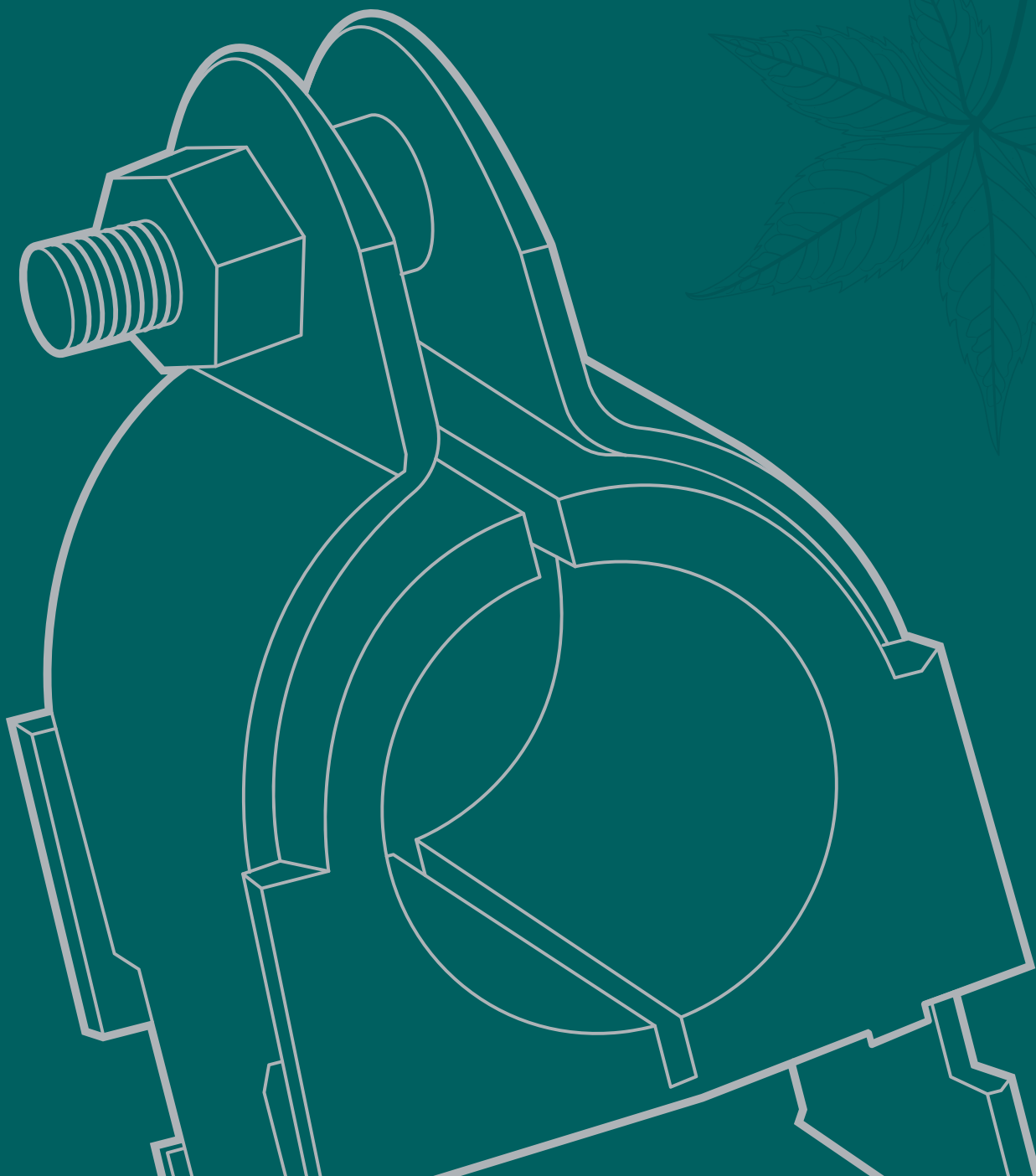




the engineers bible
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Introduction

Hi, I'm Ed, and Welcome to our Product Catalogue!



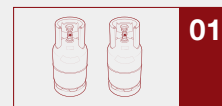
You'll see me in and around the catalogue talking all things 'fridge! Tech tips, interesting facts and records relating to the world of refrigeration.

This catalogue covers installation materials, service products, tools (have a look, lots of new products) and refrigeration equipment. It has been divided into colour coded sections to aid navigation and the comprehensive Index at the back helps you find products easily.

Related Products...

We've also included icons at the bottom of each page to help remind you of items that are related to the products you're looking at. For example, if you are looking at the page covering copper tube, you may need fittings, tube cutter, pipe clamps or insulation.

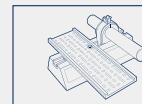
The icons across the bottom of the page will show a number and this relates to the section containing related items. We hope you find it useful!



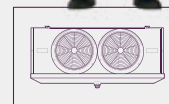
01



02



03



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Detailed Index...

At the back we've also included useful conversion formulas and data for your use followed by over 1100 products listed in the index.



Dedicated Catalogues...

We haven't forgotten Air-Conditioning products, or the need of the Industrial sector! These now have their own dedicated catalogues covering MHI for VRF, PAC and RAC systems as well as a Carrier brochure for their range of splits. Another covers Danfoss Industrial Products in detail.

Please ask one of my colleagues for copies!

We hope you like the catalogue and find it useful and informative. See you soon...

Ed

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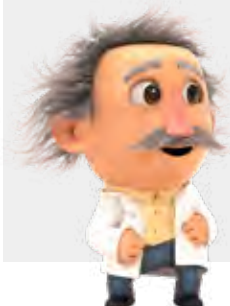
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Large Refrigeration Project?



Make sure you call our team of experts for competitive pricing on all your heavy commercial refrigeration projects, as well as assistance with technical support and equipment selection.

Get in touch with your local branch today!



VRF?

GO

HEAVY



Go HEAVY with your next VRF Project...

Easily design your own system using the easy to use E-Solution software so you have total design control, or pass it to us. With 92 types of indoor units, 17 concealed or exposed fan coils MHI VRF systems cover every application. Using 2 pipe & 3 pipe configurations MHI VRF gives total flexibility and undeniable reliability at a commercially realistic cost.

Contact your local branch and GO HEAVY today!



**MITSUBISHI
HEAVY INDUSTRIES**

AIR CONDITIONING
& WATER HEATING

WHY GO HEAVY?

SPLITS

MHI offer 3 ranges, each with increasing specification and efficiency levels. Using inverter driven systems operating on R410A and R32 there is a huge range of indoor units available from stock, offering a variety of solutions for every installation.

MULTI-SPLITS

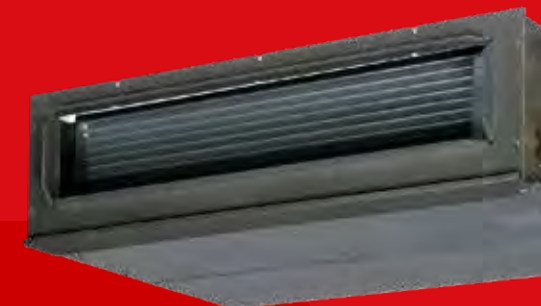
MHI Multi-splits allow you to mix and match up to 6 indoors with one outdoor, different style, different duty. Total flexibility at a great price!

LOYALTY

MHI genuinely rewards loyalty with dedicated support staff, specification support and project design. We also offer full training, branded workwear and 7 year warranty covering Splits & VRF through our 3 Diamond Dealer & 3 Diamond Partner schemes.

WARRANTY

With 5 a year warranty as standard, MHI offers 7 year warranty if you become a 3 Diamond Dealer or Partner.



3DIAMOND LOYALTY SCHEME

BECOME A 3DIAMOND DEALER OR PARTNER!

If you are a contractor holding F-Gas Certification, why not join our 3Diamond Loyalty Scheme in order to gain extended warranty of up to 7 years for MHI products and some quality branded clothing?

For more information please contact your local branch, or contact MHI Direct...

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Turn to the experts



The Carrier range of split systems offer full App control linked to a very competitive price!



Our Carrier mobile units offer maximum cooling, and heating, for your money.

Simple to install, effective, efficient & pleasing to the eye.





TRANSCRITICAL CO2 PACKS

FLOOR MOUNTED EVAPORATORS

SCM

FRIGO

FRIGA-BOHN

Our parent company, Beijer Ref, own production facilities throughout the world manufacturing a wide range of packs, chillers, pumping stations and outdoor packaged solutions. In partnership with Friga-Bohn Industrial Evaporators and Condensers we have the solution for **all** Heavy Commercial applications.

Contact your local branch with your project and our specialist Heavy Commercial technical team will design a commercially acceptable solution.

SPEAK TO THE SPECIALISTS...

when it comes to your next **Heavy Commercial Refrigeration** project!





COMPRESSOR ONLY PACKS

COMMERCIAL PACKS

LARGE FLAT & V BLOCK CONDENSERS



BEIJER REF



240196

240196

refrec

refrec

RECEIVER CYLINDER - RECEIVER
 NON FLAMMABLE COMPRESSED GAS
 RECEIVER
 FGA
 MAX FILL Weight 20kg
 UN 3078

RECEIVER CYLINDER - RECEIVER
 NON FLAMMABLE COMPRESSED GAS
 RECEIVER
 MAX FILL Weight 20kg
 UN 3078

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NON FLAMMABLE
 COMPRESSED
 GAS

NON FLAMMABLE
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RECOVERY
 MAX FILL Weight 20kg
 UN 3078

RECOVERY
 MAX FILL Weight 20kg
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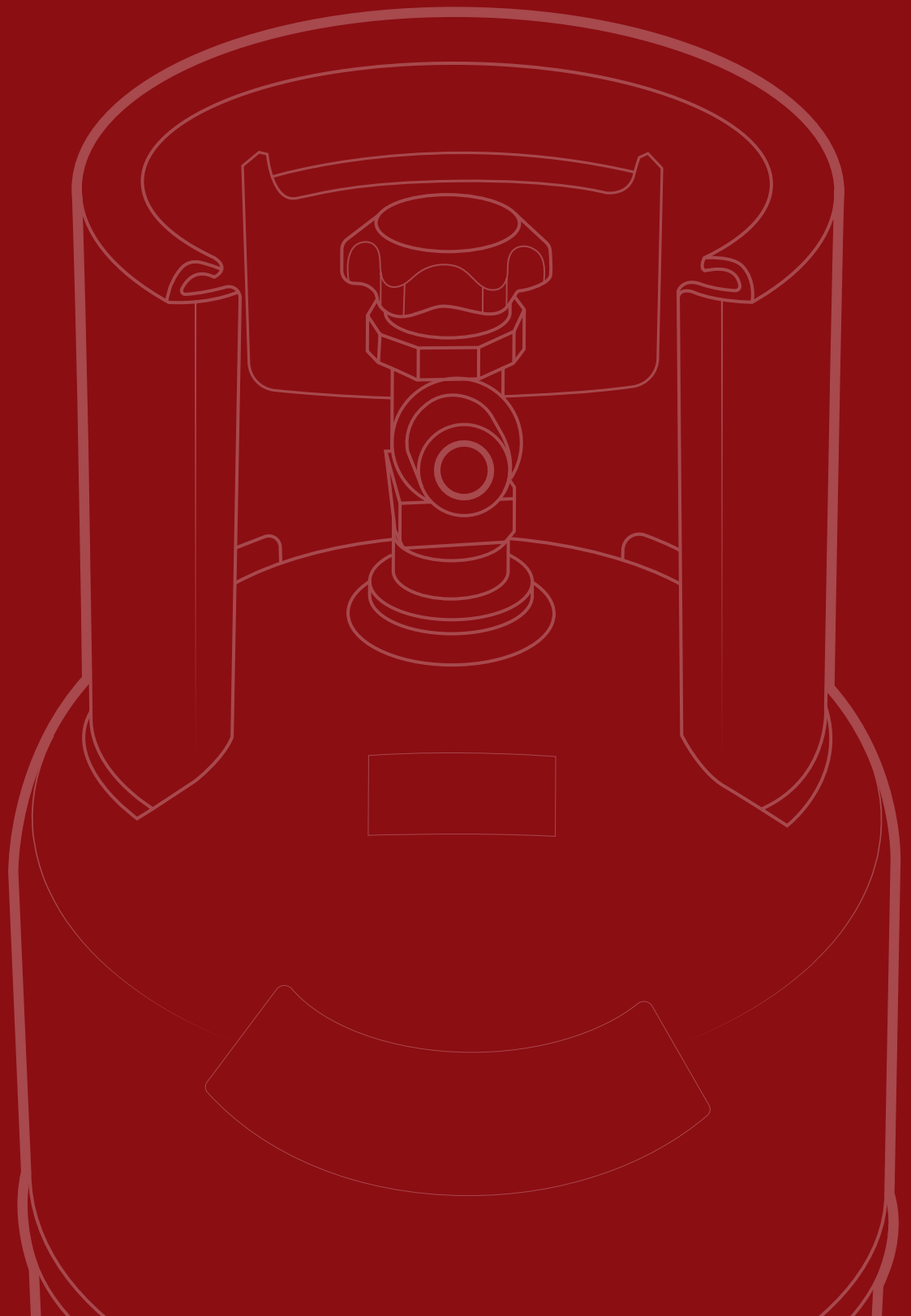
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RECOVERY
 MAX FILL Weight 20kg
 UN 3078

SECTION ONE

Refrigerant



A Guide to F-Gas Regulations

Introduction

Fluorinated gases (F-gases) are a family of man-made chemicals that are very powerful greenhouse gases. Emission of even a small quantity of an F-Gas to the atmosphere is harmful to the environment. Most F-Gases are between 1,000 and 20,000 more powerful than CO₂ in terms to Global Warming Potential (GWP).

The F-Gas Regulations EU 517/2014 took effect on 1st January 2015, making commonly used HFC's such as R404A, no longer viable as long term refrigerant choices due to their high GWP.

Background

Until 2015, the accepted default refrigerant for most refrigeration applications was R404A, due to its ability to be applied to high, medium and low temperature applications without special considerations to equipment or system design.

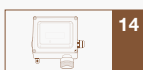
Replacement refrigerants such as R448A and R449A which have a lower GWP, offer a practical alternative but also present some challenges of their own in trying to match all the necessary requirements of such a versatile refrigerant. With availability of equipment restricted to certain models, or compressor types / sizes, and special consideration needed for their use on low temperature applications, the following pages show the refrigeration equipment currently approved as suitable for the various refrigerants on offer.

F-Gas Legislation

The use of virgin fluorinated greenhouse gases with a GWP >2500 to service or maintain refrigeration equipment with a charge size of 40 tonnes of CO₂ equivalent or more shall be

prohibited from 1st January 2020. The charge size equivalent to 40 tonnes CO₂ is shown in the table below.

Refrigerant	Typical Application	GWP	Temperature Glide (K)	Charge equivalent to 40 tonnes CO ₂	Safety Code
R1234yf	Automotive AC	4	0	10,000kg	A2L
R134a	HT/MT	1430	0	27.97kg	A1
R32	AC	675	6.15	59.26kg	A2L
R404A	LT/MT	3922	0.75	10.20kg	A1
R407A	LT/MT	2107	6.5	18.98kg	A1
R407C	HT/AC	1600	7.1	25.00kg	A1
R407F	LT/MT	1825	6.4	21.92kg	A1
R410A	HT/AC	2088	0.1	19.16kg	A1
R417A	AC	2346	5.1	17.05kg	A1
R422A	LT/MT	3143	2.4	12.73kg	A1
R422D	LT/MT	2729	4.8	14.66kg	A1
R434A	LT/MT	3245	2.7	12.33kg	A1
R448A	MT	1387	6.1	28.48kg	A1
R449A	MT	1397	6.1	28.63kg	A1
R450A	MT	604	3.8	66.23kg	A1
R452A	LT/MT	2140	5.4	18.69kg	A1
R454A	LT/MT	239	5	162.60kg	A2L
R454C	LT/MT	148	6	270kg	A2L
R455A	LT/MT	148	8	270kg	A2L
R513A	MT	631	0.6	63.39kg	A1
R744 (CO ₂)	LT/MT	1	0	40,000kg	A1



The F-Gas Regulations (EU 517/2014) introduced a phase-down mechanism which implements a gradually declining cap on the total placement of bulk HFCs (in tonnes of CO₂ equivalent) on the market in the EU.

Year	Phase-Down Percentage
2016-17	93%
2018-20	63%
2021-23	45%
2024-26	31%
2027-29	24%
2030	21%

F-Gas Legislation




NEW Installation Bans

Products and Equipment	Date of Prohibition
Refrigerators and freezers for commercial use (hermetically sealed systems) containing HFCs with GWPs of 2500 and over	January 1st 2020
Refrigerators and freezers for commercial use (hermetically sealed systems) containing HFCs with GWPs of 150 or greater	January 1st 2022
Stationary refrigeration equipment that contains, or that relies upon for its functioning, HFCs with GWPs of 2500 or greater (except equipment for temperatures below -50°C)	January 1st 2020
Multipack centralised refrigeration systems for commercial use with a capacity of 40 kW or greater that contain, or that rely upon for their functioning, fluorinated greenhouse gases with GWP of 150 or greater (except in the primary refrigerant circuit of cascade systems, where fluorinated greenhouse gases with a GWP of less than 1500 may be used)	January 1st 2022
Movable room air-conditioning appliances (hermetically sealed equipment which is movable between rooms by the end user) that contain HFCs with GWP of 150 or greater	January 1st 2020
Single split air-conditioning systems containing less than 3kg of fluorinated greenhouse gases, that contain, or that rely upon for their functioning, fluorinated greenhouse gases with GWP of 750 or greater	January 1st 2025





Service & Maintenance Ban

Products and Equipment	Date of Prohibition
The use of all VIRGIN Refrigerants with a GWP of 2500 or greater to service existing equipment with a charge size of 40MT CO ₂ e or greater	January 1st 2020
The use of all RECLAIMED Refrigerants with a GWP of 2500 or greater to service existing equipment with a charge size of 40MT CO ₂ e or greater	January 1st 2030

Need to Install a New System?

-  Lower GWP Refrigerants (R448A, R449A & R452A)
-  Virgin R404A Refrigerant
-  Reclaimed R404A Refrigerant

Adding R404A to Existing System?

System Charge	<10kg	>10kg
Virgin Refrigerant		
Reclaimed Refrigerant		

Exceptions

-  Systems below -50°C
-  Military Applications

EFFECTS REFRIGERANTS GWP 2500+ (R404A, R422A, R434A, R507)



An Introduction to Sustainable Refrigerants

To meet the requirements of the F-Gas regulation phase down process, it is necessary to make use of refrigerants with much lower GWP. This means that the RAC industry will use new A2L refrigerants as part of this process, as the HFC phase down take effect.

A feature of A2L products is that they exhibit lower flammability however, these new refrigerants can be used safely in a wide range of applications, providing guidance and regulations are observed and good practice is used. Due to their lower flammability, A2L refrigerants are intended for use in equipment specifically designed for these products, so A2L's are not retrofit alternatives.

A2L refrigerants are used in a variety of applications. For instance, from 1st January 2017, all new cars produced in Europe have contained a refrigerant with a GWP of less than 150 in their A/C system. The product of choice is R1234yf and millions of cars on European roads are now using this refrigerant.

R32 (an HFC classified as A2L) is firmly established as the first choice alternative to R410A in new air conditioning systems, due to its similarity in performance.

In commercial refrigeration, the A2L front runners are R454C and R455A. These refrigerants are HFO blends with a GWP of 148 and suitable for both LT and MT applications.

Practical Aspects Of Using A2L Refrigerants

All technicians that carry out work on stationary RAC systems must hold an F-Gas handling certificate. Existing certificates issued in accordance with the 2006 EU F-Gas Regulation remain valid, in accordance with the conditions under which they were originally issued.

Service Equipment

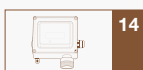
Many of the service tools used for current non-flammable (A1) refrigerants can be used for servicing A2L refrigerants. However, some service equipment, due to the electrical components and motors, should be specifically designed for use with lower flammability A2L refrigerants (e.g. R32, R1234yf etc.). Equally, tools such as manifolds, leak detectors and reclaim devices need to be compatible for use with A2L refrigerants. Flare connections and pipework, as well as pressure testing requirements, remain the same. Providing the required risk assessments* have been made beforehand, installation of an A2L system should be no more difficult than an A1 system. A2L service items are available from all Beijer Ref UK & Ireland companies.

*Risk assessment guidance will soon be available from the British Refrigeration Association.

The Natural Choice



SCM have developed a range of CO₂ transcritical condensing units with a very low carbon footprint and lower energy consumption than the traditional HFC solutions. Factory programmed for an easy start-up, the Cubo₂ Smart is easy to install and maintain.



Tonnes CO₂ Equivalent - What Does it Mean?

The use of virgin refrigerants with a GWP > 2500 to service or maintain refrigeration equipment with a charge size of 40 tonnes of CO₂ equivalent or more shall be prohibited from 1st January 2020. This provision shall not apply to military equipment or equipment intended for applications designed to cool products to temperatures below -50°C. Calculation to work out the Tonnes CO₂ Equivalent:

Mass (in kg) of system charge x GWP value divided by 1000 = tonnes CO₂ equivalent (kg)

Leak Checks & The Law, When & Why?

From the 1st January 2015, operators of equipment that contain fluorinated greenhouse gases in quantities of 5 tonnes of CO₂ equivalent or more and not contained in foams shall ensure that the equipment is checked for leaks.

This applies to operators of stationary refrigeration equipment, stationary air conditioning equipment, stationary heat pumps, stationary fire protection equipment, refrigeration units of refrigerated trucks and trailers.

Tonnes CO ₂ Equivalent Charge Weight (kg)	Example R404A Charge (kg)	Example R448A Charge (kg)	Frequency of Inspection	Frequency if Leak Detection Equipment is Fitted	Leak Detection Equipment Mandatory
≥5 and ≤50	≥1.28 and ≤12.8	≥3.56 and ≤35.6	Every 12 months	Every 24 months	No
≥50 and ≤500	≥12.8 and ≤128	≥35.6 and ≤356	Every 6 months	Every 12 months	No
≥500	≥128	≥356	N/A	Every 6 months	Yes
Hermetic systems ≤10	≤2.55	≤7.12	None	None	No

Labelling & The Law, What's Required?

Since the 1st January 2017, RAC equipment placed on the market containing F-Gases should be labelled with a reference that the equipment contains fluorinated greenhouse gases, the name of the refrigerant, the quantity

of gas expressed in kg and its CO₂ equivalent along with its GWP value of the refrigerant. Typical indicative labelling for a system containing 0.2kg of R452A might be as follows:



Make: DANFOSS
 Model: 114X7092
 Serial No: 123456789
 Installation Date: 01/07/2020

Asset Reference:

Gas Type / ASHRAE No: R452A (GWP 2140)
 System Charge: 6.3kg
 System Equivalent CO₂ Charge: 13.4820 tonnes

CONTAINS FLOURINATED GREENHOUSE GASES COVERED BY THE KYOTO PROTOCOL

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General Replacement Guide

R404A & R-407A/C/F Replacements

Product Name	ASHRAE#	Applications ²	Safety Class ³	Equipment Type	Compatible Oil ⁴
Opteon™ XP40	R449A	LT, MT, AC	A1	New, Retrofit	POE
Solstice N40	R448A	LT, MT	A1	New, Retrofit	POE
Opteon™ XP44	R452A	LT, MT, TR	A1	New, Retrofit	POE
Opteon™ XL40	R454A	LT, MT, AC, HP	A2L	New	POE
Opteon™ XL20	R454C	LT, MT, AC	A2L	New	POE

R404A Retrofit Recommendation: **LT/MT: R449A (XP40), R448A (N40):** Excellent performance match & lower energy consumption with 64% lower GWP.
LT: R452 (XP44): Closest match & low discharge temperature with 45 % lower GWP.

R134a Replacements

Product Name	ASHRAE#	Applications ²	Safety Class ³	Equipment Type	Compatible Oil ⁴
Opteon™ XL10	HFO-1234yf	MT	A2L	New	POE
Opteon™ XP10	R454A	MT	A1	New, Retrofit	POE

R134a Retrofit Recommendation: **R513A (XP10) :** Excellent performance match with 56% lower GWP vs. R134a.

R123 & R245fa Replacements

Product Name	ASHRAE#	Applications ²	Safety Class ³	Equipment Type	Compatible Oil ⁴
Opteon™ MZ	HFO-1336mzz(Z)	HP, WHR	A1	New	POE
Opteon™ XP30	R514A	AC	B1	New, Retrofit	POE

R22 Replacements

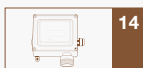
Product Name	ASHRAE#	Applications ²	Safety Class ³	Equipment Type	Compatible Oil ⁴
Opteon™ XP40	R449A	LT, MT, AC	A1	New, Retrofit	POE
Solstice N40	R448A	LT, MT	A1	New, Retrofit	POE
Opteon™ XL20	R454C	LT, MT, AC	A2L	New	POE
Freon™ MO99	R438A	AC	A1	Retrofit	MO, AB POE

R22 Retrofit Recommendation: **LT/MT R449A (XP40), R448A (N40):** Excellent performance match & lower discharge temperature vs. R22 with 27% lower GWP.
AC: R438A (MO99): Closest MO compatible performance match to R22 in A/C.

² LT = Low Temperature, MT = Medium Temperature, A/C = Air Conditioning, Auto = Automotive Air Conditioning,

TR = Transport, HP = Heat Pump, WHR = Waste-Heat Recovery ³Safety Class according to ASHRAE Standard 34 and ISO 817

⁴ MO = Mineral Oil, AB = Alkylbenzene, POE = Polyol Ester



Flammability References

Refrigerants are classified according to their flammability and toxicity. "A" classification indicates low toxicity ("B" is high toxicity). The numbers 1, 2 or 3 following the A or B indicate the degree of flammability. The safety groups A1, A2 and A3 are explained in the tables below.

Safety Classification	Lower Flammability Level, % In Air By Volume	Heat Of Combustion, J/kg	Flame Propagation
A1	-	-	No flame propagation when tested at 60°C and 101.3kPa
A2, lower flammability	>3.5	<19,000	Exhibit flame propagation when tested at 60°C and 101.3kPa
A2L, lower flammability, proposed sub classification	>3.5	<19,000	Exhibit flame propagation when tested at 60°C and 101.3kPa and have a maximum burning velocity of \leq 10cm/s when tested at 23°C and 101.3kPa.
A3, higher flammability	\geq 3.5	<19,000	Exhibit flame propagation when tested at 60°C and 101.3kPa



Refrigerant

HFC Refrigerants

HFCs (hydrofluorocarbons) are the third generation of fluorine-based gases. These products are categorised as having zero ODP (Ozone Depleting Potential) and medium to high GWP (Global Warming Potential) and so offer a more environmentally friendly alternative to CFCs and HCFCs. HFCs are used in a wide range of refrigeration and air conditioning equipment specifically designed for them, and as “drop in” retrofit gases for older CFC or HCFC equipment.

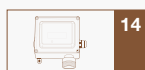
ASHRAE Name	GWP	Max. Charge Size (Equivalent to 40 tonnes CO ₂ [*])	Safety Classification	Flammability
R134a	1430	29.97kg	A1	No
R23	14800	2.72kg	A1	No
R32	675	59.26kg	A2	Yes
R404A	3922	10.20kg	A1	No
R407A	2107	18.98kg	A1	No
R407C	1774	25.00kg	A1	No
R407F	1825	21.92kg	A1	No
R410A	2088	19.16kg	A1	No
R413A	2053	20.53kg	A2	No
R417A	2346	17.05kg	A1	No
R422A	3143	12.73kg	A1	No
R422D	2729	14.66kg	A1	No
R424A	2440	16.16kg	A1	No
R426A	1509	26.56kg	A1	No
R428A	3600	11.12kg	A1	No
R434A	3245	12.33kg	A1	No
R437A	1805	22.16kg	A1	No
R438A	2265	17.68kg	A1	No
R442A	1888	21.2kg	A1	No
R454C	148	272kg	A2	No
R507	3985	10.04kg	A1	No
R508A	13396	3.04kg	A2	No
R508B	13396	2.96kg	A1	No

*CO₂ equivalent calculated based on 1kg of refrigerant

HFO & HFO Blends

- HFOs (hydrofluoro-olefins) are the fourth generation of fluorine-based gases.
- HFC refrigerants are composed of hydrogen, fluorine and carbon atoms connected by single bonds between the atoms.
- HFO refrigerants are composed of hydrogen, fluorine and carbon atoms but contain at least one double bond between the carbon atoms.

