after few seconds if pressure is equalized)
- Can be used to reach a higher cabinet energy class
- Can be used to replace a run capacitor in connection with e.g. a TLES compressor
- Run capacitor acceptance

ePTC (code number 103N0050)

Functional Description

The main component of the ePTC is the same PTC pill like in other 220-240 V 103N…. Danfoss PTC starters. Thus the start of the compressor motor is performed in the same way. In standard PTC starters the >2 W energy loss to keep the PTC heated during compressor operation are not avoidable. In the ePTC a small electronic circuit cuts off the current through the PTC short time after start and thus reduces the energy loss down to approx 0.4 W. The switch used is a Triac, an electronic AC switch, controlled by a timer circuit.
As the timer circuit has a short reset time and the main PTC cools down during compressor operation already, the full start torque will be available after approx 6 s compressor off time. However, it is still a LST starting device, needing full pressure equalization before start.

MAKING MODERN LIVING POSSIBLE

Danfoss Compressors
R600a • 220-240 V
50 Hz & 60 Hz

REFRIGERATION &
AIR CONDITIONING DIVISION

Quick reference

Hermetic Compressors R600a • 220V - 240V for Refrigerators and Freezers

Application Range

All compressors for R600a have denominations ending with **K** after the number for displacement or capacity.
They are designed for low operating temperatures - **LBP** (**L**ow **B**ack **P**ressure) for use in refrigerators, freezers and similar applications.
Compressors with endings **K** and **KK** are designed for regions with stable supply voltage.
Endings **KTK** are designed for less stable supply voltage and tropical conditions.
Some of the smaller compressors and the variable speed compressors are also released for medium operating temperatures - **MBP** (**M**edium **B**ack **P**ressure).

Yellow Warning Label

Warnings

- R600a is flammable in concentrations of air between approximatey 1.5% and 8.5% by volume (LEL lower explosion limit and UEL upper explosion limit).
- An ignition source at a temperature higher than 460°C is needed for a combustion to occur.
- Isobutane is significantly different from R12 and R134a. This means that compressors for R600a cannot be used with R12 or R134a.
- No high potential test nor start tests must be carried out while the compressor is under vacuum.
- No attempt must be made to start the compressor without a complete starting device.
- Allow the compressor to assume a temperature above 10°C before starting the first time in order to avoid starting problems.
- Anti-freeze agents must not be used in the compressors as such agents are damaging to several of the materials used. In particular, the ethyl or methyl alcohol contents of such anti-freeze agents have a destructive effect on the synthetic motor insulation.

Model Designation

Compressor design	Optimization level	Compressor size	Application range	Start characteristics	Generation
PL TL NL	Blank Standard energy level S Semi-direct intake E Energy-optimized (optimized motor) Y,X High Energy-optimized (high optimization level) V Variable Speed	Nominal displacement in cm^3 Exception: For PL compressors the capacity at rating point is stated.	K R600a LBP/(MBP) KT R600a LBP/(MBP) tropical	Blank → universal (principal rule) K = LST characteristics (capillary tube)	Blank → first generation .2 → second generation .3 → third generation etc.

Examples

PL	E	35	K		
TL	ES	6	KT	K	
NL	X	15	K	K	.2

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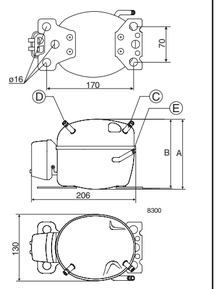
DEHC.PB.520.D4.02/520N0287

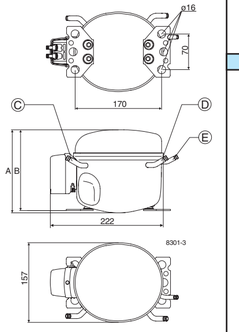
Produced by Danfoss Compressors/DEHC 6093, 05.2006

