

Embraco Compressors Portfolio

made in China



think ahead

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Table of Contents

- 04 About Nidec Global Appliance
- 05 Digital Tools
- 07 Nomenclature
- 09 Application Guide
- 15 Technical Information
- 20 Fixed Speed Compressors
- 26 Variable Speed Compressors
- 40 Operation Envelope Per Family
- 41 Electrical Configuration
- 48 Recommendations



We are Nidec Global Appliance

A global partner for home and commercial refrigeration industries

With over 10,000 employees across 9 countries, Nidec Global Appliance manufactures and commercializes products for domestic and commercial applications, including Embraco refrigeration solutions and Nidec motors for washing machines, dryers and dishwashers. Nidec Global Appliance is a business platform within Nidec Appliance, Commercial and Industrial Motors (ACIM), a business unit of Nidec Corporation.

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Over 50 years
raising the bar
of refrigeration

think ahead

Since 1971 Embraco has been responsible for shaping refrigeration market trends by bringing solutions beyond the compressor for the residential and commercial cold chain. A pioneer in fostering the development of variable speed and the use of natural refrigerants over the years, the brand delivers innovation driven by the Think Ahead positioning, which means focusing on the future's needs to transform the refrigeration segment and make its customers' lives easier. Embraco counts on a broad and competitive portfolio for food service, food retail, merchandisers, and medical applications, including complete, synchronized and integrated solutions, which combines efficiency and data intelligence.

	<p>Home Appliances</p> <p>Products for residential freezers, refrigerators and mini-fridges.</p>
	<p>Commercial Appliances</p> <p>Compressors and cooling solutions for commercial applications, such as bottle coolers, chest freezers, reach-ins, ice machines, medical refrigerators, etc.</p>
	<p>Aftermarket</p> <p>Parts distribution, replacement and retail focused on retail owners, installers and contractors.</p>

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Digital Tools



embraco
toolboxapp



Available in all countries and in more than 10 languages, the Embraco Tool Box has 7 functionalities which help refrigeration professionals on their daily routine. **Download the App now for Android and iOS systems.**



Find inside:

- Cross-reference
- Product catalogue
- Distributor locator
- Unit converter
- Refrigerant slider
- Refrigeration club
- Troubleshooting

PSS

Product Software Selector

Choose the best solution for your business at Embraco's official portfolio platform. Access: products.embraco.com



Embraco website in 11 languages
www.embraco.com

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Compressor families and their main applications

FIXED SPEED COMPRESSOR

EM



Bottle coolers, ice cream freezers, household replacement, water coolers and vending machines. Up to 1/2 HP

NE



Frozen food islands, professional kitchen upright coolers and freezers, display cases, ultra low temperature freezers. 1/2 to 1 HP

EH



Professional kitchens, bottle coolers, under counters, professional reach ins. 1/2 HP to 3/4 HP

VARIABLE SPEED COMPRESSOR

VEM/VEH



Refrigerators and freezers, wine cooler, beverage coolers, chest freezer, medical cooler. Up to 1 HP

VES



Refrigerators and freezers, wine cooler, beverage coolers, chest freezer, medical cooler. Up to 1/3+ HP

FMX



Refrigerators and freezers, wine cooler, beverage coolers, chest freezer, medical cooler. Up to 1/4 HP

Nomenclature China Line

VEM / VES / FMX

VES A 7 U

VARIABLE SPEED FAMILY
VES/VEM/FMX

PRODUCT GENERATION
Y - 1st Generation
T - 2nd Generation
Z - 3rd Generation
X - 4th Generation
A - 5th Generation
C - 6th Generation
D - 7th Efficiency
F - 8th Generation

DISPLACEMENT
cm³

REFRIGERANT CODE
U - R290
Z - R134a
L - R1234yf
C - R600a

VEM / VEH

VEM T 4 06 U

PRODUCT FAMILY
VEM/VEH

EFFICIENCY LEVEL
U - 1st Generation
T - 2nd Generation

APPLICATION AND TORQUE
1 - LBP / LST
2 - LBP / HST
3 - L-MBP / LST
4 - L-MBP / HST
5 - M-HBP / LST
6 - M-HBP / HST

DISPLACEMENT
cm³

REFRIGERANT CODE
U - R290
Z - R134a
L - R1234yf
GK - R404A

EM

EM Y 3 130 Z

COMPRESSOR FAMILY
EM/EH

PRODUCT GENERATION
□ - 1st Generation
K - 2nd Generation
U - 3rd Generation
X - 4th Generation
D - 5th Generation

APPLICATION CODE

1. LBP - LST
2. LBP - HST
3. L-MBP - LST
4. L-MBP - HST
5. M-HBP - LST
6. M-HBP - HST
9. M-HBP - HST

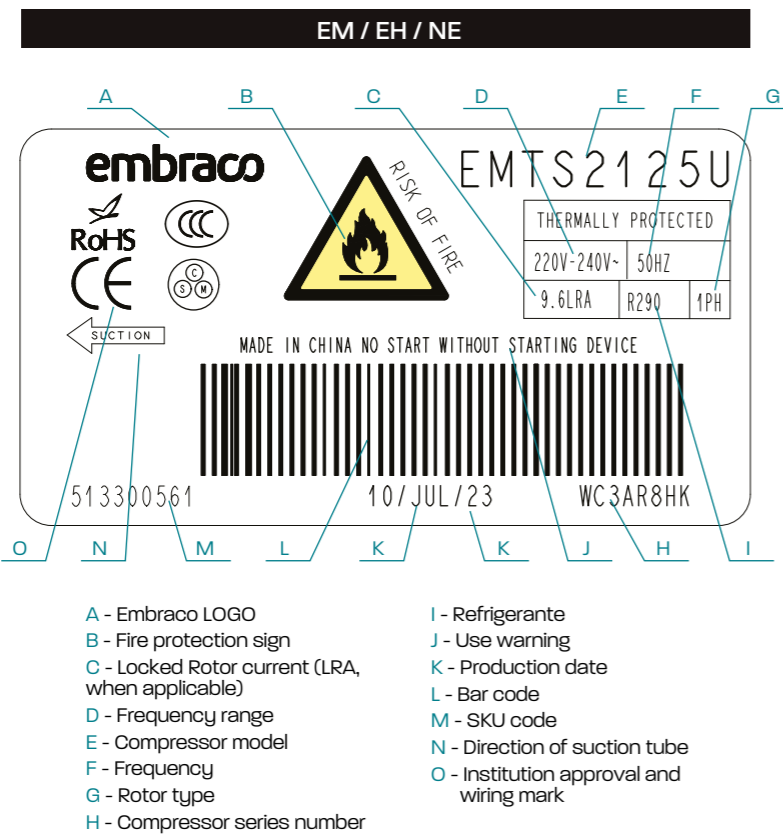
CAPACITY

The first digit is the number of zeros that you must attach to the last two digits to obtain the capacity (approx.) in kcal/h in 50 Hz.

Ex: 144 = 440 kcal/h em 50 Hz.

REFRIGERANT CODE

- U - R290
- Z - R134a
- E - R22/R422D
- GK - R404A
- Y - R600a



Application Guide

Our products are classified into four main application groups in the light commercial refrigeration: merchandisers, supermarkets, professional kitchens and household refrigeration. Below you will find the portfolio for each application and relevant technical information.

Merchandisers



Supermarkets



Professional Kitchens



Household Refrigeration

Disclaimer: this chapter indicates the most used compressors for each application, in order to make your product selection process easier and faster. However it does not intend to assure that the specific compressor will fit any application in the same cluster worldwide, because there are several specific approval standards as well as different product designs.

Merchandisers

Glass Door Horizontal Freezers



System	Characteristics
Evaporation Temperature	-30 °C
Internal Cabinet Temperature	-18 °C
Ambient Temperature	32 °C
Relative Humidity	40-70 %
Application	LBP / LST

COMPRESSORS 50Hz	
Size (Liters)	R290 (Refrigerant)
300 to 360	EM2X3117U
380 to 420	EM2X3121U
430 to 500	EM2X3125U
500 to 600	EMX3134U

Glass Door Upright Freezers



System	Characteristics
Evaporation Temperature	-30 °C
Internal Cabinet Temperature	-18 °C
Ambient Temperature	35 °C
Relative Humidity	40-75 %
Application	LBP / HST

COMPRESSORS 50Hz	
Size (Liters)	R290 (Refrigerant)
300 to 400	EHU2155U

Merchandisers

Upright Glass Door Bottle Coolers



System	Characteristics
Evaporation Temperature	-10 °C
Internal Cabinet Temperature	5 °C
Ambient Temperature	40,5 °C
Relative Humidity	40-75 %
Application	MBP / LST

COMPRESSORS 50Hz	
Size (Liters)	R290 (Refrigerant)
300	EM2X3117U
400	EM2X3121U
500 to 600	EM2X3125U
1000	EMX3134U

Vending Machines



System	Characteristics
Evaporation Temperature	-15 °C
Internal Cabinet Temperature	-4 °C
Ambient Temperature	32 °C
Relative Humidity	40-75 %
Application	L / MBP / LST

COMPRESSORS 50Hz	
Size (Liters)	R290 (Refrigerant)
300	EM2X3117U
400 to 500	EM2X3121U
500 to 600	EM2X3125U

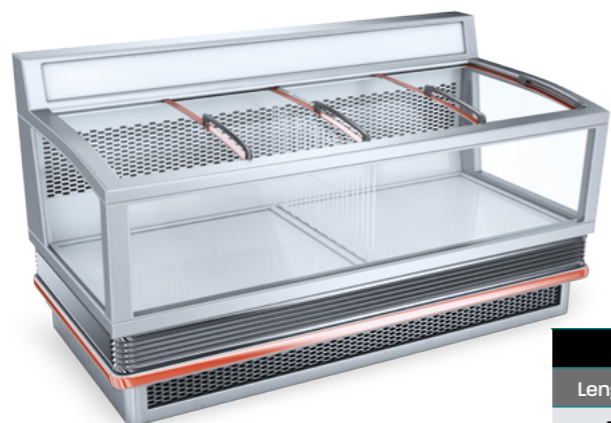
Reach in
with Doors



System	Characteristics
Evaporation Temperature	-10 °C to -5 °C
Internal Cabinet Temperature	0 °C to 10 °C
Ambient Temperature	32 °C
Relative Humidity	40-75 %
Application	MBP / LST

COMPRESSORS 50Hz	
Size (Liters)	R290
350 to 500	EM2X3125U
500 to 700	EHU6214U

Frozen
Food Island



System	Characteristics
Evaporation Temperature	-30 °C
Internal Cabinet Temperature	-20 °C to -15 °C
Ambient Temperature	32 °C
Relative Humidity	40-70 %
Application	LBP / LST

COMPRESSORS 50Hz		
Length (m)	R404A (Refrigerant)	R290 (Refrigerant)
1.5m	NEU2155GK	EHU2155U
1.8m	NEU2168GK	EHU2155U

Undercounters
and Prep Tables



System	Characteristics
Evaporation Temperature	-15 to -5 °C
Internal Cabinet Temperature	0 to 10 °C
Ambient Temperature	32 °C
Relative Humidity	40-70 %
Application	MBP

COMPRESSORS 50Hz	
Size (Liters)	R290
300 to 500	EM2X3117U
500	EM2X3121U

System	Characteristics
Evaporation Temperature	-30 °C
Internal Cabinet Temperature	-18 °C
Ambient Temperature	32 °C
Relative Humidity	40-70 %
Application	LBP

COMPRESSORS 50Hz	
Size (Liters)	R290 (Refrigerant)
125 to 175	EM2X3117U
175 to 275	EM2X3121U

Reachin Freezers and Refrigerators



System	Characteristics
Evaporation Temperature	-30 °C
Internal Cabinet Temperature	-18 °C
Ambient Temperature	32 °C
Relative Humidity	40-70 %
Application	LBP

System	Characteristics
Evaporation Temperature	-15 to -5 °C
Internal Cabinet Temperature	0 to 10 °C
Ambient Temperature	32 °C
Relative Humidity	40-70 %
Application	MBP

COMPRESSORS 50Hz	
Size (Liters)	R290 (Refrigerant)
←350	EM2X312IU
350 to 550	EM2X3125U
500 to 650	EMX3134U
650 to 900	EMX3140U
900 to 1200	EHU2155U

COMPRESSORS 50Hz	
Size (Liters)	R290
350 to 550	EM2X3117U
500 to 650	EM2X312IU
650 to 900	EM2X3125U
900 to 1200	EMX3134U
1200 to 1500	EMX3140U

Applications

Application	Evaporation Temperature °C / °F	Applications
LBP (Low Back Pressure)	Between -45/ -35 and -10	Household refrigerators, frozen food islands, ice cream freezers
MPB (Medium Back Pressure)	Between -15 and 0	Displays cases, reach in coolers, bottle coolers
HBP (High Back Pressure)	Between 0 and 15	Refrigerated wine houses, Water coolers, air dehumidifiers

Test Conditions

Test Conditions	Applications	Evaporation Temperature °C / °F	Condensing Temperature °C / °F	Gas Return Temperature °C / °F	Subcooling K/OR	Ambient Temperature °C / °F
ASHRAE	LBP	-23.3 / 10	54.4 / 130	32.2 / 90	22.2 / 40	32.2 / 90
	M/HBP	7.2 / 45	54.4 / 130	35 / 95	8.3 / 15	35 / 95
ARI	LBP	-23.3 / 10	48.9 / 120	4.4 / 40	0	35 / 95
	MBP	-6.7 / 20	48.9 / 120	4.4 / 40	0	35 / 95
	HBP	7.2 / 45	54.4 / 130	18.3 / 65	0	35 / 95
EN12900	LBP	-35	40	20	40 / 72	35
	MBP	-10	45	20	45 / 81	35
	HBP	5	50	20	5 / 90	35

Cooling Type

Static	Compressor approved for static cooling not requiring a fan motor on the condenser side.
Fan	Compressor approved for fan cooling requiring forced cooling with a fan motor on the condenser side.

Motor Torque

LST	LOW STARTING TORQUE Compressor with RSIR-RSCR-PSC electrical motor for systems with capillary tube and with equalized pressures at start up.
HST	HIGH STARTING TORQUE Compressor with CSIR-CSR and 3 phase electrical motor for systems with equalized or not equalized pressures at start up

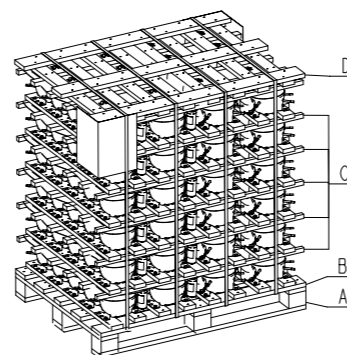
Compressor Packaging

Multiple Packaging

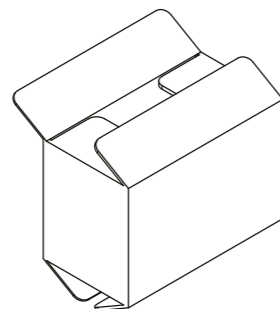
This type of package consists of a shipping skid of 835 mm x 1150 mm on which are positioned the elements composing the packaging of various compressor layers, as listed below, secured with straps to the shipping skid.