ASHRAE Name	GWP	Max. Charge Size (equivalent to 40 tonnes CO ₂)	Safety Classification	Flammability
R1234yf	4	-	A2L	Low
R449A	1397	28.63kg	A1	No
R448A	1390	28.48kg	A1	No
R452A	2141	18.69kgww	A1	No
R513A	631	69.39kg	A1	No

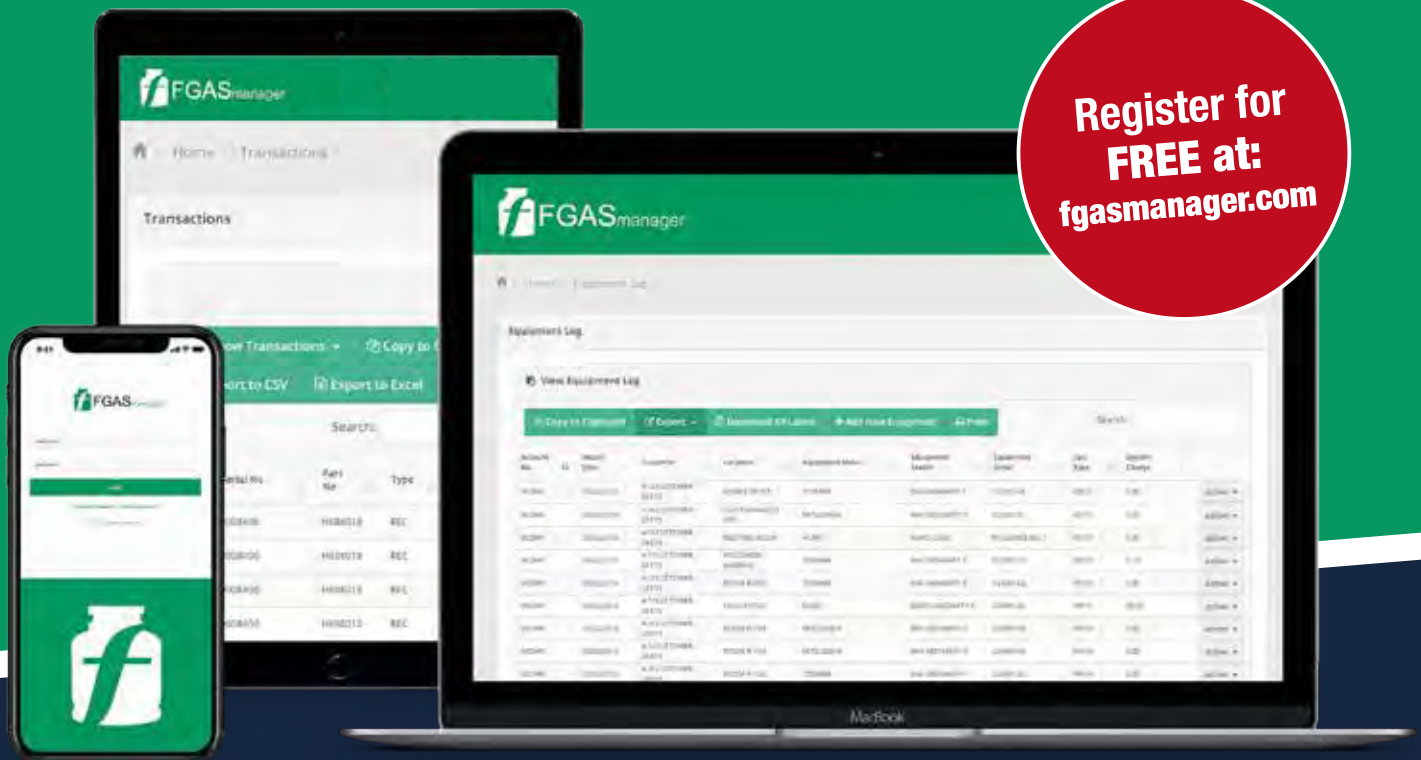




Control Your Compliance With FGASmanager



ACR NEWS AWARD WINNER
Ancillary of the Year 2020



For more information go to  **YouTube** and search for 'fgasmanager'

- Log Usage/Recovery
- Automated Paperwork
- Equipment Log
- Built-in Calender
- Customised Reports
- Scan In/Out with App
- Organise Collections
- Assign bottles to Engineers
- **COMPLETELY FREE!**

FGASmanager is a website and app developed for the comprehensive management of all your F-Gas requirements.

Refrigerant

Natural Refrigerants

Natural refrigerants are chemicals which occur in nature's bio-chemical processes. They do not deplete the ozone layer and make a negligible, or zero contribution to global warming. The high efficiency of natural refrigerants also means that they make a lower indirect contribution to global warming.

ASHRAE Name	Description	GWP	Max. Charge Size (Equivalent to 40 tonnes CO ₂)	Safety Classification	Flammability
R717	Ammonia	0	-	B2L	Low
R744	CO ₂ (Carbon Dioxide)	1	40,000kg	A1	No
R1150	Ethylene	4	-	A3	Highly Flammable

Oxygen-Free Nitrogen

- Leak & Strength testing
- Purging to prevent oxidation during brazing

Type
OFN Nitrogen
Tracer Gas (Leak Trace)

Reclaim & Receiver Cylinders

Type
Recovery
Recovery - R410A Only
Recovery - High Pressure
Recovery - Hydrocarbon
Receiver

Hydrocarbon Refrigerants

Type	GWP	Safety Classification
R1270	2	A3
R290	3	A3
R600a	4	A3

RECEIVER

REFRIGERANT IN



REFRIGERANT RETURN TO SYSTEM

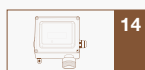
Receiver cylinders are designed to hold refrigerant while maintenance or repair is undertaken. They must be returned empty.

RECOVERY

REFRIGERANT RECOVERY



Recovery cylinders are used for the return of used or reclaimed refrigerant for processing.



Cylinder Deposits/Rentals

Standard Refrigerant & Recovery Cylinders

As from April 2018, and as an account customer, you will benefit from six months free rental on all standard refrigerant and recovery cylinders. Following the six months free rental, and in line with industry norms, a monthly rental fee will be invoiced. The cylinder rental will continue until the cylinder is returned or has been on rent for 18 months (including the free rental period). Following the 18 months, a non-return cylinder charge will be invoiced. Should the cylinder be returned between the 18th and 24th month, 50% of the non-return charge will be credited.

OFN (Nitrogen)

OFN (Nitrogen) cylinders will benefit from three months free rental, followed by a daily charge. The cylinder rental will continue until the cylinder is returned or has been on rent for 12 months (including the free rental period). Following the 12 months, a non-return cylinder charge will be invoiced. Should the cylinder be returned between the 12th and 18th month, 50% of the non-return charge will be credited.

High Pressure Cylinders

High pressure cylinders (R23/R508) will benefit from three months free rental, followed by a monthly rental charge. The cylinder rental will continue until the cylinder is returned or has been on rent for 15 months (including the free rental period). Following the 15 months, a non-return cylinder charge will be invoiced. Should the cylinder be returned between the 15th and 21st month, 50% of the non-return charge will be credited.



DID YOU KNOW...

At any one time our business has over **90,000 cylinders** in the field!

Refrigerant Accessories

Gas Bottle Connectors

Description	Part No.
Gas Bottle Connector 1/4" X 3/4"	1316
Gas Bottle Connector 1/4" X 5/8" - C/W Gasket	1318
Gas Bottle Connector 3/8" X 5/8" - C/W Gasket	1319
R600/R290 Bottle Adaptor	9881202
Gas Bottle Gasket	1320
A2L Bottle Connector 1/4 left hand thread	1345

Charge Labels

Description	Part No.
R134a Labels (pkt of 20)	188841
R404A Labels (pkt of 20)	188842
R407C Labels (pkt of 20)	188843
R407F Labels (pkt of 20)	188850
R410A Labels (pkt of 20)	188844
R413A Labels (pkt of 20)	188845
R417A Labels (pkt of 20)	188846
R442A Labels (pkt of 20)	188851

Log & Report Sheets

Description	Part No.
Breakdown Report Sheets (pkt of 50)	ZZZ270
Installation Report Sheets (pkt of 50)	ZZZ271
Air Conditioning Service Report Sheets (pkt of 50)	ZZZ273
Commissioning Report Sheets (pkt of 50)	ZZZ272
Refrigeration Service Report Sheets (pkt of 50)	160500
Pipe Strength & Joint Tightness Test Sheets (pkt of 50)	160501

Refrigerant Flow Labels

Description	Part No.
R134a Flow Labels (pkt of 50)	188861
R404A Flow Labels (pkt of 50)	188862
R407C Flow Labels (pkt of 50)	188863
R407F Flow Labels (pkt of 50)	188871
R422D Flow Labels (pkt of 50)	188865

Related Items:



13

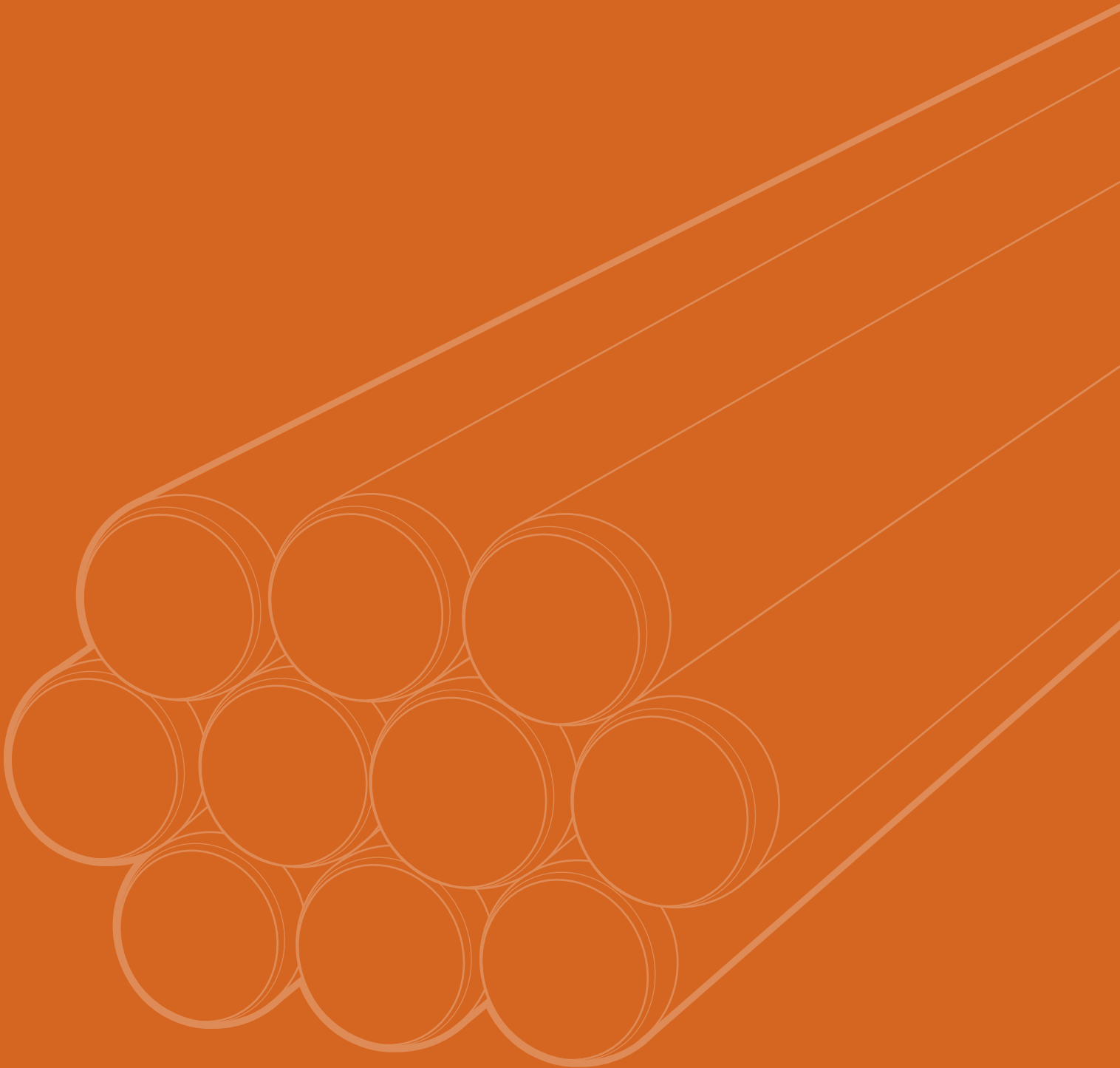


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SECTION TWO

Pipe Products



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Waste Pipe



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Access Fittings



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Brass Fittings



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High Pressure Hose & Fittings



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Fitting Consumables

3-metre Straight

OD (")	Gauge	Wall (")	Weight per Length (kg)	Weight per Metre (kg)	Part No.
3/8	21	0.032	0.56	0.19	34000
1/2	20	0.036	0.84	0.28	34001
5/8	20	0.036	1.07	0.36	34002
3/4	19	0.04	1.42	0.47	34003
3/4	18	0.048	1.68	0.56	34004
7/8	18	0.048	1.98	0.66	34005
7/8	16	0.064	2.64	0.86	34006
1.1/8	18	0.048	2.58	0.86	34007
1.1/8	16	0.064	3.38	1.13	34008
1.1/8	14	0.08	4.24	1.27	34009
1.3/8	18	0.048	3.17	1.06	34010
1.3/8	16	0.064	4.17	1.39	34011
1.5/8	18	0.048	3.77	1.26	34012
1.5/8	16	0.064	4.97	1.66	34013
1.5/8	14	0.08	6.67	2.22	34014
2.1/8	18	0.048	5.07	1.69	34015
2.1/8	16	0.064	6.72	2.24	34016
2.1/8	14	0.08	8.31	2.77	34017
2.5/8	18	0.048	6.29	2.10	34018
2.5/8	16	0.064	8.34	2.78	34019
2.5/8	14	0.080	10	3.33	34020
2.5/8	12	0.104	13.31	4.44	34021
3.1/8	16	0.064	9.97	3.32	34022
3.5/8	16	0.064	11.60	3.87	34023
4.1/8	16	0.064	13.51	4.50	34024

Pipeline solutions for refrigeration and air conditioning, all to EN 12735-1

Material Analysis:

- Material grade phosphorus de-oxidised copper; Cu-DHP or CW024A as defined in BS EN 1976
- Minimum copper content 99.90% (including silver)
- Phosphorus 0.015-0.040%
- Total impurity maxima 0.060% (excluding phosphorus and silver)
- The melting point of copper is 1083° and it has a density of 8.9 gm/cc

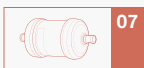


6-metre Straight

OD (")	Gauge	Wall (")	Weight per Length (kg)	Weight per Metre (kg)	Part No.
3/8	21	0.032	1.11	0.19	34100
1/2	20	0.036	1.69	0.28	34101
1/2	18	0.048	2.35	0.39	34102
5/8	20	0.036	2.14	0.36	34103
5/8	19	0.04	2.37	0.40	34104
5/8	18	0.048	2.82	0.47	34105
3/4	19	0.04	2.83	0.47	34106
3/4	18	0.048	3.36	0.56	34107
3/4	16	0.064	4.46	0.74	34108
7/8	18	0.048	3.95	0.66	34109
7/8	16	0.064	5.28	0.88	34110
1.1/8	18	0.048	5.15	0.86	34111
1.1/8	16	0.064	6.75	1.13	34112
1.1/8	14	0.08	8.48	1.41	34113
1.3/8	18	0.048	6.35	1.06	34115
1.3/8	16	0.064	8.34	1.39	34116
1.3/8	14	0.08	11.18	1.86	34117
1.3/8	12	0.104	13.42	2.24	34118
1.5/8	18	0.048	7.54	1.26	34119
1.5/8	16	0.064	9.93	1.66	34120
1.5/8	14	0.08	13.34	2.22	34121
1.5/8	12	0.104	17.08	2.85	34122
2.1/8	18	0.048	10.13	1.69	34123
2.1/8	16	0.064	13.43	2.24	34124
2.1/8	14	0.08	16.61	2.77	34125
2.1/8	12	0.104	22.70	3.78	34126
2.5/8	18	0.048	12.57	2.10	34127
2.5/8	16	0.064	16.69	2.78	34128
2.5/8	14	0.08	20.68	3.45	34129
2.5/8	12	0.104	26.61	4.44	34130
3.1/8	16	0.064	19.95	3.32	34131
3.1/8	14	0.08	24.74	4.12	34132
3.1/8	12	0.104	31.89	5.31	34133
3.5/8	16	0.064	23.21	3.87	34134
3.5/8	14	0.08	28.80	4.80	34135
4.1/8	16	0.064	27.03	4.51	34137
4.1/8	14	0.08	33.56	5.59	34138
4.1/8	12	0.104	43.35	7.22	34139

Hard Drawn 6-metre

OD (")	Gauge	Wall (")	Weight per Length (kg)	Weight per Metre (kg)	Part No.
7/8	18	0.048	3.92	0.65	34500
1.1/8	18	0.048	5.15	0.86	34501
1.1/8	14	0.08	8.48	1.41	143117
1.3/8	12	0.104	13.42	2.24	143127
1.3/8	18	0.048	6.37	1.06	34502
1.5/8	18	0.048	7.54	1.26	34503
2.1/8	18	0.048	10.08	1.68	34504
2.5/8	18	0.048	12.57	2.10	34505
4.1/8	16	0.064	27.03	4.51	34507
3.1/8	16	0.064	19.95	3.32	34506



Copper Tube - Coils

6-metre Coil



OD (")	Gauge	Part No.
1/4	22	34200
3/8	21	34201
1/2	21	34202
5/8	20	34203

15-metre Coil



OD (")	Gauge	Part No.
1/4	22	34300
3/16	22	143036
1/8	22	142015
3/8	21	34301
1/2	21	34302
5/8	20	34303
7/8	19	34305

30-metre Coil



OD (")	Gauge	Part No.
3/16	22	34400
1/4	22	34401
5/16	22	34402
3/8	21	34403
1/2	21	34404
5/8	20	34405
3/4	19	34406
7/8	19	34407

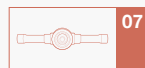
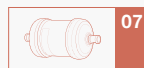
Pipeline Tube specification suitable for refrigeration and air conditioning, all to EN 12735-1:2016

Capillary Tube

Length (m)	ID (")	OD (")	Part No.
15	0.031	0.085	142844
30	0.026	0.07	142836
30	0.036	0.075	142852
30	0.042	0.085	142860
30	0.047	0.085	142879
30	0.052	0.09	142887
30	0.054	0.106	142889
30	0.064	0.11	142895
12	0.125	0.064	BC-4
10	0.81	0.031	BC-1
12	0.93	0.04	BC-2
12	0.93	0.052	BC-3

DID YOU KNOW...

18 million tonnes of copper are mined across the world each year!

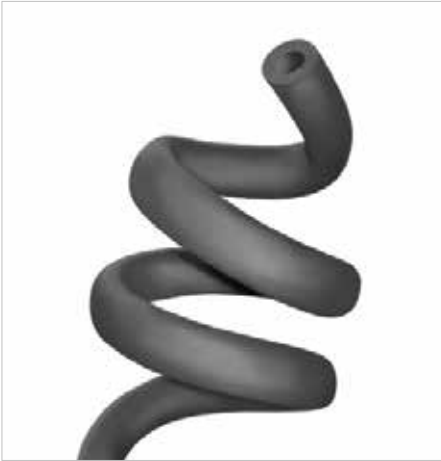


THE IDEAL SOLUTION

FOR ALL DOMESTIC, COMMERCIAL AND INDUSTRIAL APPLICATIONS.



Range Overview



K-FLEX® ST - Class 0

K-FLEX® ST products meet all the requirements demanded by civil and industrial refrigeration, air conditioning, plumbing, insulation of tanks, fittings, water pipes and all other applications that need thermal insulation.

- Elastomeric insulation for all civil and industrial applications
- High performance for all applications in a temperature range from -165 °C to +110 °C
- Prevents the risk of condensation and improves energy saving
- Class of reaction to fire euroclass B^L-s2, d0
- Very fine closed cellular structure and high technical performance
- Resistant to mould, fungi and bacteria
- Light and flexible



K-FLEX® SRC ECO

K-FLEX® SRC ECO is an HALOGEN FREE insulation with reduced smoke emission. Is an insulating product comprising a layer of closed cell elastomeric foam and a protective jacket. The special K-FLEX® SRC ECO configuration offers a unique product which, in case of fire, retards the emission of smoke and fumes which are also free of hydrohalic acids and organochlorine compounds. K-FLEX® SRC ECO is ideal for thermal and acoustic insulation of walls and technical installations where low smoke emission is required in case of fire.

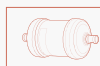
- Products with reaction to fire Euroclass BL-s1, d0 / B-s2, d0
- Low smoke emission in case of fire
- Excellent thermal conductivity
- High resistance to water vapour diffusion
- Application temperatures from -40 °C to +85 °C



K-FLEX® K-COAT

Flexible K-FLEX® insulation with outer covering to withstand mechanical impact.

- Protection against mechanical damage
- Can be used on underground pipework, including mains cold water and ground source heat pump pipes.
- Washdown waterproof and easy to clean
- Built-in vapour barrier prevents condensation
- No additional painting required
- UV resistant reduces energy losses with a low thermal conductivity



K-FLEX® Class O Straight Lengths - 2m

Wall (")	OD (")	M/Ctn	Part No
1/4	1/4	496	K6925
1/4	3/8	364	K6926
1/4	1/2	316	K6927
1/4	5/8	266	K6928
3/8	1/4	352	K6937
3/8	3/8	266	K6938
3/8	1/2	234	K6939
3/8	5/8	192	K6940
3/8	3/4	136	K6941
3/8	7/8	136	K6942
3/8	1.1/8	98	K6943
3/8	1.3/8	76	K6944
3/8	1.5/8	60	K6945
3/8	2.1/8	46	K6946
1/2	1/4	200	K6949
1/2	3/8	172	K6950
1/2	1/2	162	K6951
1/2	5/8	136	K6952
1/2	3/4	98	K6953
1/2	7/8	98	K6954
1/2	1.1/8	78	K6955
1/2	1.3/8	58	K6956
1/2	1.5/8	48	K6957
1/2	2.1/8	34	K6958
1/2	2.5/8	26	K6959
1/2	3.1/8	24	K6960
1/2	3.1/2	42	K6998
1/2	4.1/8	16	K6962
1/2	4.1/2	16	K7657
3/4	3/8	98	K6963
3/4	1/2	88	K6964
3/4	5/8	78	K6965
3/4	3/4	66	K6966
3/4	7/8	64	K6967
3/4	1.1/8	48	K6968

Wall (")	OD (")	M/Ctn	Part No
3/4	1.3/8	36	K6969
3/4	1.5/8	32	K6970
3/4	2.1/8	24	K6971
3/4	2.5/8	18	K6972
3/4	3	18	K7658
3/4	3.1/8	14	K6973
3/4	3.1/2	14	K1989
3/4	4.1/8	12	K6990
3/4	4.1/2	12	K7005
1	1/2	54	K6974
1	5/8	52	K6975
1	3/4	42	K6984
1	7/8	42	K6976
1	1.1/8	40	K6977
1	1.3/8	24	K6978
1	1.5/8	22	K6979
1	2.1/8	16	K6980
1	2.5/8	12	K7010
1	3	10	K7009
1	3.1/8	8	K7011
1	3.1/2	8	K6985
1	4.1/8	6	K6947
1	4.1/2	6	K7015
1.1/4	5/8	36	K7016
1.1/4	7/8	32	K7017
1.1/4	1.1/8	24	K7018
1.1/4	1.3/8	22	K7019
1.1/4	1.5/8	16	k7060
1.1/4	1.1/4	14	K7615
1.1/4	2.1/8	12	K7021
1.1/4	2.5/8	10	K7022
1.1/4	3	8	K7023
1.1/4	3.1/2	8	K7024
1.1/4	4.1/2	6	K7025

K-FLEX® Class O Coils



Wall (")	OD (")	Length (m)	Part No
1/4	3/8	15	K7430
1/4	3/8	40	K7230
3/8	3/8	15	K7431
3/8	3/8	34	K7231
3/8	1/2	15	K7432
3/8	1/2	31	K7232
3/8	5/8	15	K7433
3/8	5/8	27	K7233
3/8	3/4	15	K7434
3/8	3/4	23	K7234
3/8	7/8	15	K7446
3/8	7/8	19	K7235
3/8	1.1/8	14	K7236
3/8	1.1/8	15	K7447
1/2	1/4	15	K7440
1/2	1/4	26	K7240
1/2	3/8	15	K7441
1/2	3/8	23	K7241
1/2	1/2	15	K7442
1/2	1/2	18	K7242
1/2	5/8	15	K7443
1/2	5/8	17	K7243
1/2	3/4	15	K7444
1/2	7/8	14	K7245
1/2	7/8	15	K7445
1/2	1.1/8	10	K7246
1/2	1.1/8	15	K7448



K-FLEX® Sheet

Thickness (mm)	Width (m)	Length (m)	Part No
10	0.5	2	K6991
13	0.5	2	K6992
19	0.5	2	K6993
25	0.5	2	K6994
32	0.5	2	K7014

Sheet (Self-Adhesive)

Thickness (mm)	Length (m)	Part No
10	2	K7636
13	2	K7650
19	2	K7661
25	2	K7663

K-FLEX® Endless Sheet

Thickness (mm)	Length (m)	Part No
6	30	K7635
13	14	K7651
19	10	K7558
25	8	K7664
32	6	K7666

Endless Sheet (Self-Adhesive)

Thickness (mm)	Length (m)	Part No
6	30	K7609
10	20	K7640
13	14	K7660
19	10	K7662
25	8	K7665
32	6	K7667



THE **IDEAL SOLUTION**

FOR ALL DOMESTIC, COMMERCIAL AND INDUSTRIAL APPLICATIONS.



K-FLEX® COLOR

- ▶ Colour coated insulation
- ▶ Aesthetic design
- ▶ Flexible and easy application
- ▶ Colour coding for different services
- ▶ UV protection

K-FLEX® ST

- ▶ Elastomeric insulation for all civil and industrial applications
- ▶ High performance for all applications in a temperature range from -165 °C to +110 °C
- ▶ Prevents the risk of condensation and improves energy saving
- ▶ Class of reaction to fire euroclass B_L-s2, d0
- ▶ Resistant to mould, fungi and bacteria



L'ISOLANTE K-FLEX (UK) Ltd
Unit 9, Coalville Business Park, Jackson Street, Coalville, Leics. LE67 3NR
T 01530 834 888
E sales@kflex.co.uk

www.kflex.com

K-FLEX® Self Seal 2m

Wall (")	OD (")	M/Ctn	Part No
3/8	3/4	136	K6941-A
3/8	7/8	136	K6942-A
3/8	1.1/8	98	K6943-A
3/8	1.3/8	78	K6944-A
3/8	1.5/8	60	K6945-A
3/8	2.1/8	46	K6946-A
1/2	7/8	98	K6954-A
1/2	1.1/8	78	K6955-A
1/2	1.3/8	58	K6956-A
3/4	5/8	78	K6965-A
3/4	3/4	66	K6966-A
3/4	1.1/8	48	K6968-A
3/4	1.1/2	24	K7623-A
3/4	2.1/8	24	K6971-A
1	5/8	52	K7632-A
1	7/8	42	K7634-A
1	1.5/8	22	K7637-A
1	2.1/8	16	K7631-A

K-FLEX® Iso Load

Description	Part No.
K-FLEX Iso Load Section 1M Half Round	K7020

K-FLEX® SRC ECO Lengths 1m



Wall (")	OD (")	Part No
5/8	3/8	K7625
1/4	1/2	K7617
3/8	1/2	K7618
1/2	1/2	K7619
5/8	1/2	K7620
7/8	1/2	K7623
1.1/8	1/2	K7648
1.3/8	1/2	K7649

K-FLEX® KCoat White 1m



Wall (")	OD (")	Part No
1/2	5/8	K1315WH-1M
1/2	3/4	K1320WH-1M
1/2	7/8	K1322WH-1M
1/2	1.1/8	K1328WH-1M
1/2	1.5/8	K1342WH-1M
1/2	2.1/8	K1354WH-1M
3/4	3/8	K1910WH-1M
3/4	1/2	K7540WH-1M
3/4	5/8	K7541WH-1M
3/4	3/4	K7542WH-1M
3/4	7/8	K7543WH-1M
3/4	1.1/8	K7544WH-1M
3/4	1.3/8	K7545WH-1M
3/4	1.5/8	K7546WH-1M
3/4	2.1/8	K7547WH-1M
3/4	2.5/8	K7550WH-1M
3/4	3.1/8	K1980WH-1M
3/4	4.1/8	K7555WH-1M
1	1/2	K2512WH-1M
1	7/8	K2522WH-1M
1	1.3/8	K2535WH-1M
1	1.1/2	K7570WH-1M

K-FLEX® ECO Lengths Black 2m

Wall (")	OD (")	Part No
1/2	3/8	KEB1310
1/2	1/2	KEB1312
1/2	5/8	KEB1315
1/2	7/8	KEB1322
1/2	1.1/8	KEB1328
1/2	1.3/8	KEB1335
1/2	1.5/8	KEB1342
3/4	7/8	KEB1922
3/4	1.3/8	KEB1935

K-FLEX® KCoat Black 1m



Wall (")	OD (")	Part No
1/2	3/8	K7608-1M
1/2	1/2	K7556-1M
1/2	5/8	K7530-1M
1/2	3/4	K7531-1M
1/2	7/8	K7532-1M
1/2	1.1/8	K7533-1M
1/2	1.3/8	K7534-1M
1/2	1.5/8	K7641-1M
3/4	3/8	K1910-1M
3/4	1/2	K7540-1M
3/4	5/8	K1915-1M
3/4	3/4	K1920-1M
3/4	7/8	K1922-1M
3/4	1.1/8	K7544-1M
3/4	1.3/8	K7545-1M
3/4	1.5/8	K1942-1M
3/4	2.1/8	K1954-1M
3/4	2.5/8	K1967-1M
1	1/2	K2512-1M
1	5/8	K2515-1M
1	3/4	K2520-1M
1	7/8	K7563-1M
1	1.1/8	K2528-1M
1	1.3/8	K2535-1M
1	1.5/8	K7566-1M
1	2.1/8	K7571-1M
1	2.5/8	K2567-1M



K-FLEX® SOLAR HT

Wall (")	OD (")	Length (m)	M/Ctn	Part No
3/8	3/8	2	192	KH1010
3/8	1/2	2	192	KH1012
3/8	5/8	2	172	KH1015
3/8	7/8	2	108	KH1022
3/8	1.1/8	2	98	KH1028
3/8	1.5/8	2	50	KH1042
1/2	3/8	2	140	KH1310
1/2	1/2	2	130	KH1312
1/2	5/8	2	112	KH1315
1/2	7/8	2	84	KH1322
1/2	1.1/8	2	64	KH1328
1/2	1.3/8	2	50	KH1335
1/2	1.5/8	2	40	KH1342
1/2	2.1/8	2	32	KH1354
3/4	1.1/8	2	48	KH1928
3/4	1.3/8	2	36	KH1935
3/4	1.5/8	2	32	KH1942
1	7/8	2	36	KH2522
1	1.1/8	2	32	KH2528
1	1.3/8	2	24	KH2535
1	1.5/8	2	24	KH2542
1	3	2	12	KH2576

K-FLEX® R90 Fire Protect Black



Wall (mm)	OD (mm)	Length (m)	M/Ctn	Part No
19	10	1	18	K7586
19	12	1	17	K7587
19	58	1	16	K7588
20	16	1	14	K7655
20	20	1	12	K7611
20	22	1	12	K7612
25	35	1	8	K7621
25	42	1	6	K7613
25	50	1	5	K7654
25	60	1	4	K7653

K-FLEX® SOLAR Sheet

OD (")	Length (m)	M/Ctn	Part No
25	1	8	KHSHE25
19	1	10	KHSHE19

ⓘ DID YOU KNOW...