Level	Generation	Compressor	Code number	EN 12900 (CECOMAF) Capacity [W]								EN 12900 (CECOMAF) at LBP rating point -25°C / 55°C			ASHRAE subcooled at LBP rating point -23.3°C /54.4°C						Dis-placement	Recommended compressor cooling at ambient temperature			Voltage and fre-quencies	Electrical Equipment								Compressor	Dimensions Height [mm]		Connectors location/I.D. [mm]		
				Evaporating temperature [°C]								Cooling capacity	COP without RC	COP with RC	Cooling Capacity		COP without run capacitor		COP with run capacitor			32°C	38°C	43°C		LST (RSIR) PTC device w/o run capacitor connector spades		LST (RSCR) PTC device with run capacitor connector spades		Run capacitor 1) optional 2) compulsory spades		LST/HST Cover	LST/HST Cord relief				Suc-tion	Pro-cess	Dis-charge
				-35	-30	-20	-15	-10	-5	0	5	[W]	[W/W]	[W/W]	[W]	[kcal/h]	[W/W]	[kcal/Wh]	[W/W]	[kcal/Wh]	[cm³]	LBP	LBP	LBP		4.8 mm	6.3 mm	4.8 mm	6.3 mm	4.8 mm	6.3 mm				A	B	C	D	E
Energy-optimized	1.	PLE35K	101H0360			38	52	68	87	109		27		0.68	38	33			0.90	0.77	3.00	S*	S*		1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N0491	103N1010	PLE35K	137	135	6.2	6.2	5.0
	3.	TLES4KK.3	102H4438	19	29	57	75	96				42	0.90		57	49	1.18				4.01	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4KK.3	163	159	6.2	6.2	5.0
		TLES4.8KK.3	102H4538	28	40	73	94	119				55	1.00		74	65	1.30				4.78	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4.8KK.3	163	159	6.2	6.2	5.0
		TLES5.7KK.3	102H4638	36	50	89	114	144				68	1.02		91	79	1.32				5.70	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES5.7KK.3	163	159	6.2	6.2	5.0
		TLES6.5KK.3	102H4738	45	61	105	134	168				81	1.02		108	94	1.31				6.49	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES6.5KK.3	163	159	6.2	6.2	5.0
		TLES7.5KK.3	102H4838	53	71	122	155	194				94	1.02	1.07	126	108	1.32	1.14	1.38	1.19	7.48	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES7.5KK.3	163	159	6.2	6.2	5.0
		TLES8.7KK.3	102H4938	62	83	143	181	228				110	1.03	1.08	147	126	1.33	1.14	1.39	1.19	8.67	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES8.7KK.3	163	159	6.2	6.2	5.0
		TLES10KK.3 ❍	102H4038									130	1.04		172	148	1.35	1.15			10.14	S	S		1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ TLES10KK.3	173	169	6.2	6.2	5.0
	4.	NLE8.8KK.4	105H6800	63	84	141	179	223				110	1.18	1.22	147	127	1.51	1.30	1.56	1.34	8.76	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE8.8KK.4	190	183	6.2	6.2	5.0
		NLE10KK.4	105H6867	74	98	164	207	257				128	1.19	1.23	170	151	1.51	1.30	1.57	1.35	10.09	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE10KK.4	190	183	6.2	6.2	5.0
		NLE11KK.4	105H6952	82	109	184	232	290				143	1.19	1.22	191	165	1.52	1.31	1.56	1.34	11.15	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE11KK.4	190	183	6.2	6.2	5.0
		NLE13KK.4	105H6959	99	131	217	274	340				170	1.18	1.23	226	194	1.50	1.29	1.57	1.35	13.25	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE13KK.4	190	183	6.2	6.2	5.0
		NLE15KK.4	105H6968	110	146	243	307	382				190	1.20	1.25	253	213	1.53	1.32	1.59	1.37	14.65	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KK.4	197	190	6.2	6.2	5.0
High Energy-optimized	3.	TLY4 KK.3	102H4442	19	29	57	74	95				42	0.96	0.99	57	49	1.26	1.08	1.29	1.11	4.01	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY4 KK.3	163	159	6.2	6.2	5.0
		TLY4.8KK.3	102H4542	28	40	73	94	119				55	1.04	1.06	74	65	1.35	1.16	1.37	1.18	4.78	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY4.8KK.3	163	159	6.2	6.2	5.0
		TLY5.7KK.3	102H4642	36	51	89	114	144				68	1.03	1.06	91	79	1.33	1.15	1.37	1.18	5.70	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY5.7KK.3	163	159	6.2	6.2	5.0
		TLY6.5KK.3	102H4742	46	62	106	135	170				82	1.10	1.14	110	94	1.42	1.22	1.47	1.27	6.49	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY6.5KK.3	163	159	6.2	6.2	5.0
		TLY7.5KK.3	102H4842	53	71	122	155	194				94	1.09	1.14	126	108	1.41	1.22	1.47	1.27	7.48	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY7.5KK.3	163	159	6.2	6.2	5.0
		TLY8.7KK.3	102H4942	65	86	144	182	227				112	1.12	1.16	149	126	1.44	1.24	1.49	1.28	8.67	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY8.7KK.3	173	169	6.2	6.2	5.0
	3.	TLX4KK.3	102H4447	21	32	59	76	95				45		1.15***	60	52			1.48***	1.28***	4.01	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX4KK.3	173	169	6.2	6.2	5.0
		TLX4.8KK.3 ❍	102H4547	36	52	90	116	146				57		1.24***	76	65			1.57***	1.35***	4.78	S*	S*	S*	1			103N0050	103N0016	117-7132[2]	117-7131[2]	103N2010	103N1010	❍ TLX4.8KK.3	173	169	6.2	6.2	5.0
		TLX5.7KK.3	102H4647	37	52	91	115	143				70		1.28***	93	80			1.63***	1.40***	5.70	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX5.7KK.3	173	169	6.2	6.2	5.0
		TLX6.5KK.3	102H4747	46	63	106	133	165				83		1.30***	110	95			1.65***	1.42***	6.49	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX6.5KK.3	173	169	6.2	6.2	5.0
		TLX7.5KK.3	102H4847	55	75	125	157	195				98		1.32***	130	112			1.68***	1.44***	7.48	S*	S*	S*	1			103N0050	103N0016	117-7132[2]	117-7131[2]	103N2010	103N1010	TLX7.5KK.3	173	169	6.2	6.2	5.0
		TLX8.7KK.3	102H4947	65	88	146	184	227				115		1.31***	152	131			1.66***	1.43***	8.67	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX8.7KK.3	173	169	6.2	6.2	5.0
	1.	NLX8.8KK	105H6874	60	83	144	182	227				111		1.35	148	127			1.72	1.48	8.76	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX8.8KK	203	197	6.2	6.2	5.0
		NLX10KK	105H6871	74	100	169	215	269				131		1.36	174	150			1.72	1.48	10.09	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX10KK	203	197	6.2	6.2	5.0
		NLX11KK	105H6984	84	112	189	240	300				147		1.36	195	168			1.73	1.49	11.15	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX11KK	203	197	8.2	6.2	6.2
		NLX13KK	105H6983	98	133	223	282	350				174		1.36	231	199			1.72	1.48	13.25	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX13KK	203	197	8.2	6.2	6.2
		NLX15KK	105H6981	110	147	249	317	397				193		1.34	257	221			1.70	1.46	14.65	S*	S*	S*	1			103N0021	103N0016	117-7129[2]	117-7130[2]	103N2010	103N1010	NLX15KK	203	197	8.2	6.2	6.2
	2.	NLX8.0KK.2	105H6010	52	73	130	167	210				99		1.47***	133	115			1.88***	1.62***	8.05	S*	S*	S*	1			103N0050	103N0016	117-7132[2]		103N2010	103N1010	NLX8.0KK.2	203	197	6.2	6.2	5.0
		NLX8.8KK.2	105H6011	62	85	147	187	234				113		1.49***	151	130			1.89***	1.63***	8.76	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX8.8KK.2	203	197	6.2	6.2	5.0
		NLX10KK.2	105H6101	75	101	171	217	271				133		1.49***	178	153			1.89***	1.63***	10.09	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX10KK.2	203	197	6.2	6.2	5.0
		NLX11KK.2	105H6971	86	115	192	242	301				150		1.49***	200	172			1.89***	1.63***	11.15	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX11KK.2	203	197	8.2	6.2	6.2
		NLX13KK.2	105H6976	95	129	219	277	345				170		1.49***	227	196			1.89***	1.63***	13.25	S*	S*	S*	1			103N0050	103N0016	117-7132[2]		103N2010	103N1010	NLX13KK.2	203	197	8.2	6.2	6.2
		NLX15KK.2	105H6977	110	147	245	309	384				192		1.48***	255	220			1.88***	1.62***	14.65	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX15KK.2	203	197	8.2	6.2	6.2
Tropical	1.	TLES4KTK	102H4436	18	28	55	74	96	123	154		40	0.83	0.84	54	47	1.09	0.94	1.10	0.95	3.86	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4KTK	173	169	6.2	6.2	5.0
		TLES5KTK	102H4536	28	41	76	99	126	159	196		57	0.93	0.95	77	66	1.21	1.04	1.23	1.06	5.08	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES5KTK	173	169	6.2	6.2	5.0
		TLES6KTK	102H4636	31	48	87	112	140				66	0.95	0.97	88	76	1.22	1.05	1.24	1.07	5.70	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES6KTK	173	169	6.2	6.2	5.0
		TLES7KTK	102H4736	40	57	101	130	163				77	0.95	0.97	103	89	1.22	1.05	1.24	1.07	6.49	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES7KTK	173	169	6.2	6.2	5.0
		TLES8KTK	102H4836	48	66	116	149	188				89	0.95	0.97	119	103	1.21	1.04	1.23	1.06	7.76	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES8KTK	173	169	6.2	6.2	5.0
		NLE9KTK	105H6848	54	74	128	166	211				98	1.03	1.05	131	112	1.32	1.13	1.35	1.15	8.35	S	S	S	2/3	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE9KTK	197	191	6.2	6.2	5.0
		NLE11KTK	105H6948	73	98	162	206	261				127	1.03	1.05	167	144	1.31	1.13	1.34	1.15	11.15	S	S	S**	2/3	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE11KTK	197	191	6.2	6.2	5.0
		NLE15KTK	105H6946	93	128	219	280	351				169	1.00	1.02	225	194	1.27	1.10	1.30	1.12	14.65	S	S	F1	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KTK	197	191	6.2	6.2	5.0
	2.	NLE10KTK.2 ❍	105H6145	74	98	164	207	257				128	1.19	1.23	170	151	1.51	1.30	1.57	1.35	10.09	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ NLE10KTK.2	203	197	6.2	6.2	5.0
		NLE13KTK.2 ❍	105H6929	99	131	217	274	340				170	1.18	1.23	226	194	1.50	1.29	1.57	1.35	13.25	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ NLE13KTK.2	203	197	6.2	6.2	5.0
		NLE15KTK.2	105H6966	103	140	239	305	383				184	1.15		245	211	1.45	1.25			14.65	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KTK.2	203	197	6.2	6.2	5.0