Pallet packages composition

A	SHIPPING SKID	on which the base is positioned
B	BASE	on which the first layer of compressors is positioned
C	SEPARATOR SKID	are positioned between layers, in quantities according to the compressor series
D	TOP SKID	upper element closing of the package



Multiple wooden package



Characteristics of multiple wooden packaging

Compressor	Size of Pallets (CM)	QUANTITY PER PALLET (ASSEMBLED ELECTRICALS)	QUANTITY PER CONTAINER (ASSEMBLED ELECTRICALS)	QUANTITY PER PALLET (UNASSEMBLED ELECTRICALS)	QUANTITY PER CONTAINER (UNASSEMBLED ELECTRICALS)
EM (CN)	113*83*113	100	2800	100	250
EH	113*83*113	80	2240	80	2000
VES	113*83*113	96	2688	96	2400
VES	113*97*113	120	2880	120	2640
FMX	113*83*113	96	2668	96	2400
FMX	113*97*113	120	2880	120	2640
VEM	113*83*113	100	2500	100	2500
NE	113*83*113	80	2250	80	2000

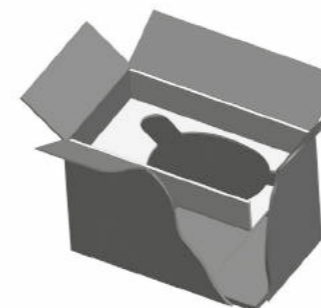
20'container can loading 28 pallets 113*83*113, or 24 pallets 113*97*113;
The final loading pallets in one 20'container is different according to different compressor accessory BOM/imported country policy/weight/type of shipping

Single Packaging

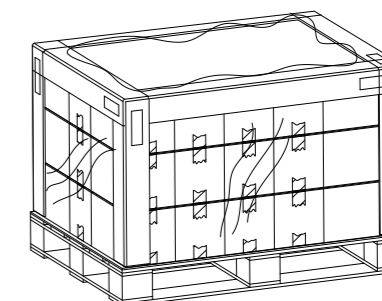
This type of package consists of a carton box and an internal separator to prevent any compressor movement. The electrical components and accessories are included in the package (assembled or attached).

Complete pallet package consists of a shipping skid of 830 mm x 1130 mm on which are placed carton boxes with compressors secured with corner strip and straps. Number of layers depends on compressor families.

Carton box for single package



Single compressor pallet package



Characteristics of complete single package

Series	QUANTITY PER PALLET	CODE	PACKAGING TYPE	ELECTRICAL COMPONENTS	NOTE
NE	56	A	4 layers of 14 compressors	Not assembled / Assembled	
NE	80	U	4 layers of 20 compressors	Assembled	
NE	80	U	4 layers of 20 compressors	Not assembled	CSR electrical box included
VEM	80	S	4 layers of 20 compressors	Not assembled	Without Screw/bushing
EH	60	S	4 layers of 15 compressors	Assembled	Without Screw/bushing
EM (CN)	80	S	4 layers of 20 compressors	Assembled	Without Screw/bushing

Wooden packaging and pallets are created to comply with recycling regulations and are treated according to standard ISPM No. 15 - Regulation of wood packaging material in international trade. IPPC mark is presented on the wooden pallets.

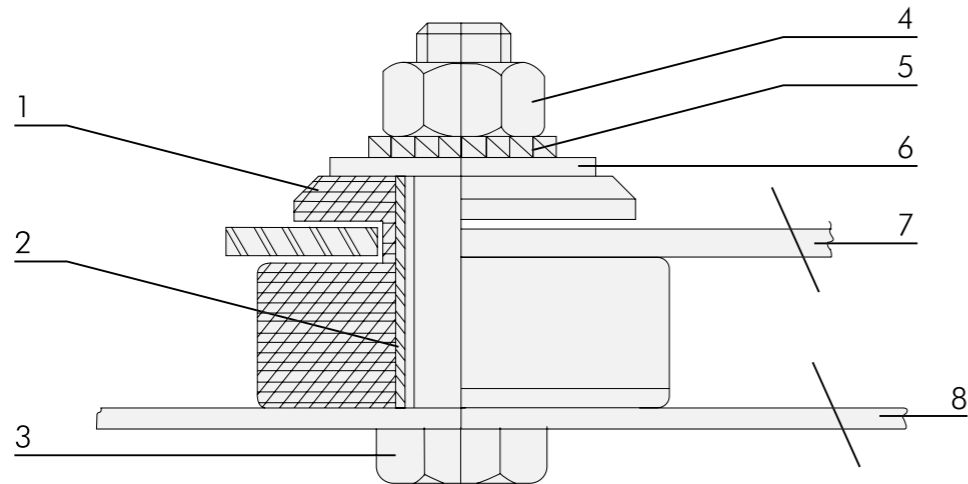
Package for electrical components and accessories

Electrical components and accessories if not assembled on compressors are packed separately in carton boxes. A label is applied showing the following data:

Components packing label

1. Components bill of material code (complete of electrical components and accessories)
2. Compressor model
3. Quantity
4. Customer name (optional)
5. List of electrical components and accessories shipped (code/description/quantity)

Mounting accessories



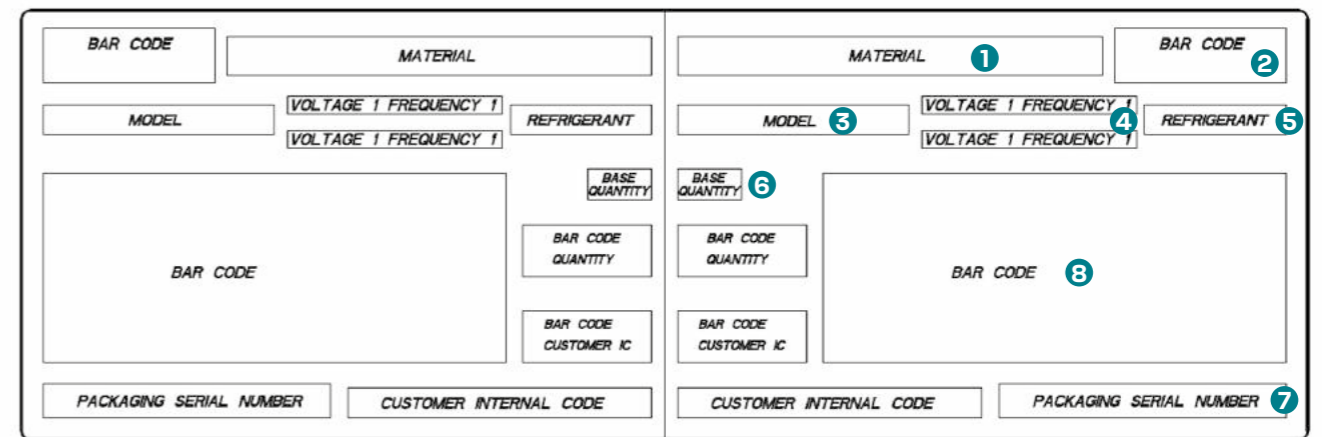
NUMBER	COMPONENT	SPECIFICATION
1	Rubber grommet	H: 16.5±0.5
2	Spacer (metal bushing)	H: 17.0±0.5
3	Fixing bolt	M6x30
4	Hexagon nut	M6
5	Washer with ext.teeth	∅ 6.4
6	Flat washer	∅ 6.4
7	Compressor base plate	
8	Mounting base	

Compressor Identification Marks

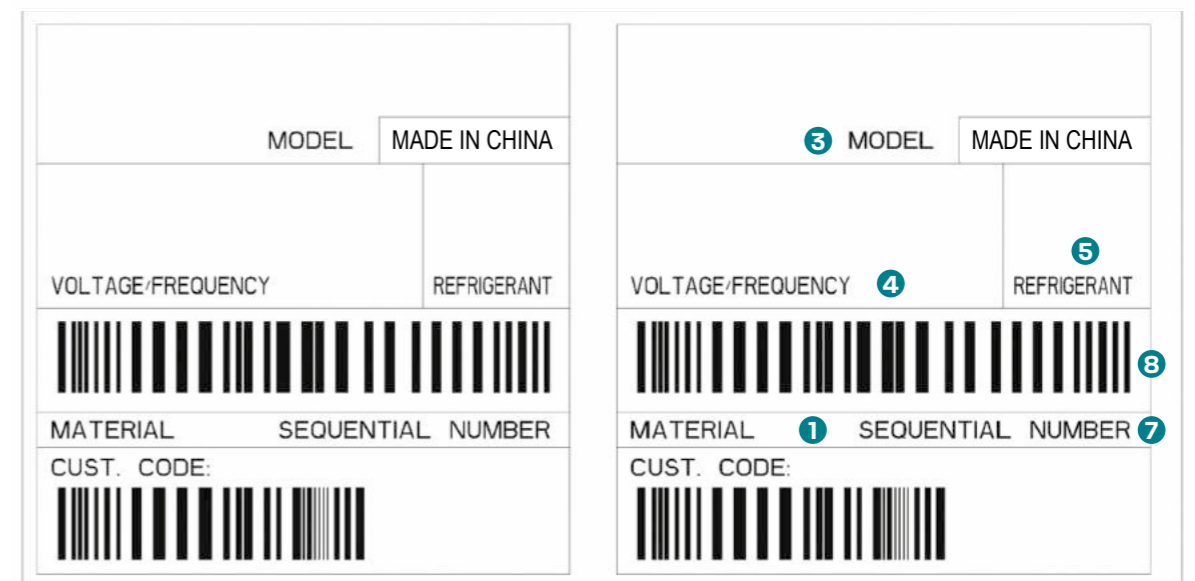
Labels are applied on two sides of each package and report the following data:

1. Compressor bill of material
2. Bar code of compressor bill of material (Type 39)
3. Compressor model
4. Voltage & frequency
5. Refrigerant
6. Package quantity (optional)
7. Packaging serial number
8. Bar code of packaging serial number (Type 128)

Compressor Identification label for multiple packaging



Compressor Identification label for single packaging



R600a | LBP | Test condition: ASHRAE LBP 32

Series	Model	Vol./Freq.	Displac.	Performance				Capacitor	Oil Viscosity	Certification	Height
				Capacity		COP					
				W	Kcal/h	W/W	kcal/wh				
EMT	EMT 46 CLP	220~240/50	7.96	142	122.1	1.35	1.16	0	ISO 5	CCC/VDE/CE	158
	EMT 45 CLP	100/50	5.96	99	85.1	1.38	1.19	0	ISO 5	CCC/CE	158
		100/60	5.96	114	98.0	1.51	1.30	0	ISO 5	CCC/CE	158
	EMT 55 CLP	220~240/50	9.04	160	137.6	1.40	1.20	0	ISO 5	CCC/CE	158
EMU	EMU 32 CLP	220~240/50	5.96	100	86.0	1.49	1.28	0	ISO 5	CCC/VDE/CE	158
	EMU 32 CLP	200~230/50	5.96	101	86.9	1.41	1.21	0	ISO 22	CCC/VDE/CE	166
	EMU 46 CLP	220~240/50	7.96	137	117.8	1.44	1.24	0	ISO 5	CCC/VDE/CE	166
	EMU 46 CLP	220~240/50	7.96	142	122.1	1.49	1.28	4	ISO 5	CCC/VDE/CE	158
	EMU 55 CLR	200~240/50	9.04	157	135.0	1.51	1.30	88-108(*)	ISO 5	CCC/CE	166
	EMU 66 CLR	200~240/50	10.61	184	158.2	1.52	1.31	88-108(*)	ISO 5	CCC/CE	171
EMY	EMY 26 CLC	220~240/50	5.19	82.2	70.7	1.54	1.32	2.5	ISO 5	CCC/VDE/CE	166
	EMYS 26 CLC	115-127/60	5.19	95	81.7	1.68	1.44	12.0	ISO 5	UL/CE	171
	EMY 32 CLP	220~240/50	5.96	99	85.1	1.60	1.38	0	ISO 5	CCC/CE	166
	EMY 40 CLP	220~240/50	7.23	125	107.5	1.60	1.38	0	ISO 5	CCC/CE	166
	EMY 32 CLP	220~240/50	5.96	100	86.0	1.60	1.38	0	ISO 5	CCC/CE	166
	EMY 40 CLP	220~240/50	7.23	125	107.5	1.60	1.38	4	ISO 5	CCC/CE	166
	EMY 45 CLP	100/50	5.96	99	85.1	1.55	1.33	12	ISO 5	CCC/CE	166
		100/60	5.96	114	98.0	1.63	1.40	12	ISO 5	CCC/CE	166
	EMYS 45 CLP	100/50	5.96	99	85.1	1.57	1.35	12	ISO 5	CCC/CE	166
		100/60		117	100.6	1.65	1.42				
	EMYS 46 CLC	100/50	7.96	139	119.5	1.57	1.35	20	ISO 5	CCC/CE	158
		100/60		160	137.6	1.60	1.38				
	EMYS 45CLP	115-127/60	5.96	113	97.2	1.65	1.42	12	ISO 5	CCC/UL/CE	166
	EMY 46 CLP	220~240/50	7.96	142	122.1	1.60	1.38	4	ISO 5	CCC/VDE/CE	166
	EMYS 46 CLP	220~240/50	7.96	142	122.1	1.59	1.37	4	ISO 5	CCC/CE	166
	EMYS 46 CLP	220~240/50	8.23	137	117.8	1.60	1.38	0	ISO 5	CCC/CE	166
	EMY 55 CLP	220~240/50	9.04	162	139.3	1.60	1.38	4	ISO 5	CCC/VDE/CE	166
	EMYS 55 CLC	115-127/60	9.04	175	150.5	1.65	1.42	20	ISO 5	UL/CE	171
	EMY 60CLC	220~240/50	9.87	168	144.5	1.52	1.31	2.5	ISO 5	CCC/CE	166
	EMR	EMR 32 CLP	220~240/50	6.20	99	85.1	1.68	1.44	2.5	ISO 5	CCC/CE
EMRS 32 CLP		220~240/50	5.96	100	86.0	1.68	1.44	2.5	ISO 5	CCC/CE	166
EMRS 32 CLC		100/50	5.96	99	85.1	1.65	1.42	12	ISO 5	CCC/CE	171
		100/60		115	98.9	1.71	1.47				
EMR 40 CLP		220~240/50	7.23	128	110.1	1.68	1.44	4	ISO 5	CCC/VDE/CE	166
EMRS 40 CLP		220~240/50	7.23	128	110.1	1.68	1.44	4	ISO 5	CCC/CE	158
EMR 46 CLP		220~240/50	7.96	142	122.1	1.66	1.43	4	ISO 5	CCC/VDE/CE	166
EMRS 46 CLP		220~240/50	7.96	142	122.1	1.65	1.42	4	ISO 5	CCC/CE	166
EMR 55 CLP	220~240/50	9.04	162	139.3	1.67	1.44	4	ISO 5	CCC/VDE/CE	166	

