

ENGINEERING
TOMORROW

Danfoss

Quick reference

Light commercial reciprocating compressors **for refrigeration**

R600a 220-240V 50 / 60Hz



Compressor	Recommended compressor cooling at ambient temperatures			Voltage and frequency	Electrical equipment								Dimensions (mm)				
	32°C	38°C	43°C		LST (RSIR)		LST (RSCR)		Run capacitor		LST / HST		Height		Connectors location / I.D		
	LBP	LBP	LBP		PTC device w/o run capacitor connector		PTC device with run capacitor connector		1 optional 2 compulsory				A	B	C	D	E
					Spades 4.8 mm	Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Spades 4.8 mm	Spades 6.3 mm	Cord relief	Cover					
PLE35K	S*	S*		1			103N0021	103N0016	117-7119 ²	117-7117 ²	103N1010	103N0491	137	135	6.2	6.2	5.0
TLES4KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLES4.8KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLES5.7KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLES6.5KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLES7.5KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLES8.7KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLES10KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
NLE8.8KK.4	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	190	183	6.2	6.2	5.0
NLE10KK.4	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	190	183	6.2	6.2	5.0
NLE11KK.4	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	190	183	6.2	6.2	5.0
NLE13KK.4	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	190	183	6.2	6.2	5.0
NLE15KK.4	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	197	190	6.2	6.2	5.0
TLY4.KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLY4.8KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLY5.7KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
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TLY7.5KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	163	159	6.2	6.2	5.0
TLY8.7KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
TLY10KK.3	S	S	S	1	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
TLX4KK.3	S*	S*	S*	1			103N0050	103N0016	117-7119 ²	117-7117 ²	103N1010	103N2010	173	169	6.2	6.2	5.0
TLX4.8KK.3	S*	S*	S*	1			103N0050	103N0016	117-7132 ²	117-7131 ²	103N1010	103N2010	173	169	6.2	6.2	5.0
TLX5.7KK.3	S*	S*	S*	1			103N0050	103N0016	117-7119 ²	117-7117 ²	103N1010	103N2010	173	169	6.2	6.2	5.0
TLX6.5KK.3	S*	S*	S*	1			103N0050	103N0016	117-7119 ²	117-7117 ²	103N1010	103N2010	173	169	6.2	6.2	5.0
TLX7.5KK.3	S*	S*	S*	1			103N0050	103N0016	117-7132 ²	117-7131 ²	103N1010	103N2010	173	169	6.2	6.2	5.0
TLX8.7KK.3	S*	S*	S*	1			103N0050	103N0016	117-7119 ²	117-7117 ²	103N1010	103N2010	173	169	6.2	6.2	5.0
TLX4KK.4	S*	S*	S*	1			103N0050	103N0016	117-7136 ²		103N1010	103N2010	173	169	6.2	6.2	5.0
TLX4.8KK.4	S*	S*	S*	1			103N0050	103N0016	117-7136 ²		103N1010	103N2010	173	169	6.2	6.2	5.0
TLX10KK.4	S*	S*	S*	1			103N0050	103N0016	117-7139 ²		103N1010	103N2010	173	169	6.2	6.2	5.0
DLX4KK	S*	S*	S*	1			103N0055	103N0016	117-7136 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
DLX4.8KK	S*	S*	S*	1			103N0055	103N0016	117-7136 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
DLX5.7KK	S*	S*	S*	1			103N0055	103N0016	117-7136 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
DLX6.5KK	S*	S*	S*	1			103N0055	103N0016	117-7136 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
DLX7.5KK	S*	S*	S*	1			103N0055	103N0016	117-7139 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
DLX8.7KK	S*	S*	S*	1			103N0055	103N0016	117-7139 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
DLX9.4KK	S*	S*	S*	1			103N0055	103N0016	117-7139 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
DLX10KK	S*	S*	S*	1			103N0055	103N0016	117-7132 ²		103N1010	103N0491	175	169	6.2	6.0	5.0
NLX8.8KK.1	S*	S*	S*	1			103N0021	103N0016	117-7136 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLX10KK.1	S*	S*	S*	1			103N0021	103N0016	117-7132 ²	117-7131 ²	103N1010	103N2010	203	197	6.2	6.2	5.0
NLX11KK.1	S*	S*	S*	1			103N0021	103N0016	117-7119 ²	117-7117 ²	103N1010	103N2010	203	197	6.2	6.2	5.0
NLX13KK.1	S*	S*	S*	1			103N0021	103N0016	117-7119 ²	117-7117 ²	103N1010	103N2010	203	197	6.2	6.2	5.0
NLX15KK.1	S*	S*	S*	1			103N0021	103N0016	117-7136 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLX8.0KK.2	S*	S*	S*	1			103N0050	103N0016	117-7132 ²	117-7131 ²	103N1010	103N2010	203	197	6.2	6.2	5.0
NLX8.8KK.2	S*	S*	S*	1			103N0050	103N0016	117-7136 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLX10KK.2	S*	S*	S*	1			103N0050	103N0016	117-7136 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLX11KK.2	S*	S*	S*	1			103N0050	103N0016	117-7136 ²		103N1010	103N2010	203	197	8.2	6.2	6.2
NLX13KK.2	S*	S*	S*	1			103N0050	103N0016	117-7132 ²	117-7131 ²	103N1010	103N2010	203	197	8.2	6.2	6.2
NLX15KK.2	S*	S*	S*	1			103N0050	103N0016	117-7119 ²	117-7117 ²	103N1010	103N2010	203	197	8.2	6.2	6.2
NLU8.0KK	S*	S*	S*	1			103N0055	103N0016	117-7139 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLU8.8KK	S*	S*	S*	1			103N0055	103N0016	117-7139 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLU10KK	S*	S*	S*	1			103N0055	103N0016	117-7139 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLU11KK	S*	S*	S*	1			103N0055	103N0016	117-7139 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLU13KK	S*	S*	S*	1			103N0055	103N0016	117-7132 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLU15KK	S*	S*	S*	1			103N0055	103N0016	117-7132 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
TLES4KTK	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
TLES5KTK	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
TLES6KTK	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
TLES7KTK	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
TLES8KTK	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	173	169	6.2	6.2	5.0
NLE9KTK	S	S	S	2/3	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	197	191	6.2	6.2	5.0
NLE11KTK	S	S	S**	2/3	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	197	191	6.2	6.2	5.0
NLE15KTK	S	S	F1	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	197	191	6.2	6.2	5.0
NLE11KTK.2	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	203	197	6.2	6.2	5.0
NLE13KTK.2	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	203	197	6.2	6.2	5.0
NLE15KTK.2	S	S	S	2	103N0018	103N0011	103N0021	103N0016	117-7119 ¹	117-7117 ¹	103N1010	103N2010	203	197	6.2	6.2	5.0
NLU11KTK	S*	S*	S*	2			103N0055	103N0016	117-7132 ²		103N1010	103N2010	203	197	6.2	6.2	5.0
NLU13KTK	S*	S*															