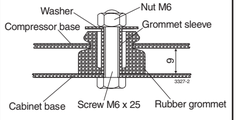
PL



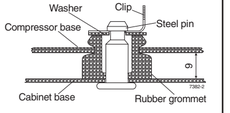
TL



Mountig Accessories



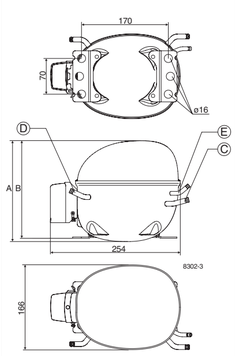
Bolt joint for
one compressor: 118-1917
in quantities: 118-1918



Snap-on
in quantities: 118-1919

The mounting accessories for the compressors are available in two versions, with bolt joint or snap-on joint.
The rubber grommets are designed for the 16 mm holes of the baseplate.

NL

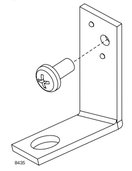


Run Capacitor Holder

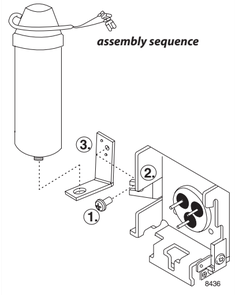
A run capacitor holder is available for the „Energy-optimized" and „High Energy-optimized" compressor range. This optional part enables to fix the run capacitor for 220V directly and earth-connected on the compressor shell, concentrating all electrical accessories on the compressor. This will save space in the machine compartment.

Code numbers:
run capacitor holder 117-0300
screw M4 x 8 PZD 2 117-0301

run capacitor holder with screw



assembly sequence



Applications
LBP: Low Back Pressure
MBP: Medium Back Pressure

Motor types
RSIR: Resistant Start Induction Run
RSCR: Resistant Start Capacitor Run

Starting devices
LST: Low Starting Torque
HST: High Starting Torque

Test conditions EN 12900 (CECOMAF)

Application	R600a
Condensing temperature	55°C
Ambient temperature	32°C
Suction gas temperature	32°C
Liquid temperature	55°C

220 V / 50 Hz

Test conditions ASHRAE

Application	R600a
Condensing temperature	54.4°C
Ambient temperature	32°C
Suction gas temperature	32°C
Liquid temperature	32°C

220 V / 50 Hz

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

Voltages and frequencies
1 = 198-254 V, 50 Hz
2 = 187-254 V, 50 Hz
3 = 198-254 V, 60 Hz, LBP, F1
4 = 198-254 V, 50-60 Hz

Note: To fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device.

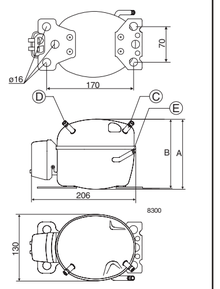
Run capacitors:
117-7117: 4 µF
117-7119: 4 µF
117-7129: 5 µF
117-7130: 5 µF
117-7131: 3 µF
117-7132: 3 µF
117-7136: 2 µF

* = run capacitor compulsory
** = run capacitor compulsory in 43°C ambient temp. at 60 Hz
*** = COP values with ePTC