(##) In AHAM condition (-23.3/40.5°C)
 (*) Start capacitor
 (#) In China system condition (-23/40°C)

Technical Data

Fixed Speed Compressors



think ahead



R600a | LBP | Test condition: ASHRAE LBP 32

Series	Model	Vol./Freq. V/Hz	Displac. (cm ³)	Performance				Capacitor µF	Oil Viscosity	Certification	Height
				Capacity		COP					
				W	Kcal/h	W/W	kcal/wh				
EMS	EMS 32 CLP	220~240/50	5.96	100	86.0	1.70	1.46	2.5	ISO 5	CCC/VDE/CE	158
	EMS 40 CLP	220~240/50	7.23	128	110.1	1.75	1.51	4	ISO 5	CCC/CE	158
	EMSS 40 CLP	220~240/50	7.51	122	104.9	1.75	1.51	4	ISO 5	CCC/CE	171
	EMSS 46 CLP	220~240/50	8.23	140	120.4	1.75	1.51	2.5	ISO5	CCC/CE	166
	EMSS 66 CLC	220~240/50	10.61	184	158.2	1.75	1.51	4	ISO5	CCC/CE	171
EMZ	EMZ 32 CLP	220~240/50	5.96	100	86.0	1.71	1.47	2.5	ISO 5	CCC/CE	166
	EMZ 40 CLP	220~240/50	7.23	128	110.1	1.72	1.48	4	ISO 5	CCC/VDE/CE	166
	EMZ 66 CLP	220~240/50	10.61	190	163.4	1.72	1.48	4	ISO 5	CCC/VDE/CE	171
EMX	EMX 32 CLC	220~240/50	5.96	102	87.7	1.78	1.53	2.5	ISO 5	CCC/CE	158
	EMXS 32 CLC	220~240/50	5.96	102	87.7	1.78	1.53	2.5	ISO 5	CCC/CE	158
	EMX 40 CLC	220~240/50	7.23	128	110.1	1.80	1.55	4	ISO 5	CCC/CE	166
	EMX 40 CLC	220~240/50	7.23	128	110.1	1.80	1.55	4	ISO 5	CCC/CE	171
	EMXS 40 CLC	220~240/50	7.51	122	104.9	1.80	1.55	4	ISO 5	CCC/CE	171
	EMX 80 CLT	220~240/50	12.21	220	189.2	1.80	1.55	5	ISO5	CCC/CE	171
EMM	EMM 32 CLC	220~240/50	5.96	98	84.3	1.86	1.60	2.5	ISO 5	CCC/CE	166
	EMM 36 CLC	220~240/50	6.78	110	94.6	1.89	1.63	3.0	ISO 5	CCC/CE	171
EMB	EMB 32 CLC	220~240/50	5.96	103	88.6	1.88	1.62	2.5	ISO 5	CCC/VDE/CE	166
	EMB 40 CLC	220~240/50	7.23	124	106.6	1.87	1.61	3	ISO 5	CCC/VDE/CE	171
	EMBS 36 CLC	220~240/50	6.6	112	96.3	1.84	1.58	3	ISO 5	CCC/CE	171
	EMB 46 CLC	220~240/50	8.23	138	118.7	1.88	1.62	4	ISO 5	CCC/VDE/CE	171
	EMB 55 CLC	220~240/50	9.04	162	139.3	1.88	1.62	4	ISO 5	CCC/VDE/CE	171
	EMBS 55 CLC	220~240/50	9.05	156	134.2	1.82	1.57	4	ISO 5	CCC/CE	171
	EMB 66 CLC	220~240/50	10.61	190	163.4	1.82	1.57	4	ISO 5	CCC/VDE/CE	171
	EMB 46 CLC	100/50	7.96	140	120.4	1.67	1.44	20	ISO 5	CCC/CE	166
		100/60	160	137.6	1.70	1.46					
	EMB 55 CLC	100/50	9.04	159	136.7	1.66	1.43	20	ISO 5	CCC/CE	171
		100/60	9.04	180	154.8	1.72	1.48	20	ISO 5	CCC/CE	171
	EMC	EM2C 32 CLT	220~240/50	5.96	98	84.3	1.93	1.66	2.5	ISO 5	CCC/VDE/CE
EM2C 40 CLT		220~240/50	7.23	124	106.6	1.93	1.66	3	ISO 5	CCC/CE	171
EMD	EMD 32 CLT	220~240/50	5.96	98	84.3	1.96	1.69	2.5	ISO 5	CCC/VDE/CE	171
				86(##)	74(##)	2.12(##)	1.82(##)				
	EMD 55 CLT	220~240/50	9.04	156	134.2	1.88	1.62	4	ISO5	CCC/VDE/CE	171
	EMD 66 CLT	220~240/50	10.61	180	154.8	1.88	1.62	5	ISO5	CCC/CE	171
	EMD 80 CLT	220~240/50	12.21	220	189.2	1.89	1.63	5	ISO 5	CCC/VDE/CE	171
	EMD 55 CLT	115~127/60	9.04	177	152.2	1.85	1.59	12	ISO 5	UL/NOM/CE	171
193(##)	167(##)	2.17(##)	1.86(##)								

(##) in AHAM condition (-23.3/40.5°C)
 (*) Start capacitor
 (##) In China system condition (-28/40°C)

R600a | LBP | Test condition: ASHRAE LBP 32

Series	Model	Vol./Freq. V/Hz	Displac. (cm ³)	Performance				Capacitor µF	Oil Viscosity	Certification	Height
				Capacity		COP					
				W	Kcal/h	W/W	kcal/wh				
EMT	EMT 28 HLP	200~240/50	3.00	83	71.4	1.20	1.03	0	ISO 22	CCC / VDE/CE	158
	EMT 32 HLP	200~240/50	3.67	102	87.7	1.20	1.03	0	ISO 22	CCC / VDE/CE	158
	EMT 40 HLP	200~240/50	4.50	130	111.8	1.30	1.12	0	ISO 22	CCC/VDE/CE	158
	EMT 45 HLP	220~240/50	4.85	145	124.7	1.34	1.15	0	ISO 22	CCC/VDE/CE	158
	EMT 55 HLC	200~240/50	5.19	155	133.3	1.42	1.22	5	ISO 22	CCC / VDE/CE	166
	EMT 65 HLC	200~240/50	5.96	182	156.5	1.38	1.19	5	ISO 22	CCC / VDE/CE	166
	EMT 75 HLC	200~240/50	6.99	215	184.9	1.35	1.16	5	ISO 22	CCC / VDE/CE	171
ER	ERUS 60HLP	200~240/50	5.19	155	133.3	1.42	1.22	5	ISO 22	EAC/CE	166
	ERUe 70HLP	200~240/50	5.96	182	156.5	1.38	1.19	5	ISO 22	EAC/CE	166
	ERU2 80HSP	200~240/50	6.99	215	184.9	1.35	1.16	5	ISO 22	EAC/CE	171
EMU	EMU 45 HLP	220~240/50	4.85	145	124.7	1.50	1.29	4	ISO 22	CCC/VDE/CE	158
	EMU 45 HLP	200~230/50	4.85	145	124.7	1.44	1.24	0	ISO 22	CCC/VDE/CE	166
	EMU 55 HLP	220~240/50	5.19	163	140.2	1.50	1.29	4	ISO 22	CCC/VDE/CE	166
	EMU 55 HLP	200~230/50	5.19	160	137.6	1.44	1.24	0	ISO 22	CCC/VDE/CE	166
	EMU 55 HLP	115~127/60	4.15	139	119.5	1.49	1.28	0	ISO 10	CCC/UL/CE	158
	EMU 60 HEP	115~127/60	4.85	168	144.5	1.41	1.21	12	ISO 10	UL/CE	166
	EMU 65 HLP	220~240/50	5.96	185	159.1	1.47	1.26	0	ISO 22	CCC/VDE/CE	166
EMY	EMY 50 HLP	115~127/60	4.15	140	120.4	1.60	1.38	12	ISO 10	CCC/UL/CE	158
	EMY 55 HLC	220~240/50	5.19	160	137.6	1.60	1.38	4	ISO 10	CCC/VDE/CE	166
	EMY 55 HLP	115~127/60	4.50	158	135.9	1.60	1.38	12	ISO 10	CCC/UL/CE	158
	EMY 65 HLC	220~240/50	5.96	185	159.1	1.60	1.38	4	ISO 10	CCC/VDE/CE	166
	EMY 60 HLP	115~127/60	4.85	180	154.8	1.60	1.38	12	ISO 10	CCC/UL/CE	166
	EMY 75 HLC	220~240/50	6.99	215	184.9	1.60	1.38	4	ISO 10	CCC/VDE/CE	171
	EMY 75 HLC	200~230/50	6.99	222	190.9	1.52	1.31	4	ISO 22	CCC/VDE/CE	171
	EMY 55 HLC	200~230/50	5.19	158	135.9	1.68	1.44	5	ISO 10	CCC/VDE/CE	171
		200~230/60	185	159.1	1.68	1.44					
	EMY 65 HLC	200~230/50	5.96	180	154.8	1.67	1.44	5	ISO 10	CCC/VDE/CE	171
		200~230/60		208	178.9	1.66	1.43				
		EMY 75 HLC	200~230/50	6.99	215	184.9	1.50	1.29	5	ISO 10	CCC/VDE/CE
200~230/60			254	218.4	1.62	1.39					
EMR	EMR 40 HLC	220~240/50	4.15	116	99.8	1.65	1.42	4	ISO 10	CCC/VDE/CE	171
	EMR 50 HLC	200~230/50	4.85	150	129.0	1.70	1.46	4	ISO 22	CCC/VDE/CE	171
	EMR 60 HLC	200~230/50	5.54	175	150.5	1.66	1.43	4	ISO 22	CCC/VDE/CE	171
EMH	EMH 60 HER	115~127/60	5.19	189	162.5	1.47	1.26	0	ISO 10	CCC /UL/CE	166
EM2	EM2Z 60 HLT	115~127/60	5.54	198	170.3	1.72	1.48	12	ISO 10	UL/CE	171
	EM2Z 80 HLT	115~127/60	6.76	240	206.4	1.76	1.51	12	ISO 10	UL/CE	171
EM3	EM3U 60 HLP	115~127/60	6.78	190	163.4	1.65	1.42	12	ISO 10	UL/CE	166
				205(##)	176.3(##)	1.95(##)	1.68(##)				
	EM3Y 60 HLP	115~127/60	5.19	190	163.4	1.70	1.46	12	ISO 10	UL/CE	166
					205(##)	176.3(##)	2.01(##)				
	EM3Z 50 HLT	115~127/60	4.50	177(##)	135.9	1.74	1.50	12	ISO 10	UL/CE	171
					152.2(##)	2.07(##)	1.78(##)				
	EM3Z 60 HLT	115~127/60	5.19	205(##)	163.4	1.76	1.51	12	ISO 10	CCC/UL/CE	171
					176.3(##)	2.07(##)	1.78(##)				
	EM3C 50 HLT	115~127/60	4.50	178(##)	129.0	1.74	1.50	12	ISO 10	CCC/UL/CE	171
					153.1(##)	2.14(##)	1.84(##)				
EM3C 60 HLT	115~127/60	5.19	207(##)	166.0	1.83	1.57	12	ISO 10	UL/CE	171	
				178(##)	2.14(##)	1.84(##)					
EM3D 60 HLT	115~127/60	5.19	205(##)	163.4	1.84	1.58	12	ISO 10	UL/CE	171	
				176.3(##)	2.17(##)	1.87(##)					

(##) in AHAM condition (-23.3/40.5°C)
 (*) Start capacitor
 (##) In China system condition (-28/40°C)