L'ISOLANTE K-FLEX® is a worldwide market leader thanks to its focus on technological innovation and the quality of its products. These play an essential role in energy consumption control and the reduction of greenhouse gas emission.

Tape



Description	Part No
K-FLEX Black Tape 15M	K7000UB
K-FLEX SRC Eco Tape	K7622
K-FLEX Solar HT Tape	KX0002
K-FLEX Eco Black Tape	KX0003
K-FLEX IC Clad Tape 5cm x 50m	KX0004
Black K-Coat Tape 5cm x 50m	K7582
White K-Coat Tape 5cm x 50m	K7582WH

Adhesive Glue



Description	Part No
K-FLEX Glue Brush	KX0012
K-FLEX Adhesive Glue 0.25L	K7196
K-FLEX Adhesive Glue 0.50L	K6995
K-FLEX Adhesive Glue 1.00L	K6996
K-FLEX Glue K420 1.00L	KX0023
K-FLEX Special Glue 660G	KX0024

Paint



Description	Part No
K-FLEX Black Paint 2.5L	K6986BK
K-FLEX White Paint 2.5L	K6886WH
K-FLEX Grey Paint 2.5L	K6986GY

Tools



Description	Part No
K-FLEX Tool Set Basic	KX0030
K-FLEX Slitting Knife	K6923
K-FLEX Slitting Knife Blades	K6924
K-FLEX Cleaner	K6989



Copper Fittings

Coupling With Stop



Size (")	Part No.
1/4	2002E
3/8	2004E
1/2	2005E
5/8	2006E
3/4	2007E
7/8	2008E
1.1/8	2010E
1.3/8	2011E
1.5/8	2012E
2.1/8	2013E
2.5/8	2014E
3.1/8	2015E
3.5/8	2016E
4.1/8	2017E

Size (")	Part No.
3/16	2001E
5/16	2003E
1	2009E

Degreased copper fittings specifically for ACR and manufactured to ASME B16.22-2001 which can be used in assemblies subject to the Pressure Equipment Directive

ⓘ DID YOU KNOW...

Nearly 80% of copper that's ever been mined is still in use.
It's also 100% recyclable!



Reducer Copper to Copper

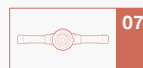
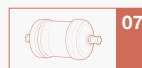


Size (")	Part No.
5/16 1/4	2021E
3/8 1/4	2023E
1/2 1/4	2025E
1/2 3/8	2024E
5/8 3/8	2027E
5/8 1/2	2026E
3/4 3/8	2030E
3/4 1/2	2029E
3/4 5/8	2028E
7/8 3/8	2034E
7/8 1/2	2033E
7/8 5/8	2032E
7/8 3/4	2031E
1.1/8 1/2	2039E
1.1/8 5/8	2038E
1.1/8 3/4	2037E
1.1/8 7/8	2036E
1.3/8 5/8	2043E
1.3/8 3/4	2042E
1.3/8 7/8	2041E
1.3/8 1.1/8	2040E
1.5/8 7/8	2046E
1.5/8 1.1/8	2045E
1.5/8 1.3/8	2044E
2.1/8 5/8	2052E
2.1/8 7/8	2051E
2.1/8 1.1/8	2050E
2.1/8 1.3/8	2049E
2.1/8 1.5/8	2048E
2.5/8 1.1/8	2056E
2.5/8 1.3/8	2055E
2.5/8 1.5/8	2054E
2.5/8 2.1/8	2053E
3.1/8 1.5/8	2059E
3.1/8 2.1/8	2058E
3.1/8 2.5/8	2057E
3.5/8 3.1/8	2060E
4.1/8 2.1/8	2064E
4.1/8 2.5/8	2063E
4.1/8 3.1/8	2062E
4.1/8 3.5/8	2061E

Reducer Fitting to Copper



Size (")	Part No.
3/8 1/4	2088E
1/2 1/4	2090E
1/2 3/8	2089E
5/8 1/4	2095E
5/8 3/8	2092E
5/8 1/2	2091E
3/4 3/8	2097E
3/4 1/2	2096E
3/4 5/8	2093E
7/8 3/8	2101E
7/8 1/2	2100E
7/8 5/8	2099E
7/8 3/4	2098E
1.1/8 1/2	2105E
1.1/8 5/8	2104E
1.1/8 3/4	2103E
1.1/8 7/8	2102E
1.3/8 5/8	2108E
1.3/8 7/8	2107E
1.3/8 1.1/8	2106E
1.5/8 5/8	2112E
1.5/8 7/8	2111E
1.5/8 1.1/8	2110E
1.5/8 1.3/8	2109E
2.1/8 5/8	2117E
2.1/8 7/8	2116E
2.1/8 1.1/8	2115E
2.1/8 1.3/8	2114E
2.1/8 1.5/8	2113E
2.5/8 1.1/8	2121E
2.5/8 1.3/8	2120E
2.5/8 1.5/8	2119E
2.5/8 2.1/8	2118E
3.1/8 1.3/8	2125E
3.1/8 1.5/8	2124E
3.1/8 2.1/8	2123E
3.1/8 2.5/8	2122E
3.5/8 3.1/8	2126E
4.1/8 2.1/8	2130E
4.1/8 2.5/8	2129E
4.1/8 3.1/8	2128E
4.1/8 3.5/8	2127E



Elbow 45° Copper x Copper



Size (")	Part No.
1/4	2238E
3/8	2239E
1/2	2240E
5/8	2241E
3/4	2242E
7/8	2243E
1.1/8	2244E
1.3/8	2245E
1.5/8	2246E
2.1/8	2247E
2.5/8	2248E
3.1/8	2249E
3.5/8	2251E
4.1/8	2250E

Elbow 90° SR Copper x Copper



Size (")	Part No.
1/4	2716E
3/8	2281E
1/2	2282E
5/8	2283E
3/4	2284E
7/8	2285E
1.1/8	2286E
1.3/8	2287E
1.5/8	2288E
2.1/8	2289E
2.5/8	2290E
3.1/8	2291E
3.5/8	2292E
4.1/8	2293E

Elbow 90° LR Copper x Copper



Size (")	Part No.
1/4	2306E
5/16	2307E
3/8	2308E
1/2	2309E
5/8	2310E
3/4	2311E
7/8	2312E
1.1/8	2314E
1.3/8	2315E
1.5/8	2316E
2.1/8	2317E
2.5/8	2318E
3.1/8	2319E
3.5/8	2320E
4.1/8	2321E

Street Elbow 45° Fitting x Copper



Size (")	Part No.
3/8	2265E
1/2	2266E
5/8	2267E
3/4	2268E
7/8	2269E
1.1/8	2270E
1.3/8	2271E
1.5/8	2272E
2.1/8	2273E
2.5/8	2274E
3.1/8	2275E

Street Elbow 90° SR Fitting x Copper



Size (")	Part No.
1/2	2448E
5/8	2449E
3/4	2712E
7/8	2451E
1.1/8	2452E
1.3/8	2453E
1.5/8	2454E
2.1/8	2455E
2.5/8	2456E
3.1/8	2457E
4.1/8	2458E
3.5/8	2459E

Street Elbow 90° LR Fitting x Copper



Size (")	Part No.
1/4	2478E
3/8	2479E
1/2	2480E
5/8	2481E
3/4	2482E
7/8	2483E
1.1/8	2484E
1.3/8	2485E
1.5/8	2486E
2.1/8	2487E
2.5/8	2488E
3.1/8	2489E
3.5/8	2490E
4.1/8	132152

Reducing Elbow 90° LR Fitting x Fitting

Size (")	Part No.	
1/2	3/8	2328E
5/8	1/2	2329E
7/8	3/4	2331E
1.5/8	1.3/8	2338E

Related Items:



Copper Fittings

Reducing Tee



1	2	3	Part No.
1/4	1/4	3/8	2520E
5/16	1/4	1/4	2721E
5/16	5/16	1/4	2720E
3/8	1/4	1/4	2529E
3/8	1/4	3/8	2526E
3/8	3/8	1/4	2528E
3/8	3/8	1/2	2527E
3/8	3/8	5/8	2722E
1/2	3/8	3/8	2534E
1/2	3/8	1/2	2533E
1/2	1/2	1/4	2532E
1/2	1/2	3/8	2531E
1/2	1/2	5/8	2530E
5/8	3/8	3/8	2547E
5/8	3/8	5/8	2546E
5/8	1/2	3/8	2545
5/8	1/2	1/2	2544E
5/8	1/2	5/8	2543E
5/8	5/8	1/4	2717E
5/8	5/8	3/8	2541E
5/8	5/8	1/2	2540E
5/8	5/8	3/4	2539E
5/8	5/8	7/8	2538E
5/8	5/8	1.1/8	2719E
3/4	1/2	1/2	2519E
3/4	5/8	5/8	2552E
3/4	3/4	3/8	2553E
3/4	3/4	1/2	2551E
3/4	3/4	5/8	2550E
3/4	3/4	7/8	2549E
7/8	1/2	1/2	2565E
7/8	1/2	7/8	2563E
7/8	5/8	1/2	2557E
7/8	5/8	5/8	2556E
7/8	5/8	7/8	2555E
7/8	7/8	3/8	2561E
7/8	7/8	1/2	2560E
7/8	7/8	5/8	2559E
7/8	7/8	3/4	2558E
7/8	7/8	1.1/8	2554E
1.1/8	5/8	5/8	2579E
1.1/8	5/8	7/8	2577E
1.1/8	5/8	1.1/8	2578E
1.1/8	7/8	1/2	2576E
1.1/8	7/8	5/8	2575E
1.1/8	7/8	7/8	2574E
1.1/8	7/8	1.1/8	2573E
1.1/8	1.1/8	3/8	2572
1.1/8	1.1/8	1/2	2571E
1.1/8	1.1/8	5/8	2570E
1.1/8	1.1/8	3/4	2569E
1.1/8	1.1/8	7/8	2568E

Equal Tee



1	2	3	Part No.
1.1/8	1.1/8	1.3/8	2567E
1.1/8	1.1/8	1.5/8	2566E
1.3/8	7/8	7/8	2589E
1.3/8	7/8	1.1/8	2590E
1.3/8	7/8	1.3/8	2591E
1.3/8	1.1/8	5/8	2588E
1.3/8	1.1/8	7/8	2587E
1.3/8	1.1/8	1.1/8	2586E
1.3/8	1.1/8	1.3/8	2585E
1.3/8	1.3/8	5/8	2584E
1.3/8	1.3/8	7/8	2583E
1.3/8	1.3/8	1.1/8	2582E
1.3/8	1.3/8	1.5/8	2581E
1.3/8	1.3/8	2.1/8	2580E
1.5/8	7/8	1.5/8	2602E
1.5/8	1.1/8	7/8	2601E
1.5/8	1.1/8	1.1/8	2600E
1.5/8	1.1/8	1.5/8	2599E
1.5/8	1.3/8	1.1/8	135283
1.5/8	1.3/8	1.3/8	2598E
1.5/8	1.3/8	1.5/8	2597E
1.5/8	1.5/8	5/8	2596E
1.5/8	1.5/8	7/8	2595E
1.5/8	1.5/8	1.1/8	2594E
1.5/8	1.5/8	1.3/8	2593E
1.5/8	1.5/8	2.1/8	2592E
2.1/8	1.1/8	1.1/8	2636E
2.1/8	1.3/8	1.1/8	2614E
2.1/8	1.3/8	1.3/8	2613E
2.1/8	1.3/8	2.1/8	2612E
2.1/8	1.5/8	1.1/8	2611E
2.1/8	1.5/8	1.5/8	2610E
2.1/8	1.5/8	2.1/8	2609E
2.1/8	2.1/8	5/8	2608E
2.1/8	2.1/8	7/8	2607E
2.1/8	2.1/8	1.1/8	2606E
2.1/8	2.1/8	1.5/8	2604E
2.1/8	2.1/8	1.3/8	2605E
2.1/8	2.1/8	2.5/8	2603E
2.5/8	2.1/8	2.1/8	2621E
2.5/8	2.5/8	5/8	2620E
2.5/8	2.5/8	7/8	2619E
2.5/8	2.5/8	1.1/8	2618E
2.5/8	2.5/8	1.3/8	2617E
2.5/8	2.5/8	1.5/8	2616E
2.5/8	2.5/8	2.1/8	2615E
3.1/8	3.1/8	1.5/8	2628E
3.1/8	3.1/8	2.1/8	2625E
3.1/8	3.1/8	2.5/8	2624E
4.1/8	4.1/8	2.1/8	2631E
4.1/8	4.1/8	2.5/8	2630E
4.1/8	4.1/8	3.1/8	2629E

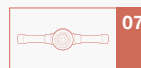
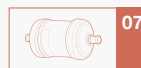
Size (")	Part No.
1/4	2500E
5/16	2501E
3/8	2502E
1/2	2503E
5/8	2504E
3/4	2505E
7/8	2506E
1.1/8	2507E
1.3/8	2508E
1.5/8	2509E
2.1/8	2510E
2.5/8	2511E
3.1/8	2512E
3.5/8	2513E
4.1/8	2514E

End Cap



Size (")	Part No.
1/4	2644E
3/8	2645E
1/2	2646E
5/8	2647E
3/4	2648E
7/8	2649E
1.1/8	2650E
1.3/8	2651E
1.5/8	2652E
2.1/8	2653E
2.5/8	2654E
3.1/8	2655E
3.5/8	2656E
4.1/8	2657E

Degreased copper fittings specifically for ACR and manufactured to ASME B16.22-2001 which can be used in assemblies subject to the Pressure Equipment Directive



180° Return Bend



Size (")	Centres (")	Part No.
3/8	1.1/2	2690E
1/2	1.1/2	2691E
5/8	1.7/8	2692E
3/4	2.1/2	2693E
7/8	2.1/2	2694E
1.1/8	3	2695E
1.3/8	3.3/4	2696E
1.5/8	4.1/2	2697E
2.1/8	5.1/2	2698E

Female Adaptor



Size (")	FPT (")	Part No.
3/8	1/4	2151E
1/2	1/2	2152E
1/2	3/8	2153E
5/8	3/4	2154E
5/8	1/2	2155E
3/4	3/4	2158E
7/8	1/2	2162E
1.1/8	1	2164E
1.3/8	1.1/4	2167E
1.5/8	1.1/2	2168E
2.1/8	2	2169E

Male Adaptor



Size (")	MPT (")	Part No.
1/4	1/8	2193E
3/8	1/4	2194E
1/2	1/2	2197E
5/8	3/4	2199E
5/8	1/2	2200E
7/8	3/4	2205E
7/8	1/2	2206E
1.1/8	1	2209E
1.1/8	3/4	2210E
1.3/8	1.1/2	2211E
1.3/8	1.1/4	2212E
1.5/8	1.1/2	2214E
1.5/8	1.1/4	2215E
2.1/8	2	2216E

P Trap Copper to Copper



Size (")	Part No.
5/8	2700E
3/4	2701E
7/8	2702E
1.1/8	2703E
1.3/8	2704E
1.5/8	2705E
2.1/8	2706E

Flare Gasket



Size (")	Part No.
1/4	1347
3/8	1348
1/2	1349
5/8	1350
3/4	1351
7/8	1352

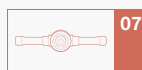
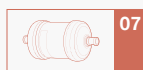
Pipe Saddle



Size (")	Part No.
1/4	1324
3/8	1325
1/2	1326



Related Items:



High Pressure Copper Tube & Fittings

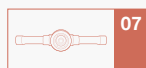
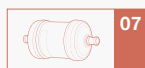
The tube system for high-pressure applications. In refrigeration, and in particular in the area of supermarket refrigeration systems, more and more ecology-oriented plant concepts are being implemented. High-pressure pipeline systems, particularly for CO₂ as a refrigerant. Further media can be used in consultation with the manufacturer. K65 has excellent processing properties which are similar to those of copper. K65 tubes can be brazed to K65 fittings.

K65 tubes and fittings are marked appropriately, so that the system components can be clearly identified at all times. The main advantage is the mechanical strength of K65. Because of the high strength of the material, the K65 product series for 120 bar can be made with comparatively thin walls.



Wieland

Conex | Bänninger



High Pressure Copper Tube & Fittings

K65 80 Bar 6m Straight

Size (")	Gauge (mm)	Length (m)	Weight per Length (kg)	Weight per Metre (kg)	Part No.
1/2	0.6	6	1.22	0.20	181900
5/8	0.75	6	1.91	0.32	181901
3/4	0.9	6	2.75	0.46	181902
7/8	1	6	3.58	0.60	181903
1.1/8	1.3	6	5.98	1.00	181904
1.3/8	1.6	6	9.94	1.66	181905
1.5/8	1.9	6	12.61	2.10	181906
2.1/8	2.5	6	20.11	3.35	182141

K65 120 Bar 5m Straight

Size (")	Gauge (mm)	Length (m)	Weight per Length (kg)	Weight per Metre (kg)	Part No.
3/8	0.65	5	0.80	0.16	181910
1/2	0.85	5	1.41	0.28	181911
5/8	1.05	5	1.97	0.39	181912
3/4	1.3	5	2.89	0.58	181913
7/8	1.5	5	3.90	0.78	181914
1.1/8	1.9	5	6.60	1.32	181915
1.3/8	2.3	5	9.40	1.88	181916
1.5/8	2.7	5	13.05	2.61	181917
2.1/8	3.55	5	25.10	5.02	181918



K65 Equal Tee



Size (")	Part No.
3/8	182007
1/2	182008
5/8	182009
3/4	182010
7/8	182011
1.1/8	182012
1.3/8	182013
2.1/8	182134

K65 Reducing Tee



Size (")	Part No.
1/2 3/8 3/8	182061
1/2 1/2 3/8	182060
5/8 1/2 1/2	182064
5/8 5/8 3/8	182062
5/8 5/8 1/2	182063
3/4 3/4 1/2	182103
3/4 3/4 5/8	182065
7/8 7/8 1/2	182104
7/8 7/8 5/8	182105
7/8 7/8 3/4	182067
1.1/8 7/8 1/2	182066
1.1/8 1.1/8 3/4	182106
1.1/8 1.1/8 7/8	182068
1.3/8 1.3/8 3/4	182107
1.3/8 1.3/8 7/8	182069
1.3/8 1.3/8 1.1/8	182108
1.5/8 1.5/8 3/4	182109
1.5/8 1.5/8 7/8	182110
1.5/8 1.5/8 1.1/8	182111
2.1/8 2.1/8 1.5/8	182135

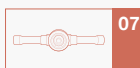
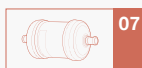
K65 Reducing Coupler



Size (")	Part No.
1/2 3/8	182115
5/8 1/2	182116
3/4 5/8	182117
7/8 3/4	182118
1.1/8 1/2	182119
1.1/8 7/8	182120
1.3/8 1/2	182121
1.3/8 5/8	182122
1.3/8 3/4	182123
1.3/8 7/8	182124
1.3/8 1.1/8	182125
1.5/8 3/4	182126
1.5/8 7/8	182127
1.5/8 1.1/8	182128
1.5/8 1.3/8	182129
2.1/8 1.5/8	182132

K65 Coupler

Size (")	Part No.
3/8	182020
1/2	182021
5/8	182022
3/4	182023
7/8	182024
1.1/8	182025
1.3/8	182026
2.1/8	182136



High Pressure Copper Tube & Fittings

K65 45° Elbow



Size (")	Part No.
3/8	182100
1/2	182101
5/8	182102
3/4	182050
7/8	182051
1.1/8	182052
1.3/8	182053
1.5/8	182054

K65 90° Long Radius Elbow



Size (")	Part No.
3/8	182000
1/2	182001
5/8	182002
3/4	182003
7/8	182004
1.1/8	182005
1.3/8	182006
1.5/8	182034
2.1/8	182133

K65 Fitting Reducer



Size (")	Part No.
1/2 3/8	182014
5/8 3/8	182039
5/8 1/2	182015
3/4 3/8	182070
3/4 1/2	182071
3/4 5/8	182016
7/8 3/8	182072
7/8 1/2	182112
7/8 5/8	182040
7/8 3/4	182017
1.1/8 1/2	182113
1.1/8 5/8	182073
1.1/8 3/4	182041
1.1/8 7/8	182018
1.3/8 1.1/8	182019
1.5/8 7/8	182114
1.5/8 1.3/8	182036
2.1/8 1.5/8	182138

K65 45° Street Elbow



Size (")	Part No.
3/4	182055
7/8	182056
1.1/8	182057
1.3/8	182058
1.5/8	182059

K65 90° Long Radius Street Elbow



Size (")	Part No.
3/8	182042
1/2	182043
5/8	182044
3/4	182045
7/8	182046
1.1/8	182047
1.3/8	182048
1.5/8	182049
2.1/8	182137

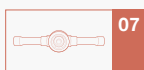
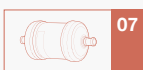
K65 End Cap



Size (")	Part No.
3/8	182027
1/2	182028
5/8	182029
3/4	182030
7/8	182031
1.1/8	182032
1.3/8	182033
1.5/8	182038
2.1/8	182139

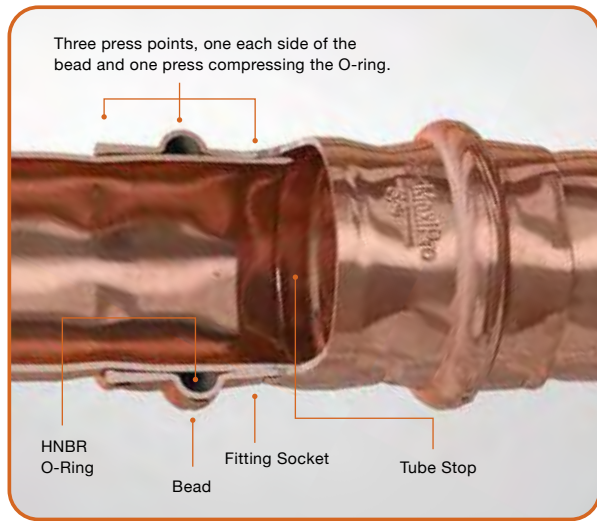
DID YOU KNOW...

K65 Pipe contains Iron to give it extra strength!



>B< MaxiPro Technology, 3-Point Press No Brazing. No Hot Works. Just Compression.

>B< MaxiPro benefits from a 3-point press, one on each side of the bead and one press compressing the O-ring. This provides a permanent and secure joint.



Technical Data

Parameters	Capability
Applications	Air conditioning, refrigeration, heat pump (refrigerant side)
Connections	Copper to copper
Approved tube: Copper tube conforming to*	EN 12735-1, EN 12735-2 or ASTM-B280
Fitting / tube range	1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1 1/8"
Fitting material	Refrigerant grade copper (UNS C12200 min 99.9% pure)
O-ring	HNBR
Approved oils	POE, PAO, PVE, AB and MO
Maximum operating and abnormal pressure	48 bar / 4800 kPa / 700 psig
Burst pressure >3 x maximum operating and abnormal pressure EN 378-2	>144 bar / >14400 kPa / >2100 psi
Leak tightness	Helium $\leq 7.5 \times 10^{-7}$ Pa.m ³ /s at +20 °C, 10 bar ref
Vacuum	200 microns
O-ring temperature range	-40 °C to 140 °C / -40 °F to 284 °F
UL listing continuous operating temperature	-40 °C to 121 °C / -40 °F to 250 °F
Compatible refrigerants	R-1234yf**, R-1234ze**, R-125, R-134a, R-290**, R-32**, R-404A, R-407A, R-407C, R-407F, R-407H, R-410A, R-417A, R-421A, R-422B, R-422D, R-427A, R-438A, R-444A**, R-447A**, R-447B**, R-448A, R-449A, R-450A, R-452A, R-452B**, R-452C, R-454A**, R-454B**, R-454C**, R-457A**, R-459A**, R-507A, R-513A, R-513B, R-600A**, R-718 and HYCOOL 20.

*Please refer to >B< MaxiPro - Tube Compatibility Table, see section 12.10.

** When using refrigerants classified A2L (lower flammability), A2 (flammable) and A3 (higher flammability) additional/specific standards, local rules and regulations, codes of practice and by-laws may be applicable. Note: >B< MaxiPro fittings are NOT suitable for R-717, R-723, R-764, R-744 refrigerants.

Compatibility Table

>B< MaxiPro fitting size	Tube size Nominal OD		EN 12735-1 / EN 12735-2 - AS/ NZS 1571 - ASTM B280 - ASTM B88 - JIS H 3300												
			Nominal wall thickness												
	Inch	mm	0.025"	0.028" 22swg	0.030"	0.031" 0.032" 21swg	0.035" 0.036" 20swg	0.039" 0.040" 19swg	0.042"	0.045"	0.048" 18swg	0.049" 0.050"	0.055"	0.064" 0.065" 16swg	0.072" 15swg
1/4	0.250"	6.35	■	●■	●■	●■	●■	●■							
3/8	0.375"	9.53		●■	●■	●■	●■	●■							
1/2	0.500"	12.70		●■	●■	●■	●■	●■			●■	●■			
5/8	0.625"	15.88		●	●	●■	●■	●■		●●	●■	●■			
3/4	0.750"	19.05		●■		●■	●■	●■	●■	●■	●■	●■			
7/8	0.875"	22.23		●■		●■	●■	●■		●■	●■	●■	■	●■	
1	1.000"	25.40		●■			●■	●■		●■				●■	
1-1/8	1.125"	28.58					●■	●■		●■	●■			●■	■

- Coil lengths in annealed condition
- Straight lengths in hard /half hard condition

Notes: Hardness tolerance as per approved standards in the table above. Ensure coil tubes are in round condition. Oval tubes should be re-rounded. It is the engineer's responsibility to ensure that the tube selected is compatible with >B< MaxiPro and meets the operating pressure requirements of the system.





**SMART
QUICK
STRONG
DURABLE**

Conex | Bänninger

>B< MaxiPro

Join the Press Revolution

An innovative, flame-free
press system suitable for
**AIR CONDITIONING
and REFRIGERATION**
applications up to 48 bar.

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 **ROTHENBERGER**

 an IBP GROUP company

Straight Coupler



Size (")	Pack Qty.	Part No.
1/4	5	150200
3/8	5	150201
1/2	5	150202
5/8	5	150203
3/4	2	150204
7/8	2	150205
1.1/8	2	150207
1	2	150206

45° Bend



Size (")	Pack Qty.	Part No.
1/4	3	150256
3/8	3	150257
1/2	3	150258
5/8	3	150259
3/4	3	150260
7/8	3	150261
1.1/8	2	150263
1	2	150262

Fitting Reducer



Size (")	Pack Qty.	Part No.
3/8 x 1/4	2	150243
1/2 x 3/8	2	150244
5/8 x 3/8	2	150245
5/8 x 1/2	2	150246
3/4 x 1/2	2	150247
3/4 x 5/8	2	150248
7/8 x 1/2	2	150249
7/8 x 5/8	2	150250
7/8 x 3/4	2	150251
1.1/8 x 1/2	1	150252
1.1/8 x 5/8	1	150253
1.1/8 x 3/4	1	150254
1.1/8 x 7/8	1	150255

90° Bend



Size (")	Pack Qty.	Part No.
1/4	5	150208
3/8	5	150209
1/2	3	150210
5/8	3	150211
3/4	3	150212
7/8	3	150213
1.1/8	2	150215
1	2	150214

Equal Tee



Size (")	Pack Qty.	Part No.
1/4	3	150223
3/8	3	150224
1/2	3	150225
5/8	2	150226
3/4	2	150227
7/8	2	150228
1.1/8	1	150230
1	1	150229

Reducing Coupler



Size (")	Pack Qty.	Part No.
1/2 x 3/8	2	150231
5/8 x 3/8	2	150232
5/8 x 1/2	2	150233
3/4 x 3/8	2	150234
3/4 x 1/2	2	150235
3/4 x 5/8	2	150236
7/8 x 1/2	2	150237
7/8 x 5/8	2	150238
7/8 x 3/4	2	150239
1.1/8 x 5/8	1	150240
1.1/8 x 3/4	1	150241
1.1/8 x 7/8	1	150242

90° Street Bend



Size (")	Pack Qty.	Part No.
3/8	3	150216
1/2	3	150217
5/8	3	150218
3/4	3	150219
7/8	3	150220
1	2	150221
1.1/8	2	150222

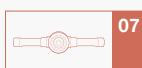
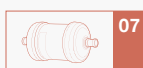
End Cap



Size (")	Pack Qty.	Part No.
1/4	3	150264
3/8	3	150265
1/2	3	150266
5/8	2	150267
3/4	2	150268
7/8	2	150269
1.1/8	1	150270
1	1	150271

ⓘ DID YOU KNOW...