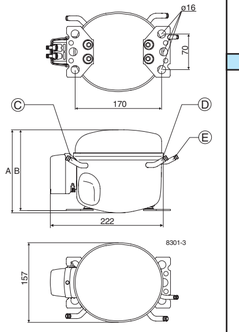
❍ **= preliminary data**

Level	Generation	Compressor	Code number	EN 12900 (CECOMAF) Capacity [W]								EN 12900 (CECOMAF) at LBP rating point -25°C / 55°C			ASHRAE subcooled at LBP rating point -23.3°C /54.4°C						Dis-placement	Recommended compressor cooling at ambient temperature			Voltage and fre-quencies	Electrical Equipment								Compressor	Dimensions Height [mm]		Connectors location/I.D. [mm]		
				Evaporating temperature [°C]								Cooling capacity	COP without RC	COP with RC	Cooling Capacity		COP without run capacitor		COP with run capacitor			32°C	38°C	43°C		LST (RSIR) PTC device w/o run capacitor connector spades		LST (RSCR) PTC device with run capacitor connector spades		Run capacitor 1) optional 2) compulsory spades		LST/HST Cover	LST/HST Cord relief				Suc-tion	Pro-cess	Dis-charge
				-35	-30	-20	-15	-10	-5	0	5	[W]	[W/W]	[W/W]	[W]	[kcal/h]	[W/W]	[kcal/Wh]	[W/W]	[kcal/Wh]	[cm³]	LBP	LBP	LBP		4.8 mm	6.3 mm	4.8 mm	6.3 mm	4.8 mm	6.3 mm				A	B	C	D	E
Energy-optimized	1.	PLE35K	101H0360			38	52	68	87	109		27		0.68	38	33			0.90	0.77	3.00	S*	S*		1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N0491	103N1010	PLE35K	137	135	6.2	6.2	5.0
	3.	TLES4KK.3	102H4438	19	29	57	75	96				42	0.90		57	49	1.18				4.01	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4KK.3	163	159	6.2	6.2	5.0
		TLES4.8KK.3	102H4538	28	40	73	94	119				55	1.00		74	65	1.30				4.78	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4.8KK.3	163	159	6.2	6.2	5.0
		TLES5.7KK.3	102H4638	36	50	89	114	144				68	1.02		91	79	1.32				5.70	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES5.7KK.3	163	159	6.2	6.2	5.0
		TLES6.5KK.3	102H4738	45	61	105	134	168				81	1.02		108	94	1.31				6.49	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES6.5KK.3	163	159	6.2	6.2	5.0
		TLES7.5KK.3	102H4838	53	71	122	155	194				94	1.02	1.07	126	108	1.32	1.14	1.38	1.19	7.48	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES7.5KK.3	163	159	6.2	6.2	5.0
		TLES8.7KK.3	102H4938	62	83	143	181	228				110	1.03	1.08	147	126	1.33	1.14	1.39	1.19	8.67	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES8.7KK.3	163	159	6.2	6.2	5.0
		TLES10KK.3 ❍	102H4038									130	1.04		172	148	1.35	1.15			10.14	S	S		1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ TLES10KK.3	173	169	6.2	6.2	5.0
	4.	NLE8.8KK.4	105H6800	63	84	141	179	223				110	1.18	1.22	147	127	1.51	1.30	1.56	1.34	8.76	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE8.8KK.4	190	183	6.2	6.2	5.0
		NLE10KK.4	105H6867	74	98	164	207	257				128	1.19	1.23	170	151	1.51	1.30	1.57	1.35	10.09	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE10KK.4	190	183	6.2	6.2	5.0
		NLE11KK.4	105H6952	82	109	184	232	290				143	1.19	1.22	191	165	1.52	1.31	1.56	1.34	11.15	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE11KK.4	190	183	6.2	6.2	5.0
		NLE13KK.4	105H6959	99	131	217	274	340				170	1.18	1.23	226	194	1.50	1.29	1.57	1.35	13.25	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE13KK.4	190	183	6.2	6.2	5.0
		NLE15KK.4	105H6968	110	146	243	307	382				190	1.20	1.25	253	213	1.53	1.32	1.59	1.37	14.65	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KK.4	197	190	6.2	6.2	5.0
High Energy-optimized	3.	TLY4 KK.3	102H4442	19	29	57	74	95				42	0.96	0.99	57	49	1.26	1.08	1.29	1.11	4.01	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY4 KK.3	163	159	6.2	6.2	5.0
		TLY4.8KK.3	102H4542	28	40	73	94	119				55	1.04	1.06	74	65	1.35	1.16	1.37	1.18	4.78	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY4.8KK.3	163	159	6.2	6.2	5.0
		TLY5.7KK.3	102H4642	36	51	89	114	144				68	1.03	1.06	91	79	1.33	1.15	1.37	1.18	5.70	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY5.7KK.3	163	159	6.2	6.2	5.0
		TLY6.5KK.3	102H4742	46	62	106	135	170				82	1.10	1.14	110	94	1.42	1.22	1.47	1.27	6.49	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY6.5KK.3	163	159	6.2	6.2	5.0
		TLY7.5KK.3	102H4842	53	71	122	155	194				94	1.09	1.14	126	108	1.41	1.22	1.47	1.27	7.48	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY7.5KK.3	163	159	6.2	6.2	5.0
		TLY8.7KK.3	102H4942	65	86	144	182	227				112	1.12	1.16	149	126	1.44	1.24	1.49	1.28	8.67	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY8.7KK.3	173	169	6.2	6.2	5.0
	3.	TLX4KK.3	102H4447	21	32	59	76	95				45		1.15***	60	52			1.48***	1.28***	4.01	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX4KK.3	173	169	6.2	6.2	5.0
		TLX4.8KK.3 ❍	102H4547	36	52	90	116	146				57		1.24***	76	65			1.57***	1.35***	4.78	S*	S*	S*	1			103N0050	103N0016	117-7132[2]	117-7131[2]	103N2010	103N1010	❍ TLX4.8KK.3	173	169	6.2	6.2	5.0
		TLX5.7KK.3	102H4647	37	52	91	115	143				70		1.28***	93	80			1.63***	1.40***	5.70	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX5.7KK.3	173	169	6.2	6.2	5.0
		TLX6.5KK.3	102H4747	46	63	106	133	165				83		1.30***	110	95			1.65***	1.42***	6.49	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX6.5KK.3	173	169	6.2	6.2	5.0
		TLX7.5KK.3	102H4847	55	75	125	157	195				98		1.32***	130	112			1.68***	1.44***	7.48	S*	S*	S*	1			103N0050	103N0016	117-7132[2]	117-7131[2]	103N2010	103N1010	TLX7.5KK.3	173	169	6.2	6.2	5.0
		TLX8.7KK.3	102H4947	65	88	146	184	227				115		1.31***	152	131			1.66***	1.43***	8.67	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX8.7KK.3	173	169	6.2	6.2	5.0
	1.	NLX8.8KK	105H6874	60	83	144	182	227				111		1.35	148	127			1.72	1.48	8.76	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX8.8KK	203	197	6.2	6.2	5.0
		NLX10KK	105H6871	74	100	169	215	269				131		1.36	174	150			1.72	1.48	10.09	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX10KK	203	197	6.2	6.2	5.0
		NLX11KK	105H6984	84	112	189	240	300				147		1.36	195	168			1.73	1.49	11.15	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX11KK	203	197	8.2	6.2	6.2
		NLX13KK	105H6983	98	133	223	282	350				174		1.36	231	199			1.72	1.48	13.25	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX13KK	203	197	8.2	6.2	6.2
		NLX15KK	105H6981	110	147	249	317	397				193		1.34	257	221			1.70	1.46	14.65	S*	S*	S*	1			103N0021	103N0016	117-7129[2]	117-7130[2]	103N2010	103N1010	NLX15KK	203	197	8.2	6.2	6.2
	2.	NLX8.0KK.2	105H6010	52	73	130	167	210				99		1.47***	133	115			1.88***	1.62***	8.05	S*	S*	S*	1			103N0050	103N0016	117-7132[2]		103N2010	103N1010	NLX8.0KK.2	203	197	6.2	6.2	5.0
		NLX8.8KK.2	105H6011	62	85	147	187	234				113		1.49***	151	130			1.89***	1.63***	8.76	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX8.8KK.2	203	197	6.2	6.2	5.0
		NLX10KK.2	105H6101	75	101	171	217	271				133		1.49***	178	153			1.89***	1.63***	10.09	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX10KK.2	203	197	6.2	6.2	5.0
		NLX11KK.2	105H6971	86	115	192	242	301				150		1.49***	200	172			1.89***	1.63***	11.15	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX11KK.2	203	197	8.2	6.2	6.2
		NLX13KK.2	105H6976	95	129	219	277	345				170		1.49***	227	196			1.89***	1.63***	13.25	S*	S*	S*	1			103N0050	103N0016	117-7132[2]		103N2010	103N1010	NLX13KK.2	203	197	8.2	6.2	6.2
		NLX15KK.2	105H6977	110	147	245	309	384				192		1.48***	255	220			1.88***	1.62***	14.65	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX15KK.2	203	197	8.2	6.2	6.2
Tropical	1.	TLES4KTK	102H4436	18	28	55	74	96	123	154		40	0.83	0.84	54	47	1.09	0.94	1.10	0.95	3.86	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4KTK	173	169	6.2	6.2	5.0
		TLES5KTK	102H4536	28	41	76	99	126	159	196		57	0.93	0.95	77	66	1.21	1.04	1.23	1.06	5.08	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES5KTK	173	169	6.2	6.2	5.0
		TLES6KTK	102H4636	31	48	87	112	140				66	0.95	0.97	88	76	1.22	1.05	1.24	1.07	5.70	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES6KTK	173	169	6.2	6.2	5.0
		TLES7KTK	102H4736	40	57	101	130	163				77	0.95	0.97	103	89	1.22	1.05	1.24	1.07	6.49	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES7KTK	173	169	6.2	6.2	5.0
		TLES8KTK	102H4836	48	66	116	149	188				89	0.95	0.97	119	103	1.21	1.04	1.23	1.06	7.76	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES8KTK	173	169	6.2	6.2	5.0
		NLE9KTK	105H6848	54	74	128	166	211				98	1.03	1.05	131	112	1.32	1.13	1.35	1.15	8.35	S	S	S	2/3	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE9KTK	197	191	6.2	6.2	5.0
		NLE11KTK	105H6948	73	98	162	206	261				127	1.03	1.05	167	144	1.31	1.13	1.34	1.15	11.15	S	S	S**	2/3	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE11KTK	197	191	6.2	6.2	5.0
		NLE15KTK	105H6946	93	128	219	280	351				169	1.00	1.02	225	194	1.27	1.10	1.30	1.12	14.65	S	S	F1	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KTK	197	191	6.2	6.2	5.0
	2.	NLE10KTK.2 ❍	105H6145	74	98	164	207	257				128	1.19	1.23	170	151	1.51	1.30	1.57	1.35	10.09	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ NLE10KTK.2	203	197	6.2	6.2	5.0
		NLE13KTK.2 ❍	105H6929	99	131	217	274	340				170	1.18	1.23	226	194	1.50	1.29	1.57	1.35	13.25	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ NLE13KTK.2	203	197	6.2	6.2	5.0
		NLE15KTK.2	105H6966	103	140	239	305	383				184	1.15		245	211	1.45	1.25			14.65	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KTK.2	203	197	6.2	6.2	5.0