R290 | VLBP | LBP | L/MBP

Series	Model	Applicat.	Starting Torque	Vol./Freq.	Displac.	Performance				Capacitor	Oil Viscosity	Certification	Height	Test Condition
						Capacity		COP						
						W	Kcal/h	W/W	kcal/wh					
EMT	EMT 2121 U	VLBP	HST	220~240/50	5.56	271.6	233.6	1.52	1.31	47(*)	ISO 22	CCC/VDE/CE	166	Fan
	EMT 2125 U	VLBP	HST	220~240/50	5.96	294.7	253.4	1.50	1.29	57(*)	ISO 22	CCC/VDE/CE	166	Fan
	EMTS 2125 U	VLBP	HST	220~240/50	5.96	302	259.7	1.53	1.32	70(*)	ISO 22	CCC/CE	166	Fan
EM2X	EM2X 1121 U	L/MBP	LST	220~240/50~60	5.54	267.1	229.7	1.76	1.51	5	ISO 10	CCC/VDE/CE	171	Static
						261	224.5	1.68	1.44	5	ISO 10	CCC/CE	171	50Hz Static
						268	230.5	1.73	1.49					50Hz Fan
						316	271.8	1.72	1.48					60HzStatic
	325	279.5	1.77	1.52	60Hz Fan									
	EM2X 1125 U	VLBP	LST	220~240/50	6.09	302	259.7	1.76	1.51	5	ISO 10	CCC/VDE/CE	171	Static
	EM2X 3113 U	L/MBP	LST	220~240/50	3.67	150	129.0	1.60	1.38	5	ISO22	CCC/VDE/CE	171	Static
						153	131.6	1.60	1.38					Fan
	EM2X 3117 U	L/MBP	LST	220~240/50	4.50	207	178.0	1.68	1.44	5	ISO22	CCC/VDE/CE	171	Static
						210	180.6	1.70	1.46					Fan
	EM2X 3121 U	L/MBP	LST	220~240/50	5.54	266	228.8	1.70	1.46	5	ISO22	CCC/VDE/CE	171	Static
						272	233.9	1.72	1.48					Fan
	EM2X 3125 U	L/MBP	LST	220~240/50	6.09	302	259.7	1.70	1.46	10	ISO22	CCC/VDE/CE	171	Static
						304	261.4	1.70	1.46					Fan
	EM2X 3113 U	L/MBP	LST	115~127V/60	3.67	189	162.5	1.60	1.38	20	ISO22	CCC/UL/CE	166	Static
195						167.7	1.62	1.39	Fan					
EM2X 3117 U	L/MBP	LST	115~127V/60	4.50	252	216.7	1.70	1.46	20	ISO22	CCC/UL/CE	171	Static	
					258	221.9	1.72	1.48					Fan	
EM2X 3121 U	L/MBP	LST	115~127V/60	5.54	333	286.4	1.72	1.48	20	ISO 22	CCC/UL/CE	171	Static	
					339.5	292.0	1.73	1.49					Fan	
EM2X 3125 U	L/MBP	LST	115~127V/60	6.09	365	313.9	1.70	1.46	20	ISO 22	CCC/UL/CE	171	Static	
					374	321.6	1.72	1.48					Fan	
EMSS	EMTE 2134 U	VLBP	HST	220~240/50	9.50	452	388.7	1.47	1.26	98(*)	ISO 22	CCC/VDE/CE	171	Fan
	EMTE 6181 U	MBP	HST	220~240/50	7.55	1021.2	878.2	2.74	2.36	98(*)	ISO 22	CCC/VDE/CE	171	Fan
EM3X	EMX 3140 U	L/MBP	LST	220~240/50	9.50	482	414.5	1.62	1.39	0	ISO 22	CCC/VDE/CE	171	Fan
	EMC 3140 U	L/MBP	LST	115~127/60	9.50	594	510.8	1.72	1.48	20	ISO 22	CCC/UL/CE	171	Fan
	EMX 3134 U	L/MBP	LST	220~240/50	7.95	406	349.2	1.65	1.42	5	ISO 22	CCC/VDE/CE	171	Fan
	EMC 3134 U	L/MBP	LST	115~127/60	7.95	498	428.3	1.76	1.51	20	ISO 22	CCC/UL/CE	171	Fan
	EMX 3113U	L/MBP	LST	115~127/60	3.68	195	167.7	1.62	1.39	12	ISO 23	CCC/UL/CE	166	Fan
	EMX 3117U	L/MBP	LST	115~127/60	4.50	249	214.1	1.67	1.44	12	ISO 22	CCC/UL/CE	166	Fan
	EMX 3117U	L/MBP	LST	220~240/50	4.50	206	177.2	1.67	1.44	5	ISO 22	CCC/CE	171	Fan
	EMX 3125 U	L/MBP	LST	220~240/50	6.09	304	261.4	1.70	1.46	5	ISO 22	CCC/CE	171	Fan
	EMX 3125 U	L/MBP	LST	115~127/60	6.09	367	315.6	1.73	1.49	20	ISO 22	UL/CE	171	Fan
EMY	EMY 3134 U	L/MBP	LST	220~240/50	7.95	389	334.5	1.57	1.35	0	ISO 22	CCC/CE	171	Fan
	EMY 3117 U	L/MBP	LST	220~240/50	4.50	204	175.4	1.53	1.32	0	ISO 22	CCC/CE	171	Fan
	EHX2155U	LBP	HST	220~240/50	12.21	595	511.7	1.58	1.36	98(*)	ISO 22	CCC/VDE/CE	191	Fan
EH	EHU2155U	LBP	HST	220~240/50	12.21	596	512.6	1.52	1.31	98(*)	ISO 22	CCC/VDE/CE	191	Fan
	EHX2155U	LBP	HST	220~240/50	12.21	618	531.5	1.63	1.40	98(*)	ISO 22	CCC/VDE/CE	191	Fan
	EHX2155U	LBP	HST	115~127/60	12.21	719	618.3	1.63	1.40	267(*)	ISO 22	CCC/UL/CE	191	Fan
	EHU6214U	MBP	HST	220~240/50	12.21	917	788.6	2.02	1.74	98(*)	ISO 22	CCC/VDE/CE	191	Fan
	EHU6212U	MBP	HST	220~240/50	10.61	811	697.5	2.03	1.75	98(*)	ISO 22	CCC/VDE/CE	191	Fan
NE	NEX4170UA(###)	L/MBP	HST	115~127/60	16.80	1561	1342.5	1.87	1.61	30/340~408(*)	ISO 22	CCC/UL/CE	207	Fan
	NEX4180UA(###)	L/MBP	HST	115~127/60	18.70	1733	1490.4	1.81	1.56	35/340~408(*)	ISO 22	CCC/UL/CE	207	Fan
	NEX2180UB	LBP	HST	220~240/50	18.70	930	799.8	1.59	1.37	12.5/108~130(*)	ISO 22	CCC/VDE/CE	211	Fan
	NEU2170UA	LBP	HST	220~240/50	16.80	820	705.2	1.54	1.32	10/108~130(*)	ISO 22	CCC/VDE/CE	211	Fan
	NEU2178U	LBP	HST	220~240/50	18.70	905	778.3	1.52	1.31	12.5/108~130(*)	ISO 22	CCC/VDE/CE	207	Fan
	NEX6217UA(###)	MBP	HST	220~240/50	14.28	1944	1671.8	2.56	2.20	72~88(*)	ISO 22	CCC/VDE/CE	211	Fan
NEX6225UA(###)	MBP	HST	220~240/50	21.02	2916	2507.8	2.68	2.30	20/130~156(*)	ISO 22	CCC/VDE/CE	211	Fan	

(*) Start capacitor
 (#) In China system condition (-28/40°C)
 (##) In AHAM condition (-23.3/40.5°C)
 (###) In ARI condition (-6.7/48.9°C)
 (####) In ASHRAE HBP condition (7.2/54.4°C)

VLBP, LBP, L/MBP test condition is ASHRAE LBP 32
 HBP test condition is ASHRAE HBP 46



R404a | VLBP | LBP | L/MBP

Series	Model	Applicat.	Starting Torque	Vol./Freq.	Displac.	Performance				Capacitor	Oil Viscosity	Certification	Height	Test Condition
						Capacity		COP						
						W	Kcal/h	W/W	kcal/wh					
EH Line Up	EHU2140GK	LBP	LST/HST	208~230/60	9.04	599	515.1	1.48	1.27	72~88(*)	ISO 22	CCC/CE	191	Fan
	EHU2140GK	LBP	LST/HST	220~240/50	9.04	500	430.0	1.46	1.26	98~124(*)	ISO 22	CCC/CE	191	Fan
	EHU2150GK	LBP	LST/HST	208~230/60	11.14	740	636.4	1.56	1.34	72~88(*)	ISO 22	CCC/CE	191	Fan
	EHU2150GK	LBP	LST/HST	220~240/50	11.14	621	534.1	1.56	1.34	88~108(*)	ISO 22	CCC/CE	191	Fan
	EHU2160GK	LBP	LST/HST	220~240/50	12.74	704	605.4	1.52	1.31	88~108(*)	ISO 22	CCC/CE	191	Fan
NE	NEU2178GK	LBP	HST	220~240/50	16.80	914.0	786.0	1.42	1.22	15/88~108(*)	ISO 22	CCC/VDE/CE	207	Fan
	NEU2183GKA	LBP	HST	220~240/50	16.80	958.0	823.9	1.51	1.30	17.5/108~130(*)	ISO 22	CCC/VDE/CE	211	Fan

R134a | VLBP | LBP | L/MBP

Series	Model	Applicat.	Starting Torque	Vol./Freq.	Displac.	Performance				Capacitor	Oil Viscosity	Certification	Height	Test Condition
						Capacity		COP						
						W	Kcal/h	W/W	kcal/wh					
EMT	EMT 6170 Z	HBP	HST	220~240/50	7.96	822.4	707.3	2.16	1.86	57(*)	ISO 22	CCC/VDE/CE	166	Fan
	EMTS 6170 Z	HBP	HST	220~240/50	7.96	822.4	707.3	2.16	1.86	98(*)	ISO 22	CCC/VDE/CE	171	Fan
	EMT 6170 Z	HBP	HST	100/50	7.96	838.2	720.9	2.69	2.31	20/98(*)	ISO 22	CE	171	Fan
		HBP	HST	100/60	7.96	974.8	838.3	2.55	2.19	20/98(*)	ISO 22	CE	171	Fan
	EMT 45 HDR	HBP	HST	220~240/50	4.15	444.2	382.0	2.69	2.31	70(*)	ISO 22	CCC/VDE/CE	166	Fan
	EMT 45 HLR	LBP	LST	220~240/50	4.85	145.5	125.1	1.31	1.13	0	ISO 22	CCC/VDE/CE	166	Static
	EMT 55 HLR	LBP	LST	220~240/50	5.19	160.6	138.1	1.37	1.18	0	ISO 22	CCC/VDE/CE	166	Static
	EMT 65 HLR	LBP	LST	220~240/50	5.96	180	154.8	1.36	1.17	0	ISO 22	CCC/VDE/CE	166	Static
	EMT 6160 Z	HBP	HST	220~240/50	6.99	737	633.8	2.34	2.01	57(*)	ISO 22	CCC/VDE/CE	166	Fan
	EMS	EMS 6170 Z	HBP	HST	220~240/50	7.96	822.4	707.3	2.16	1.86	57(*)	ISO 22	CCC/VDE/CE	166
EMSS	EMTE 6187 Z	HBP	HST	220~240/50	9.50	943	811.0	2.52	2.17	98(*)	ISO 22	CCC/VDE/CE	171	Fan
EMY	EMY3130Z	L/MBP	LST	220~240/50	11.14	320.0	275.2	1.51	1.30	88~108(*)	ISO 22	CCC/VDE/CE	171	Fan

R1234yf | VLBP | LBP | L/MBP

Series	Model	Applicat.	Starting Torque	Vol./Freq.	Displac.	Performance				Capacitor	Oil Viscosity	Certification	Height	Test Condition
						Capacity		COP						
						W	Kcal/h	W/W	kcal/wh					
EMT	EMT 6170 L	HBP	HST	100/50	7.96	838.2	720.9	2.69	2.31	20/98(*)	ISO 22	CCC/CE	171	Fan
		HBP	HST	100/60	7.96	974.8	838.3	2.55	2.19	20/98(*)	ISO 22	CCC/CE	171	Fan
EH	EHU 3125 L	L/MBP	LST	100/50	9.04	286.0	246.0	1.39	1.20	20	ISO 22	CE	166	Fan
		L/MBP	LST	100/60	9.04	333	286.4	1.55	1.33	20	ISO 22	CE	166	Fan

(*) Start capacitor
 (#) In China system condition (-28/40°C)
 (##) In AHAM condition (-23.3/40.5°C)
 (###) In ARI condition (-6.7/48.9°C)
 (####) In ASHRAE HBP condition (7.2/54.4°C)

VLBP, LBP, L/MBP test condition is ASHRAE LBP 32
 HBP test condition is ASHRAE HBP 46



Variable Speed Compressors

Embraco variable speed compressors are a solution for residential and commercial applications which demand fast cooling, low energy consumption, operate with a low starting voltage and with a wide operating range, low noise and vibration levels. The variable speed compressor associated with an inverter allows the compressor run in different RPM, delivering the cooling capacity needed according to the thermal load.

Control Modes

DROP-IN

Drop-In can use all kinds of inverters, where single thermostat contact is used to set the compressor running conditions. Drop-In mode allows the application to any refrigeration system with a simple ON/OFF thermostat, without the need of a rotation control signal through serial or frequency communication. The compressor speed will be adjusted automatically by the inverter, in accordance to the thermal load variation.

SMART DROP-IN

The Smart-Drop-In was designed with focus on cooling capacity, but always considering good system efficiency. This solution provides a customization tool that allows the routine to be parameterized and adjusted for each refrigeration system. The logic is divided in four mains parts: Pull-down, Stability Routine, Heavy Duty Routine and Defrost Routine. The Stability, Heavy Duty and Defrost Routine begin to run in parallel after Pull-down is completed.

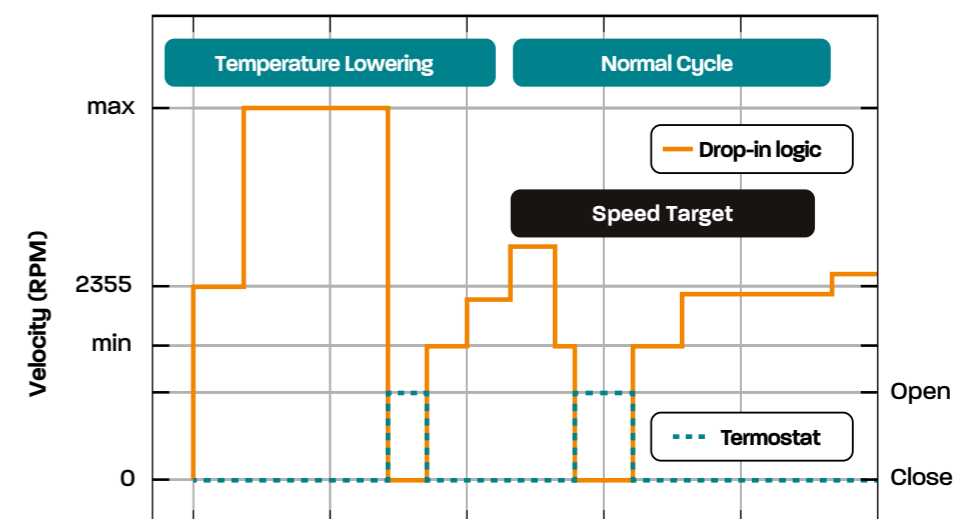
Technical Data

Variable Speed Compressors



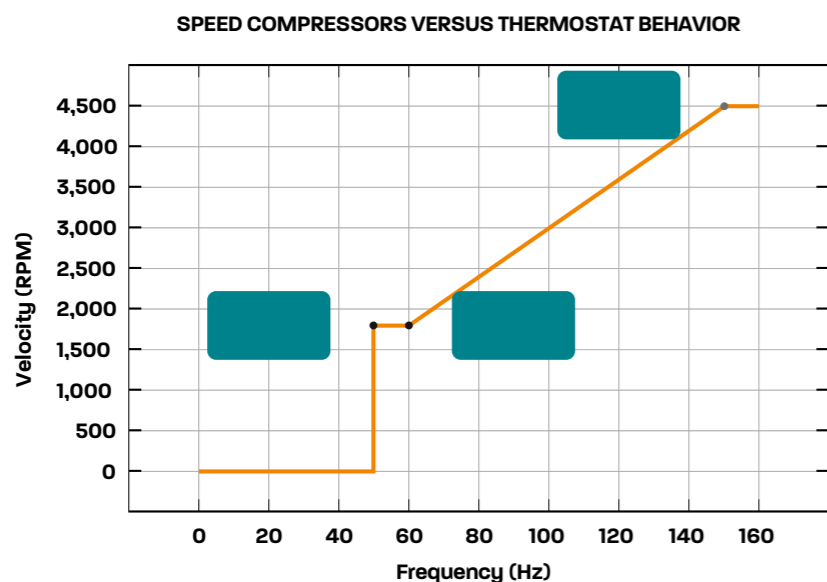
think ahead

COMPRESSOR SPEED IN FUNCTION OF FREQUENCY



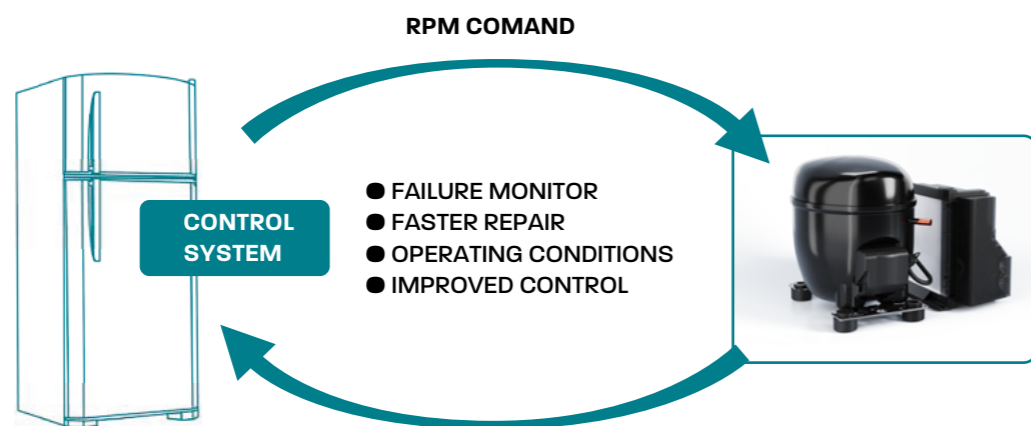
FREQUENCY

In this communication mode, the compressor's speed is controlled by a frequency signal sent to the inverter, usually generated by an electronic controller. This frequency signal is a digital wave that varies between 53 and 150 Hz. The compressor is then driven by this signal sent to the inverter