Applications**LBP** = Low Back Pressure**MBP** = Medium Back Pressure**HBP** = High Back Pressure**Motor types****RSIR** = Resistant Start Induction Run**RSCR** = Resistant Start Capacitor Run**Starting devices****LST** = Low Starting Torque**HST** = High Starting Torque**Compressor cooling****S** = Static cooling normally sufficient**O** = Oil cooling**F₁** = Fan cooling 1.5 m/s

(compressor compartment temp. equal to ambient temperature)

F₂ = Fan cooling 3.0 m/s necessary**Voltage and frequencies****1** = 198-254V, 50Hz**2** = 187-254V, 50Hz**3** = 198-254V, 60Hz, LBP, F₁**4** = 198-254V, 50 - 60Hz**Note:** To fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device.**Run capacitors**

117-7117 4 µF

117-7129 5 µF

117-7131 3 µF

117-7136 2 µF

117-7140 3.5 µF

117-7119 4 µF

117-7130 5 µF

117-7132 3 µF

117-7139 2.5 µF

Model designation

Compressor design	Optimization level	Compressor size	Application range	Start characteristics	Generation
PL	Blank: Standard energy level S: Semi direct intake E: Energy optimized (optimized motor) X,Y,U: High energy optimized (high optimization level)	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 MK: R600a MBP	Blank > Universal (principal rule) K = LST Characteristics (capillary tube)	Blank > first generation
TL					.2 > Second generation
DL					.3 > third generation etc...
NL					