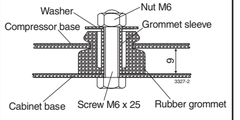
PL



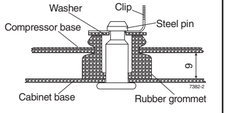
TL



Mountig Accessories



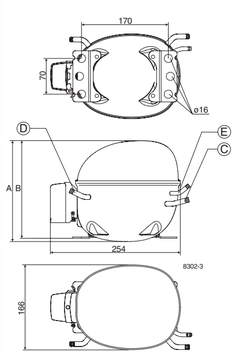
Bolt joint for
one compressor: 118-1917
in quantities: 118-1918



Snap-on
in quantities: 118-1919

The mounting accessories for the compressors are available in two versions, with bolt joint or snap-on joint.
The rubber grommets are designed for the 16 mm holes of the baseplate.

NL

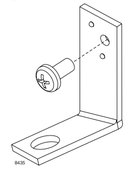


Run Capacitor Holder

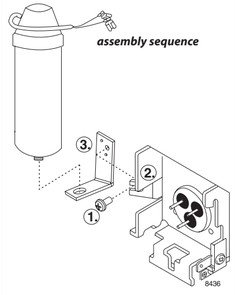
A run capacitor holder is available for the „Energy-optimized" and „High Energy-optimized" compressor range. This optional part enables to fix the run capacitor for 220V directly and earth-connected on the compressor shell, concentrating all electrical accessories on the compressor. This will save space in the machine compartment.

Code numbers:
run capacitor holder 117-0300
screw M4 x 8 PZD 2 117-0301

run capacitor holder with screw



assembly sequence



Applications
LBP: Low Back Pressure
MBP: Medium Back Pressure

Motor types
RSIR: Resistant Start Induction Run
RSCR: Resistant Start Capacitor Run

Starting devices
LST: Low Starting Torque
HST: High Starting Torque

Test conditions EN 12900 (CECOMAF)

Application	R600a
Condensing temperature	55°C
Ambient temperature	32°C
Suction gas temperature	32°C
Liquid temperature	55°C

220 V / 50 Hz

Test conditions ASHRAE

Application	R600a
Condensing temperature	54.4°C
Ambient temperature	32°C
Suction gas temperature	32°C
Liquid temperature	32°C

220 V / 50 Hz

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

Voltages and frequencies
1 = 198-254 V, 50 Hz
2 = 187-254 V, 50 Hz
3 = 198-254 V, 60 Hz, LBP, F1
4 = 198-254 V, 50-60 Hz

Note: To fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device.

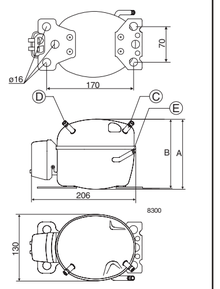
Run capacitors:
117-7117: 4 µF
117-7119: 4 µF
117-7129: 5 µF
117-7130: 5 µF
117-7131: 3 µF
117-7132: 3 µF
117-7136: 2 µF

* = run capacitor compulsory
** = run capacitor compulsory in 43°C ambient temp. at 60 Hz
*** = COP values with ePTC