SERIAL

This option is used associated with an electronic thermostat, in which the inverter uses a serial communication protocol, building a communication bridge between the inverter and the controller. Based on Embraco protocol it is possible to define the compressor speed and check other parameters such as compressor RPM and failure state. This response from the inverter can be used to help diagnose system failure and/or fix it in less time than usual.



R600a | VEM family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity	COP				
					W	W/W				
VEMT	VEMT7C	7.23	LBP	1600	68.0	1.66	-23.3/54.4/32.2°C	ISO5	CCC/CE	166
				2000	79.0	1.70				
				3000	117.0	1.74				
				MAX SPEED(ref.4500)	173.0	1.7				
	VEMT9C	9.04	LBP	1600	88.0	1.68	-23.3/54.4/32.2°C	ISO5	CCC/CE	158
				2000	106.0	1.74				
				3000	154.0	1.76				
				MAX SPEED(4500rpm)	211.0	1.63				
	VEMT11C	11.14	LBP	1600	106.0	1.82	-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	158
				2000	133.0	1.85				
				3000	196.0	1.85				
				MAX SPEED(ref.4300)	265.0	1.67				
VEMT9C	9.04	LBP	1200	61.0	1.58	-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	166	
			1600	84.0	1.72					
			2000	106.0	1.74					
			3000	154.0	1.78					
VEMT11C	11.14	LBP	1200	77.0	1.52	-23.3/54.4/32.2°C	ISO5	CCC/CE	166	
			1600	105.0	1.65					
			2000	133.0	1.72					
			3000	198.0	1.76					
VEMX	VEMX9C+	9.04	LBP	1200	64.0	1.71	-23.3/54.4/32.2°C	ISO5	CCC/VDE/UL/CE	166
				1600	84.0	1.8				
				2000	105.3	1.87				
				3000	163.0	1.93				
	VEMX11C+	11.14	LBP	1200	84	1.81	-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	166
				1600	107	1.92				
				2000	135	1.90				
				3000	196	1.89				
	VEMX6L	6.36	LBP	1500	94	1.66	-23.3/54.4/32.2°C	ISO10	CE	166
				2000	128	1.74				
				3000	189	1.76				
				MAX SPEED(ref.4500)	275	1.64				
VEMX9C	9.04	LBP	1500	240	1.88	6/70/15°C	ISO5	CCC/VDE/CE	158	
			2000	201	1.54					
			MAX SPEED(ref.4500)	537	2.13					
			MAX SPEED(ref.4500)	537	2.13					
VEMY	VEMY9C	9.04	LBP	1600	85.0	1.73	-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	158
				2000	106.0	1.74				
				3000	161.0	1.78				
				MAX SPEED(ref.4500)	220.0	1.70				



R600a | VEM family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height	
					Capacity	COP					
					W	W/W					
VEMB	VEMB9C	9.04	LBP	1200	61.0	1.74	-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	166	
				1600	85.0	1.85					
				2000	106.0	1.90					
				3000	161.0	1.87					
				MAX SPEED(ref.4100)	203.0	1.76					
VEMB11C	VEMB11C	11.14	LBP	1200	79.0	1.80	-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	166	
				1600	108.0	1.85					
				2000	135.0	1.90					
				3000	204.0	1.89					
				MAX SPEED(ref.4300)	281.0	1.75					
VEMC	VEMC5C	5.19	LBP	1200	30.0	1.56	-23.3/54.4/32.2°C	ISO5	CCC/VDE/UL/CE	166	
				1600	42.0	1.74					
				2000	53.2	1.79					
				3000	70.0	1.63					
	MAX SPEED(ref.4500)	105.0	1.58								
	VEMC7C	VEMC7C	7.23	LBP	1200	46.0	1.78	-23.3/54.4/32.2°C	ISO5	CCC/VDE/UL/CE	166
					1600	63.0	1.87				
					2000	80.4	1.89				
					3000	116.0	1.87				
	MAX SPEED(ref.4500)	168.0	1.81								
	VEMC9C	VEMC9C	9.04	LBP	1200	62.0	1.89	-23.3/54.4/32.2°C	ISO5	CCC/VDE/UL/CE	166
					1600	86.0	1.95				
					2000	107.3	1.95				
3000					159.0	1.96					
MAX SPEED(ref.4500)	214.0	1.87									
VEMC9C++	VEMC9C++	9.04	LBP	1200	69.0	2.38	-23.3/58/32.2°C	ISO5	CCC/VDE/CE	166	
				1600	92.0	2.41					
				2000	119.0	2.44					
				3000	181.0	2.39					
MAX SPEED(ref.4500)	258.0	2.14									

R290 | VEM family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity	COP				
					W	W/W				
VEM/VEH	VEMT406U	6.36	L/MBP	1600	151	1.54	-23.3/54.4/32.2	ISO22	CCC/UL	161
				2000	195	1.64				
				3000	302	1.72				
				3600	364	1.72				
				MAX SPEED(ref.4500)	439	1.66				
VEHT409U	VEHT409U	9.04	L/MBP	1600	239	1.76	-23.3/54.4/32.2	ISO22	CCC/UL	171
				2000	303	1.81				
				3000	464	1.84				
				3600	545	1.78				
MAX SPEED(ref.4500)	668	1.73								
VEHU413U	VEHU413U	12.74	L/MBP	1600	345	1.63	-23.3/54.4/32.2	ISO22	CCC/UL	171
				2000	434	1.68				
				3000	658	1.72				
				3600	767	1.68				
MAX SPEED(ref.4500)	936	1.62								

R600a | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height			
					Capacity	COP							
					W	W/W							
VESA	VESA5C	5.19	LBP	1300	76	3.00	-10/40/32.2°C	ISO5	CCC/VDE/CE	135			
				1600	96	3.11							
				2000	121	3.17							
				1300	33	1.69	-23.3/54.4/32.2°C						
				1600	42	1.77							
				2000	50	1.72							
				3000	80	1.76							
	MAX SPEED(ref.4500)	117	1.65										
	VESA7C	VESA7C	7.23	LBP	1300	50	2.00	-25/40/32.2°C	ISO5	CCC/VDE/CE	135		
					1600	65	2.10						
					2000	83	2.10						
					1300	47	1.65	-23.3/54.4/32.2°C					
					1600	60	1.75						
2000					80	1.79							
3000	119	1.83											
MAX SPEED(ref.4500)	179	1.78											
VESA9C	VESA9C	9.04	LBP	1300	69	2.06	-25/40/32.2°C	ISO5	CCC/VDE/CE	135			
				1600	83	2.10							
				2000	107	2.11							
				1300	67	1.73	-23.3/54.4/32.2°C						
				1600	83	1.83							
				2000	104	1.79							
3000	159	1.85											
MAX SPEED(ref.4500)	223	1.71											
VESA11C	VESA11C	11.14	LBP	1300	88	2.22	-25/40/32.2°C	ISO5	CCC/VDE/CE	135			
				1600	109	2.20							
				2000	137	2.19							
				1300	86	1.89	-23.3/54.4/32.2°C						
				1600	107	1.91							
				2000	136	1.91							
				3000	207	1.88							
MAX SPEED*(ref.4500)	276	1.76											

R600a | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity W	COP W/W				
VESC	VESC7C	7.23	LBP	1300	55	2.20	-25/40/32.2°C	ISO5	CCC/VDE/CE	135
				1600	68	2.26				
				2000	84	2.22				
				1300	52	1.87	-23.3/54.4/32.2°C			
				1600	65	1.92				
				2000	81	1.89				
				3000	125	1.92				
				MAX SPEED(ref.4500)	184	1.79				
	VESC9C	9.04	LBP	1300	69	2.18	-25/40/32.2°C	ISO5	CCC/VDE/CE	135
				1600	86	2.19				
				2000	109	2.21				
				1300	66	1.80	-23.3/54.4/32.2°C			
				1600	83	1.87				
				2000	106	1.91				
				3000	163	1.87				
				MAX SPEED(ref.4500)	230	1.76				
	VESC11C	11.14	LBP	1300	88	2.22	-25/40/32.2°C	ISO5	CCC/VDE/CE	135
				1600	109	2.20				
				2000	137	2.19				
				1300	86	1.89	-23.3/54.4/32.2°C			
				1600	107	1.91				
				2000	136	1.91				
				3000	207	1.88				
				MAX SPEED*(ref.4500)	276	1.76				
	VESC13C	13.26	LBP	1300	102	2.22	-25/40/32.2°C	ISO5	CE	135
				1600	126	2.19				
				2000	157	2.16				
				1300	100	1.85	-23.3/54.4/32.2°C			
1600				123	1.87					
2000				158	1.91					
3000				235	1.81					
4150				295	1.64					

R600a | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity W	COP W/W				
VESD	VESD3C	2.98	LBP	1300	38	2.68	-10/40/32.2°C	ISO5	CCC/VDE/CE	135
				1600	48	2.78				
				2000	61	2.81				
	VESD5C	5.19	LBP	1300	78	3.18	-10/40/32.2°C	ISO5	CCC/VDE/CE	135
				1600	97	3.25				
				2000	122	3.22				
				1300	34	1.77	-23.3/54.4/32.2°C			
				1600	42	1.79				
				2000	52	1.75				
				3000	84	1.81				
				MAX SPEED(ref.4500)	126	1.73				
	VESD7C	7.23	LBP	1300	52	2.20	-25/40/32.2°C	ISO5	CCC/VDE/CE	135
				1600	66	2.23				
				2000	83	2.21				
				1300	49	1.82	-23.3/54.4/32.2°C			
				1600	63	1.92				
				2000	79	1.92				
				3000	120	1.90				
				MAX SPEED(ref.4500)	184	1.86				
	VESD9C	9.04	LBP	1300	69	2.24	-25/40/32.2°C	ISO5	CCC/VDE/CE	135
				2000	107	2.25				
				1300	66	1.85	-23.3/54.4/32.2°C			
				2000	107	1.94				
				MAX SPEED(ref.4100)	209	1.79				
	VESD9C+	9.04	LBP	1300	74	2.42	-23.3/38/32.2°C	ISO5	CCC/CE	135
				1600	93	2.43				
				2000	117	2.39				
				1300	65	1.88	-23.3/54.4/32.2°C			
				1600	82	1.93				
				2000	104	1.94				
				3000	160	1.90				
				MAX SPEED(ref.4300)	210	1.78				
	VESD10C	9.50	LBP	1300	73	2.28	-25/40/32.2°C	ISO5	CCC/CE	135
				1600	90	2.27				
				2000	111.8	2.24				
				1300	72	1.96	-23.3/54.4/32.2°C			
				1600	86	1.93				
				2000	109	1.92				
				3000	162	1.87				
	MAX SPEED(ref.4500)	207	1.74							
	VESD11C	11.14	LBP	1300	86	2.21	-25/40/32.2°C	ISO5	CCC/VDE/UL/CE	135
				2000	133	2.22				
				1300	86	1.86	-23.3/54.4/32.2°C			
				2000	133	1.92				
	MAX SPEED(ref.4000)	254	1.75							
	VESD13C	13.26	LBP	1300	103	2.25	-25/40/32.2°C	ISO5	---	135
				1600	126	2.23				
				2000	157	2.20				
1300				104	1.89	-23.3/54.4/32.2°C				
1600				123	1.91					
2000				158	1.93					
3000				233	1.84					
4500	300	1.65								

R600a | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height					
					Capacity	COP									
					W	W/W									
VESF	VESF5C	5.19	LBP	950	56	3.14	-10/40/32.2°C	ISO5	CCC/VDE/U/CE	135					
				1300	78	3.25									
				1600	97	3.30									
				2000	122	3.28									
				3000	180	3.15									
				4500	259	2.90									
				1300	33	1.76					-23.3/54.4/32.2°C	ISO5	CCC/VDE/U/CE	135	
				2000	52	1.79									
	4500	119	1.74												
	VESF7C	7.23	LBP	LBP	950	38	2.23	-25/40/32.2°C	ISO5	CCC/VDE/U/CE	135				
					1300	54	2.27								
					1600	66	2.26								
					2000	83	2.25								
					3000	125	2.14								
					4000	154	2.04								
					950	35	1.82					-23.3/54.4/32.2°C	ISO5	CCC/VDE/U/CE	135
					1300	50	1.89								
	2000	79	1.93												
	4000	157	1.86												
	VESF9C	9.04	LBP	LBP	950	50	2.25	-25/40/32.2°C	ISO5	CCC/VDE/U/CE	135				
					1300	69	2.30								
					1600	85	2.28								
					2000	106	2.25								
					3000	160	2.17								
4000					189	1.97									
950					47	1.90	-23.3/54.4/32.2°C					ISO5	CCC/VDE/U/CE	135	
1300					66	1.94									
2000	106	1.94													
4000	188	1.79													
VESF9C+	9.04	LBP	LBP	1600	94	2.45	-23.3/38/32.2°C	ISO5	CCC/CE	135					
				2000	117	2.42									
				950	49	1.90					-23.3/54.4/32.2°C	ISO5	CCC/CE	135	
				1300	67	1.98									
				2000	105	1.99									
4500	210	1.75													
VESF11C	11.14	LBP	LBP	950	64	2.23	-25/40/32.2°C	ISO5	CCC/VDE/U/CE	135					
				1300	87	2.28									
				1600	107	2.28									
				2000	135	2.26									
				3000	198	2.13									
				4000	231	1.94									
				950	63	1.91					-23.3/54.4/32.2°C	ISO5	CCC/VDE/U/CE	135	
				1300	86	1.94									
				2000	133	1.97									
				4000	244	1.77									