In testing, MaxiPro fittings withstood hydraulic pressures of up to 300bar before the **pipe** fractured - not the fitting or joint!



Aspen Xtra

A range of high grade UPVC rigid HVAC/R condensate discharge pipe. With a superior internal smooth finish providing a low coefficient of flow friction which will help prevent build-up of debris, bacteria and blockages.



Straight Lengths

Size (")	Length (m)	Colour	Part No.
1.1/4	2.9	White	XRP114
3/4	2.9	White	XRP34
1.1/4	2.9	Black	XRPB114
3/4	2.9	Black	XRPB34

Fittings

Straight Connector



Size (")	Pk Qty.	Colour	Part No.
3/4	5	White	XRP34SC
1.1/4	5	White	XRP114SC
3/4	5	Black	XRPB34SC
1.1/4	5	Black	XRPB114SC

Stud Clip



Size (")	Pk Qty.	Colour	Part No.
3/4	10	White	XRP34SMC
1.1/4	10	White	XRP114SMC
3/4	10	Black	XRPB34SMC
1.1/4	10	Black	XRPB114SMC

Equal Tee



Size (")	Pk Qty.	Colour	Part No.
3/4	5	White	XRP34T
1.1/4	5	White	XRP114T
3/4	5	Black	XRPB34T
1.1/4	5	Black	XRPB114T

90° Elbow



Size (")	Pk Qty.	Colour	Part No.
3/4	5	White	XRP34EL90
1.1/4	5	White	XRP114EL90
3/4	5	Black	XRPB34EL90
1.1/4	5	Black	XRPB114E90

Barrel Union

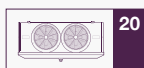
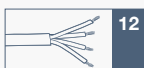


Size (")	Pk Qty.	Colour	Part No.
3/4	10	White	XRP34BU
1.1/4	10	White	XRP114BU
3/4	10	Black	XRPB34BU
1.1/4	10	Black	XRPB114BU

Surface Clip



Size (")	Pk Qty.	Colour	Part No.
3/4	10	White	XRP34CLIP
1.1/4	10	White	XRP114CLIP
3/4	10	Black	XRPB34CLIP
1.1/4	10	Black	XRPB114CLP



Rodding Fitting



Size (")	Pk Qty.	Colour	Part No.
1.1/4	2	White	XRPB7653
1.1/4	2	Black	XRPB7654

Reducing Bush



Size (")	Pk Qty.	Colour	Part No.
3/4-1.1/4	5	Black	XRPB34114B
3/4-1.1/4	5	White	XRP34114RB

Reducing Socket



Size (")	Pk Qty.	Colour	Part No.
3/4-1.1/4	5	White	XRP34114RS
3/4-1.1/4	5	Black	XRPB34114R

Threaded Socket Male



Size (")	Pk Qty.	Colour	Part No.
3/4	5	White	XRP34TSM
1.1/4	5	White	XRP114TSM
3/4	5	Black	XRPB34TSM
1.1/4	5	Black	XRPB114TSM

Threaded Socket Female



Size (")	Pk Qty.	Colour	Part No.
3/4	5	White	XRP34TFS
1.1/4	5	White	XRP114TFS
3/4	5	Black	XRPB34TFS
1.1/4	5	Black	XRPB114TFS

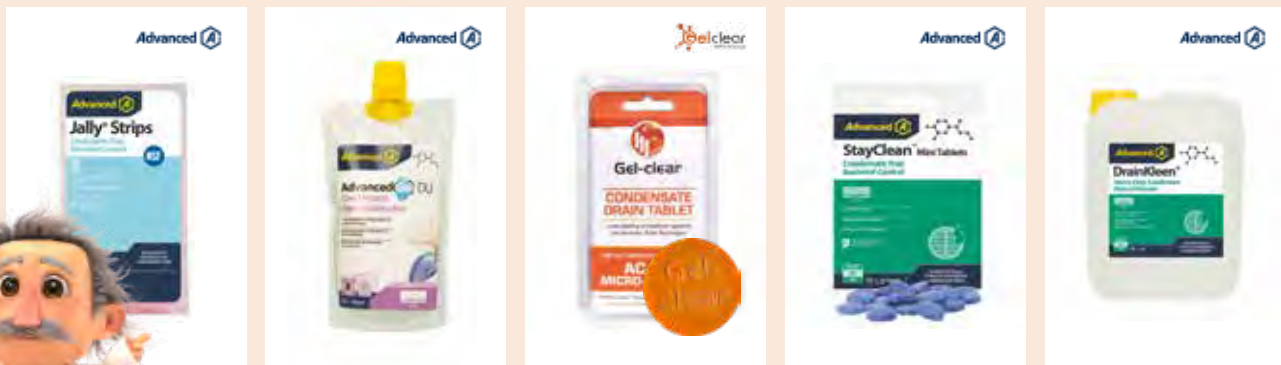
45° Elbow



Size (")	Pk Qty.	Colour	Part No.
3/4	5	White	XRP34EL45
1.1/4	5	White	XRP114EL45
3/4	5	Black	XRPB34EL45
1.1/4	5	Black	XRPB114E45

Defeat the Dirt...

For easy removal of dirt, grime, slime and blockages check our fantastic range of FS-approved Drain & Condensate Tray Treatments available from your local branch today. **For more information see pages 94 & 95.**



Waste Pipe



Polypipe

Polypipe ABS Straight Lengths



Description	Size (")	Colour	Part No.
Straight Pipe - 3m	32mm	White	191915
Straight Pipe - 3m	40mm	White	191916

Polypipe ABS Fittings



Description	Size (")	Colour	Part No.
Tee	32mm	White	191936
Tee	40mm	White	191937
Access plug	32mm	White	191957
Access plug	40mm	White	191958
90° Bend	32mm	White	191924
45° Bend	32mm	White	191927
45° Bend	40mm	White	191928
Coupler	32mm	White	191918
Coupler	40mm	White	191919
Reducer	40 - 32mm	White	191944
Reducer	50 - 32mm	White	191945
Pipe Clip	32mm	White	191921

Polypipe Overflow

Straight Lengths

Description	Size (")	Colour	Part No.
Straight Pipe - 3m	22mm	White	181814



Overflow Fittings

Description	Size (")	Colour	Part No.
45° Bend	22mm	White	181821
Tee	22mm	White	181818
90° Elbow	22mm	White	181817
Straight Connector	22mm	White	181816

Solvent Accessories

Solvent Cement



Size (ml)	Part No.
250	240427
250	181813

Hepto Valves & Adaptor



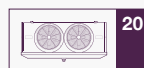
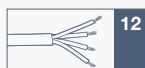
Description	Part No.
Self Sealing Waste Valve - 32mm	P5889
Self Sealing Waste Valve - 40mm	P1914
Running Adaptor - 32mm	P5887
Running Adaptor - 40mm	PI916

Pipe To Pipe



Rubber Adaptor To Connect 21mm Overflow Pipe To Waste Pipe

Description	Pk Qty.	Part No.
Aspen Xtra Connector 21mm - 25mm	3	FP2016
Aspen Xtra Connector 21mm - 32mm	3	FP2017
Aspen Xtra Connector 21mm - 40mm	3	FP2018



Access Fittings



Part No: 1554



Part No: 1561



Part No: 1595



Part No: 1596



Part No: 1549



Part No: 1547



Part No: 1568



Part No: 1551



Part No: 1550



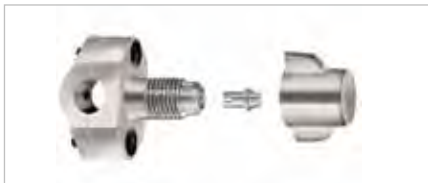
Part No: 1594



Part No: 1384

Description	Size (")	Part No.
	1/4 SAE Flare with 1/4 OD x 3/16 ID with 2inch tail	1554
	1/4 SAE Flare with 3/8 OD x 5/16 ID with 2inch tail	1560
	1/4 SAE Flare with 1/4 OD x 3/16 ID with 6inch tail	1554-6
Extended Copper Tube Fitting w/Schraeder	1/4 SAE Flare with 5/16 OD x 1/4 ID with 2inch tail	1559
	5/16 SAE Flare (R410a) with 1/4 OD x 3/16 ID with 2inch tail	1559PH
	5/16 Flare (R410a)	1586
	5/16 Flare x 1/4 OD	167208
Swivel T with access port	1/4 flare x 1/4 access x 1/4 flare swivel / depressor	1596
	1/4 flare x 1/4 flare swive / depressor x 1/4 access	1552
Swivel T with access port & depressor	1/4 flare x 1/4 access x 1/4 flare swivel	1597
	1/4 flare x 1/4 flare swivel x 1/4 access	1561
Threaded T with access port	1/4 flare x 1/8 MPT x 1/4 access	1595
Solder Tee Fitting - W/Schraeder	1/4 ODS x 1/4 ODS on run with 1/4 SAE Male Flare on branch	1547
	3/8 ODS x 3/8 ODS on run with 1/4 SAE Male Flare on branch	1562
	1/2 ODS x 1/2 ODS on run with 1/4 SAE Male Flare on branch	1548
	5/8 ODS x 5/8 ODS on run with 1/4 SAE Male Flare on branch	1583
Full Union - W/Schraeder	1/4 OD SAE Flare x 1/4 SAE Flare with Cap	1549
3-Way Solder Fitting - W/Schraeder	3/16 OD x 1/4 & 3/8	1551
Straight Solder Fitting - W/Schraeder	1/4 ODS x 3/8 ODF	1568
Access Fitting - W/Schraeder	Female 1/4 SAE Swivel Nut w/Depressor x 1/4 SAE male flare	1594
Half Union - W/Schraeder	1/8 MPT	1550
	1/4 MPT	1588
Plain SAE Flare Cap	1/4	1384

Line Piercing Valves



Description	Part No.
Quick Tap - 1/4", 5/16", 3/8" OD	1390
Line Tap Valve - 6.3mm OD	1367
Bullet Piercing Valve - 1/2", 5/8"	BPV21
Bullet Piercing Valve - 1/4", 5/16"	BPV31

Access Fittings Tools

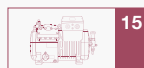


Description	Part No.
Valve Core Tool with 2 Cores	167924
Valve Core Depressor	167985

Other Bits & Bobs



Description	Part No.
Schraeder 9 Way Solder	1553
Schraeder Core Holder C/W Cores	1387
Schraeder Core Replace	1385



Brass Fittings

Blanking Nut



Flare Size (")	Part No.
1/4"	1307
3/8"	1308
1/2"	1309
5/8"	1310

Copper Bonnet



Flare Size (")	Part No.
1/4"	1356
3/8"	1358
1/2"	1359
5/8"	1360
3/4"	1361

Flare Connector Female



Female (")	Part No.
1/4"	1272
3/8"	1273
1/2"	1274

Blanking Plug NPTE

NPTE (")	Part No.
1/8"	1541
1/4"	1542
3/8"	1543
1/2"	1544

Flare Connector Reducer Female x Male



Female (")	Male (")	Part No.
1/4"	3/8"	1161
5/16"	1/4"	1163
3/8"	1/4"	1164
3/8"	1/2"	1165
1/2"	1/4"	1167
1/2"	3/8"	1168
1/2"	5/8"	1169
5/8"	1/2"	1172
5/8"	3/4"	1173
3/4"	5/8"	1148

Flare Connector Male

Male (")	Part No.
1/4"	1106
3/8"	1108
1/2"	1109
3/4"	1111
5/8"	1110

Connector Male Flare x NPTI



Male Flare (")	NPTI (")	Part No.
1/4"	1/8"	1900
1/4"	1/4"	1901
1/4"	1/2"	1903
3/8"	1/4"	1907
3/8"	1/2"	1909
5/8"	1/2"	1916

Flare Connector Male Flare x NPTE



Male Flare (")	NPTE (")	Part No.
1/4"	1/8"	1117
1/4"	1/4"	1118
1/4"	3/8"	1119
1/4"	1/2"	1120
1/2"	3/8"	1126
1/2"	1/2"	1127
3/8"	1/4"	1122
3/8"	3/8"	1123
3/8"	1/2"	1124
5/8"	1/2"	1130

Connector Male Flare x Solder

Male Flare (")	Solder (")	Part No.
1/4"	1/4"	1925
3/8"	3/8"	1928
1/2"	1/2"	1931

Flare Connector Reducer Male x Male

Male (")	Male (")	Part No.
3/8"	1/4"	1140
1/2"	1/4"	1141
1/2"	3/8"	1142
5/8"	1/4"	1143
5/8"	1/2"	1145

Flare Elbow Male Flare x NPTE



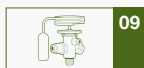
Male Flare (")	Part No.
1/4" x 1/4"	1187
3/8" x 3/8"	1188

Cap Female Flare

Flare (")	Part No.
1/4"	N5-04

Flare Elbow Male Flare x NPTE

Male Flare (")	NPTE (")	Part No.
1/4"	1/8"	1208
1/4"	1/4"	1209



Brass Fittings

Flare Nut Short



Female (")	Part No.
1/4"	1088
5/16"	1089
3/8"	1090
1/2"	1091
5/8"	1092
3/4"	1093

Flare Nut Long



Female (")	Part No.
1/4"	1070
3/8"	1072
5/8"	1074
3/4"	1076

Flare Nut Reducer

Female Flare (")	OD (")	Part No.
3/8"	1/4"	1098
1/2"	3/8"	1099
5/8"	1/2"	1100
3/4"	5/8"	1101

Equal Flare

Flare (")	Flare (")	Part No.
3/8"	3/8"	1188

Flare Plug



Male Flare (")	Part No.
1/4"	1281
3/8"	1283
1/2"	1284
5/8"	1285

Fusible Plug NPTE



NPTE (")	Part No.
1/4" (76°C)	2081
1/4" (139°C)	2082
3/8" (76°C)	2085
3/8" (139°C)	2086

Pressure Coupler



Length (mm)	Flare (")	Part No.
500	1/4"	270806

Swivel Nut - Flare



Flare (")	Part No.
1/4"	1970
3/8"	1972

Tee Male Flare x NPTE Branch



Flare (")	Part No.
1/4"	1227
3/8"	1229
1/2"	1230

Tee Male Flare x NPTE Branch



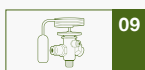
Male Flare (")	Male (")	Part No.
1/4"	1/8"	1250
1/4"	1/4"	1251



DID YOU KNOW...

Did you know that **Brass** is made from **Copper** with a dash of **Zinc**?

Related Items:



Gomax Quadra



DN2 2mm ID - 6mm OD

The Gomax QUADRA flexible thermoplastic capillary hoses are available in three sizes, 2mm, 4mm and 6mm. They are also supplied in two colours, orange and black. QUADRA is designed to replace copper tube for refrigerant and oil connections to items such as pressure gauges, pressure switches and high-pressure oil distribution systems.

The use of two colours allows easy identification between the high (typically orange) and low (typically black) sides of a system. The wide range of QUADRA fittings allows connections to almost any system. QUADRA hoses and fittings are assembled using the QUADRA hand pliers - RXA007.



DN2 Hose

Description	Qty	Part No.
2mm Id (6mm Od) Capillary Hose - Black	10m	291428
2mm Id (6mm Od) Capillary Hose - Orange	10m	291540
2mm Id (6mm Od) Capillary Hose - Orange	16.5m	1690-16
2mm Id (6mm Od) Capillary Hose - Orange	50m	1690

DN2 Fittings



Assembled Hose

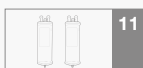
Description	Qty	Part No.
1m 1/4" Straight sch x 1/4" Elbow	1	ccE100
1m 1/4" Straight x 1/4" Elbow	1	CAC100

Description	Fitting Type	Qty	Part No.
1/4" Female Straight Connector C/W Crimp & Copper Gasket	Crimped	1	1691
1/4" Female Straight Connector C/W Crimp, Copper Gasket & Valve Opener	Crimped	1	1692
1/4" Female 90° Elbow C/W Crimp & Copper Gasket	Crimped	1	1696
1/4" Tee Without Gasket	Crimped	1	170206
Elbow Fitting	Crimped	1	170208
Female T Branch	Crimped	10	291468
Cross Fitting	Crimped	1	170211
1/4" Branch Tee With Connector	Crimped	1	170207



Accessories

Description	Part No.
Gomax Crimping Plier High Performance	1699
Hose Cutter	1700



DN4 4mm ID - 8.3mm OD



DN4 Hose

Description	Qty	Part No.
4mm ID (8.3mm Od) Capillary Hose - Black	10m	291436

DN6 6mm ID - 10.9mm OD



DN6 Hose

Description	Qty	Part No.
6mm ID (10.9mm OD) capillary hose - Black	1m	170212

DN4 Fittings

Description	Fitting Type	Qty	Part No.
1/4" SAE Female Straight Connector	Crimped	10	291476
1/4" SAE Female Elbow	Crimped	10	291484
1/4" SAE Female Straight Connector	Reusable	10	291492
1/4" SAE female elbow	Reusable	10	291500

DN6 Fittings

Description	Fitting Type	Qty	Part No.
1/4" SAE Straight Female	Crimped	1	XBA02N
1/4" SAE Elbow Female 90°	Crimped	1	XCA02N
3/8" SAE Elbow Female 90°	Crimped	1	XCA04N
3/8" SAE Straight Female	Crimped	1	XBA04N
Copper brazing - 6x8x100mm	Crimped	1	WZE2N1

Manuli RefriMaster



Hose



Cut to length hose suitable for applications where improved resistance to abrasions and high temperatures is required. Sizes 8mm, 10mm and 12mm with straight and elbow connectors.

Description	Hose Size (inch)	Max Working Press. (bar)	Part No.
10 Hose - Size 08 1FT	13/32"	35	1681MI2
12 Hose - Size 10 1FT	1/2"	35	1682MI2
08 Hose - Size 06 1FT	5/16"	35	1680MI2

Fittings For M12 Hose



Description	Part No.
1/4" Straight Union for MI2 Hose	1683MI2
1/2" 90° Elbow for MI2 Hose	1737MI2
1/2" Union for MI2 Hose	1685MI2
3/8" Union for MI2 Hose	1684MI2

Aflex Braided Hose

PTFE lined pre assembled hose with flare connectors at either end.



Description	Part No.
12"	291307
18"	291316
24"	291323
30"	291331
48"	291366
60"	291374

Fitting Consumables



Description	Part No.
Loctite 270 Studlock 50ml	621012
Loctite Adhesive Sealant-271	1433
Pro-Tite Thread Sealant 39ml	1401
Loctite 577 Pipe Sealant 50ml	621044
Ptfe Sealing Tape	160600
Ptfe Tape Thread Sealing 12mm	6886
Ptfe Gasket - 2 1/4"	127214
Nylog Blue Sealant 30ml	119168



M

150235

MPA5240 0060401
3/4" X 1/2" Red x 2

15023

MPA5240 006
3/4" X 5/8" R

M

150240

MPA5240 0060402
1/2" X 1/2" Red x 1


 Conex | Banninger
>B< MaxiPro
 Join the Press Revolution
 Maximum operating and abnormal pressure: 4000 psi
 Operating temperature range: -40°C to 120°C (-40°F to 248°F)
 Compatible refrigerants: R134a, R1234ze, R125, R152a, R125/CO2
 Made in USA with imported components (USA/USA)
 Conex/Banninger 2015, Inc. 10000 10th St. #1000, Dallas, TX 75243
 Phone: 972.988.1111 | Fax: 972.988.1112 | Email: sales@conexbanninger.com

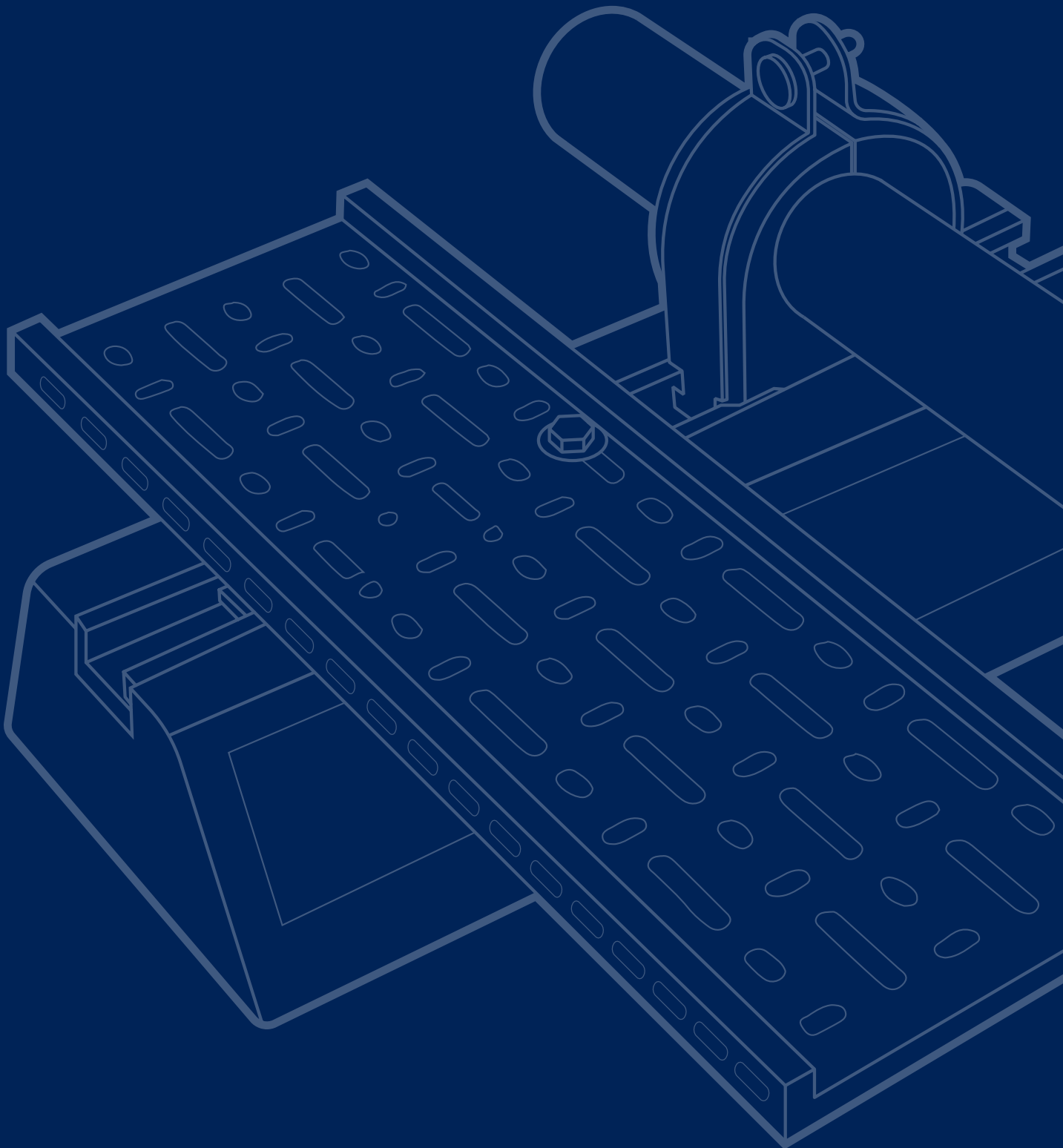
15024

MPA5240 006
1 1/8" X 3/4"

M

SECTION THREE

Installation & Fixings



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Trunking

Pipe Clips & Clamps



Klo-Shure Clamp Insulation Couplings

These reduce the time required to insulate copper tubing used for refrigerant lines. The patented coupling allows sections of insulation to be secured at suspension points. This eliminates having to double wrap, glue and tape insulation at strut mounted clamps. The coupling can also be used to simply secure two lengths of insulation.

Wall In.	ID In.	Bag Qty.	Part No.
1/4"	3/4"	1	150012
3/8"	1/4"	1	150000
3/8"	3/8"	1	150001
3/8"	1/2"	1	150002
3/8"	5/8"	1	150003
3/8"	3/4"	1	150004
3/8"	7/8"	1	150005
3/8"	1"	1	150013
3/8"	1.1/8"	1	150007
3/8"	1.3/8"	1	150008
3/8"	1.5/8"	1	150009
3/8"	2.1/8"	1	150010
1/2"	3/8"	1	150016
1/2"	1/2"	1	150017
1/2"	5/8"	1	150018
1/2"	3/4"	1	150019
1/2"	7/8"	1	150020
1/2"	1"	1	150021
1/2"	1.1/8"	1	150022
1/2"	1.3/8"	1	150023
1/2"	1.5/8"	1	150024
1/2"	2.1/8"	1	150025
1/2"	2.5/8"	1	150026
1/2"	3.1/8"	1	150027
1/2"	3.5/8"	1	150028
1/2"	4.1/8"	1	150029
3/4"	3/8"	1	150030
3/4"	1/2"	1	150031
3/4"	5/8"	1	150032
3/4"	3/4"	1	150033
3/4"	7/8"	1	150034
3/4"	1.1/8"	1	150036
3/4"	1.3/8"	1	150037
3/4"	1.5/8"	1	150038
3/4"	2.1/8"	1	150055
3/4"	2.5/8"	1	150056
3/4"	3.1/8"	1	150057
3/4"	3.5/8"	1	150058
3/4"	4.1/8"	1	150059
1"	1/2"	1	150041
1"	5/8"	1	150042
1"	3/4"	1	150043
1"	7/8"	1	150044
1"	1.1/8"	1	150046
1"	1.3/8"	1	150047
1"	1.5/8"	1	150048
1"	2.1/8"	1	150049
1"	2.5/8"	1	150050
1"	3.1/8"	1	150051
1"	3.5/8"	1	150052

Cushion Clamp



These channel mounted clamping systems are ideal for multiple line runs, while absorbing shock and vibration, reducing unwanted noise and preventing galvanic corrosion.

These clips are sold in the bag quantities shown.

Tube Diameter	Bag Qty.	Part No.
1/4"	10	292300
3/8"	10	292307
1/2"	10	292314
5/8"	10	292321
3/4"	10	292328
7/8"	10	292335
1.1/8"	10	292342
1.3/8"	10	292349
1.5/8"	10	292356
2.1/8"	5	292363
2.5/8"	5	292370
3.1/8"	5	292377
4.1/8"	5	292391

Quick Positioning Clips



Simply insert into channel rail and twist to fix clip in place.

Tube Diameter	Bag Qty.	Part No.
1/4"	10	160300
3/8"	10	160301
1/2"	10	160302
5/8"	10	160303
3/4"	10	160304
7/8"	10	160305
1.1/8"	10	160306
1.3/8"	10	160307
1.5/8"	10	160311

Related Items:



02



02



02



03



03

Pipe Clips & Clamps



Aspen Xtra Grip Locks

Unique ratchet design ensures quick installation and adjustment.

Type	Approx. Tube Diametre	Bag Qty.	Part No.
Type 1	1/4" x 1/2" Insulated	10	B6186
Type 2	3/8" x 5/8" Insulated	10	B6187
Type 3	1/2" x 7/8" Insulated	10	B6188
Type 4	5/8" x 1.1/8" Insulated	10	B6189



Stud Clips

Designed to be clipped onto threaded rod, the unique ratchet design ensures quick installation and adjustment. 2 pipe versions hold two insulated pipes for split systems.

Studding Diameter	Clip Diameter	Bag Qty.	Part No.
Stud clip M8	1/4"	10	B6800
Stud clip M8	3/8"	10	B6802
Stud clip M8	1/2"	10	B6801
Stud clip M8	5/8"	10	B6803
Stud clip M8	3/4"	10	B6804
Stud clip M8	7/8"	10	B6805
Stud clip M8	1"	10	B6806
Stud clip M8	1.1/8"	10	B6807
Stud clip M8	1.1/4"	10	B6808
Stud clip M8	1.3/8"	10	B6809
Stud clip M8	1.1/2"	10	B6810
Stud clip M8	1.5/8"	10	B6811
Stud clip M8	3.1/8"	5	B7200
Stud clip M8	1/2" – 7/8" to 5/8 – 11/8	5	B7205
Stud clip M10	1/4"	10	B6814
Stud clip M10	3/8"	10	B6816
Stud clip M10	1/2"	10	B6815
Stud clip M10	5/8"	10	B6817
Stud clip M10	3/4"	10	B6818
Stud clip M10	7/8"	10	B6819
Stud clip M10	1"	10	B6820
Stud clip M10	1.1/8"	10	B6821
Stud clip M10	1.1/4"	10	B6822
Stud clip M10	1.1/2"	10	B6824
Stud clip M10	1.3/8"	10	B6823
Stud clip M10	1.5/8"	10	B6825
Stud clip M10	2"	10	B6826
Stud clip M10	2.1/8"	10	B6827
Stud clip M10	1/2" – 7/8" to 5/8 – 11/8	5	B7210



VRF 3 Pipe Clips

The uniquely designed Xtra 3 Pipe Clip provides support for VRV / VRF systems pipework.