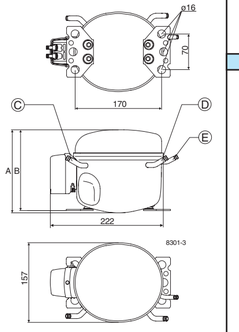
❍ **= preliminary data**

Level	Generation	Compressor	Code number	EN 12900 (CECOMAF) Capacity [W]								EN 12900 (CECOMAF) at LBP rating point -25°C / 55°C			ASHRAE subcooled at LBP rating point -23.3°C /54.4°C						Dis-placement	Recommended compressor cooling at ambient temperature			Voltage and fre-quencies	Electrical Equipment								Compressor	Dimensions Height [mm]		Connectors location/I.D. [mm]		
				Evaporating temperature [°C]								Cooling capacity	COP without RC	COP with RC	Cooling Capacity		COP without run capacitor		COP with run capacitor			32°C	38°C	43°C		LST (RSIR) PTC device w/o run capacitor connector spades		LST (RSCR) PTC device with run capacitor connector spades		Run capacitor 1) optional 2) compulsory spades		LST/HST Cover	LST/HST Cord relief				Suc-tion	Pro-cess	Dis-charge
				-35	-30	-20	-15	-10	-5	0	5	[W]	[W/W]	[W/W]	[W]	[kcal/h]	[W/W]	[kcal/Wh]	[W/W]	[kcal/Wh]	[cm³]	LBP	LBP	LBP		4.8 mm	6.3 mm	4.8 mm	6.3 mm	4.8 mm	6.3 mm				A	B	C	D	E
Energy-optimized	1.	PLE35K	101H0360			38	52	68	87	109		27		0.68	38	33			0.90	0.77	3.00	S*	S*		1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N0491	103N1010	PLE35K	137	135	6.2	6.2	5.0
	3.	TLES4KK.3	102H4438	19	29	57	75	96				42	0.90		57	49	1.18				4.01	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4KK.3	163	159	6.2	6.2	5.0
		TLES4.8KK.3	102H4538	28	40	73	94	119				55	1.00		74	65	1.30				4.78	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4.8KK.3	163	159	6.2	6.2	5.0
		TLES5.7KK.3	102H4638	36	50	89	114	144				68	1.02		91	79	1.32				5.70	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES5.7KK.3	163	159	6.2	6.2	5.0
		TLES6.5KK.3	102H4738	45	61	105	134	168				81	1.02		108	94	1.31				6.49	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES6.5KK.3	163	159	6.2	6.2	5.0
		TLES7.5KK.3	102H4838	53	71	122	155	194				94	1.02	1.07	126	108	1.32	1.14	1.38	1.19	7.48	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES7.5KK.3	163	159	6.2	6.2	5.0
		TLES8.7KK.3	102H4938	62	83	143	181	228				110	1.03	1.08	147	126	1.33	1.14	1.39	1.19	8.67	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES8.7KK.3	163	159	6.2	6.2	5.0
		TLES10KK.3 ❍	102H4038									130	1.04		172	148	1.35	1.15			10.14	S	S		1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ TLES10KK.3	173	169	6.2	6.2	5.0
	4.	NLE8.8KK.4	105H6800	63	84	141	179	223				110	1.18	1.22	147	127	1.51	1.30	1.56	1.34	8.76	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE8.8KK.4	190	183	6.2	6.2	5.0
		NLE10KK.4	105H6867	74	98	164	207	257				128	1.19	1.23	170	151	1.51	1.30	1.57	1.35	10.09	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE10KK.4	190	183	6.2	6.2	5.0
		NLE11KK.4	105H6952	82	109	184	232	290				143	1.19	1.22	191	165	1.52	1.31	1.56	1.34	11.15	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE11KK.4	190	183	6.2	6.2	5.0
		NLE13KK.4	105H6959	99	131	217	274	340				170	1.18	1.23	226	194	1.50	1.29	1.57	1.35	13.25	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE13KK.4	190	183	6.2	6.2	5.0
		NLE15KK.4	105H6968	110	146	243	307	382				190	1.20	1.25	253	213	1.53	1.32	1.59	1.37	14.65	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KK.4	197	190	6.2	6.2	5.0
High Energy-optimized	3.	TLY4 KK.3	102H4442	19	29	57	74	95				42	0.96	0.99	57	49	1.26	1.08	1.29	1.11	4.01	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY4 KK.3	163	159	6.2	6.2	5.0
		TLY4.8KK.3	102H4542	28	40	73	94	119				55	1.04	1.06	74	65	1.35	1.16	1.37	1.18	4.78	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY4.8KK.3	163	159	6.2	6.2	5.0
		TLY5.7KK.3	102H4642	36	51	89	114	144				68	1.03	1.06	91	79	1.33	1.15	1.37	1.18	5.70	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY5.7KK.3	163	159	6.2	6.2	5.0
		TLY6.5KK.3	102H4742	46	62	106	135	170				82	1.10	1.14	110	94	1.42	1.22	1.47	1.27	6.49	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY6.5KK.3	163	159	6.2	6.2	5.0
		TLY7.5KK.3	102H4842	53	71	122	155	194				94	1.09	1.14	126	108	1.41	1.22	1.47	1.27	7.48	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY7.5KK.3	163	159	6.2	6.2	5.0
		TLY8.7KK.3	102H4942	65	86	144	182	227				112	1.12	1.16	149	126	1.44	1.24	1.49	1.28	8.67	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLY8.7KK.3	173	169	6.2	6.2	5.0
	3.	TLX4KK.3	102H4447	21	32	59	76	95				45		1.15***	60	52			1.48***	1.28***	4.01	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX4KK.3	173	169	6.2	6.2	5.0
		TLX4.8KK.3 ❍	102H4547	36	52	90	116	146				57		1.24***	76	65			1.57***	1.35***	4.78	S*	S*	S*	1			103N0050	103N0016	117-7132[2]	117-7131[2]	103N2010	103N1010	❍ TLX4.8KK.3	173	169	6.2	6.2	5.0
		TLX5.7KK.3	102H4647	37	52	91	115	143				70		1.28***	93	80			1.63***	1.40***	5.70	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX5.7KK.3	173	169	6.2	6.2	5.0
		TLX6.5KK.3	102H4747	46	63	106	133	165				83		1.30***	110	95			1.65***	1.42***	6.49	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX6.5KK.3	173	169	6.2	6.2	5.0
		TLX7.5KK.3	102H4847	55	75	125	157	195				98		1.32***	130	112			1.68***	1.44***	7.48	S*	S*	S*	1			103N0050	103N0016	117-7132[2]	117-7131[2]	103N2010	103N1010	TLX7.5KK.3	173	169	6.2	6.2	5.0
		TLX8.7KK.3	102H4947	65	88	146	184	227				115		1.31***	152	131			1.66***	1.43***	8.67	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	TLX8.7KK.3	173	169	6.2	6.2	5.0
	1.	NLX8.8KK	105H6874	60	83	144	182	227				111		1.35	148	127			1.72	1.48	8.76	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX8.8KK	203	197	6.2	6.2	5.0
		NLX10KK	105H6871	74	100	169	215	269				131		1.36	174	150			1.72	1.48	10.09	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX10KK	203	197	6.2	6.2	5.0
		NLX11KK	105H6984	84	112	189	240	300				147		1.36	195	168			1.73	1.49	11.15	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX11KK	203	197	8.2	6.2	6.2
		NLX13KK	105H6983	98	133	223	282	350				174		1.36	231	199			1.72	1.48	13.25	S*	S*	S*	1			103N0021	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX13KK	203	197	8.2	6.2	6.2
		NLX15KK	105H6981	110	147	249	317	397				193		1.34	257	221			1.70	1.46	14.65	S*	S*	S*	1			103N0021	103N0016	117-7129[2]	117-7130[2]	103N2010	103N1010	NLX15KK	203	197	8.2	6.2	6.2
	2.	NLX8.0KK.2	105H6010	52	73	130	167	210				99		1.47***	133	115			1.88***	1.62***	8.05	S*	S*	S*	1			103N0050	103N0016	117-7132[2]		103N2010	103N1010	NLX8.0KK.2	203	197	6.2	6.2	5.0
		NLX8.8KK.2	105H6011	62	85	147	187	234				113		1.49***	151	130			1.89***	1.63***	8.76	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX8.8KK.2	203	197	6.2	6.2	5.0
		NLX10KK.2	105H6101	75	101	171	217	271				133		1.49***	178	153			1.89***	1.63***	10.09	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX10KK.2	203	197	6.2	6.2	5.0
		NLX11KK.2	105H6971	86	115	192	242	301				150		1.49***	200	172			1.89***	1.63***	11.15	S*	S*	S*	1			103N0050	103N0016	117-7136[2]		103N2010	103N1010	NLX11KK.2	203	197	8.2	6.2	6.2
		NLX13KK.2	105H6976	95	129	219	277	345				170		1.49***	227	196			1.89***	1.63***	13.25	S*	S*	S*	1			103N0050	103N0016	117-7132[2]		103N2010	103N1010	NLX13KK.2	203	197	8.2	6.2	6.2
		NLX15KK.2	105H6977	110	147	245	309	384				192		1.48***	255	220			1.88***	1.62***	14.65	S*	S*	S*	1			103N0050	103N0016	117-7119[2]	117-7117[2]	103N2010	103N1010	NLX15KK.2	203	197	8.2	6.2	6.2
Tropical	1.	TLES4KTK	102H4436	18	28	55	74	96	123	154		40	0.83	0.84	54	47	1.09	0.94	1.10	0.95	3.86	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES4KTK	173	169	6.2	6.2	5.0
		TLES5KTK	102H4536	28	41	76	99	126	159	196		57	0.93	0.95	77	66	1.21	1.04	1.23	1.06	5.08	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES5KTK	173	169	6.2	6.2	5.0
		TLES6KTK	102H4636	31	48	87	112	140				66	0.95	0.97	88	76	1.22	1.05	1.24	1.07	5.70	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES6KTK	173	169	6.2	6.2	5.0
		TLES7KTK	102H4736	40	57	101	130	163				77	0.95	0.97	103	89	1.22	1.05	1.24	1.07	6.49	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES7KTK	173	169	6.2	6.2	5.0
		TLES8KTK	102H4836	48	66	116	149	188				89	0.95	0.97	119	103	1.21	1.04	1.23	1.06	7.76	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	TLES8KTK	173	169	6.2	6.2	5.0
		NLE9KTK	105H6848	54	74	128	166	211				98	1.03	1.05	131	112	1.32	1.13	1.35	1.15	8.35	S	S	S	2/3	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE9KTK	197	191	6.2	6.2	5.0
		NLE11KTK	105H6948	73	98	162	206	261				127	1.03	1.05	167	144	1.31	1.13	1.34	1.15	11.15	S	S	S**	2/3	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE11KTK	197	191	6.2	6.2	5.0
		NLE15KTK	105H6946	93	128	219	280	351				169	1.00	1.02	225	194	1.27	1.10	1.30	1.12	14.65	S	S	F1	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KTK	197	191	6.2	6.2	5.0
	2.	NLE10KTK.2 ❍	105H6145	74	98	164	207	257				128	1.19	1.23	170	151	1.51	1.30	1.57	1.35	10.09	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ NLE10KTK.2	203	197	6.2	6.2	5.0
		NLE13KTK.2 ❍	105H6929	99	131	217	274	340				170	1.18	1.23	226	194	1.50	1.29	1.57	1.35	13.25	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	❍ NLE13KTK.2	203	197	6.2	6.2	5.0
		NLE15KTK.2	105H6966	103	140	239	305	383				184	1.15		245	211	1.45	1.25			14.65	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119[1]	117-7117[1]	103N2010	103N1010	NLE15KTK.2	203	197	6.2	6.2	5.0