R600a | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height					
					Capacity	COP									
					W	W/W									
VESG	VESG7C	7.23	LBP	950	39	2.25	-25/40/32.2°C	ISO5	CCC/VDE/CE	135					
				1300	55	2.32									
				1600	67	2.33									
				2000	84	2.31									
				3000	125	2.25									
				4000	167	2.15									
				950	37	1.87					-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	135	
				1300	52	1.95									
				2000	82	1.99									
	4000	163	1.91												
	VESG9C	9.04	LBP	LBP	950	52	2.36	-25/40/32.2°C	ISO5	CCC/VDE/U/CE	135				
					1300	70	2.36								
					1600	87	2.38								
					2000	106	2.33								
					3000	159	2.25								
					4000	211	2.14								
					950	47	1.90					-23.3/54.4/32.2°C	ISO5	CCC/VDE/U/CE	135
					1300	66	1.96								
2000					106	2.01									
4000	209	1.91													
VESG11C	11.14	LBP	LBP	950	65	2.34	-25/40/32.2°C	ISO5	CCC/VDE/CE	135					
				1300	88	2.38									
				1600	109	2.37									
				2000	133	2.32									
				3000	199	2.21									
				4000	254	2.08									
				950	63	1.90					-23.3/54.4/32.2°C	ISO5	CCC/VDE/CE	135	
				1300	86	1.98									
				2000	133	2.02									
4000	254	1.88													
VESH	VESH7C	7.23	L/MBP	@950	39.0	2.43	-25/40/32.2°C	ISO5	VDE/CE	135					
				@1300	55.0	2.45									
				@1600	68.0	2.43									
				@2000	84.0	2.41									
				@1300	53.0	2.09					-23.3/54.4/32.2°C	ISO5	VDE/CE	135	
				@2000	83.0	2.12									
	@4000	164.0	1.97												
	VESH9C	9.04	L/MBP	L/MBP	@950	51.0	2.41	-25/40/32.2°C	ISO5	VDE/CE	135				
					@1300	70.0	2.43								
					@1600	87.0	2.43								
					@2000	107.0	2.40								
					@1300	69.0	2.09					-23.3/54.4/32.2°C	ISO5	VDE/CE	135
					@2000	107.0	2.09								
	@4000	210.0	1.91												
	VESH11C	11.14	L/MBP	L/MBP	@950	63.0	2.39	-25/40/32.2°C	ISO5	CCC/VDE/CE	135				
					@1300	87.0	2.41								
					@1600	107.0	2.42								
					@2000	133.0	2.40								
@1300					86.0	2.07	-23.3/54.4/32.2°C					ISO5	CCC/VDE/CE	135	
@2000					133.0	2.08									
@4000	254.0	1.88													

R134a | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height			
					Capacity	COP							
					W	W/W							
VESA	VESA4H	4.25	LBP	1400	61.6	2.03	-23.3/40.5/32.2	ISO10	CCC/CE	138			
				1600	69.2	2.05							
				2000	86.7	2.06							
				3000	131.2	1.98							
				MAX SPEED(ref.4000)	164.0	1.88							
				1400	52.0	1.62					-23.3/54.4/32.2		
				1600	56.4	1.63							
				2000	73.4	1.66							
				3000	110.8	1.64							
				MAX SPEED(ref.4000)	139.9	1.58							
				1400	89.0	2.09	-23.3/40.5/32.2					ISO10	CCC/CE
				1600	98.4	2.11							
	2000	123.1	2.06										
	3000	186.9	2.01										
	MAX SPEED(ref.4000)	234.4	1.92										
	1400	74.0	1.64	-23.3/54.4/32.2									
	1600	82.7	1.67										
	2000	106.5	1.67										
	3000	158.8	1.66										
	MAX SPEED(ref.4500)	219.0	1.59										
	1400	112.7	2.09		-23.3/40.5/32.2	ISO10		CCC/CE	138				
	1600	122.0	2.07										
	2000	153.1	2.05										
	3000	229.1	1.99										
MAX SPEED(ref.4000)	282.0	1.88											
1400	97.4	1.65	-23.3/54.4/32.2										
1600	106.3	1.69											
2000	133.8	1.67											
3000	199.4	1.66											
MAX SPEED(ref.4000)	248.7	1.61											

R290 | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity	COP				
					W	W/W				
VESA	VESA5U	5.19	LBP	1600	68	1.32	-35/40/32 3m/s	ISO10	CCC/VDE/CE	138
				2000	88	1.38				
				3000	138	1.42				
				MAX SPEED(ref.4000)	183	1.41	-23.3/54.4/32.2 3m/s			
				1600	121	1.50				
				2000	156	1.60				
				3000	244	1.70				
				MAX SPEED(ref.4000)	327	1.72				
				1600	297	2.22				
	2000	379	2.29							
	3000	568	2.25							
	MAX SPEED(ref.4000)	748	2.12							
	1600	182	1.62	-23.3/54.4/32.2 3m/s						
	2000	233	1.69							
	3000	363	1.74							
	MAX SPEED(ref.4000)	482	1.73							

R600 | VES family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity	COP				
					W	W/W				
VESA	VESD5B	5.19	LBP	1300	53	3.10	-10/40/32.2°C	ISO5	CCC/VDE/CE	135
				1600	66	3.10				
				2000	84	3.10				
				1300	20	1.50	-23.3/54.4/32.2°C			
				1600	25	1.56				
				2000	31	1.53				
				3000	50	1.59				
				MAX SPEED(ref.4500)	75	1.49				

R600a | FMX family

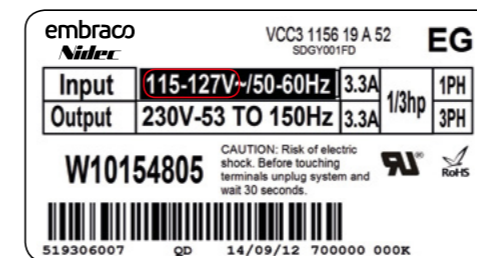
Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity	COP				
					W	W/W				
FMXY	FMXY4C	3.97	L/MBP	1300	57.0	2.90	-10/40/32.2°C	ISO5	CCC/VDE/CE	131
				2000	86.0	2.90				
				3000	126.0	2.94				
				4000	175.0	2.83				
				1300	21.0	1.42				
				2000	35.0	1.50				
	FMXY6C	6.23	L/MBP	1300	43.0	1.94	-25/40/32.2°C	ISO5	CCC/VDE/CE	131
				2000	68.0	1.99				
				3000	104.0	1.97				
				4000	128.0	1.90				
				1300	39.0	1.60				
				2000	65.0	1.64				
FMXY9C	8.74	L/MBP	1300	65.0	1.96	-25/40/32.2°C	ISO5	CCC/VDE/CE	131	
			2000	99.0	2.00					
			3000	150.0	1.97					
			4000	190.0	1.86					
			1300	62.0	1.65					
			2000	98.0	1.71					
FMXA	FMXA4C	3.97	L/MBP	1300	59.0	3.12	-10/40/32.2°C	ISO5	CCC/VDE/U/CE	131
				2000	87.5	3.10				
				3000	134.0	3.08				
				4000	187.0	2.94				
				1300	22.0	1.47				
				2000	36.0	1.65				
	FMXA6C	6.23	L/MBP	1300	43.0	2.05	-25/40/32.2°C	ISO5	CCC/VDE/U/CE	131
				2000	69.0	2.10				
				3000	105.0	2.05				
				4000	128.0	1.95				
				1300	40.0	1.67				
				2000	65.0	1.79				
FMXA9C	8.74	L/MBP	1300	65.0	2.05	-25/40/32.2°C	ISO5	CCC/VDE/U/CE	131	
			2000	99.0	2.11					
			3000	150.0	2.05					
			4000	190.0	1.93					
			1300	62.0	1.70					
			2000	98.0	1.80					
FMXA9CE	8.74	L/MBP	1300	65.0	2.05	-25/40/32.2°C	ISO5	CCC/CE	131	
			2000	99.0	2.11					
			3000	150.0	2.05					
			4800	220.0	1.82					
			1300	62.0	1.70					
			2000	98.0	1.80					
FMXA9CE	8.74	L/MBP	1300	65.0	2.05	-23.3/54.4/32.2°C	ISO5	CCC/CE	131	
			2000	99.0	2.11					
			3000	150.0	2.05					
			4800	218.0	1.65					
			1300	62.0	1.70					
			2000	98.0	1.80					

R600a | FMX family

Series	Comp. Model	Displ. (cm ³)	Application	Speed RPM	Performance		Test Condition	Oil Viscosity	Certification	Height
					Capacity	COP				
					W	W/W				
FMXC	FMXC6C	6.23	L/MBP	1300	44.0	2.12	-25/40/32.2°C	ISO5	CCC/CE	131
				2000	68.0	2.15				
				3000	102.0	2.04				
				4000	125.0	1.92				
				1300	40.0	1.69				
				2000	65.0	1.82				
	FMXC9C	8.74	L/MBP	1300	65.0	2.17	-25/40/32.2°C	ISO5	CCC/CE	131
				2000	101.0	2.18				
				3000	152.0	2.09				
				4000	199.0	1.97				
				1300	62.0	1.76				
				2000	100.0	1.87				
FMXD	FMXD6C	6.23	L/MBP	1300	45.0	2.24	-25/40/32.2°C	ISO5	CCC/CE	131
				2000	70.0	2.22				
				3000	107.0	2.17				
				4000	131.0	2.03				
				1300	41.0	1.81				
				2000	67.0	1.91				
	FMXD9C	8.74	L/MBP	1300	65.0	2.24	-25/40/32.2°C	ISO5	CCC/CE	131
				2000	101.0	2.23				
				3000	152.0	2.13				
				4000	199.0	2.01				
				1300	62.0	1.84				
				2000	99.0	1.90				
FMXD9C	8.74	L/MBP	1300	65.0	2.24	-23.3/54.4/32.2°C	ISO5	CCC/CE	131	
			2000	101.0	2.23					
			3000	152.0	2.13					
			4000	199.0	2.01					
			1300	62.0	1.84					
			2000	99.0	1.90					
FMXD9C	8.74	L/MBP	1300	65.0	2.24	-23.3/54.4/32.2°C	ISO5	CCC/CE	131	
			2000	101.0	2.23					
			3000	152.0	2.13					
			4000	199.0	2.01					
			1300	62.0	1.84					
			2000	99.0	1.90					

Voltage

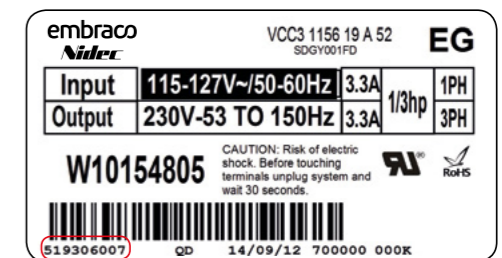
Check what is the inverter voltage specified on the label, as seen below: The inverter must be replaced by an equivalent one with the same voltage range.



The inverter must be replaced by another one with the same voltage range

Control Signal

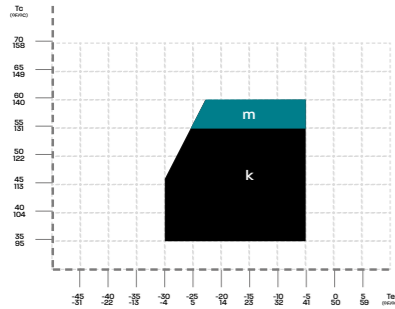
Check which control signal is used in the original inverter. Please contact the technical support to clarify the control type for each product SKU.



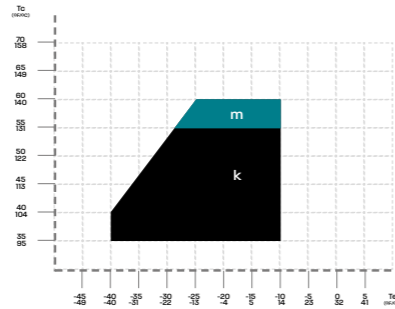
Operation Envelope Per Family

EM, NE, EH

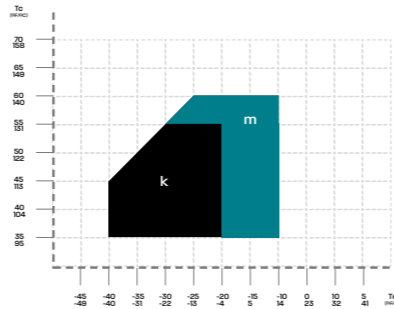
LBP
R134A - R600A



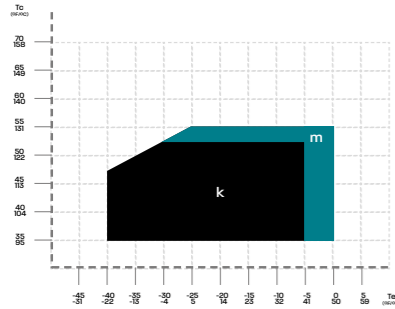
LBP
R404A / R507 / R452A - R290



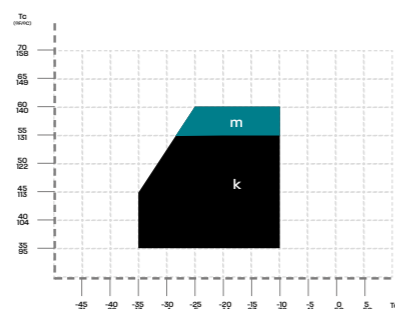
MBP
R404A / R507 / R452A - R290



LMBP
R290



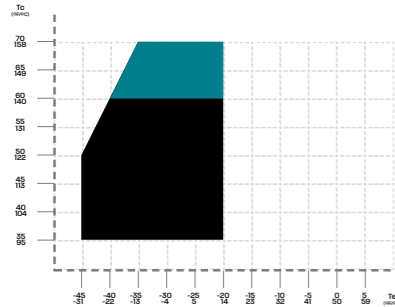
HBP
R134A - R600



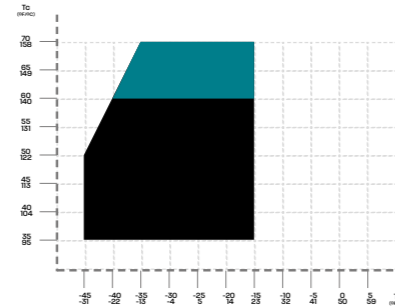
EM, VEM, VES, FMX

Ambient temperature: 42,7 °C - Return temperature: 32,2 °C

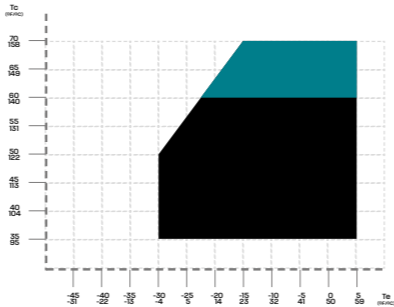
LBP
R290 - R134A - R600A



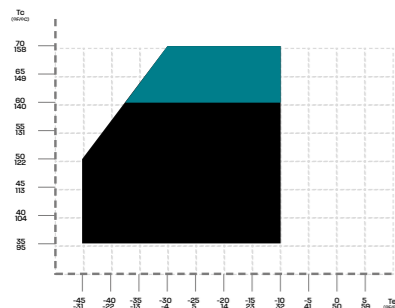
L-MBP (STANDARD)
R290 - R134A



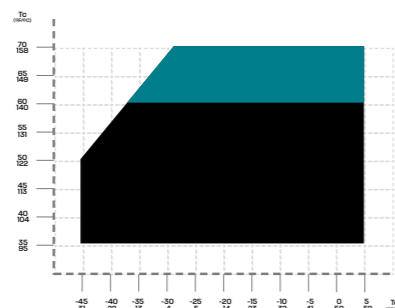
M-HBP
R134A



L-MBP EXTENDED RANGE FFUS, EM2, EM3
R290 - R134A - R600A



L-M-HBP
R134A



■ Operation Condition
■ Transient Condition

Tc Condensing T temperature
k Ambient 32 °C and return gas 20 °C
Te Evaporating T temperature
m Ambient 32 °C and return gas 20 °C (for transitory period)