Type	Dimensions (From)	Tube Diameter	Bag Qty.	Part No.
Size 1	3/8" - 5/8" - 3/4"	1/2" - 3/4" - 1"	5	B6361
Size 2	1/2" - 1/8" - 3/4"	5/8" - 1.1/8" - 1.1/8"	5	B6362
Size 3	5/8" - 1.1/8" - 1.1/8"	3/4" - 1.3/8" - 1.1/8"	5	B6363
Size 4	7/8" - 1.3/8" - 1.1/8"	3/4" - 1.5/8" - 1.3/8"	5	B6364



Barb Clips

Ideal for horizontal support on refrigeration installations.

Clip Diameter (Liquid)	Bag Qty.	Part No.
7/8"	10	B7006
1. 1/8"	10	B7008
1. 1/4"	10	B7009
1. 3/8"	10	B7010
2"	5	B7300



Metal Hanger

A rod clip ideal for supporting air conditioning line set pairs.

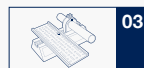
Type	Clip Diameter (Liquid)	Clip Diameter (Gas)	Bag Qty.	Part No.
Size 2	3/8"	5/8"	10	B6492
Size 3	1/2"	7/8"	10	B6493
Size 4	5/8"	1. 1/8"	10	B6494



Jubilee Hose Clips

Easy to fix and great for multiple pipework routes.

Tube Diameter (mm)	Bag Qty.	Part No.
8 - 12	5	602319
10 - 16	5	602320
12 - 20	5	602321
16 - 25	5	602322
18 - 32	5	602323
24 - 40	5	602324





K-Flex Pipe Support

Specifically designed to ensure a correct insulation thickness where joints are made.

The PIR central section, which covers the whole circumference and is attached to two K-FLEX insulating material sections, ensures a perfect continuity of the vapour barrier. Longitudinal sealing is obtained by means of the self-adhesive overlap. The external cover is in PVC. The support is also available with a collar and a special metal support which, when fixed to the supporting framework, ensures greater overall installation stability.

K-Flex Pipe Support & Collar

Description	Quantity	Part No.
K-Flex Pipe Support + Collar 13 x 010	1	KCL001
K-Flex Pipe Support + Collar 13 x 015	1	KCL002
K-Flex Pipe Support + Collar 13 x 022	1	KCL003
K-Flex Pipe Support + Collar 13 x 028	1	KCL004
K-Flex Pipe Support + Collar 19 x 010	1	KCL020
K-Flex Pipe Support + Collar 19 x 102	1	KCL021
K-Flex Pipe Support + Collar 25 x 114	1	KCL022
K-Flex Pipe Support + Collar 19 x 015	1	KCL023
K-Flex Pipe Support + Collar 19 x 022	1	KCL024
K-Flex Pipe Support + Collar 19 x 028	1	KCL025
K-Flex Pipe Support + Collar 19 x 035	1	KCL026
K-Flex Pipe Support + Collar 19 x 042	1	KCL027
K-Flex Pipe Support + Collar 19 x 048	1	KCL028
K-Flex Pipe Support + Collar 19 x 054	1	KCL029
K-Flex Pipe Support + Collar 25 x 060	1	KCL030
K-Flex Pipe Support + Collar 25 x 070	1	KCL031
K-Flex Pipe Support + Collar 25 x 080	1	KCL032
K-Flex Pipe Support + Collar 25 x 089	1	KCL033
K-Flex Pipe Support + Collar 40 x 070	1	KCL050
K-Flex Pipe Support + Collar 32 x 022	1	KCL051
K-Flex Pipe Support + Collar 32 x 022	1	KCL052
K-Flex Pipe Support + Collar 32 x 028	1	KCL053
K-Flex Pipe Support + Collar 32 x 035	1	KCL054
K-Flex Pipe Support + Collar 32 x 042	1	KCL055
K-Flex Pipe Support + Collar 32 x 048	1	KCL056
K-Flex Pipe Support + Collar 32 x 054	1	KCL057
K-Flex Pipe Support + Collar 40 x 080	1	KCL058



K-Flex 2S Clamp

Description	Quantity	Part No.
2S CLamp ZP (M8/10) 25-30mm	50	KCL070
2S CLamp ZP (M8/10) 38-46mm	50	KCL071
2S CLamp ZP (M8/10) 38-46mm	50	KCL072
2S CLamp ZP (M8/10) 47-52mm	50	KCL073
2S CLamp ZP (M8/10) 53-61mm	50	KCL074
2S CLamp ZP (M8/10) 62-67mm	50	KCL075
2S CLamp ZP (M8/10) 68-74mm	50	KCL076
2S CLamp ZP (M8/10) 75-81mm	50	KCL077
2S CLamp ZP (M8/10) 82-87mm	50	KCL078
2S CLamp ZP (M8/10) 96-103mm	50	KCL079
2S CLamp ZP (M8/10) 104-112mm	25	KCL080
2S CLamp ZP (M8/10) 113-118mm	25	KCL081
2S CLamp ZP (M8/10) 138-144mm	25	KCL082

Related Items:



Cable Tray & Accessories

Pre-Galvansied components are formed from sheet metal that has been galvanised and then the parts cut from the sheet. Hot Dipped Galvanised products are pre cut/formed components that are then galvanised individually offering improved protection.



Medium Duty Cable Tray (Pre-Galvanised)

Pre-galvanised cable tray with a range of time saving fixings and fittings.

Description	length (mm)	Part No.
3m Pre-Galv Cable Tray Medium Duty 75mm	3000	180233
3m Pre-Galv Cable Tray Medium Duty 100mm	3000	541519
3m Pre-Galv Cable Tray Medium Duty 150mm	3000	541520
3m Pre-Galv Cable Tray Medium Duty 225mm	3000	541521
3m Pre-Galv Cable Tray Medium Duty 300mm	3000	541522
3m Pre-Galv Cable Tray Medium Duty 450mm	3000	1984
3m Pre-Galv Cable Tray Medium Duty 600mm	3000	1993



Cable Tray Flat Bend 90° (Pre-Galvanised)

Description	Part No.
Pre-Galv Flat Bend 90° 75mm	180400
Pre-Galv Flat Bend 90° 100mm	180401
Pre-Galv Flat Bend 90° 150mm	180402
Pre-Galv Flat Bend 90° 225mm	180403
Pre-Galv Flat Bend 90° 300mm	180404
Pre-Galv Flat Bend 90° 450mm	180405



Cable Tray Hanger (Pre-Galvanised)

Description	Part No.
Pre-Galv Cable Tray Hanger 100mm	180440
Pre-Galv Cable Tray Hanger 150mm	180441
Pre-Galv Cable Tray Hanger 225mm	180442
Pre-Galv Cable Tray Hanger 300mm	180241



Cable Tray Flat Bend 45° (Pre-Galvanised)

Description	Part No.
Pre-Galv Flat Bend 45° 75mm	180410
Pre-Galv Flat Bend 45° 100mm	180411
Pre-Galv Flat Bend 45° 150mm	180412
Pre-Galv Flat Bend 45° 225mm	180413
Pre-Galv Flat Bend 45° 300mm	180414
Pre-Galv Flat Bend 45° 450mm	180415



Cable Tray Intersection (Pre-Galvanised)

Description	Part No.
Pre-Galv Cable Tray Intersection 75mm	180430
Pre-Galv Cable Tray Intersection 100mm	180431
Pre-Galv Cable Tray Intersection 150mm	180432
Pre-Galv Cable Tray Intersection 225mm	180433
Pre-Galv Cable Tray Intersection 300mm	180434
Pre-Galv Cable Tray Intersection 450mm	180435



Cable Tray Tee (Pre-Galvanised)

Description	Part No.
Pre-Galv Cable Tray Tee 75mm	180420
Pre-Galv Cable Tray Tee 100mm	180421
Pre-Galv Cable Tray Tee 150mm	180422
Pre-Galv Cable Tray Tee 225mm	180423
Pre-Galv Cable Tray Tee 300mm	180424
Pre-Galv Cable Tray Tee 450mm	180425





Stand Off Bracket (Pre-Galvanised)

Description	Part No.
Pre-Galv Cable Tray Stand Off Bracket 100mm	180245
Pre-Galv Cable Tray Stand Off Bracket 150mm	180247
Pre-Galv Cable Tray Stand Off Bracket 225mm	180249
Pre-Galv Cable Tray Stand Off Bracket 300mm	180251



Medium Duty Cable Tray (Hot Dipped Galvanised)

Description	length (mm)	Part No.
3m HDG Cable Tray Medium Duty 75mm	3000	180232
3m HDG Cable Tray Medium Duty 100mm	3000	180228
3m HDG Cable Tray Medium Duty 150mm	3000	180229
3m HDG Cable Tray Medium Duty 225mm	3000	180230
3m HDG Cable Tray Medium Duty 300mm	3000	180231
3m HDG Cable Tray Medium Duty 450mm	3000	180256
HDG Cable Tray Wrap Couplers x 2	N/A	180242



Stand Off Bracket (Hot Dipped Galvanised)

Description	Part No.
HDG Cable Tray Stand Off Bracket 100mm	180244
HDG Cable Tray Stand Off Bracket 150mm	180246
HDG Cable Tray Stand Off Bracket 225mm	180248
HDG Cable Tray Stand Off Bracket 300mm	180250



Cable Tray Hanger (Hot Dipped Galvanised)

Description	Part No.
HDG Cable Tray Hanger 100mm	180234
HDG Cable Tray Hanger 150mm	180236
HDG Cable Tray Hanger 225mm	180238
HDG Cable Tray Hanger 300mm	180240

Basket Tray

Description	Length (mm)	Part No.
3m Basket Tray 60mm	3000	2131
3m Basket Tray 100mm	3000	2132
3m Basket Tray 150mm	3000	2133
3m Basket Tray 200mm	3000	2134
3m Basket Tray 300mm	3000	2135
3m Basket Tray 400mm	3000	2136
3m Basket Tray 500mm	3000	9100
3m Basket Tray 600mm	3000	9101

Basket Tray Accessories

Description	Part No.
Quick Coupler x 2	180500
4 Part Clamp Kit	180501
Hold Down Clamp	180502
Central Support Hanger	180503
Suspension Hanger	180504
Quick Coupler x 2	2143

Related Items:



02



02



02



03



03



03

Channel & Accessories



Channel Lengths

Un-Slotted Channel

Description	Gauge (mm)	Size (mm)	Length (mm)	Part No.
Aluminium Channel	-	41 x 21	3000	C3MA
Plain Channel	2.5	41 x 21	3000	1000
Plain Channel	2.5	41 x 41	3000	1002
Plain Channel	2.5	41 x 41	6000	1003

Slotted Channel

Description	Gauge (mm)	Size (mm)	Length (mm)	Part No.
Unistrut Slotted Channel	1.5	41 x 21	3000	CH5LGU
Unistrut Slotted Channel	2.5	41 x 21	3000	CH5U
Unistrut Slotted Channel	1.5	41 x 41	3000	CH10LGU
Unistrut Slotted Channel	2.5	41 x 41	3000	CH10U
Slotted Channel	2.5	41 x 21	6000	1006
Slotted Channel	2.5	41 x 41	6000	1007
Slotted Channel	2.5	81 x 41	6000	1009
Slotted Channel	1.5	41 x 41	6000	1011
Slotted Channel	2.5	41 x 41	500	180131
Slotted Channel	2.5	41 x 41	6000	160128



Channel Wing Fitting

Description	Part No.
Type 1	1033
Type 2	1034
Type 3	1035
Type 4	1036



Channel Beam Clamp

The original metal framing system available in plain (un-slotted) and slotted channel in galvanised steel or aluminium.

Description	Part No.
Type 1	1043
Type 2	1044
Type 3	1045
Type 4	1046
Type 5	1047
Type 6	1048
Type 7	1049
Type 8	1050



Channel End Caps

Description	Size (mm)	Box Qty.	Part No.
Black Plastic End Caps	41 x 21	100	160272
White Plastic End Caps	41 x 21	6	160012W
White Plastic End Caps	41 x 21	100	160272W
White Plastic End Caps	41 x 41	6	160013W
White Plastic End Caps	41 x 41	100	160273W

Other Accessories

Description	Part No.
Internal Angle 45/135°	1018
Offset Angle	1022



Threaded Rod



Metal Rod Lengths

Metal threaded rod which is threaded down its entire length can be cut to size and fastened with our range of nuts.

Description	Length (mm)	Part No.
Threaded Rod M6	3000	160148
Threaded Rod M8	3000	TR8MU
Threaded Rod M10	1000	150153
Threaded Rod M10	3000	TR10MU
Threaded Rod M12	3000	160151

Hex Nut

Description	Pack Qty.	Part No.
Hex Nut BZP M6	25	160095
Hex Nut BZP M6	200	160380
Hex Nut BZP M8	25	160096
Hex Nut BZP M8	200	160381
Hex Nut BZP M10	25	160097
Hex Nut BZP M10	200	160382



Metal Rod Accessories

Description	Box Qty.	Part No.
Hanger Clip 1/4" x 1/2"	1	160457
Hanger Clip 3/8 x 5/8	1	160308
Hanger Clip 1/2 x 7/8	1	160309
Hanger Clip 5/8 x 1.1/8	1	160310
Black Threaded Rod Stud Caps M8	30	160076
Black Threaded Rod Stud Caps M8	100	160361
Black Threaded Rod Stud Caps M10	30	160077
Black Threaded Rod Stud Caps M10	100	160362
Connectors M6	100	160356
Connectors M8	4	160072
Connectors M8	100	160357
Connectors M10	4	160073
Connectors M10	100	160358
Connectors M12	100	160359
Threaded Rod Back Plate M8/M10	1	180606

Nylon Rod

Nylon rod is perfect for situations where a thermal barrier is required when fixing any items to cold rooms. Manufactured in the UK using very strong nylon 6.6 bar it is available in 8mm, 10mm or 12mm together with a range of complimentary range of nuts and washers.



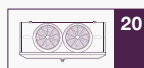
Straight Lengths

Description	Length (m)	Part No.
Threaded Rod M8	1	1100008
Threaded Rod M10	1	1660
Threaded Rod M12	1	1661



Accessories

Description	Box Qty.	Part No.
Dome Nut M10	1	1668
Dome Nut M12	1	1669
Buffalo/Cooler Bolt M10	1	11710300
Nut M8	1	1110080
Nut M10	1	1662
Nut M12	1	1663
Nut/Washer Comb. M8	1	1140080
Nut/Washer Comb. M10	1	1666
Nut/Washer Comb. M12	1	1667
Standard Washer M10	1	1664
Standard Washer M12	1	1665



Multi Frame - Custom Build

Description	2 Unit System Quantity	4 Unit System Quantity	6 Unit System Quantity	Part No.
End Bar 1000mm	2	-	-	604413
End Bar 2000mm	-	2	-	604414
End Bar 3000mm	-	-	2	604417
Boxed leg Assy 305mm	4	6	8	604419
Unit Clamp Kit (Bag of 4)	2	4	6	604421
Cross Bar 1200mm	2	4	6	604423
Anti Vibration Pad (per foot)	-	-	-	604338

Description	Dimensions (mm)	Weight (kg)	Max Load (kg)	Part No.
Multi Frame Base	1000 L x 1200 W x 355 H	36	500	B9720
Multi Frame Extension Kit	1000 L x 1200 W x 355 H	26	500	B9721



Lock 'n' Load

Description	Dimensions (mm)	Weight	Max Load	Part No.
Low Frame	1096 L x 767 W x 305 H	9.9kg	150kg	600650

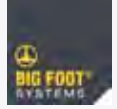


Condensing Unit Mounting Blocks

Description	Dimensions (mm)	Safe Working Load (kg)	Part No.
Mounting Block - 350mm	350 L x 100 W x 100 H	240	976588
Mounting Block - 450mm	450 L x 100 W x 100 H	240	976590
Mounting Block - 1000mm	1000 L x 100 W x 100 H	240	976591
Plarock End Cover	-	-	976592



H Frame Set



Description	Foot Size (mm)	Weight (kg)	Max Load (kg)	Part No.
H-Frame Set - 305mm	305	14	300	160330
H-Frame Set - 450mm	450	3.65	500	160331
H-Frame Set - 600mm	600	25	500	160332



Standard Frames

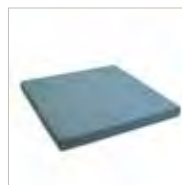
Description	Part No.
2 Uit System 1m x 1.3m	160320
3 Uit System 2m x 1.3m	160321
4 Uit System 3m x 1.3m	160322



Fix-it Foot

Rubber mounting foot reduces vibration, adds stability and allows pipe runs across roof areas.

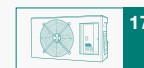
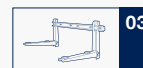
Dimensions (mm)	Weight (kg)	Max Load (kg)	Part No.
250 L x 180 W x 95 H	2.4	82	600640
400 L x 180 W x 95 H	3.5	128	600641
600 L x 180 W x 95 H	5.8	224	600642
1000 L x 180 W x 95 H	9.9	295	600643



Ultralite Paving Slab

Light weight self levelling slab that requires little or no ground penetration. Chemical, weathering, frost and freeze resistant.

Type	Dimensions (mm)	Safe Working Load (kg)	Part No.
UltraLite Equipment Slab - S	600 L x 600 W x 51 H	270	170099
UltraLite Equipment Slab - M	900 L x 400 W x 51 H	343	170098
UltraLite Equipment Slab - L	1200 L x 600 W x 76 H	703	170100



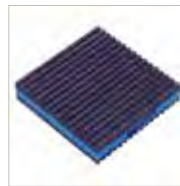
Anti-Vibration Pads

Anti-vibration pads: We stock a range of ant-vibration pads and strips to suit a variety of applications.

Machinery Mounting Pad



Dimensions (mm)	Part No.
1270 L x 100 W x 12.5 H	170686
1270 L x 75 W x 12.5 H	170688



Rubber Anti-Vibration Pad

Description	Dimensions (mm)	Weight (kg)	Max Load (kg per cm ²)	Part No.
MP-3 EVA Pad (Extreme Vibration Attenuation)	80 L x 80 W x 22 H	0.05	3.5	1482
MP-4 EVA Pad (Extreme Vibration Attenuation)	100 L x 100 W x 22 H	0.146	3.5	140004
MP-16 EVA Pad (Extreme Vibration Attenuation)	150 L x 150 W x 22 H	0.342	3.5	140005
MP-18 EVA Pad (Extreme Vibration Attenuation)	460 L x 460 W x 22 H	1.8	3.5	1491
MP-2C Rubber/Cork AV Pad	50 L x 50 W x 22 H	0.04	3.5	1481
MP-3C Rubber/Cork AV Pad	80 L x 80 W x 22 H	0.05	3.5	1483
MP-4C Rubber/Cork AV Pad	150 L x 150 W x 22 H	0.01	3.5	1484



Recycled Rubber Anti-Vibration Strip

Description	Dimensions (mm)	Part No.
Anti-Vibration Mounting Strip - Rubber	500 L x 50 W x 15 H	1496
Anti-Vibration Mounting Strip - Rubber	1000 L x 75 W x 15 H	140000
Anti-Vibration Mounting Strip - Rubber	1200 L x 75 W x 15 H	1495



Anti-Vibration Strip

Description	Dimensions (mm)	Part No.
Anti-Vibration Mounting Strip - TICO	1200 L x 100 W x 12.55 H	600610
Anti-Vibration Mounting Strip - TICO	1200 L x 75 W x 12.55 H	600611

Wall Bracket Trays



PVC

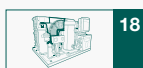
Description	Dimensions (mm)	Part No.
ccT790	790 L x 390 W	580030
ccT940	940 L x 420 W	580031



Metal

Description	Dimensions (mm)	Part No.
ccTM-800	800 L x 400 W	4540
ccTM-1100	1100 L x 400 W	4541
ccTM-1400	1400 L x 400 W	977124

Related Items:



Wall Brackets



Cantilever Arm Webbed

Length	Weight	Max Load	Part No.
600mm	2.6kg	190kg	160107
750mm	3kg	150kg	160108
950mm	-	-	CAB900



Condensing Unit Wall Brackets

Type	Max Load (kg)	Part No.
M	90	4538
L	140	4532
XL	250	4533
XXL	250	4534



Cantilever Arm Slotted HDG

Length	Depth	Part No.
150mm	41mm	180219
300mm	41mm	180220
450mm	41mm	180221
600mm	41mm	180222



Condensing Unit Wall Brackets C/W Rail

Type	Max Load (kg)	Part No.
S	60	4535
M	90	4536
L	140	4537
L - Economy	140	4556
XL	250	4545



Cantilever Arms Kit

Description	Weight (kg)	Max Load (kg)	Part No.
Cantilever Arm Kits - 600mm	9	190	160105



Condensing Unit Wall Brackets Accessories

Description	Box Qty.	Part No.
Plastic End Caps 41 x 21	6	160012
Plastic End Caps 41 x 41	6	160013
Plastic End Caps 41 x 41	100	160273



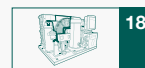
Cantilever Arm

Length (mm)	Part No.
150	160194
310	160195
450	CA450
600	CA600
750	CA750U

📌 DID YOU KNOW...

MHI don't just make air-conditioning units!

They also make ships, aircraft, rockets for the space station, fork lift trucks and much more...



Condensing Unit Security Guard

Description	Dimensions (mm)	Weight (kg)	Part No.
Pumphouse Cond Unit Cage S	720 L x 1020 H x 450 D	18	4520
Pumphouse Cond Unit Cage M	1120 L x 1120 H x 640 D	27	4521
Pumphouse Cond Unit Cage L	1420 L x 1120 H x 640 D	30	4522
Pumphouse Condensing Unit Cage XL	1770 L x 1120 H x 640 D	40	4529
Condensing Unit Cage Base Panel-Lge/Med	-	-	4523-L
Fastline Guard S	1067 H x 762 W x 635 D	19	45000
Fastline Guard M	1168 H x 1168 W x 635 D	29	45001
Fastline Guard L	1473 H x 1168 W x 635 D	3	45002

Pumphouse Protective Housing

Description	Dimensions (mm)	Part No.
CH-S	500 H x 710 W x 600 D	160110
CH-L	550 H x 810 W x 720 D	160111

Hermetic Condensing Unit Housing

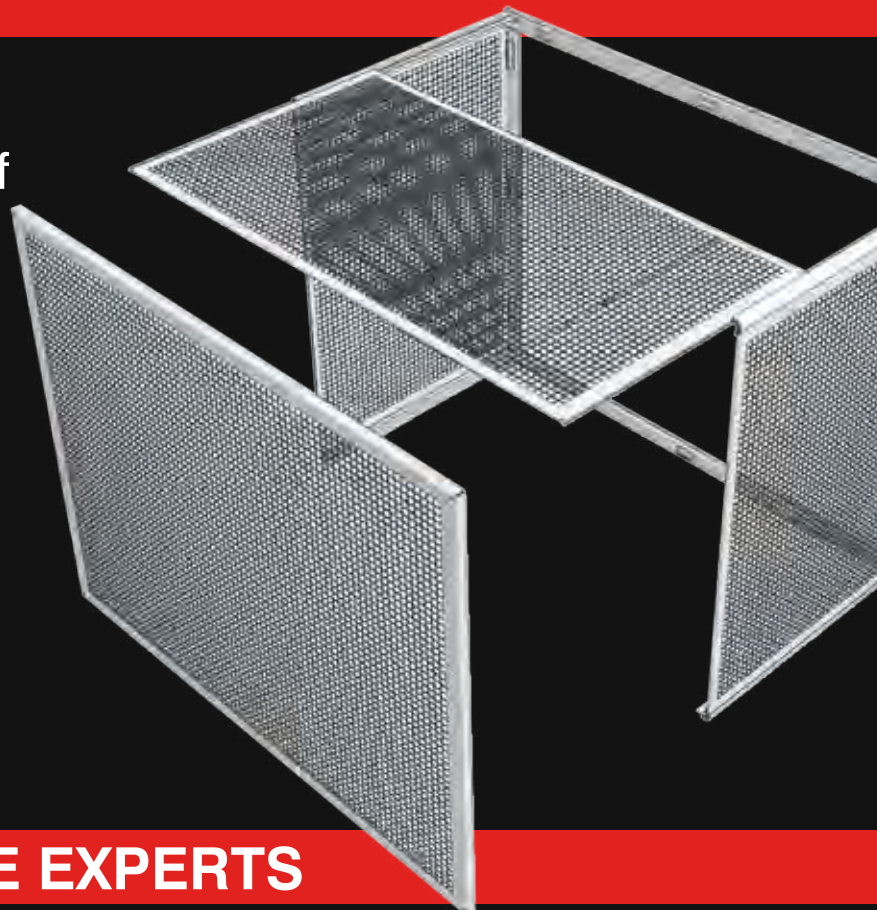


Type	Dimensions (mm)	Part No.
Virgo 0.1	432 H x 584 W x 584 D	4660
Virgo 1	610 H x 660 W x 762 D	4661
Virgo 2	762 H x 838 W x 965 D	4662
Virgo 3 / 4 / 5 / 6 / 7	Available on Request	-

Type	Embraco		L'Unite	
	From	To	From	To
Virgo 0.1	UNEK6144GK	UNEK6213GK	AET4425ZHR	AET4470ZHR
	UNEK2134GK	UNJ2212GK	CAJN9480ZHR	CAJ9513ZHR
	UNB6144E-2	UJ7228F	AET2415ZBR	AET2425ZBR
	UEMT2125GK	UNT2192GK	CAJN2432ZBR	T/ CAJN2464ZBR
	UEMT6144Z	UNJ6220Z	AEZ4425EHR	T/ CAJ9513TMHR
-	-	-	-	
-	-	-	-	
Virgo 1	UJ9232E	UJ7240F	T/ CAJN4517ZHR	T/FHT4524ZHR
	UJ9232GK/S	UJ9238GK/S	T/CAJ4517ZHR	T/FH4524ZHR
	-	-	TFH2480ZBR	TFH2511ZBR
	-	-	FH4518YHR	TAG4537YHR

THE ORIGINAL EASY-FIT CONDENSING CAGE

- Rugged and weatherproof
- Tough zintec steel construction
- Easy to install
- 24 sizes available
- 18 years of industry experience



General Fixings

Channel Brackets - Various

We offer a variety of brackets to adapt and fit channel to various applications.