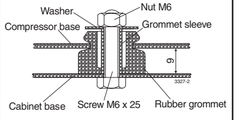
PL



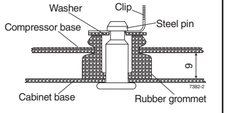
TL



Mountig Accessories



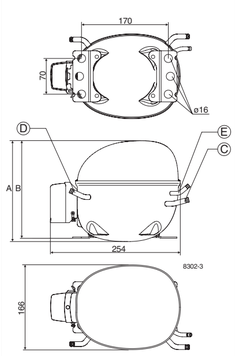
Bolt joint for
one compressor: 118-1917
in quantities: 118-1918



Snap-on
in quantities: 118-1919

The mounting accessories for the compressors are available in two versions, with bolt joint or snap-on joint.
The rubber grommets are designed for the 16 mm holes of the baseplate.

NL

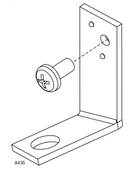


Run Capacitor Holder

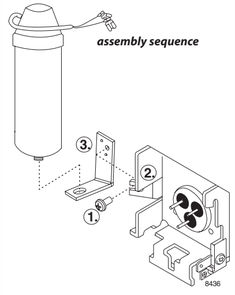
A run capacitor holder is available for the „Energy-optimized" and „High Energy-optimized" compressor range. This optional part enables to fix the run capacitor for 220V directly and earth-connected on the compressor shell, concentrating all electrical accessories on the compressor. This will save space in the machine compartment.

Code numbers:
run capacitor holder 117-0300
screw M4 x 8 PZD 2 117-0301

run capacitor holder with screw



assembly sequence



Applications
LBP: Low Back Pressure
MBP: Medium Back Pressure

Motor types
RSIR: Resistant Start Induction Run
RSCR: Resistant Start Capacitor Run

Starting devices
LST: Low Starting Torque
HST: High Starting Torque

Test conditions EN 12900 (CECOMAF)

Application	R600a
Condensing temperature	55°C
Ambient temperature	32°C
Suction gas temperature	32°C
Liquid temperature	55°C

220 V / 50 Hz

Test conditions ASHRAE

Application	R600a
Condensing temperature	54.4°C
Ambient temperature	32°C
Suction gas temperature	32°C
Liquid temperature	32°C

220 V / 50 Hz

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

Voltages and frequencies
1 = 198-254 V, 50 Hz
2 = 187-254 V, 50 Hz
3 = 198-254 V, 60 Hz, LBP, F1
4 = 198-254 V, 50-60 Hz

Note: To fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device.