NOTE: usage of compressors outside the intended working range cannot make use of the warranty, or should be consulted with Technical support.

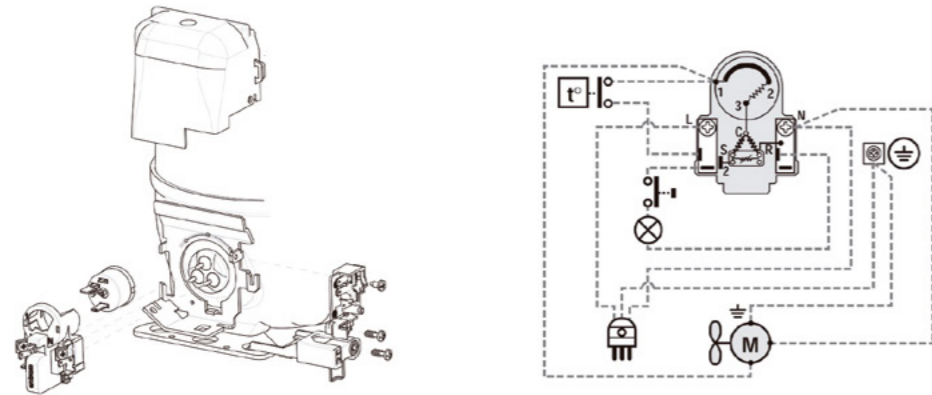
Electrical Configurations

Wiring Diagrams Key

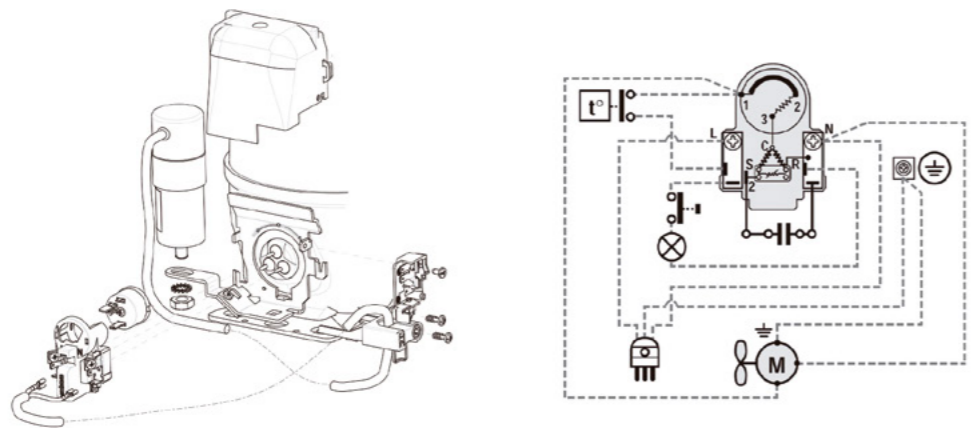
	OVERLOAD PROTECTOR		PTC START DEVICE*
	OVERLOAD PROTECTOR		INTEGRATED PTC DEVICE
	CURRENT START RELAY		CURRENT START RELAY WITH CAPACITOR CONNECTIONS
	3CR CURRENT START RELAY		3ARR3 START RELAY (VOLTAGE).
	RUN CAPACITOR		RUN CAPACITOR (MANDATORY - NOT SUPPLIED)
	OPTIONAL RUN CAPACITOR		START CAPACITOR
	FAN		PUSH BUTTON
	LAMP		SINGLE PHASE MOTOR
	3-PHASE MOTOR		THERMOSTAT
	LOW-HIGH PRESSURE SWITCH		PILOT CIRCUIT 24 OR 220 V
	EARTH CONNECTION		COMMON (INTERNAL OVERLOAD PROTECTOR)
	3-PHASE SUPPLY		START
	SINGLE PHASE SUPPLY		BROWN CABLE
	COMMON		BLACK CABLE
	RUN		RED CABLE
	TERMINAL BLOCK		CONNECTIONS TO BE MADE BY THE CUSTOMER (NOT SUPPLIED)
	WHITE CABLE		
	BLUE CABLE		
	YELLOW-GREEN CABLE		
	CONNECTIONS SUPPLIED		

Wiring Diagrams

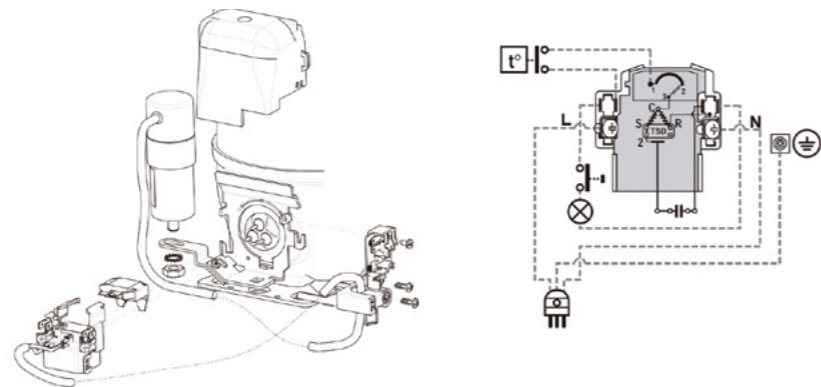
NE SERIES RSIR PTC European Version



NE SERIES RSCR PTC European Version

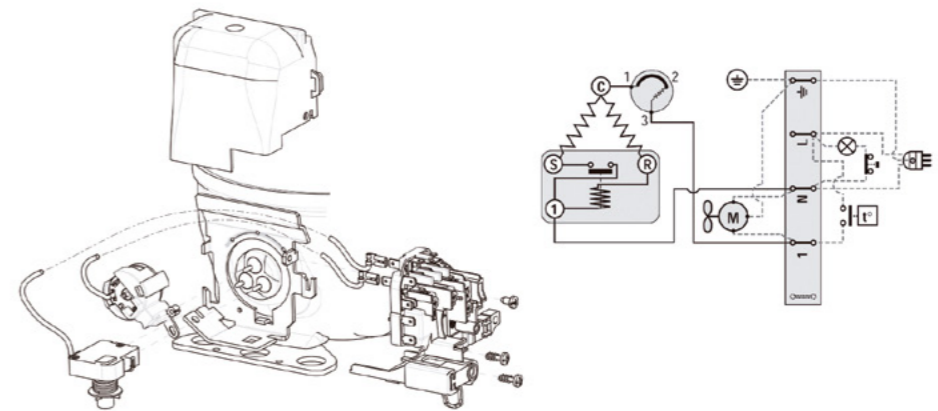


NE SERIES RSCR TSD European Version

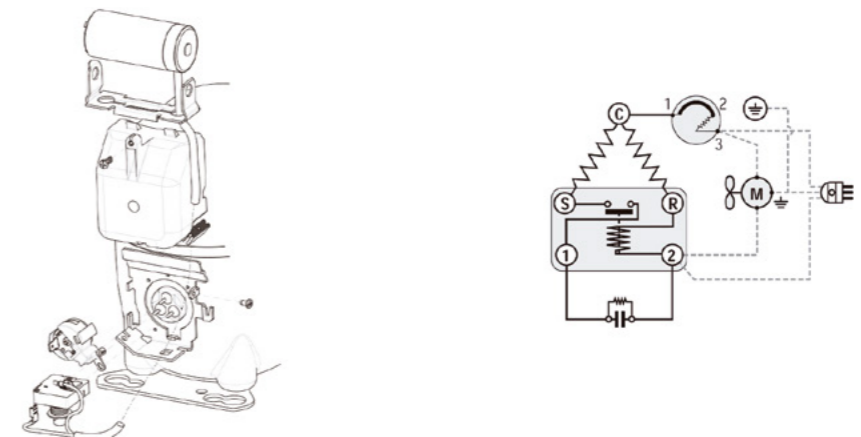


Wiring Diagrams

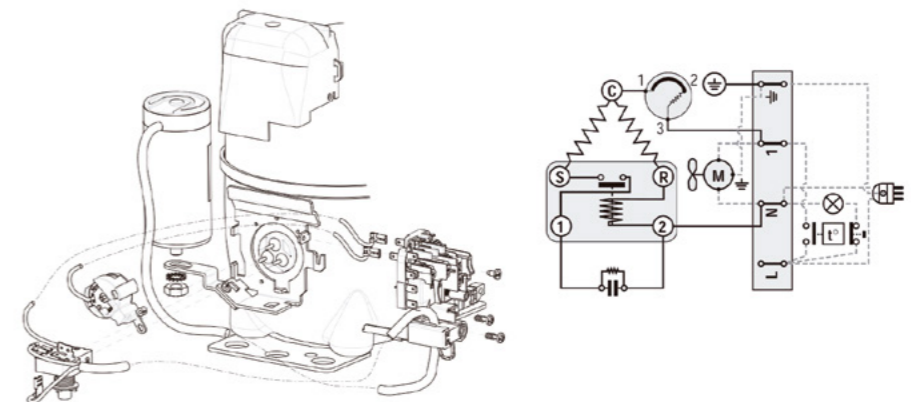
NE SERIES RSIR Terminal Board & Start Device



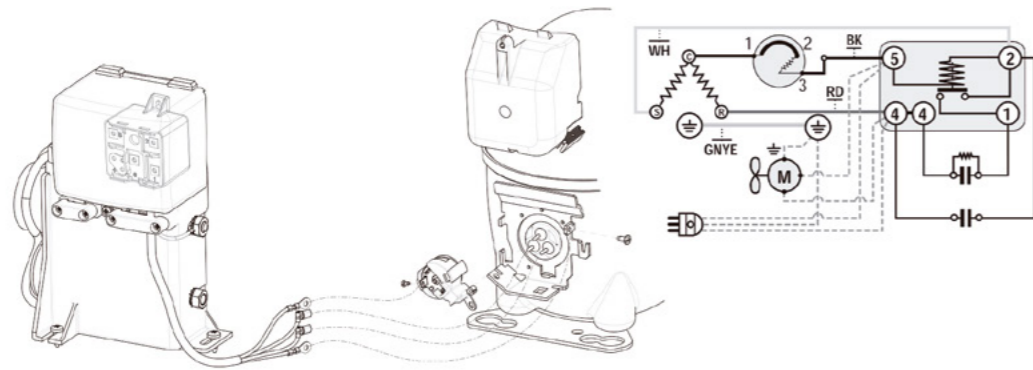
NE SERIES CSIR American Version



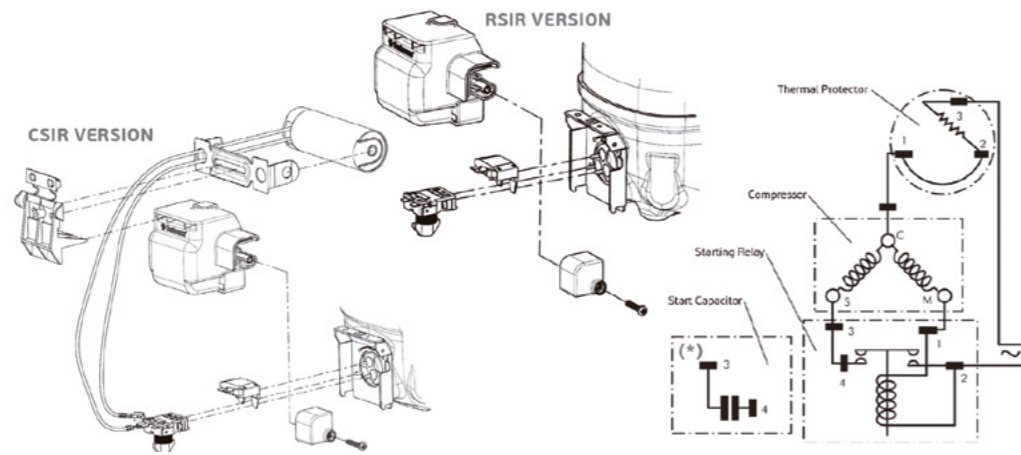
NE SERIES CSIR Terminal Board & Start Device