Description	Pack Qty.	Part No.
Window Clamp 41 x 21	1	WINCLAMP
Window Clamp 41 x 41	1	WINCLAMP41
G-Clamp M8	1	M8GCLAMP
G-Clamp M10	1	M10GCLAMP
1 Hole 90° Bracket	1	CS12
2 Hole Flat Bracket	1	180154
3 Hole Flat Bracket	1	FB-102
3 Hole 90° Bracket	1	FB-112
4 Hole 90° Bracket	1	FB-114
4 Hole Flat Bracket	1	FB-103
4 Hole Flat T Bracket	1	FB-121
Base Plate 41 x 41 (Two Way)	1	180150
90° Flat 3 Hole Bracket	1	180136
Pull On Purling Clip M10	1	180129
Pull On Purling Clip M8	1	180188
Purling Clip	1	PCLIP
Channel 4 Hole External Connector 41 x 41	1	180145
Channel 4 Hole External Connector 41 x 21	1	180146
Channel 4 Hole External Connector 41 x 41	1	180147
Channel 4 Hole External Connector 41 x 21	1	180148
90° Bracket (1 hole x 3 hole)	1	180139
4Hole 90° Angled Tee	1	180142
Z Bracket 41 x 41	1	180143
Top Hat U Bracket 41 x 41	1	180144
Base Plate 41 x 41 (One Way)	1	180149
Base Plate 41 x 82	1	180151
Base Plate UP Stand 41 x 41	1	180152
Flat 5 Hole Connector Bracket	1	180158
Internal Angle 45°	1	1019
Top Hat U Bracket 82 x 41	1	1038
Z Bracket 41 x 21	1	1042



Square Plate Washers

Description	Pack Qty.	Part No.
Square Plate Washer M6	6	160014
Square Plate Washer M6	100	160274
Square Plate Washer M8	6	160015
Square Plate Washer M8	100	160275
Square Plate Washer M10	6	160016
Square Plate Washer M10	100	160276
Square Plate Washer M12	6	160017



Channel Nut Plain

Description	Pack Qty.	Part No.
Channel Nut Plain M6	8	160000
Channel Nut Plain M6	100	160260
Channel Nut Plain M8	8	160001
Channel Nut Plain M8	100	160261
Channel Nut Plain M10	8	160002
Channel Nut Plain M10	100	160262
Channel Nut Plain M12	8	160003
Channel Nut Plain M12	100	160263



Channel Nut Short Spring

Description	Pack Qty.	Part No.
Channel Nut Short spring M6	6	160008
Channel Nut Short spring M6	100	160268
Channel Nut Short spring M8	6	160009
Channel Nut Short spring M8	100	160269
Channel Nut Short spring M10	6	160010
Channel Nut Short spring M10	100	160270
Channel Nut Short spring M12	6	160011



Channel Nut Long Spring

Description	Pack Qty.	Part No.
Channel Nut Long Spring M6	6	160004
Channel Nut Long spring M8	6	160005
Channel Nut Long Spring M10	6	160006
Channel Nut Long spring M12	6	160007
Channel Nut Long Spring M6	100	160264
Channel Nut Long spring M8	100	160265
Channel Nut Long Spring M10	100	160266
Channel Nut Long spring M12	100	160267





U-Bolt Standard

Description	Pack Qty.	Part No.
U-Bolt Standard M6 x 15mm	1	180210
U-Bolt Standard M6 x 20mm	1	180211
U-Bolt Standard M6 x 25mm	1	180212
U-Bolt Standard M10 x 32mm	1	180213
U-Bolt Standard M10 x 40mm	1	180214
U-Bolt Standard M10 x 50mm	1	180215
U-Bolt Standard M10 x 65mm	1	180216
U-Bolt Standard M10 x 80mm	1	180217
U-Bolt Standard M12 x 100mm	1	180209

U-Bolt Extended

Description	Pack Qty.	Part No.
U-Bolt Extended M6 x 15mm	1	180201
U-Bolt Extended M6 x 20mm	1	180202
U-Bolt Extended M6 x 25mm	1	180203
U-Bolt Extended M10 x 32mm	1	180204
U-Bolt Extended M10 x 40mm	1	180205
U-Bolt Extended M10 x 50mm	1	180206
U-Bolt Extended M10 x 65mm	1	180207
U-Bolt Extended M12 x 80mm	1	180208
U-Bolt Extended M12 x 100mm	1	180200

Roofing Bolt & Nut

Description	Pack Qty.	Part No.
Roofing Nuts & Bolts M6 x 12mm	200	160278
Roofing Nuts & Bolts M6 x 20mm	200	160280
Roofing Nuts & Bolts M6 x 16mm	20	160019
Roofing Nuts & Bolts M6 x 16mm	200	160279
Roofing Nuts & Bolts M6 x 20mm	20	160020
Roofing Nuts & Bolts M6 x 25mm	20	160021
Roofing Nuts & Bolts M6 x 25mm	200	160281
Roofing Nuts & Bolts M6 x 30mm	20	160022
Roofing Nuts & Bolts M6 x 30mm	200	160282
Roofing Nuts & Bolts M6 x 35mm	20	160023



Hex Set

Description	Pack Qty.	Part No.
Hexset HT BZP M6 x 30mm	10	160255
Hexset HT BZP M6 x 30mm	100	180600
Hexset HT BZP M8 x 30mm	10	160256
Hexset HT BZP M8 x 30mm	100	180601
Hexset HT BZP M8 x 50mm	10	160440
Hexset HT BZP M8 x 50mm	100	180602
Hexset HT BZP M10 x 30mm	10	160257
Hexset HT BZP M10 x 30mm	100	180603
Hexset HT BZP M10 x 50mm	10	160441
Hexset HT BZP M10 x 50mm	100	180604
Hexset HT BZP M12 x 30mm	10	160109



Hex Nut

Description	Pack Qty.	Part No.
Hex Nut BZP M6	25	160095
Hex Nut BZP M6	200	160380
Hex Nut BZP M8	25	160096
Hex Nut BZP M8	200	160381
Hex Nut BZP M10	25	160097
Hex Nut BZP M10	200	160382



Eye Bolt

Description	Pack Qty.	Part No.
Eye Bolts M8 x 80mm	25	160396
Eye Bolts M10 x 80mm	10	160397



General Fixings



Hex Nut Cover

Description	Pack Qty.	Part No.
Hex Nut Cover M10	10	1055
Hex Nut Cover M10	100	160393



Wedge Nut

Description	Pack Qty.	Part No.
Wedge Nut M8	100	160429
Wedge Nut M10	1	180196



Penny Washer

Description	Pack Qty.	Part No.
Penny Washer M6 x 25mm	25	160079
Penny Washer M6 x 25mm	100	160364
Penny Washer M6 x 40mm	100	160368
Penny Washer M8 x 25mm	25	160080
Penny Washer M8 x 25mm	100	160365
Penny Washer M8 x 40mm	100	160369
Penny Washer M10 x 25mm	25	160081
Penny Washer M10 x 25mm	100	160366
Penny Washer M10 x 30mm	100	180607
Penny Washer M10 x 40mm	100	160370
Penny Washer M12 x 40mm	100	160371



Socket Bolt

Description	Pack Qty.	Part No.
Socket Bolt M8/M10	4	180610
Socket Bolt M8/M10	100	180611



Wall Plugs

Description	Pack Qty.	Part No.
Red Wall Plugs 5mm	100	RRP100
Brown Wall Plugs 7mm	100	BRP100



Anchor Bolt

Description	Pack Qty.	Part No.
100 Anchor Bolts M8/10	4	180612



Flat Washer

Description	Pack Qty.	Part No.
Flat Washer M8	100	160373
Flat Washer M10	100	160374
Flat Washer M12	100	160375



Lock Washer

Description	Pack Qty.	Part No.
Lock Washer M8	1	160187
Lock Washer M12	1	160189



Shakeproof Washer

Description	Pack Qty.	Part No.
Shakeproof Washer M6	100	160376
Shakeproof Washer M8	100	160377
Shakeproof Washer M10	100	160378
Shakeproof Washer M12	100	160379



Drop In Anchor Setting Tool

Description	Pack Qty.	Part No.
Fixings Setting Tool for Drop in Anchor	1	180189



Drop In Anchor

Description	Pack Qty.	Part No.
Drop-in Anchor M8	10	160438
Drop-in Anchor M8	100	160435
Drop-in Anchor M10	50	160434
Drop-in Anchor M10	10	160439



Loose Bolt Shield Anchor

Description	Pack Qty.	Part No.
Loose Bolt Shield Anchor 0810L M8	1	M825L
Loose Bolt Shield Anchor 1025L M10	1	M1025L
Loose Bolt Shield Anchor 1010L M10	1	M1010L



Screws



TEKS Screw

Description	Pack Qty.	Part No.
Teks Screws ASF17/g16 5.5 x 25	100	160284
Teks Screws ASF17/g16 5.5 x 38	100	160285



Coach Screw

Description	Pack Qty.	Part No.
Coach Screw Hex Head M8 x 40mm	5	160026
Coach Screw Hex Head M8 x 50mm	5	160027
Coach Screw Hex Head M8 x 50mm	100	160287
Coach Screw Hex Head M8 x 60mm	5	160028
Coach Screw Hex Head M8 x 75mm	5	160029
Coach Screw Hex Head M8 x 80mm	5	160030
Coach Screw Hex Head M10 x 30mm	5	160031
Coach Screw Hex Head M10 x 30mm	100	160291
Coach Screw Hex Head M10 x 40mm	5	160032
Coach Screw Hex Head M10 x 50mm	5	160033
Coach Screw Hex Head M10 x 50mm	100	160293
Coach Screw Hex Head M10 x 60mm	5	160034
Coach Screw Hex Head M10 x 70mm	5	160035
Coach Screw Hex Head M10 x 80mm	5	160036
Coach Screw Hex Head M12 x 40mm	5	160037
Coach Screw Hex Head M12 x 50mm	5	160038
Coach Screw Hex Head M12 x 60mm	5	160039
Coach Screw Hex Head M12 x 75mm	5	160040



Twinfast Screw

Description	Pack Qty.	Part No.
Twinfast CSK POZI No8 x 1"	200	160406
Twinfast CSK POZI No8 x 1.1/2"	200	160408
Twinfast CSK POZI No8 x 2"	200	160409
Twinfast CSK POZI No10 x 1"	200	160410
Twinfast CSK POZI No10 x 1.1/2"	200	160411
Twinfast CSK POZI No10 x 2"	200	160412
Twinfast CSK POZI No10 x 2.1/2"	200	160414



Plasterboard Fixings

Description	Pack Qty.	Part No.
Plasterboard Fixings	100	PBF100



Related Items:



03



03



03

Trunking



Inoac Trunking Straight Length White

Description	Size (mm)	Length (m)	Part No.
Straight Duct	75	2	CD75W
Straight Duct	100	2	CD100W



Inoac Trunking Fittings White

Description	Size	Pack Qty.	Part No.
45° Elbow	75	1	NU75W
Corner Cap	75	1	NA75W
Flexible Joint	75	1	NF75W
Horizontal Elbow	75	1	NE75W
Outlet Cover	75	1	NW75W
Socket	75	1	NS75W
Vertical Elbow	75	1	NC75W
Wall Cap	75	1	NK75W
Corner Cap	100	1	NA100W
Horizontal Elbow	100	1	NE100W
Outlet Cover	100	1	NW100W
Socket	100	1	NS100W
T-Joint	100	1	NT100W

ⓘ DID YOU KNOW...

In 1939, Frigidaire demonstrated the strength of their domestic refrigerator by standing a **4-tonne elephant** on it!



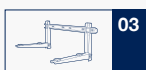
Inoac Trunking Straight Length Ivory

Description	Size (mm)	Length (m)	Part No.
Straight Duct	60	2	CD-60
Straight Duct	75	2	CD-75
Straight Duct	100	2	CD-100
Straight Duct	140	2	CD-140



Inoac Trunking Fittings Ivory

Description	Size	Pack Qty.	Part No.
Horizontal Elbow	60	1	NE-60
Outlet Cover	60	1	NW-60
Socket	60	1	NS-60
Vertical Elbow	60	1	NC-60
Corner Cap	75	1	NA-75
End Socket	75	1	NR-75
Flexible Joint	75	1	NF-75
Horizontal Elbow	75	1	NE-75
Horizontal Universal Elbow	75	1	NX-75
Outlet Cover	75	1	NW-75
Socket	75	1	NS-75
Vertical 45° Elbow	75	1	NU-75
Vertical Elbow	75	1	NC-75
Vertical Universal Elbow	75	1	NZ-75
Wall Cap	75	1	NK-75
T-Joint	75	1	NT-75
Horizontal Elbow	100	1	NE-100
Horizontal Universal Elbow	100	1	NX-100
Outlet Cover	100	1	NW-100
Socket	100	1	NS-100
T-Joint	100	1	NT-100
Vertical 45° Elbow	100	1	NU-100
Vertical Elbow	100	1	NC-100
Wall Cap	100	1	NK-100





Aspen Trunking Straight Length Ivory

Description	Size (mm)	Length (m)	Part No.
Straight Duct	70	2	UUD70
Straight Duct	105	2	D105



Aspen Trunking Fittings Ivory

Description	Size (mm)	Pack Qty.	Part No.
45°C Bend	70	1	FB7045
Connector	70	1	CP70
Duct Cap	70	1	DC70
Duct End	70	1	DE70
Elbow Bend	70	1	EB70
Flat Bend	70	1	FB70
Flex Joint	70	1	FJ70
Int Elbow	70	1	EIN70
Reducer	70	1	RJ70105
Rosette	70	1	FR70
W.Rosette	70	1	WR70
Wall Cover	70	1	WC70
45°C Bend	105	1	FB10545
Connector	105	1	CP105
Duct Cap	105	1	DC105
Duct End	105	1	DE105
Elbow Bend	105	1	EB105
Flat Bend	105	1	FB105
Flex Joint	105	1	FJ105
Int Elbow	105	1	EIN105
W.Rosette	105	1	WR105
Rosette	105	1	FR105
T-Joint	105	1	TJ105
Wall Cover	105	1	WC105
Wall Cover	105	1	B6790



Sauermann Trunking Straight Length White

Description	Size (mm)	Length (m)	Part No.
Straight Duct 80 x 60	80	2	977736
Straight Duct 110 x 75	110	2	977742



Sauermann Trunking Fittings White

Description	Size (mm)	Pack Qty.	Part No.
Connection Piece	80	1	977738
End Cap	80	1	977743
External Corner 90°	80	1	977745
Flat Elbow 90°	80	1	977731
Wall Duct	80	1	977675
Internal Corner 90°	80	1	977733
T Joint	80	1	977746
Connection Piece	110	1	977737
End Cap	110	1	977730
External Corner 90°	110	1	977747
Flat Elbow 90°	110	1	977744
Internal Corner 90°	110	1	977740
T Joint	110	1	977739
Wall Duct	110	1	977735

ⓘ DID YOU KNOW...

The first residential air conditioning system was installed in 1914.

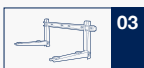
It was 7ft. high, 6ft. wide, and 20ft. long!



Related Items:



AC



03



04



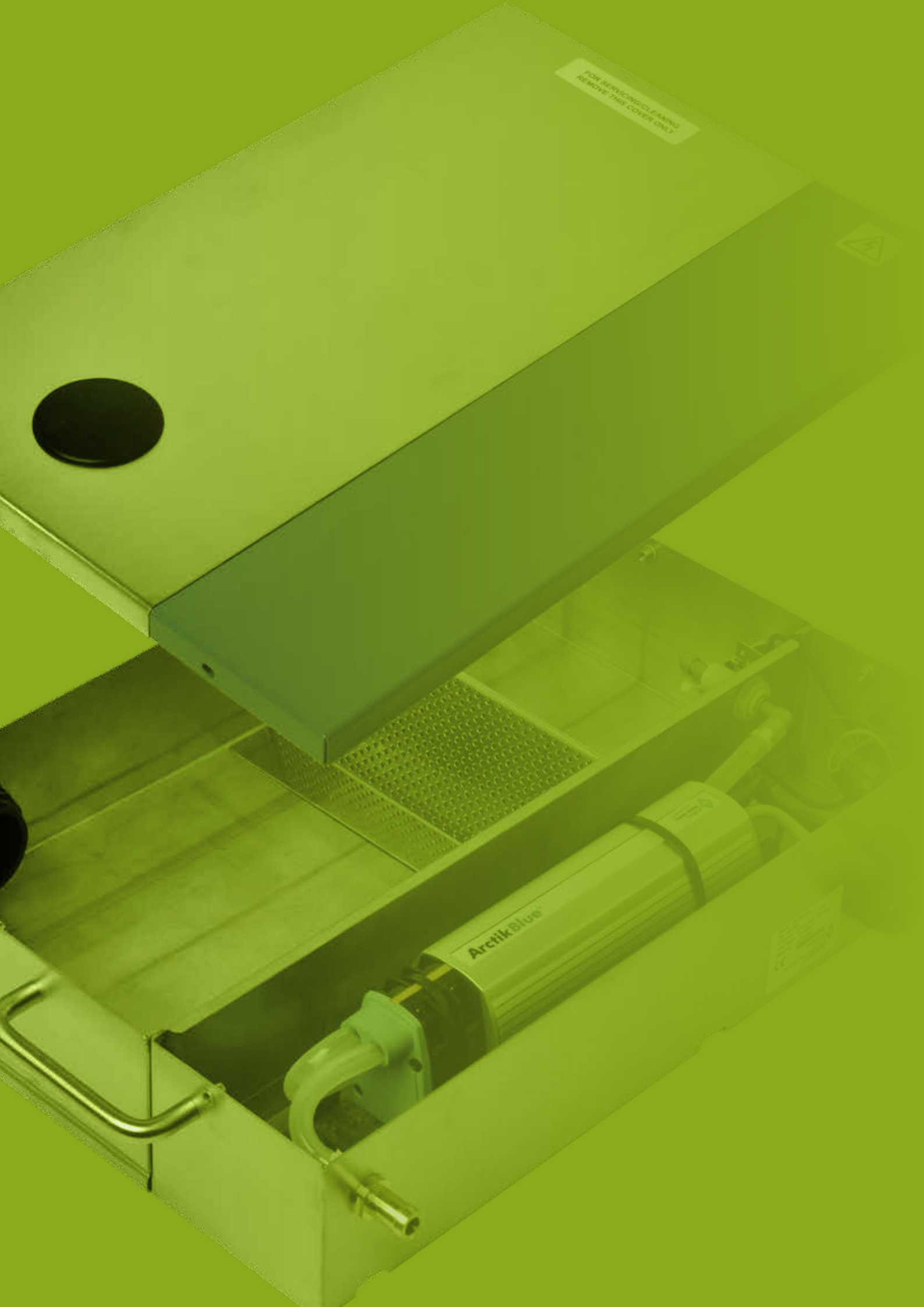
04



04



04



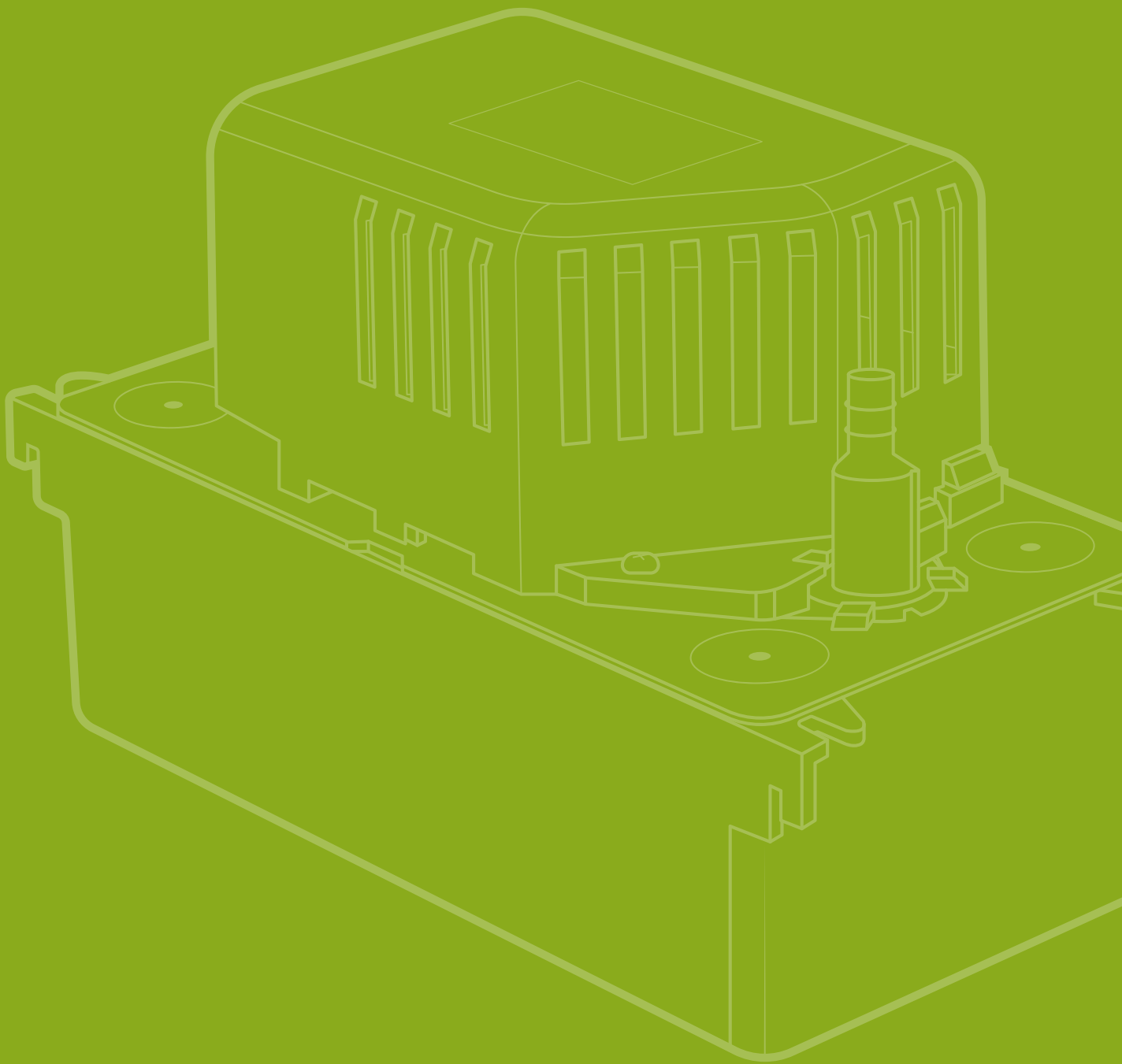
FOR EFFICIENT CLEANING
READY THE COVER ONLY



Arectik Blue

SECTION FOUR

Condensate Pumps



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Tank Pumps



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Mini Pumps



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Mini Pumps w/Trunking



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Rotary Pumps



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Condensate Removal



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Accessories & Spares



Si-83 Tank Pump

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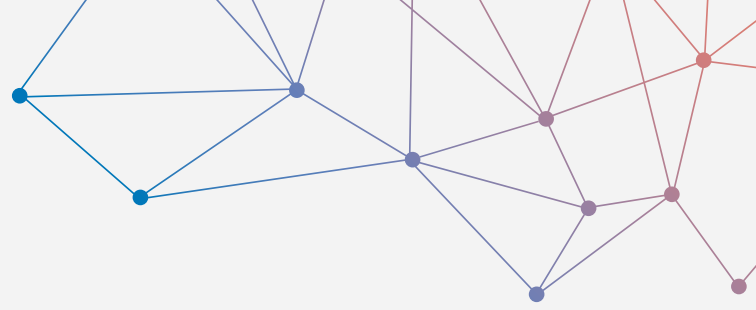
DCP-30W Dairy Pump

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MaxiBlue Rotary Pump

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Sauerermann's new Delta Pack 80X60

Pump inside a trunk



Large space
for tubing



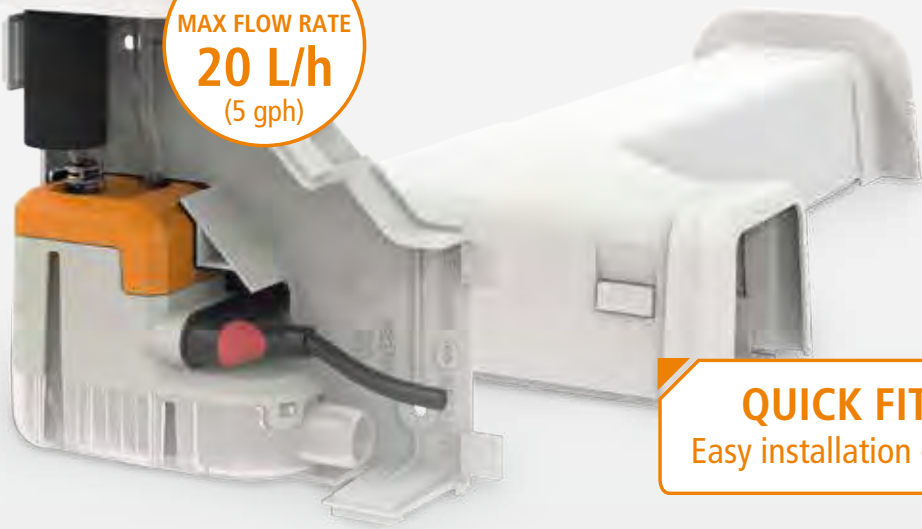
Quick and easy
installation



Low operating
sound level
EN ISO 3744 tested



Patented
piton pump
technology



QUICK FIT & RELEASE
Easy installation - Easy maintenance

Tank Pumps

Aspen Max Head 15m Mini Tank Pump

Part No: FP1056/2



Performance	
Max flow rate (l/h)	35
Electrical	
Ampage	0.1
IP class	65
Safety switch**	3.0A Normally closed
Dimensions	
Outlet ID	6mm & 10mm
Length	210mm
Width	89mm
Height	69mm
Weight (kg)	0.57
Other	
Sound Level (dBA)*	35

Aspen Hi Lift 1-Litre Pump

Part No: FP2099/2



Performance	
Max flow rate (l/h)	11
Max discharge head (m)	12
Tank volume (l)	1
Electrical	
Ampage	0.4
IP class	20
Safety switch	3.0A Normally closed
Dimensions	
Outlet ID	1/4"
Length	244mm
Width	148mm
Height	132mm
Weight (kg)	1.75
Other	
Sound Level (dBA)	51
Detection	Integrated Float

Aspen Hi Lift 2 -Litre Pump

Part No: FP2071/2



Performance	
Max flow rate (l/h)	11
Max discharge head (m)	12
Tank volume (l)	2
Electrical	
Ampage	0.4
IP class	20
Safety switch	3.0A Normally closed
Dimensions	
Outlet ID	1/4"
Length	244mm
Width	148mm
Height	164mm
Weight (kg)	1.8
Other	
Sound Level (dBA)	51
Detection	Integrated Float

Aspen Max Hi-Flow Tank Pump

Part No: FP3349



Performance	
Max flow rate (l/h)	550
Max discharge head (m)	5
Tank volume (l)	1.7
Electrical	
Ampage	0.8
IP class	24
Safety switch	3.0A Normally closed
Dimensions	
Outlet ID	3/8"
Length	285mm
Width	144mm
Height	134mm
Weight (kg)	1.65
Other	
Sound Level (dBA)	44
Detection	Integrated Float

Aspen Hot Water 4-Litre Pump

Part No: FP2092/2



Performance	
Max flow rate (l/h)	900
Max discharge head (m)	6
Tank volume (l)	4
Electrical	
Ampage	1.5
IP class	20
Safety switch	3.0A Normally closed
Dimensions	
Outlet ID	3/8"
Length	300mm
Width	150mm
Height	205mm
Weight (kg)	3.6
Other	
Sound Level (dBA)	60
Detection	Integrated Float

Aspen Heavy Duty 6m Pump

Part No: FP2074/2



Performance	
Max flow rate (l/h)	900
Max discharge head (m)	6
Tank volume (l)	4
Electrical	
Ampage	1.5
IP class	20
Safety switch	3.0A Normally closed
Dimensions	
Outlet ID	3/8"
Length	300mm
Width	150mm
Height	205mm
Weight (kg)	3.5
Other	
Sound Level (dBA)	60
Detection	Integrated Float



Aspen Heavy Duty 10m Pump

Part No: FP2066/2



Performance	
Max flow rate (l/h)	1070
Max discharge head (m)	9
Tank volume (l)	4

Electrical	
Ampage	0.38
IP class	20
Safety switch	3.0A Normally closed

Dimensions	
Outlet ID	3/8"
Length	300mm
Width	150mm
Height	265mm
Weight (kg)	4.3

Other	
Sound Level (dBA)	64
Detection	Integrated Float

Aspen Macerator 4-Litre Pump

Part No: FP2305/2



Performance	
Max flow rate (l/h)	780
Max discharge head (m)	8.5
Tank volume (l)	4

Electrical	
Ampage	0.38
IP class	21
Safety switch	4.0A Normally closed

Dimensions	
Outlet ID	3/8"
Length	335mm
Width	150mm
Height	230mm
Weight (kg)	3.8

Other	
Sound Level (dBA)	64
Detection	Integrated Float

Aspen Macerator 10-Litre Pump

Part No: FP2307/2



Performance	
Max flow rate (l/h)	780
Max discharge head (m)	8.5
Tank volume (l)	10

Electrical	
Ampage	0.38
IP class	21
Safety switch	4.0A Normally closed

Dimensions	
Outlet ID	3/8"
Length	390mm
Width	310mm
Height	230mm
Weight (kg)	6.8

Other	
Sound Level (dBA)	64
Detection	Integrated Float

Pumphouse 1-Litre Tank Pump

Part No: 677004



Performance	
Max flow rate (l/h)	270
Max discharge head (m)	6
Tank volume (l)	0.8

Electrical	
Ampage	-
IP class	20
Safety switch	n/a

Dimensions	
Outlet ID	3/8" & 1/4"
Length	220mm
Width	134mm
Height	122mm
Weight (kg)	2

Other	
Sound Level (dBA)	43
Detection	Integrated Float

Pumphouse 2-Litre Tank Pump

Part No: 677013



Performance	
Max flow rate (l/h)	300
Max discharge head (m)	4.8
Tank volume (l)	2

Electrical	
Ampage	-
IP class	20
Safety switch	n/a

Dimensions	
Outlet ID	3/8" & 1/4"
Length	290mm
Width	130mm
Height	180mm
Weight (kg)	2.4

Other	
Sound Level (dBA)	60
Detection	Integrated Float



DID YOU KNOW...

As a rule of thumb it is recommended you allow 1ltr/hr of condensate for every 1kw of system duty.

For a 5kw wall mount unit allow for 5ltrs/hr of condensate. **Simple.**

Related Items:



Tank Pumps

Sauermann Si-1805 0.5 Litre Tank Pump

Part No: 677138



Performance

Max flow rate (l/h)	500
Max discharge head (m)	5.4
Tank volume (l)	0.5

Electrical

Ampage	-
IP class	20
Safety switch	NC4 A resistive - 250V

Dimensions

Outlet ID	3/8" & 1/4"
Length	195mm
Width	130mm
Height	132mm
Weight (kg)	2

Other

Sound Level (dBA)	47
Detection	Integrated Float

Sauermann Si-81 2-Litre Tank Pump

Part No: 677132



Performance

Max flow rate (l/h)	500
Max discharge head (m)	5
Tank volume (l)	2

Electrical

Ampage	0.67
IP class	20
Safety switch	NC4 A resistive - 250V

Dimensions

Outlet ID	3/8" & 1/4"
Length	279mm
Width	130mm
Height	174.5mm
Weight (kg)	2.5

Other

Sound Level (dBA)	45
Detection	Integrated Float

Sauermann Si-83 1-2 Litre Tank Pump

Part No: 677133



Performance

Max Flow	700 l/h
Tank Capacity	2ltr
Max Discharge head	5.4m (65l/h)
Max Pressure	5.7m
Inlet connection	3/8"
Outlet connection	1.3/16"

Electrical

Mains supply	230 V~ 50 Hz - 115 W - 1.4 A
Operation conditions	7 % non-continuous
Protection	IP44
Max condensate acidity	pH > 2.5 (Gas condensing boilers)
Colour	Black, blue
Safety switch	NC: 5 A resistive 250 V

Dimensions

Outlet ID	-
Length / Width / Height	287mm / 146mm / 129mm
Weight	1.83kg

Sauermann 1-2 Litre Tank Pump Si-83



The Si-83 ultra low level tank pump is constructed from rugged materials and components for exceptional durability and reliability and its unmatched versatility means that the Si-83 tank pump from Sauermann is equally proficient for air conditioning and refrigeration applications as it is for heating applications. It's also available with the new Si-83 Mobile App allowing the engineer to level the pump, check instructions and review maintenance calendars.