Examples

Compressor design	Optimization level	Compressor size	Application range	Start characteristics	Generation
PL	E	35	K		
TL	ES	6	KT	K	
NL	X	15	K	K	.2

Test conditions

Test Conditions	EN 12900 CECOMAF (220 V / 50 Hz)	ASHRAE (220 V / 50 Hz)
Application	R600a	R600a
Condensing temperature	55°C	54.4°C
Ambient temperature	32°C	32°C
Suction gas temperature	32°C	32°C
Liquid temperature	55°C	32°C

Application range

- All compressors for R600a have denominations ending with K or MK after the number for displacement or capacity. They are designed for low operating temperatures - LBP (Low Back Pressure) for use in refrigerators, freezers and similar applications.
- Compressors with endings **K** and **KK** are designed for low operating temperatures - **LBP** (Low Back Pressure) and for regions with stable supply voltage.
- Endings **KTK** are designed for LBP (Low Back Pressure) and for less stable supply voltage and tropical conditions. Some of the smaller compressors are also released for medium operating temperatures - MBP (Medium Back Pressure).
- Endings with **MK** are designed for light commercial applications - MBP (Medium Back Pressure).

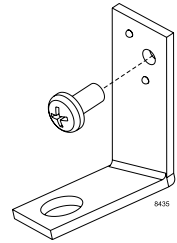
Run capacitor holder

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 220 V 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:

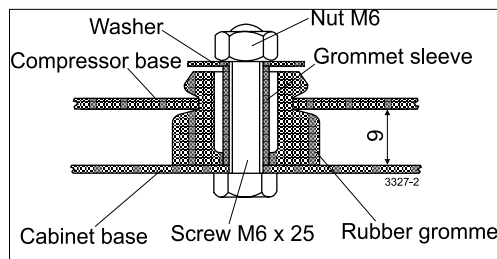
Run capacitor holder 117-0300
 Screw M4 x 8 PZD 2 117-0301



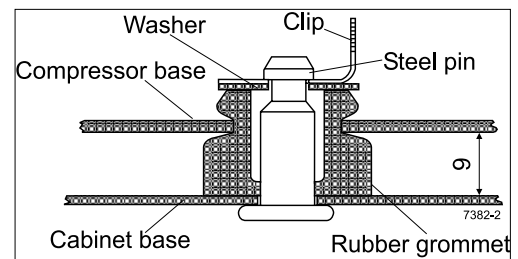
Mounting accessories

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.



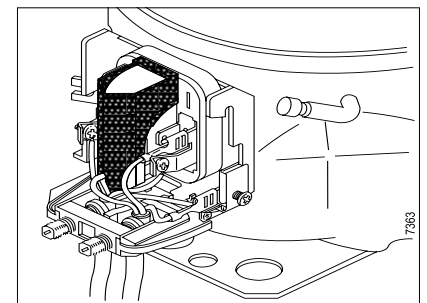
Bolt joint for
 one compressor: 118-1917
 in quantities: 118-1918




Snap-on
 in quantities: 118-1919

Protection screen for PTC

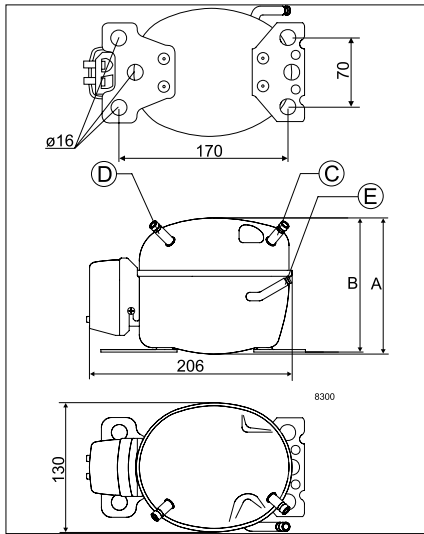
Note: To fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device.