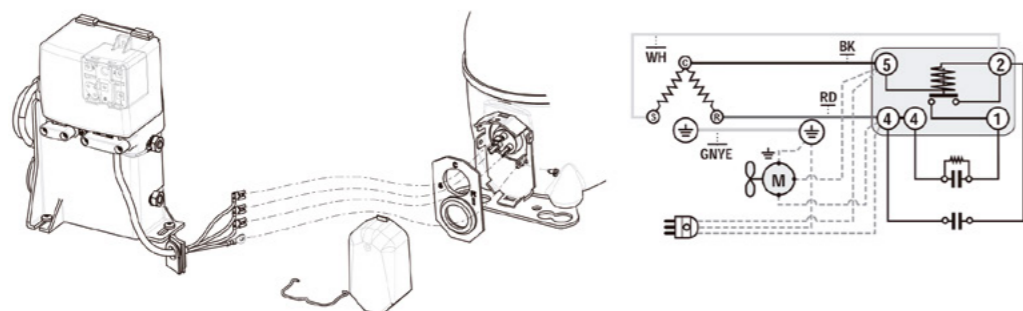
NE SERIES CSR Box



EM

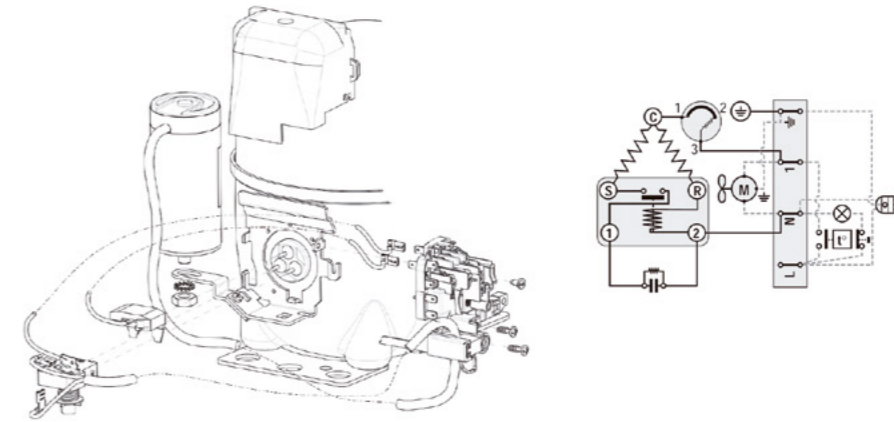


NE CSR Box

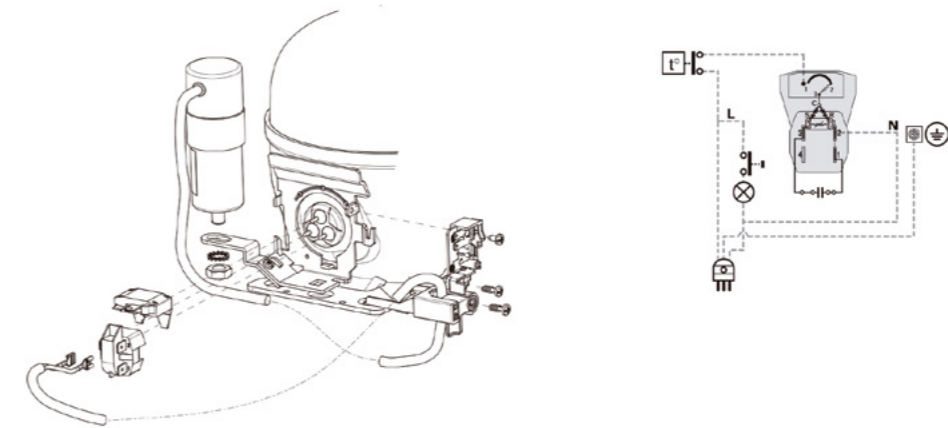


Wiring Diagrams

EMX SERIES CSIR TERMINAL BOARD & START DEVICE & 4TM

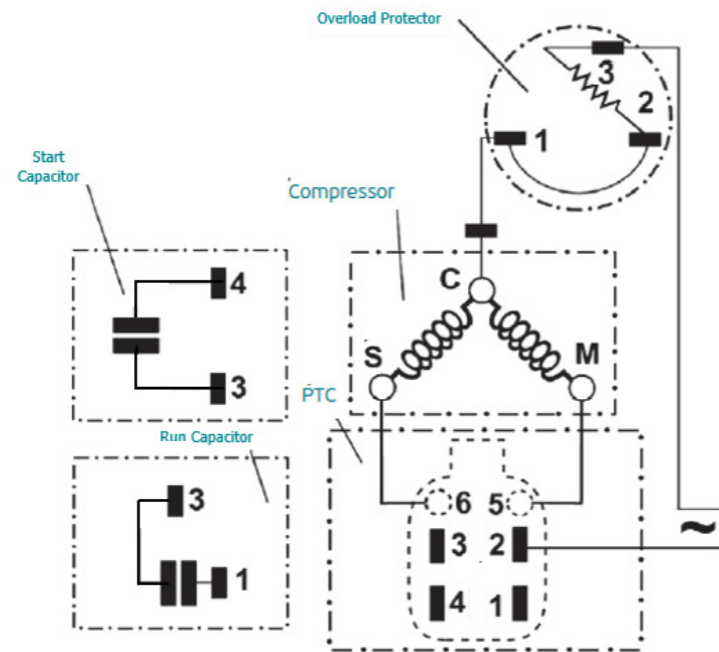


EM RSCR PTC & 4TM



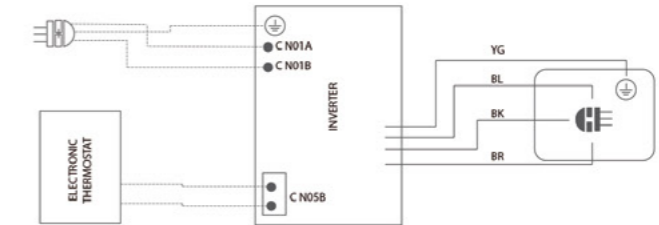
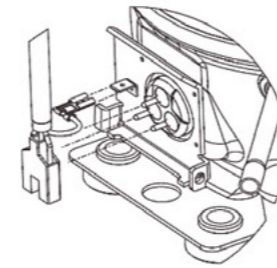
Wiring Diagrams

EM CSCR

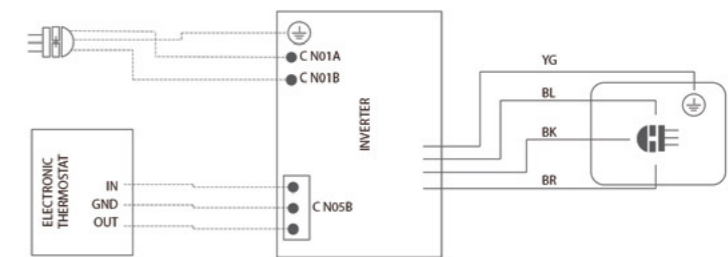
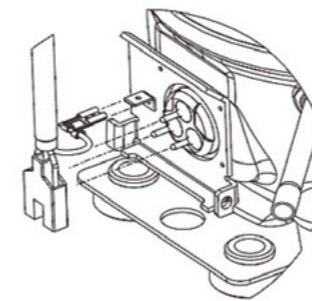


Wiring Diagrams

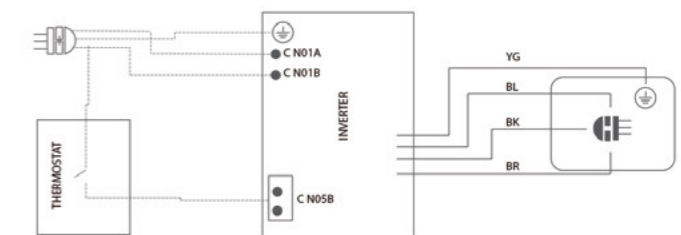
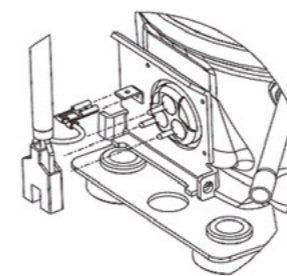
VEM/VEH (Frequency)



VEM/VEH (Serial)



VEM/VEH (Drop-in)



Electrical Accessories

Before removing the compressor plastic protection cover, check if the compressor is fully disconnected from the power source and if capacitors are applied.



Never operate on any electrical accessory with the compressor connected to the power grid. Working on an electrified compressor can cause severe damages to the technician's health, causing risks of electric shocks or getting burnt.



Start and/or run capacitors must be handled carefully, because, even when disconnected, they can cause electric shocks.

When you need to remove the capacitors, disconnect this components carefully paying attention to the exposed electric terminals. After disconnected, the capacitor must be discharged. Check if the capacitance ranges (μF) printed on the label on the capacitors are in accordance with the compressor's technical data. The capacitor's voltage must be the same or higher than the specified value in the compressor's technical data. In case the capacitor or compressor's specification don't match, replace the capacitor.



The application of the wrong capacitor, not specified component, may cause overheating of these components. Overheating may cause fractures on the capacitor which can lead to the leakage of internal content burning the operator.

In the case of removing the electrical components from the compressor's hermetic terminal, first remove the overload protector and the start device (relay or PTC) applying longitudinal force on the terminal pins. Never apply transversal force on the pins of the hermetic terminal.



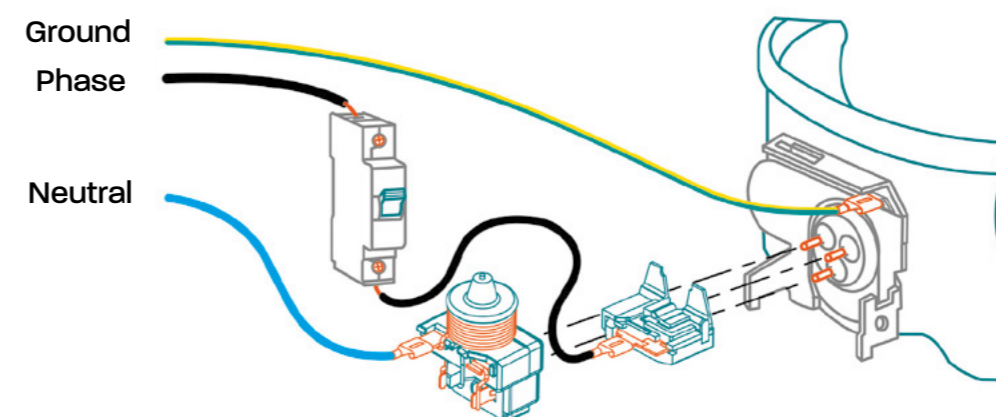
The incorrect removal of these accessories may damage the hermetic terminal on the compressor which can lead to the hermetic pins to be dislodged, causing refrigerant leakage. This situation becomes more critical in the case of flammable refrigerant utilization, since associated with an ignition source, creating a risk of and exposed flame with serious risks to the technician's physical integrity.

Cross check the code printed on the overload protector, relay or PTC with the compressor's technical data. In case they are different, replace these components for a compliant one. Universal accessories don't exist, you must always use components specified on the compressor's technical data.

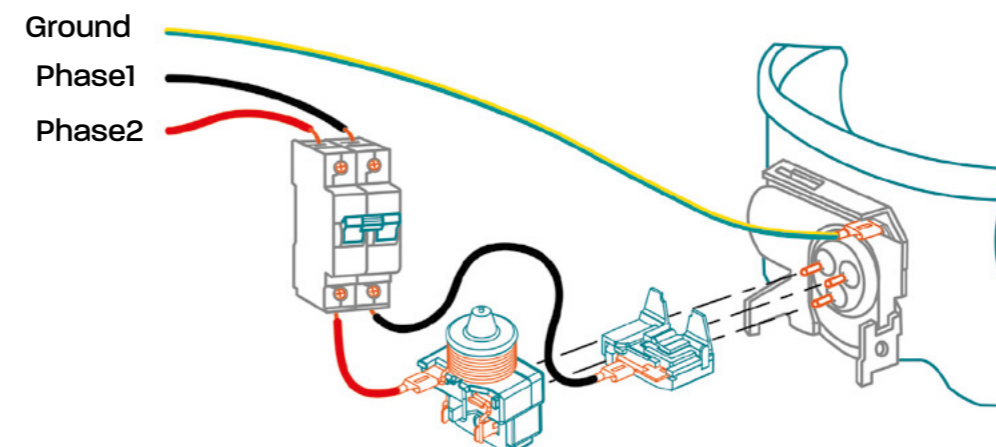


The use of incorrect electrical components, (overload protector, starting device) can cause a short circuit in the region the hermetic terminal of the compressor, which can lead to the hermetic pins to be dislodged, causing refrigerant leakage. This situation becomes more critical in the case of flammable refrigerant utilization, since associated with an ignition source, creating a risk of and exposed flame with serious risks to the technician's physical integrity.

Electrical Installation



On single-phase installations, the phase wire must be protected by a circuit breaker and connected to the overload protector. The Neutral wire must be connected to the start device (Relay or PTC). The system must be grounded.



On two-phase installations, the use of a bipolar circuit breaker is mandatory, because in case of a short circuit, both phases will be protected. The system must be grounded.



When this bipolar starter isn't applied, the system is exposed to a short circuit in the region the hermetic terminal of the compressor, which can lead to the hermetic pins to be dislodged, causing refrigerant leakage. This situation becomes more critical in the case of flammable refrigerant utilization, since associated with an ignition source, creating a risk of and exposed flame with serious risks to the technician's physical integrity.

The usage of a not grounded system can generate severe risk of an electric shock on the technician.

Compressor

If the compressor's replacement is necessary, be aware to these points below:

I. Check if the compressor is disconnected from the power grid.



You must never handle any electrical accessory with the compressor connected to the power grid. This can prevent several health risks to the technicians, such as electric shocks or getting burnt.

II. You must never remove the compressor without first removing all the refrigerant inside the system. You can use refrigerant recovery. In the case of replacing compressors with flammable refrigerants, such as R290 or R600a, make sure to remove the whole charge from the system.



The presence of flammable fluid residues can expose the technician to risks.

III. You must always use a pipe cutter to disconnect the pipes from the compressor. Under no circumstances, use the flame torch to disconnect the compressor tubes.



The use of a torch to disconnect the compressor from the system operating with flammable refrigerant can cause fire and release of toxic vapors.

IV. In case of compressor failure and / or internal contamination of the system, clean the refrigeration circuit with a suitable solvent, following the technical guidelines of the solvent manufacturer.



Failure to comply with the solvent manufacturer's technical guidelines may expose the technician to risk of fire or intoxication.

V. Before turning the compressor on:
- Check if the voltage specified on the compressor label in accordance with the power grid and system electrical installation, following item 1.1.



The application of a compressor with a wrong voltage can cause a short circuit in the region the hermetic terminal of the compressor, which can lead to the hermetic pins to be dislodged, causing refrigerant leakage. This situation becomes more critical in the case of flammable refrigerant utilization, since associated with an ignition source, creating a risk of an exposed flame with serious risks to the technician's physical integrity.

- Check if the electrical protection plastic cover is properly inserted.



Failure to use or improperly fix the plastic cover on the electrical terminal may expose the technician to risk of electric shock and fire.

Horizontal lines for notes.

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