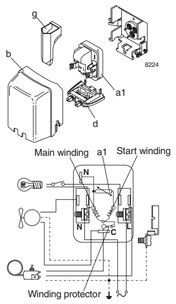
Run capacitors:
117-7117: 4 µF
117-7119: 4 µF
117-7129: 5 µF
117-7130: 5 µF
117-7131: 3 µF
117-7132: 3 µF
117-7136: 2 µF

* = run capacitor compulsory
** = run capacitor compulsory in 43°C ambient temp. at 60 Hz
*** = COP values with ePTC

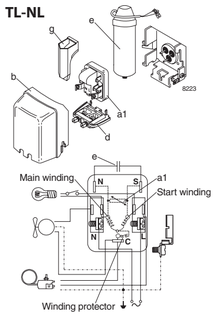
❍ **= preliminary data**

LST - RSCR

PL

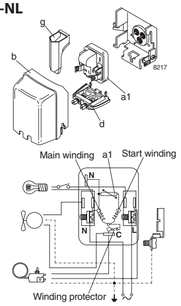


TL-NL



LST - RSIR

TL-NL



Motor Types

Compressors with the motor type **R**esistant **S**tart **I**nduction **R**un (**RSIR**) have a starting device for **L**ow **S**tarting **T**orque (LST).
This starting device consists of a PTC, a cord relief and a cover.

Compressors with the motor type **R**esistant **S**tart **C**apacitor **R**un (**RSCR**) have a starting device for **L**ow **S**tarting **T**orque (LST).
This starting device consists of a PTC, a cord relief and a cover. A run capacitor has to be connected to the PTC unit.

LST Starting Device

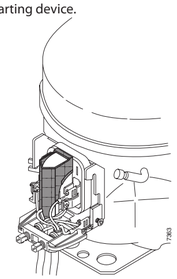
The **LST** starting device (**L**ow **S**tarting **T**orque) is used in well-designed refrigerating systems with capillary tube as throttling device and pressure equalizing. Pressure equalizing may exceed 10 minutes.
The PTC needs a compressor standstill period of 5 minutes to cool down before each start.

Legend

a1: PTC starting device
b: Cover
d: Cord relief
e: Run capacitor
g: Protection screen for PTC

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.



Electronically controlled PTC

Introduction

The asynchronous motor of a single phase AC powered compressor has two windings, a main and an auxiliary winding. The auxiliary winding is powered high at start by means of a starting device, then powered down, often still utilized continuously by means of a run capacitor. The starting device of our standard PTC-starters is a "Positive Temperature Coefficient" resistor, PTC. When heated up during the start phase, the PTC almost cuts off the current to the auxiliary winding, leaving only enough current to keep itself heated to this closing level. The heat loss for this amount to approximately 2.5 W. With the ePTC this loss can be reduced down to approximately 0.4 W by an extra electronic circuit.
The ePTC solution is an easy way to save energy in existing and future freezer and refrigerator designs. It is fully interchangeable with the conventional PTC types 103N0018 and 103N0021 with 4.8 mm spade connectors.

Advantages:

- 2 watt power consumption reduction
- Short recovery time (re-start possible after few seconds if pressure is equalized)
- Can be used to reach a higher cabinet energy class
- Can be used to replace a run capacitor in connection with e.g. a TLES compressor
- Run capacitor acceptance

ePTC (code number 103N0050)

Functional Description

The main component of the ePTC is the same PTC pill like in other 220-240 V 103N…. Danfoss PTC starters. Thus the start of the compressor motor is performed in the same way. In standard PTC starters the >2 W energy loss to keep the PTC heated during compressor operation are not avoidable. In the ePTC a small electronic circuit cuts off the current through the PTC short time after start and thus reduces the energy loss down to approx 0.4 W. The switch used is a Triac, an electronic AC switch, controlled by a timer circuit.
As the timer circuit has a short reset time and the main PTC cools down during compressor operation already, the full start torque will be available after approx 6 s compressor off time. However, it is still a LST starting device, needing full pressure equalization before start.

MAKING MODERN LIVING POSSIBLE

Danfoss Compressors
R600a • 220-240 V
50 Hz & 60 Hz

REFRIGERATION &
AIR CONDITIONING DIVISION

Quick reference

Hermetic Compressors R600a • 220V - 240V for Refrigerators and Freezers

Application Range

All compressors for R600a have denominations ending with **K** after the number for displacement or capacity.
They are designed for low operating temperatures - **LBP** (**L**ow **B**ack **P**ressure) for use in refrigerators, freezers and similar applications.
Compressors with endings **K** and **KK** are designed for regions with stable supply voltage.
Endings **KTK** are designed for less stable supply voltage and tropical conditions.
Some of the smaller compressors and the variable speed compressors are also released for medium operating temperatures - **MBP** (**M**edium **B**ack **P**ressure).

Yellow Warning Label

Warnings

- R600a is flammable in concentrations of air between approximatey 1.5% and 8.5% by volume (LEL lower explosion limit and UEL upper explosion limit).
- An ignition source at a temperature higher than 460°C is needed for a combustion to occur.
- Isobutane is significantly different from R12 and R134a. This means that compressors for R600a cannot be used with R12 or R134a.
- No high potential test nor start tests must be carried out while the compressor is under vacuum.
- No attempt must be made to start the compressor without a complete starting device.
- Allow the compressor to assume a temperature above 10°C before starting the first time in order to avoid starting problems.
- Anti-freeze agents must not be used in the compressors as such agents are damaging to several of the materials used. In particular, the ethyl or methyl alcohol contents of such anti-freeze agents have a destructive effect on the synthetic motor insulation.

Model Designation

Compressor design	Optimization level	Compressor size	Application range	Start characteristics	Generation
PL TL NL	Blank Standard energy level S Semi-direct intake E Energy-optimized (optimized motor) Y,X High Energy-optimized (high optimization level) V Variable Speed	Nominal displacement in cm^3 Exception: For PL compressors the capacity at rating point is stated.	K R600a LBP/(MBP) KT R600a LBP/(MBP) tropical	Blank → universal (principal rule) K = LST characteristics (capillary tube)	Blank → first generation .2 → second generation .3 → third generation etc.

Examples

PL	E	35	K		
TL	ES	6	KT	K	
NL	X	15	K	K	.2

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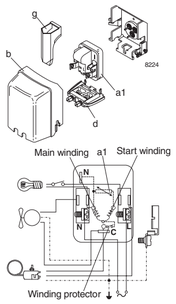
DEHC.PB.520.D4.02/520N0287

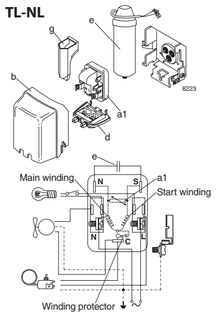
Produced by Danfoss Compressors/DEHC 6093, 05.2006

LST - RSCR

PL

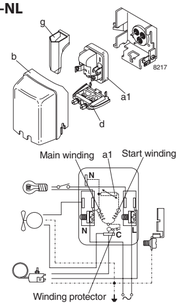


TL-NL



LST - RSIR

TL-NL



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Legend

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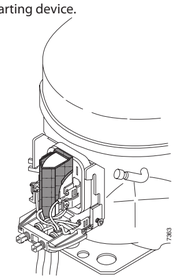

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DEHC.PB.520.D4.02/520N0287

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