- **Ultra low level tank pump**
- **6 inlet options for un-rivaled positioning**
- **Tank can be cleaned whilst pump remains connected**
- **Unique MobileApp assists engineers with smart phones**

KIT CONTENT

- 1 One-piece centrifugal pump with 2 L tank
- 1 Integrated barb end check valve, Ø ext. 10 mm
- 1 1.8 m power cord, plug. (SI83CE04UN23, SI83CE74UN23: bare ends)
- 1 Built-in safety switch, 1 m wires, plug, NC (SI83CE01UN23), NO (SI83CE41UN23) or NC/NO (SI83CE71UN23)
- 1 Built-in safety switch, 1 m wires, stripped wires: NC (SI83CE04UN23), NC/NO(SI83CE74UN23)
- 2 screws, 2 plugs
- 1 Straight connector with tube and zip tie for Ø6 mm int. tube



Mini Pumps

Aspen Micro-V Mini Pump

Part No: 7513



Performance

Max flow rate (l/h)	14.5
Max discharge head (m)	10

Electrical

Ampage	0.45
IP class	24
Safety switch**	3.0A Normally closed

Dimensions (pump)

Outlet ID	6mm
Length	106mm
Width	31mm
Height	37mm
Weight (kg)	0.46

Other

Sound Level (dBA)	19
-------------------	----

Aspen Mini Orange Pump

Part No: 6538



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.11
IP class	21
Safety switch**	3.0A Normally closed

Dimensions (pump)

Outlet ID	6mm
Length	116mm
Width	39mm
Height	51mm
Weight (kg)	0.25

Other

Sound Level (dBA)	21
-------------------	----

Aspen Mini Silent+ Pump

Part No: 7500



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.11
IP class	21
Safety switch**	3.0A Normally closed

Dimensions (pump)

Outlet ID	6mm
Length	116mm
Width	39mm
Height	51mm
Weight (kg)	0.25

Other

Sound Level (dBA)	19
-------------------	----

Aspen Mini Blanc Pump

Part No: 7462



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.11
IP class	21
Safety switch**	3.0A Normally closed

Dimensions (pump)

Outlet ID	6mm
Length	182mm
Width	55mm
Height	115mm
Weight (kg)	0.46

Other

Sound Level (dBA)*	21
--------------------	----

Aspen Maxi Orange Pump

Part No:7412



Performance

Max flow rate (l/h)	35
Max discharge head (m)	15

Electrical

Ampage	0.11
IP class	21
Safety switch**	3.0A Normally closed

Dimensions (pump)

Outlet ID	6mm
Length	122mm
Width	44mm
Height	66mm
Weight (kg)	0.45

Other

Sound Level (dBA)*	35
--------------------	----

Aspen Aqua Mini Pump

Part No: 7408



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch	3.0A Normally closed

Dimensions (pump)

Outlet ID	6mm
Length	183mm
Width	28mm
Height	28mm
Weight (kg)	0.18

Other

Sound Level (dBA)	21
-------------------	----

Related Items:



Mini Pumps

Aspen Aqua Silent+ Mini Pump

Part No: 7511



Performance	
Max flow rate (l/h)	12
Max discharge head (m)	10
Electrical	
Ampage	0.1
IP class	24
Safety switch	3.0A Normally closed
Dimensions (pump)	
Outlet ID	6mm
Length	183mm
Width	28mm
Height	28mm
Weight (kg)	0.18
Other	
Sound Level (dBA)	19

Aspen Silent+ Mini Lime Replacement Pump

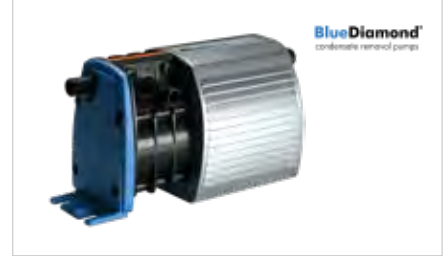
Part No: FP3322/2



Performance	
Max flow rate (l/h)	12
Max discharge head (m)	10
Electrical	
Ampage	0.1
IP class	24
Safety switch**	5.0A N.C. / N.O.**
Dimensions	
Outlet ID	6mm
Length	239mm
Width	47mm
Height	101mm
Weight (kg)	0.31
Other	
Sound Level (dBA)	20

Blue Diamond MiniBlue c/w Temperature Sensor

Part No: 7022



Performance	
Max flow rate (l/h)	8
Max discharge head (m)	8
Electrical	
Ampage	0.02
IP class	IP4
Safety switch	Thermal Cut Out
Dimensions	
Outlet ID	6mm
Length	138mm
Width	58mm
Height	67mm
Weight (kg)	0.6
Other	
Sound Level (dBA)	21

Blue Diamond MiniBlue c/w CR Plug

Part No: 7021



Performance	
Max flow rate (l/h)	8
Max discharge head (m)	8
Dimensions (pump)	
Outlet ID	6mm
Length	138mm
Width	58mm
Height	67mm
Weight (kg)	0.6
Other	
Sound Level (dBA)	21

Blue Diamond MicroBlue Reservoir Pump

Part No: 7794



Performance	
Max flow rate (l/h)	5
Max discharge head (m)	5
Electrical	
Ampage	0.04
IP class	IP5X
Safety switch	Thermal Cut Out
Dimensions	
Outlet ID	6mm
Length	150mm
Width	37mm
Height	40mm
Weight (kg)	0.56 Kg
Other	
Sound Level (dBA)	17

Blue Diamond Microblue Pump + Temp Sensor

Part No: 7857



Performance	
Max flow rate (l/h)	5
Max discharge head (m)	5
Electrical	
Ampage	0.04
IP class	IP5X
Safety switch	Thermal Cut Out
Dimensions	
Outlet ID	6mm
Length	150mm
Width	37mm
Height	40mm
Weight (kg)	0.5 Kg
Other	
Sound Level (dBA)	17



Mini Pumps

Sauermann Si-10 Univers'L Mini Pump & Accessories Kit

Part No: 677143



Performance	
Max flow rate (l/h)	20
Max discharge head (m)	10
Electrical	
Ampage	-
IP class	X4
Safety switch	NC 8 A resistive - 250 V
Dimensions	
Outlet ID	6mm
Length	96mm
Width	44mm
Height	76mm
Weight (kg)	0.4
Other	
Sound Level (dBA)	22

Sauermann Si-10 Universal Service Replacement Pump

Part No: 677170



Performance	
Max flow rate (l/h)	12
Max discharge head (m)	10
Electrical	
Ampage	0.1
IP class	24
Safety switch	3.0A Normally closed
Dimensions (pump)	
Outlet ID	6mm
Length	183mm
Width	28mm
Height	28mm
Weight (kg)	0.18
Other	
Sound Level (dBA)	19

Sauermann Si-20 2 Piece Slim Mini Pump

Part No: 977713



Performance	
Max flow rate (l/h)	20
Max discharge head (m)	10
Electrical	
Ampage	-
IP class	X2
Safety switch	NC 8 A resistive - 250 V
Dimensions (pump)	
Outlet ID	6mm
Length	136mm
Width	38mm
Height	37mm
Weight (kg)	0.48
Other	
Sound Level (dBA)*	22

*Sound level at 1m according to EN ISO 3744

Sauermann Si-30 2 Piece Mini Pump

Part No: 677163



Performance	
Max flow rate (l/h)	20
Max discharge head (m)	10
Electrical	
Ampage	-
IP class	20
Safety switch	NC 8 A resistive - 250 V
Dimensions (pump)	
Outlet ID	6mm
Length	43.5mm
Width	60mm
Height	60mm
Weight (kg)	0.48
Other	
Sound Level (dBA)*	20

*Sound level at 1m according to EN ISO 3744

Sauermann Si-33 Piston Pump

Part No: 677165



Performance	
Max flow rate (l/h)	30
Max discharge head (m)	13
Electrical	
Ampage	-
IP class	20
Safety switch**	NC 8 A resistive - 250 V
Dimensions (pump)	
Outlet ID	6mm
Length	66mm
Width	43.5mm
Height	60mm
Weight (kg)	0.48
Other	
Sound Level (dBA)*	34

*Sound level at 1m according to EN ISO 3744

Sauermann Omega Pack

Part No: 977714



Performance	
Max flow rate (l/h)	20
Max discharge head (m)	10
Electrical	
Ampage	-
IP class	X2
Safety switch**	NC 8 A resistive - 250 V
Dimensions (pump)	
Outlet ID	6mm
Length	326mm
Width	58mm
Height	65mm
Weight (kg)	0.73
Other	
Sound Level (dBA)*	22

*Sound level at 1m according to EN ISO 3744

Related Items:





BEST IN CLASS CONDENSATE REMOVAL PUMPS

Aspen Pumps are at the forefront of condensate pump technology. As engineers, we understand the complexity of installations and so create market leading products that are designed to best suit the application and environment.

We pride ourselves on providing professionals with everything they need for the perfect installation; from mini pumps to tank pumps we have it all.

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sales@aspenpumps.com

Mini Pumps with Trunking

Aspen Silent+ Mini Lime c/w Ivory BBJ Trunking

Part No: FP3316/2



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch**	5.0A N.C. / N.O.**

Dimensions (pump)

Outlet ID	6mm
Length	101mm
Width	47mm
Height	239mm
Weight (kg)	0.31

Dimensions (trunking)

Height	65mm
Depth	70mm

Other

Sound Level (dBA)	20
-------------------	----

Aspen Silent+ Mini Lime c/w White BBJ Trunking

Part No: FP3320/2



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch**	5.0A N.C. / N.O.**

Dimensions (pump)

Outlet ID	6mm
Length	101mm
Width	47mm
Height	239mm
Weight (kg)	0.31

Dimensions (trunking)

Height	65mm
Depth	70mm

Other

Sound Level (dBA)	20
-------------------	----

Aspen Silent+ Mini Lime c/w Slimline Ivory Trunking

Part No: FP3312/2



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch**	5.0A N.C. / N.O.**

Dimensions (pump)

Outlet ID	6mm
Length	101mm
Width	47mm
Height	239mm
Weight (kg)	0.31

Dimensions (trunking)

Height	50mm
Depth	80mm

Other

Sound Level (dBA)	20
-------------------	----

Aspen Silent+ Mini Lime c/w Ivory Inoac Trunking

Part No: FP3317/2



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch**	5.0A N.C. / N.O.**

Dimensions (pump)

Outlet ID	6mm
Length	101mm
Width	47mm
Height	239mm
Weight (kg)	0.31

Dimensions (trunking)

Height	62mm
Depth	74mm

Aspen Silent+ Mini Lime c/w White Inoac Trunking

Part No: FP3321/2



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch**	5.0A N.C. / N.O.**

Dimensions (pump)

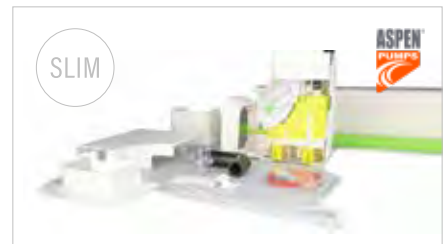
Outlet ID	6mm
Length	101mm
Width	47mm
Height	239mm
Weight (kg)	0.31

Dimensions (trunking)

Height	62mm
Depth	74mm

Aspen Silent+ Mini Lime c/w Slimline White Trunking

Part No: FP3319/2



Performance

Max flow rate (l/h)	12
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch**	5.0A N.C. / N.O.**

Dimensions (pump)

Outlet ID	6mm
Length	101mm
Width	47mm
Height	239mm
Weight (kg)	0.31

Dimensions (trunking)

Height	50mm
Depth	80mm

Related Items:



Mini Pumps w/Trunking

Aspen Maxi Lime c/w BBJ White Trunking

Part No: 7435



Performance

Max flow rate (l/h)	35
Max discharge head (m)	10

Electrical

Ampage	0.1
IP class	24
Safety switch	3.0A Normally closed

Dimensions (pump)

Outlet ID	6mm
Length	99mm
Width	44mm
Height	119mm
Weight (kg)	0.47

Dimensions (trunking)

Height / Depth	65mm / 70mm
----------------	-------------

Other

Sound Level (dBA)*	35
--------------------	----

Sauermann Delta Pack Pure White / Off White

Part No: 977724 / 977725



Performance

Max flow rate (l/h)	20
Max discharge head (m)	10

Electrical

Ampage	-
IP class	X4
Safety switch	NC 8 A resistive - 250 V

Dimensions (pump)

Outlet ID	6mm
Length	96mm
Width	44mm
Height	76mm
Weight (kg)	0.4

Dimensions (trunking)

Height / Depth	80mm / 60mm
----------------	-------------

Other

Sound Level (dBA)	22
-------------------	----

Blue Diamond MiniBlue R c/w Ducting Kit

Part No: 7039



Performance

Max flow rate (l/h)	8
Max discharge head (m)	8

Electrical

Ampage	0.02
IP class	IP5X
Safety switch	Thermal Cut Out

Dimensions (pump)

Outlet ID	6mm
Length	138mm
Width	58mm
Height	67mm
Weight (kg)	2.16

Dimensions (trunking)

Height / Depth	70mm / 130mm
----------------	--------------

Other

Sound Level (dBA)	17
-------------------	----

RELIABLE, DURABLE, DEPENDABLE
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company

ASK THE EXPERTS

with over 60,000 Dairy Cabinet Pumps installed

Dairy Pumps

DCP-30E Dairy Pump c/w High Level Alarm (Economy)

Part No: 677017



Performance

Max flow rate (l/h)	700
Max discharge head (m)	23
Tank Capacity (l)	5.5

Electrical

IP class	44
----------	----

Dimensions (pump)

Outlet ID	1/2"
Length	610mm
Width	200mm
Height	76mm
Weight (kg)	5

DCP-30V Dairy Pump (Vertical)

Part No: 677037



Performance

Max flow rate (l/h)	700
Max discharge head (m)	23
Tank Capacity (l)	4.5

Electrical

IP class	44
----------	----

Dimensions

Outlet ID	1/2"
Length	580mm
Width	76mm
Height	200mm
Weight (kg)	5

DCP-30A Dairy Pump c/w High Level Alarm (Standard)

Part No: 677016



Performance

Max flow rate (l/h)	700
Max discharge head (m)	23
Tank Capacity (l)	5.5

Electrical

IP class	44
----------	----

Dimensions (pump)

Outlet ID	1/2"
Length	610mm
Width	200mm
Height	76mm
Weight (kg)	5

Hydron DP30S

Part No: 7426



Performance

Max flow rate (l/h)	110
Max discharge head (m)	30
Tank Capacity (l)	5

Electrical

IP class	20
Safety switch	High Level Alarm

Dimensions

Outlet ID	1/2"
Length	465mm
Width	205mm
Height	60mm
Weight (kg)	3

Sauermann Si-1931

Part No: 677134



Performance

Max flow rate (l/h)	1200
Max discharge head (m)	24.6
Tank Capacity (l)	6.5

Electrical

IP class	-
Safety switch	NO - 8 A resistive - 250 V

Dimensions

Outlet ID	13mm
Length	610mm
Width	235mm
Height	80mm
Weight (kg)	5

Sauermann Si-93

Part No: 677241



Performance

Max flow rate (l/h)	360
Max discharge head (m)	20
Tank Capacity (l)	6

Electrical

IP class	20
Safety switch	NO - 8 A resistive - 250 V

Dimensions

Outlet ID	10mm
Length	529mm
Width	259mm
Height	69mm
Weight (kg)	6.7

Blue Diamond ArctikBlue

Part No: 7790



Performance

Max flow rate (l/h)	50
Max discharge head (m)	20
Tank Capacity (l)	4.1

Electrical

IP class	X4
Safety switch**	250V /5A

Dimensions (pump)

Outlet ID	1.1/2"
Length	430mm
Width	305mm
Height	87mm
Weight (kg)	5



Related Items:



Peristaltic Pumps

Aspen Standard Peristaltic

Part No: 6627



Performance

Max flow rate (l/h)	6.5
Max discharge head (m)	12

Electrical

Ampage	0.2
IP class	21

Dimensions

Outlet ID	6mm
Length	135mm
Width	77mm
Height	115mm
Weight (kg)	1.35

Other

Sound Level (dBA)	47
-------------------	----

Aspen Universal Peristaltic

Part No: 6628



Performance

Max flow rate (l/h)	6.5
Max discharge head (m)	12

Electrical

Ampage	0.2
IP class	21

Dimensions (pump)

Outlet ID	6mm
Length	135mm
Width	77mm
Height	115mm
Weight (kg)	1.35

Other

Sound Level (dBA)	47
-------------------	----

Aspen MK4 Peristaltic

Part No: 6651



Performance

Max flow rate (l/h)	6.5
Max discharge head (m)	12

Electrical

Ampage	0.2
IP class	21

Dimensions (pump)

Outlet ID	6mm
Length	160mm
Width	83mm
Height	145mm
Weight (kg)	1.7

Other

Sound Level (dBA)	47
-------------------	----

Rotary Pumps

Blue Diamond MaxiBlue / MaxiBlue Drainstick Pump

Part No: 7025 / 7027



Performance

Max flow rate (l/h)	14
Max discharge head (m)	8
Max lift (m)	8

Electrical

Ampage	0.2
IP class	21

Dimensions

Outlet ID	6mm
Length	135mm
Width	77mm
Height	115mm
Weight (kg)	1.35

Other

Sound Level (dBA)	47
-------------------	----

Blue Diamond MaxiBlue c/w Temp Sensor

Part No: 7026



Performance

Max flow rate (l/h)	14
Max discharge head (m)	8
Max lift (m)	8

Electrical

Ampage	0.2
IP class	21

Dimensions (pump)

Outlet ID	6mm
Length	160mm
Width	83mm
Height	145mm
Weight (kg)	1.7

Other

Sound Level (dBA)	47
-------------------	----

Blue Diamond MaxiBlue Pro Package

Part No: X87-707



Performance

Max flow rate (l/h)	14
Max discharge head (m)	8
Max lift (m)	8

Electrical

Ampage	0.02
IP class	IP5X

Dimensions (pump)

Outlet ID	6mm
Length	138mm
Width	58mm
Height	67mm
Weight (kg)	3.9

Other

Sound Level (dBA)	21
-------------------	----



Rotary Pumps

Blue Diamond MegaBlue

Part No: 7012



Performance

Max flow rate (l/h)	50
Max discharge head (m)	8
Max lift (m)	5

Electrical

Ampage	0.02
IP class	IPX4
Safety Switch	250V / 5A

Dimensions (pump)

Outlet ID	5.5mm
Length	250mm
Width	58mm
Height	68mm
Weight (kg)	0.7

Other

Sound Level (dBA)	23
-------------------	----

Blue Diamond MegaBlue c/w Drainstik

Part No: 7028



Performance

Max flow rate (l/h)	50
Max discharge head (m)	8
Max lift (m)	5

Electrical

Ampage	0.02
IP class	IPX4
Safety Switch	250V / 5A

Dimensions (pump)

Outlet ID	5.5mm
Length	250mm
Width	58mm
Height	68mm
Weight (kg)	0.7

Other

Sound Level (dBA)	23
-------------------	----

Blue Diamond MegaBlue c/w Temp Sensor

Part No: 7013



Performance

Max flow rate (l/h)	50
Max discharge head (m)	8
Max lift (m)	5

Electrical

Ampage	0.02
IP class	IPX4
Safety Switch	N/A

Dimensions (pump)

Outlet ID	5.5mm
Length	250mm
Width	58mm
Height	68mm
Weight (kg)	0.7

Other

Sound Level (dBA)	23
-------------------	----

Condensate Removal

Braided Hose - Clear



ID Conn (")	Length (m)	Part No.
1/4	30	1782
3/8	30	1783
1/2	30	1784
5/8	30	140006
3/4	6	RVT3/4

Braided Hose - Black



ID Conn (")	Length (m)	Part No.
1/4	30	1782BK
3/8	30	1783BK
1/2	30	1784BK

Hose Clamp



Description	Part No.
Vinyl Hose Clamp 3/8" - 7/8"	1795

Aspen Adaptors

Looking to connect a cassette unit condensate drain pipe to a tank pump?



Description	Pk Qty.	Part No.
Aspen Xtra Adaptor 16mm - 21mm	3	FP2011
Aspen Xtra Adaptor 26mm - 21mm	3	FP2012
Aspen Xtra Adaptor 32mm - 21mm	3	FP2013

Aspen Adaptors

Looking to connect a Ducted Unit to a Mini Pump?



Description	Pk Qty.	Part No.
Aspen Xtra Adaptor 16mm - 20mm	3	FP2001
Aspen Xtra Adaptor 16mm - 25mm	3	FP2002
Aspen Xtra Adaptor 16mm - 32mm	3	FP2003

Aspen Adaptors

Looking to connect a Wall Mount to Mini Pump Reservoir?



Description	Pk Qty.	Part No.
Aspen Xtra 90° Bend 12mm - 16mm	3	FP2006

Related Items:



Condensate Removal

Connectors & Fittings

Description	Pack Qty.	Part No.
Hose Connector 1/4" (6mm)	2	677011
Hose Connector 3/8" (9mm)	2	677012
Sauermann Straight Connector - 6mm	5	677150
Sauermann Straight Connector - 10mm	5	677147
Self-Seal Fitting - 6mm	5	677167
Self-Seal Fitting - 10mm	5	677247
Aspen Xtra Reducer 3/8" - 1/4"	5	FP2020
Aspen Xtra T Connector 1/4"	5	FP2024
Aspen Xtra Elbow Connector 1/4"	5	FP2028
Aspen Xtra T Connector 3/8"	5	FP2030
Aspen Xtra Elbow Connector 3/8"	5	FP2032
Aspen Xtra Waste Conn 1/4" - 3/8"	3	FP2038
Aspen Xtra Reducing Connector 16mm - 6mm	5	FP2632
Aspen Xtra Non Return Valve - 10mm	5	FP2630
Aspen Xtra Non Return Valve - 6mm	5	FP2628
Aspen Xtra Straight Connector 1/4"	5	FP2622
Aspen Xtra Overflow Conn 1/4" - 3/8"	3	FP2040



Accessories & Spares

Sauermann Accessories



Description	Pack Qty.	Part No.
Adaptor - 1.1/4" (32mm)	3	677144
Adaptor - 15/21/25/32/40mm	3	677149
Adaptor - 20mm/10mm	3	677223
Adaptor - 25mm/21mm	3	677146
Adaptor - 40mm/21mm	3	677148
Hose - 50cm x 16mm	1	677168
Non-Return Valve	3	977722
Sping Clip - 6mm	25	977750
Spring Clip - 20mm	6	977704

Aspen Accessories



Description	Part No.
Mini Lime - Inlet Hose 1m	ZZZ236
Peristaltic Front Housing	602131
Peristaltic Pump Tube	6629

Pumphouse Accessories



Description	Pack Qty	Part No.
Cassette A/C Adaptor 3/8" (22mm)	1	677034
Cassette A/C Drain Adaptor 3/4" x 1" - Green	3	976900
Cassette A/C Drain Adaptor 3/4" x 1.1/4" - Blue	3	976901
Cassette A/C Drain Adaptor 3/4" x 1.1/2" - Black	3	976902
Cassette A/C Drain Adaptor - Mixed	3	677033

Sauermann Spares



Description	Part No.
NRV for UCP-30 (SI1931)	UCP30-1011
PCB for UCP-30 (SI1931)	UCP30-1003
Pump for UCP-30 (SI1931)	UCP30-1001
Replacement Peristaltic Tube	677119
Test Bottle	677249
Replacement Motor	677248

Spares



Description	Part No.
Dairy Pump Install Kit 1.1/2" (40mm)	101012
Dairy Pump Install Kit 1.1/4" (32mm)	101011
Blue Diamond MegaBlue Reservoir Sensor	7018
Blue D'mond Mini/Maxi/MegaBlue 5m Cable	7017
Tube for Little Giant 677000-677003	6858

Blue Diamond Accessories



Description	Part No.
ARMS B105SE Bypass Pump Service Kit	S02-007
Mounting Feet (Pair) - F10-011	605931
Mounting Feet (Pair) - F10-001	7048



SECTION FIVE

Maintenance Chemicals & Lubricants



Unbeatable performance from the most concentrated cleaners on the market.

Advanced



We've now squeezed unrivalled cleaning performance into the most concentrated pack on the market.



Evaporator Cleaner & Disinfectant

Kills 99.99% of odour producing bacteria

Powerful cleaning action will remove dirt, slime and mould

Improves energy efficiency of unit



Condenser Cleaner

Cleans even the most stubborn baked-on deposits

Leaves coils clean and visibly brighter

Safe to use on aluminium or copper coils



Condensate Drain Unblocker

Heavy-duty formula clears organic and inorganic blockages

Heavier than water, it will sink and find the blockage

Safe to use with all condensate removal pumps



Ice Machine Cleaner



Use undiluted to clean heavy limescale and slime deposits

Nickel and aluminium safe – suitable for all ice machines

Colour indicator ensures product is completely flushed



Universal Coil Cleaner

Powerful & effective cleaning against common dirt, including dust, lint and grease

Biodegradable and environmentally friendly

Improves energy efficiency of unit



The Advanced HydroSprayer® cleaner applicator is a heavy duty low-pressure sprayer suitable for use with all Advanced coil cleaner concentrates.



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Tapes, Wipes, Sealants & Adhesives

Condenser Cleaners

Advanced RTU® cc



Ready mixed general purpose condenser cleaner. Removes common dirt and debris and is biodegradable.

Description	Part No.
RTU Condenser Cleaner 1L	976224

Advanced SuperClean



Heavy duty cleaner removes stubborn, baked on deposits with a powerful foaming action. Formulation brightens the coil and inhibits future oxidation. Needs diluting.

Description	Part No.
SuperClean 5L	976240

Advanced HydroFoam® 2.0



Condenser cleaner & brightener
Non-Toxic, biodegradable solution that brightens as it cleans. Needs diluting.

Description	Part No.
HydroFoam 5L	976205

Advanced EasyFoam



Foaming condenser cleaner.

Description	Part No.
Easy Foam 600ml	976229

Advanced Grease Gobbler



No-rinse condensing unit coil cleaner.

Description	Part No.
GreaseGobbler 400ml	976201

Advanced Gel cc



Condenser cleaner. Compact super concentrated cleaning gel in a pouch that's easy to store in the van. Use the spray HydroSprayer to apply. Needs diluting.

Description	Part No.
Advanced Gel Condenser Cleaner 490ml	976868



Advanced CoolSafe

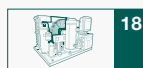
Refrigeration coil cleaner.

- Registered by NSF - Safe for use in food storage & preparation areas
- Removes slime, mould & foodstuffs
- Improves equipment efficiency
- User and environmentally friendly
- Complies with British & European Standards for Bactericides & Fungicides
- BS/EN 1276 & BS/EN 1650
- Safe to use with condensate pumps

Description	Part No.
CoolSafe 1L	976267
CoolSafe 5L	976261

📌 DID YOU KNOW...

Research has shown that even a small layer of dirt on a condenser coil can reduce its **efficiency by over 20%**



Evaporator Cleaners



Advanced

Advanced RTU® EC

Ready to use evaporator cleaner.

Description	Part No.
RTU EC 1L	976223



Advanced

Advanced EasyCare

Aerosol evaporator cleaner and disinfectant.

Description	Part No.
EasyCare 600ml	976227



Advanced

Advanced CondenCide

Alkaline evaporator cleaner and disinfectant.

Description	Part No.
CondenCide 5L	976203



Advanced

Advanced RTU® ECD

Ready to use evaporator cleaner and disinfectant.

Description	Part No.
RTU ECD 1L	976221



Advanced

Advanced Gel ECD

Evaporator cleaner. Compact super concentrated cleaning gel in a pouch that's easy to store in the van. Use the spray HydroSprayer to apply. Needs diluting.

Description	Part No.
Evaporator Cleaner 490ml	976867

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Universal Cleaners

Advanced EnviroCoil



Universal coil cleaner.

Description	Part No.
EnviroCoil 5L	976237

Advanced VerteX



Neutral pH7 cleaner for evaporators.

Description	Part No.
VerteX 5L	291987

Advanced EasyClean



Universal aerosol coil cleaner.

Description	Part No.
EasyClean 600ml	976228

Leak Detection

Advanced Bubble Up Leak Detector - RTU



Description	Part No.
Ready to use Bubble Up Leak Detector 1L	976222

Advanced EasyFind



Description	Part No.
EasyFind Aerosol Leak Spray 400ml	976225

Gotec Leak Spray



Description	Part No.
Gotec Aerosol Leak Spray 400ml	600384

Drain & Condensate Tray Treatment

Advanced DrainKleen®



Condensate drain cleaner and unblocker.

Description	Part No.
DrainKleen 5L	976245
DrainKleen one shot 250ml	976243

Advanced StayClean™



Condensate tray bacterial control.