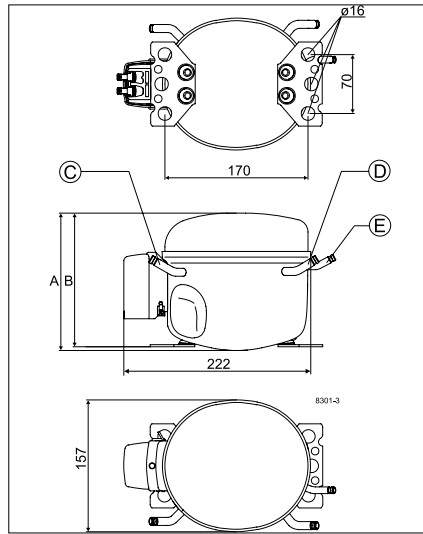
Warnings

- R600a is flammable in concentrations of air between approximately 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.
- Yellow warning label: 
- 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.

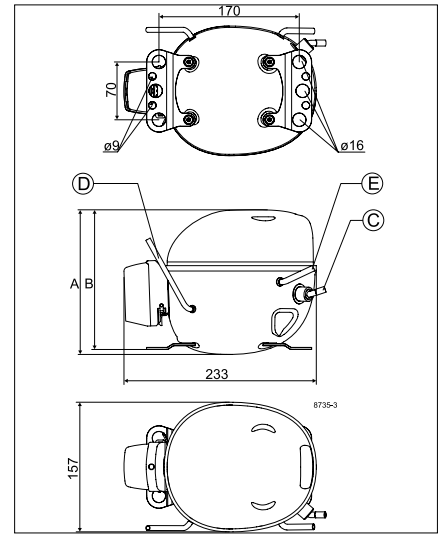
PLE



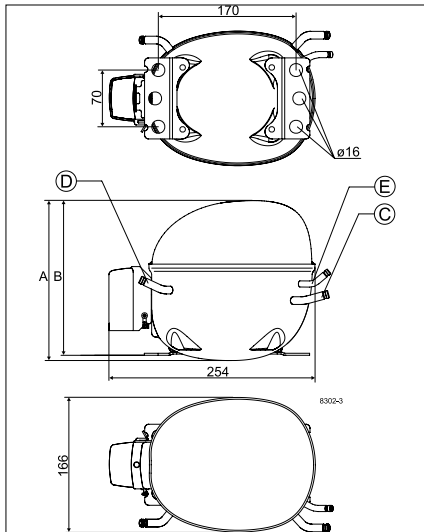
TLES / TLX / TLY



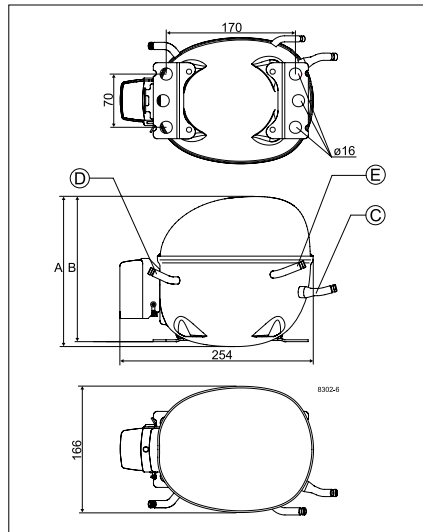
DLX



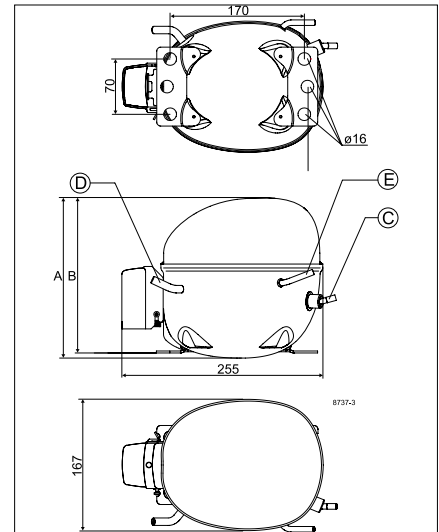
NLE / NLX



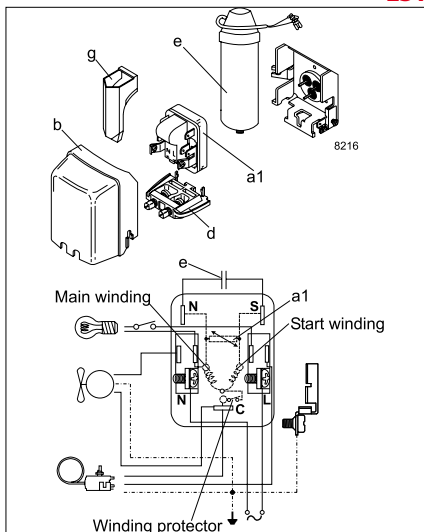
NLX-KK.1/2



NLU

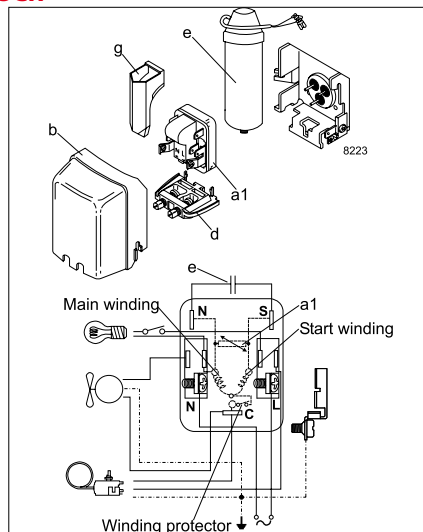


LST - RSCR

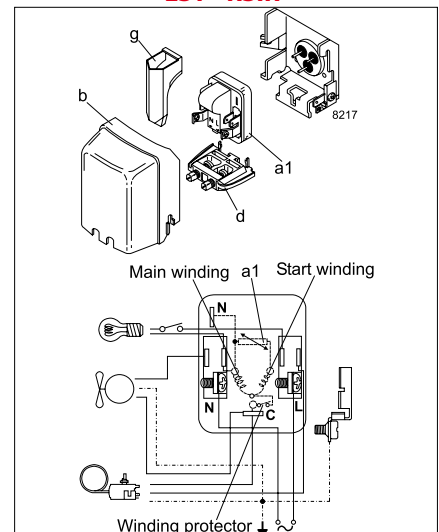


PLE / DLX

LST - RSIR



TLES / TLX / TLY - NLE / NLX / NLU



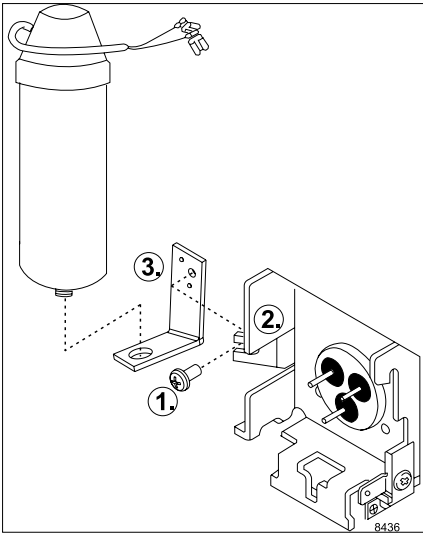
TLES / TLY - NLE

Legend :
a1: PTC starting device

b: Cover
d: Cord relief

e: Run capacitor
g: Protection screen for PTC

Run capacitor holder



Run capacitor holder	117-0300
Screw M4 x 8 PZD 2	117-0301

Danfoss Commercial Compressors

is a worldwide manufacturer of compressors and condensing units for refrigeration and HVAC applications. With a wide range of high quality and innovative products we help your company to find the best possible energy efficient solution that respects the environment and reduces total life cycle costs.

We have 40 years of experience within the development of hermetic compressors which has brought us amongst the global leaders in our business, and positioned us as distinct variable speed technology specialists. Today we operate from engineering and manufacturing facilities spread across three continents.



Our products can be found in a variety of applications such as rooftops, chillers, residential air conditioners, heatpumps, coldrooms, supermarkets, milk tank cooling and industrial cooling processes.

<http://cc.danfoss.com>

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