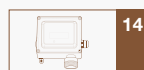
Description	Pack Qty.	Part No.
StayClean Mini Tablets	20	ZZZ339
StayClean Strips (small) - size 1	-	976219
StayClean Strips (large) - size 2	-	ZZZ337

Anti Clog Tablets



Stops the growth of bacteria and slime accumulations in drain pans. Lasts for circa 3 months

Description	Part No.
CDC Anti Clog Tablets (sold as singles)	65012



Drain & Condensate Tray Treatment

Advanced Jally® Strips



Condensate tray microbial control.

- Slime dispersing action
- Smart release - extra biocidal power when needed
- 12 months protection

Description	Pack Qty.	Part No.
Jally Strips	6	976856
Jally Strips	50	976279

Advanced Drainsafe



Refrigeration drain unblocker.

- Clears organic blockages
- Safe to use with condensate pumps
- Registered by NSF – Suitable for use in food storage & preparation areas

Description	Part No.
DrainSafe 500ml	976856
DrainSafe 5L	976262

Advanced Gel Drain Unblocker



Compact super concentrated gel clears organic & inorganic blockages.

Heavier than water it will sink to find the blockage. Needs diluting.

Description	Part No.
Advanced Drain Unblocker Gel DU 490ml	976864



Gel-Clear Tablet for Condensate Fan Coil Units



- Up to 6 months protection
- NSF approved
- Suitable for pumps or gravity drains
- Non-corrosive to metals
- Stops drain blockages
- Prevents biofilms & odours

Description	Pack Qty.	Part No.
FC-22 Condensate Drain Tablets	1	701236

Gel-Clear AC-03 Micro Tablets for Wall Mount Units & Tank Pumps



- 3 Months protection
- NSF approved
- Suitable for pumps or gravity drains
- Extends condensate pump lifespan
- Non-corrosive to metals
- 100% biodegradable
- No ecological toxicity

Description	Pack Qty.	Part No.
Gel-Clear AC-03 Condensate Drain Tablets	6	701234



Gel-Clear TGS-18 Drain Strips for Wall Mounts & Tank Pumps

- 6 Months protection
- Improves IAQ
- Prevents & controls biofilms
- Kills both airborne and waterborne bacteria
- Prevents odour - long lasting pleasant fresh fragrance
- Pump safe
- Biodegradable

Description	Pack Qty.	Part No.
TGS-18 Drain Strips	1	701235

Related Items:



Fragrance & Odour Control



Advanced EasyFresh

- Specifically designed for air conditioning units
- Eliminates odours
- Produces a long-lasting fresh scent

Description	Part No.
EasyFresh 400ml	EASYFRESH



Diversitech Smell-Buster

Smell Buster is a unique odour elimination product which is not a perfume or a cover up, but actually removes unpleasant smells from the air.

Description	Part No.
Liquid Smell-Buster - 1L	976819



Advanced Smelly Jelly

Fragrancing gel.

- Mini size is suitable for small fan coil units.
- Size 1 is suitable for large fan coil and cassette units.

Description	Type	Part No.
Smelly Jelly Citrus	mini	976255
Smelly Jelly Floral	mini	976256
Smelly Jelly Apple	mini	293529
Smelly Jelly Morning	mini	ZZZ333
Smelly Jelly Mountain	mini	976258
Smelly Jelly Mixed	mini	976259
Smelly Jelly Herbal	mini	ZZZ332
Smelly Jelly Citrus	Size 1	976233
Smelly Jelly Morning	Size 1	976234
Smelly Jelly Floral	Size 1	976231
Smelly Jelly Mountain	Size 1	976207
Smelly Jelly Apple	Size 1	293527
Smelly Jelly Mixed	Size 1	976365

Cleaning Accessories

Advanced HydroSprayer®



Sprayer applicator for coil cleaners.

Description	Qty	Part No.
HydroSprayer 8L	1	976242
Replacement Seal Kit	1	S010138
Pump Assembly	1	S010139
Lance Assembly	1	S010140
Handle Assembly	1	S010141

Advanced HydroSprayer® Elite



Battery-powered electric sprayer.

Designed for use with Advanced concentrated and ready-mixed coil cleaner chemicals, both indoors and outdoors. Boasts a capacity of 15 litres, with supportive back pack-style straps. Fully rechargeable battery that supplies the 12V electric sprayer with all its power.

Description	Part No.
HydroSprayer-Elite 15L	163393

Diversitech Sprayer®



Sprayer applicator for coil cleaners.

Description	Part No.
2Wand Sprayer (7.4 L)	976808



Specialist Cleaners

Advanced ScalePro



Limescale remover for adiabatic condensers.

Description	Part No.
ScalePro 5L	SCALEPRO

Advanced EndoFlush



Internal coil and system cleaner.

Description	Part No.
EndoFlush 5L	976241
EndoFlush 20L	976272

Advanced Hidrox



Internal pipework lime scale remover.

Description	Part No.
Hidrox 5L	976206
Hidrox 20L	S010213GB

DiversiFlush



DiversiFlush™ effectively removes all traces of residual oil and contaminants from the entire system. The easy-to-use kit includes everything needed to quickly and effectively clean through the entire system.

DiversiFlush™ Solvent is a non-Volatile Organic Compound (VOC), residue-free and complies with the Environmental Protection Agency (EPA) and the Significant New Alternatives Program (SNAP) standards.

Description	Size (L)	Part No.
Pro-Flush HVAC Flushing Agent Kit	-	4558
Pro-Flush HVAC Flushing Agent Refill	0.48	4559

Advanced EasyFinish



Fascia and case cleaner suitable for most air conditioning units.

- Safely removes finger marks etc from plastic and metal casework
- Easily removes stubborn nicotine, grease & general grime
- Part of our Easy range of products

Description	Part No.
EasyFinish 600ml	976226

Advanced All-White



Ceiling tile restorer.

- Restores tile colour following condensate/oil leakage
- Covers nearly all types of stains
- Saves costly tile replacement

Description	Part No.
All-White Tile Restorer 400ml	ALLWHITE

Ice Machine Cleaners

Ice 'n' Clean®

Description	Size (ML)	Part No.
Ice 'n' Clean one shot	250	976212
Ice 'n' Clean 1L	1000	976200

- Clears heavy limescale and slime deposits
- Nickel and aluminium safe - suitable for all ice machines
- Colour indicator ensures product is completely flushed
- New odourless formula



Other Cleaners

Electrical Solvent IPA



Key Features:

- Very 'safe' and gentle solvent cleaner
- Removes light oil, flux residue, and electronics contamination
- Excellent materials compatibility
- Fast evaporation and residue free
- Removes moisture IPA purity ≥ 99.7%
- Conforms to BS1595, ASTM 0770 & DIN53245

Application Areas: A 'universally safe' solvent cleaner with excellent materials compatibility. Use on printed circuit boards, optical equipment, lenses, precision instruments and other delicate components.

Description	Part No.
Action Can IPA Electronic Cleaning Solvent	601407

Blue Crystal Glass & Hard Surface Cleaner



Key Features:

- Multi-purpose cleaner for use on glass, plastic, ceramic tiles, metal and many hard surfaces
- Ready to use in a handy trigger spray
- Fast and easy cleaning with anti-static additive to reduce dust build-up
- Smear and streak free, crystal-clear finish

Application Areas: Especially effective glass cleaner. Ideal for use on shiny and gloss surfaces that require cleaning. Excellent materials compatibility: aluminium, chrome, fibreglass, glass, linoleum, metals, mirrors, plastics, polished metals & stainless steel.

Description	Part No.
Action Can Blue Crystal Glass Cleaner	601408

EC-90 Fast Drying Contact Cleaner



Key Features:

- Cleans delicate electronic and electrical components
- Removes deposits and tarnish from switches and contacts
- Rapidly evaporates and does not leave a residue
- Safe for use on all metals, most rubbers, plastics and coatings
- Non-conductive and corrosion resistant

Application Areas: Use on electric motor contacts and windings, generator and transformer windings, electrical parts, switch-gear, fuses and high-tension contacts.

Description	Part No.
Action Can EC-90 Fast Dry Contact Cleaner	601401

Stainless Steel Cleaner SC-90



Key Features:

- 3-in-1 Foaming Stainless Steel Cleaner cleans, protects and polishes
- A white foam cleaner that clings to vertical surfaces
- Long-lasting shine and non-greasy polished finish
- Cleans and removes grime easily
- Protects against dirt attraction, fingerprints and watermarks
- Specially designed for cleaning stainless steel, chrome plating, powder-coated surfaces and aluminium NSF A7 and C1
- Registered for use in the food and beverage sector

Application Areas: Ideal after maintenance cleaner to remove contamination and leave work area clean. Can be used in the food and beverage sector as a stainless steel surface cleaner and polish, removing finger marks, contamination and water-marks.

Description	Part No.
Action Can SC-90 SS Cleaner Food Grade	601406

Coil Treatment

Description	Part No.
Blygold Diy Coil Protection Kit	293740
AEL - ProTect Corrosion protection 1L	976269
AEL - ProTect Corrosion protection 5L	976270



Oil Lubricant SP-90 Silicone Lubricant Spray



Key Features:

- Dry film precision silicone lubricant
- Lubricates and reduces friction
- Effective temperature range -50°C to $+200^{\circ}\text{C}$
- Solvent free formulations
- Safe for use on all metals, most rubbers and most plastics

Application Areas: Useful throughout the electrical, plastic processing, plumbing, metal working and sewing/upholstery industries. Lubricates plastic to plastic surfaces, sewing needles and O-rings – assists with the installation of cabling. Protects against water ingress.

Description	Part No.
Action Can SP-90 500ml	601405

AC-90 Multi Purpose Lubricant



Key Features:

- Displaces moisture and eliminates damp induced faults.
- Lubricates moving parts to keep them working smoothly and efficiently.
- Rapidly penetrates and releases seized parts and fasteners.
- Excellent short-term corrosion protection.
- Cleans surfaces effectively, removing heavy oils, waxes and grime.

Application Areas: Quick fix instant solution for professional engineers. Lubricates practically everything such as fittings, locks, tools and sliding metal-to-metal parts. Releases rusted threaded fasteners. Cleans industrial equipment and tools.

Description	Part No.
Action Can AC-90 500ml	601404

Oil Lubricant - RP-90 Rapid Penetrating Oil



Key Features:

- Excellent penetrating power
- Rapid release capability
- Protects against rust and corrosion
- Loosens surface rust/flash rusting
- Contains 'moly' for easy reassembly
- Does not contain silicone

Application Areas: The fastest solution for freeing nuts, bolts, screws, studs, pins, valves, machine parts, pipe couplings and pulleys, whether seized through over-tightening, corrosion, heat or bonding.

RP-90 can also be used for cleaning rusted surfaces of moulds, dies and heavy tools and for softening or removing carbon deposits.

Description	Part No.
Action Can RP-90 500ml	601403

AC-90 LUBRICANT "AC-90 for Professionals"

WD40



The classic protection and lubrication spray, WD-40 loosens rusted parts, stops squeaks, removes tar, grease and adhesives fast and effectively.

Description	Part No.
WD-40 Aerosol 400ml	621013

Pull A Spout Oiler



An all-purpose oiler with a 35cm telescoping spout. Squeeze-bottle action for general industrial use.

Description	Part No.
Pull-A-Spout Oiler 118ml	1432

Oil Lubricant - AG-90 Anti-Galling Lubricant



An extreme pressure rated lubricant. Formulated to prevent galling/cold welding of stainless steel/titanium/aluminium fasteners. Particularly effective when used with powered nut runners. The product is reinforced with PTFE DuPont food grade. H1 Food Grade approved.

Description	Part No.
Action Can AG-90 200ml	601410

Lubricants & Oil



Emkarate Oils

Emkarate RL series oils provide a POE (Polyol Ester) lubricant that provides unparalleled chemical and thermal stability.

Type	Size (L)	Blend	ISO Viscosity Grade	Part No.
RL22H	5	POE	22	161004
RL22H	1	POE	22	6906
	1	POE	32	69008
RL32H	5	POE	32	69034
	20	POE	32	69017
RL32-3MAF	1	POE	32-3	6505-1
	5	POE	32-3	6507-5
RL46H	1	POE	46	6509
	5	POE	46	6512
RL68HB	1	POE	68	171680
	20	POE	68	69019
RL68H	1	POE	68	6510
	5	POE	68	6513
RL68H	20	POE	68	69018
	1	POE	100	6506-1
RL100H	5	POE	100	171672
	20	POE	100	6506-20
RL170H	5	POE	170	65014
	20	POE	170	65015
RL220H	5	POE	220	6508



Mobil Oils

Mobil EAL Arctic Series are high performance Environmental Awareness Lubricants (EAL) that are fully synthetic products designed specifically for the lubrication of refrigeration compressors and systems, using ozone-friendly HFC refrigerants. Oils marked 'cc' are 'Copeland Compliant'

Type	Size (L)	Blend	ISO Viscosity Grade	Part No.
EAL Arctic 22	5	Synthetic	22	7051-5
	20	Synthetic	22	7050
EAL Arctic 22cc	5	Synthetic	22	177858
	5	Synthetic	32	177857
EAL Arctic 32	20	Synthetic	32	178944
	5	Synthetic	46	177856
EAL Arctic 46	20	Synthetic	46	178952
	5	Synthetic	68	177855
EAL Arctic 68	20	Synthetic	68	178839
	EAL Arctic 300	20	Mineral	300



Fuchs Oils for CO² Refrigeration Compressors



Manufactured by Fuchs, these synthetic oils cover all refrigerants including CO².

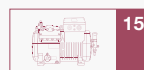
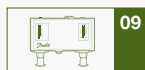
Type	Size (L)	Blend	ISO Viscosity Grade	Part No.
Fuchs Reniso C55E	5	Synthetic	55	S143111
Fuchs Reniso C85E	10	Synthetic	85	7084



Fuchs PAG Oil

Note: this oil is approved for use on SCM CUBO2 Smart CO² condensing units.

Type	Size (ml)	Blend	ISO Viscosity Grade	Part No.	Replaced by
PAG 100	250		100	4530049	71200



Vacuum Pump Oil



Advanced Engineering Vacuum Pump Oil

Specially formulated to improve cold start performance of most high vacuum pumps; chemically engineered to maintain viscosity at very high running temperatures.

Description	Part No.
AEL - Vac Pump Oil 1L	171703

Other Chemicals

ZG-90 Cold Zinc Galvanising Paint



Key Features:

- Rapid drying time: Touch dry in 2 mins/ Hard dry in 20 mins at 20°C
- 2-in-1: Primer and Topcoat
- Excellent colour-match for freshly hot-dip galvanised steel
- Effective protection against corrosion (tested to ASTM B117)
- Excellent substrate adhesion and flexibility (tested to ISO 2409:0)
- Crossrail approval #CRL-MCR-004850
- Non-conductive

Use ZG-90 to protect cut ends of Unistrut type channelling and cable conduit. Spray ZG-90 on exposed bolts and threaded bar to match existing zinc plating or galvanised coating. Ideal for repairing and maintaining metal sheets that are used on air conditioning units and ducting.

Description	Part No.
ZG-90 Brushing Zinc Galv Paint 900ml Black (Tin)	601409
ZG-90 Cold Zinc Galvanise 500ml Silver Bright Finish (Aerosol)	601402

CT-90 Cutting & Tapping Fluid



Key Features:

- Versatile, multi-metal cutting, tapping, drilling and reaming lubricant
- Reduces friction and cutting time
- Improves surface finish
- Extends tool life
- Dissipates heat & reduces swarf build-up

Application Areas: All types of stainless steels, carbon steels and Nimonic alloys. Can also be used as a deep drawing, blanking or piercing lubricant. Convenient, easy to apply and precise control for hard to reach areas.

Description	Part No.
CT-90 Cutting and tapping Fluid 500ml	601400



Acid Test Kits

QwikCheck



Fast and effective way to check for acid.

Description	Part No.
Mainstream - QwikCheck - Acid Test Kit	976248

Acid Test Kit



Detects acid in refrigeration oil.

Description	Part No.
Acid Test Kit Mini/Alky	580027
Acid Test Kit Polyol/Ester	580028

Acid Neutralizer



Easy to use, works fast, circulates quickly, and leaves no solids or solid residuals.

Description	Part No.
Acid Neutralizer (All Oils) 4oz	580022



Tapes, Wipes, Sealants & Adhesives

Cable Ties



Description	Part No.
Cable Tie, Black - 100mm - 100pk	5140
Cable Tie, Black - 200mm - 100pk	5141
Cable Tie, Releasable - 250mm - 100pk	290904
Cable Tie, Black - 300mm - 100pk	5142
Cable Tie, Black - 300mm - 100pk	CT300-7.8B
Cable Tie, White - 300mm - 100pk	CT300-4.8N
Cable Tie, Black - 370mm - 100pk	CT370-7.6B
Cable Tie, Black H/Duty - 380mm - 100pk	DEM1024
Cable Tie, Black - 540mm - 100pk	CT540-8.0B
Knock In Cable Tie, Black - 8mm - 100pk	CTFB9
Knock In Cable Tie Mounts - 100pk	290725
Screw-in Cable Tie, Black - 100pk	CTS9B
Scew In Cable Tie Mounts -100pk	290727

Wipes & Rags



Description	Part No.
Big Wipes Heavy Duty (80 wipes per tub)	1372
Big Wipes Multi Purpose (80 wipes per tub)	1499
Bale of Rags (10kg box white sheet)	W0010
Blue Paper Roll 2 ply 195mm x 140M	600310
Wypall L40 Wipes	580032
Easy Wipes (50 wipes per pack)	EASYWIPES

Heat Shrink



Description	Part No.
Black Heat Shrink Tubing 12mm Sleeve Dia. x 1.2m Length - 3:1 ratio	157-3818

Tape



Description	Part No.
Black PVC Electrical Tape 19mm x 20m	6892
Electrical Tape 19Mm Brown	AL3049
Aluminium Foil Tape 50mm x 46m	UUT18
X60FT Economy Electrical Tape	ET63460

Sealants



Description	Part No.
Silicone Sealant - Clear	SILICONC
Silicon Sealant - White	SILICONW
Permagum Nbs Cryo 7.5m	161002
Diversigum Sealing Compound 1.0Kg Slug	9048

Abrasive Cleaning



Description	Part No.
Grip Cut 5 Yrd Roll 180 grit 38mm x 4.6m	1738
Clean Fit Abrasive Strip 5mtr x 38mm	600408
Clean-Fit Abrasive Strips (Pkt 10) 250mm x 38mm	171589
Abrasive Cloth 9 Metres	1431
Single Abrasive Nylon Pad 230 X 150	171641

Expanding Foams



Description	Part No.
Expanding Foam 12oz UN1950	580026
Flame Retardant Foam 750ml	175708

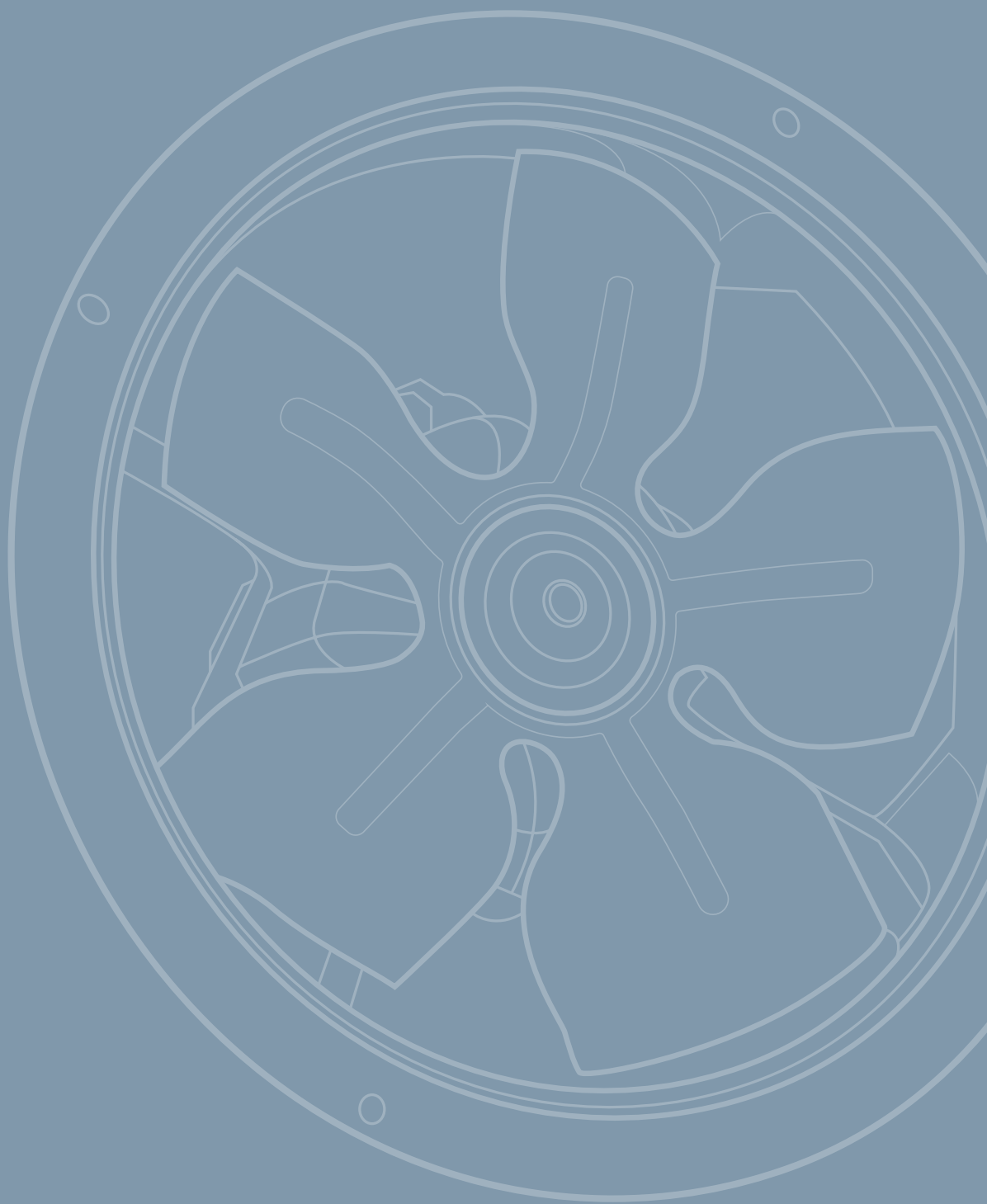


3 DIAMOND LOYALTY SCHEME

BECOME A 3DIAMOND DEALER OR PARTNER!

SECTION SIX

Fan Motors





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Multi-Fit Fan Motors

As the name suggests, they fit in multiple positions and are perfect van stock items. These can be mounted using the base, back, top or front of the motor. A section of interchangeable base mounting brackets and fan blades are also available. Ring mount brackets can also be fitted converting these motors into ring mount assemblies. The full range is stocked from 5w to 34w.



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Tangential Fan Motors

Tangential fan motor assemblies use a cage type impeller that draws surrounding air into the assembly and exhausts the air through a small rectangular opening. They are fitted as standard to many types of commercial and industrial refrigerators. The motor is mounted at one end. We carry as stock items motors from 20w to 39w and in lengths from 180mm to 360mm.



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Axial Fan Motors

These shaded pole square fan assemblies have the motor built into the centre of the assembly to provide excellent performance within a minimal footprint. These quiet fan assemblies are capable of operating in temperatures from -20c through to +60c. The design allows the airflow to be reversed by mounting it the opposite way around. They are also reliable with an average service life of 30,000hrs. This wide range is available in sizes from 11w to 380w and from 90mm to 360mm wide.



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Ring Mounted Fan Assemblies

These assemblies are typically found fitted to chiller/freezer cabinets and are attached by screwing the ring to a plenum. These motors are adaptable and available in a wide range of options. Available in sizes from 5w to 38w and ring sizes ranging from 130mm to 254mm.

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Fan Motor Spares

Multi-Fit Fan Motors



Standard Multi-Fit

Universal, multi-fit fan motors are ideal for replacement in nearly all industrial and commercial refrigeration and ventilation equipment.

Features:

- Individually-boxed complete with fixings
- 1 metre power cord for greater flexibility during installation
- CE-certified/ROHS-2 compliant

Watts	Voltage	Part No.
5	240V	5001
7	240V	5002
10	240V	5003
16	240V	5004
18	240V	5005
25	240V	5006
34	240V	5007



Premium Multi-Fit

The "Multifix" Q Motor has the advantage that it can be used on all IP42 applications. Sleeve bearings - The direction of rotation is left, viewed from the output shaft side.

Watts	Voltage	Part No.
10	230V	510112
18	230V	510114
25	230V	510116



FAN-MOTORS

- Universal multi-fit
- Complete with fixings
- 1 metre power cord cable
- Individually boxed
- CE certified
- ROHS-2 compliant



ASK THE EXPERTS

Tangential Fan Motors



Watts	Motor Placement	Length (mm)	Flow (m3/hr)	Part No.
15	RH	90	65	5024
15	RH	120	80	5025
20	RH	180	120	5017
30	RH	240	170	5018
30	RH	300	190	5019
31	LH	180	140	180TFM
31	RH	180	140	TAS18-16R
33	LH	240	160	240TFM
35	RH	180	122	510255
39	LH	300	225	300TFM
32	LH	360	240	360TFM

Axial Fan Motors



Watts	Dimensions (mm)			Flow (m3/hr)	Part No.
	Height	Width	Depth		
11	200	200	79	500	510266
13	120	120	26	71	600414
14	80	80	38	40	AXIAL 80
15	80	80	38	40	198786
18	120	120	25	112	ZZZ48
19	119	119	38	160	510231
19	119	119	38	160	510232
20	120	120	38	132	5148
20	120	120	38	132	600415
21	120	120	38	132	AXIAL120
85	315	315	146	1537	5097
90	300	300	150	1810	510303
90	300	300	150	1810	510304
118	350	350	172	3150	510307
118	350	350	172	3150	5098
160	450	450	197	4500	510310
195	400	400	185	4235	5083
240	450	450	197	5580	510309
380	500	500	200	7620	510311
380	500	500	200	7620	D826090

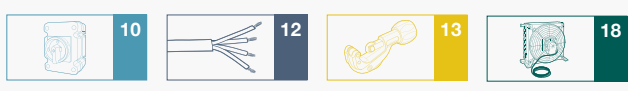
DID YOU KNOW...

The largest fridge 'in the world' is used to cool the 9,300 magnets used in the Hadron Collider located on the French/Swiss border. It is a 17 miles long cryogenic distribution line.



EC Axial Fans

Description	Part No.
EBM EC Axial Fan, 2100rpm 230V	510295
EBM EC Axial Fan, 900/1300rpm 230V	510266
EBM Mains Lead, 450mm Single plug	510280



Ring Mounted Fan Assemblies

Elco Ring Mounted Fans

Our N series motors are shaded pole motors with rated output power from 5 to 34 Watt, 4 pole, single-speed, aluminium or thermoplastic end shields, sleeve or ball bearings. They have insulation class B with IP20, IP42 and IP44. A range of plug in connectors or flying leads are available, all standard models are VDE, UL, CE or CSA approved and offer multiple mounting options, such as threaded holes drive end, threaded holes non-drive end, through bolts, side studs and brackets.

To accompany these motors a range of accessories are available such as guards, ring brackets, pedestal brackets and fan blades. These motors come with either a threaded white four pin fan hub or plain shaft for hubbed fan blade attachment. The blades range general in size from 154mm up to 300mm.

These motors find themselves in many industrial and domestic applications like condensers, evaporators, refrigerators and household appliances."



Watts	Fan Diameter (mm)	Fan Speed	Part No.
5	154	1300/1550 rpm	191426
5	154	1350/1550 rpm	5106
5	172	1350/1550 rpm	5102
5	200	1300/1550 rpm	191361
5	200	1300/1550 rpm	198727
5	200	1350/1550 rpm	5103
7	130	1350/1550 rpm	5105
10	200	1350/1550 rpm	5108
10	200	1350/1550 rpm	5109
18	254	1300/1550 rpm	191418
38	200	1300/1550 rpm	198724
38	200	1300/1550 rpm	198771

Other Ring Mounted Fans

Make	Watts	Fan Diameter (mm)	Part No.
Pole Star	10	230	NA10230

Ring Mounts

Description	Part No.
Ring Mount 6"	RING6
Ring Mount 7"	RING7
Ring Mount 8"	RING8
Ring Mount 9"	RING9
Ring Mount 10"	RING10

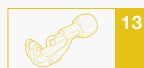
Universal Brackets

Description	Part N.
Fan Bracket 109 x 81 x 24	5655
Fan Bracket 39 x 78 x 24	5658
Fan Bracket 55 x 81 x 24	5659
Fan Bracket 72 x 81 x 24	5660
Fan Bracket 84 x 81 x 24	5661

Fan Blades



Air Flow Direction	Blade Diameter (in)	Blade Diameter (mm)	Pitch	Part No.
Blower	7	172	28°	FAN7B
Blower	8	200	28°	FAN8B
Blower	8	200	31°	5185
Blower	9	230	28°	FAN9B
Blower	9	230	31°	5187
Blower	10	250	28°	FAN10B
Blower	10	250	31°	5189
Blower	12	300	28°	FAN300B
Suck	6	154	28°	FAN6S
Suck	7	172	28°	FAN7S
Suck	7	172	31°	5167
Suck	8	200	22°	5168
Suck	8	200	28°	5169
Suck	8	200	31°	5170
Suck	9	230	22°	5171
Suck	9	230	28°	FAN9S
Suck	9	230	31°	5173
Suck	10	250	28°	FAN10S
Suck	10	250	31°	5175
Suck	12	300	28°	FAN300S
Suck	12	300	31°	5177



Fan Motor Spares

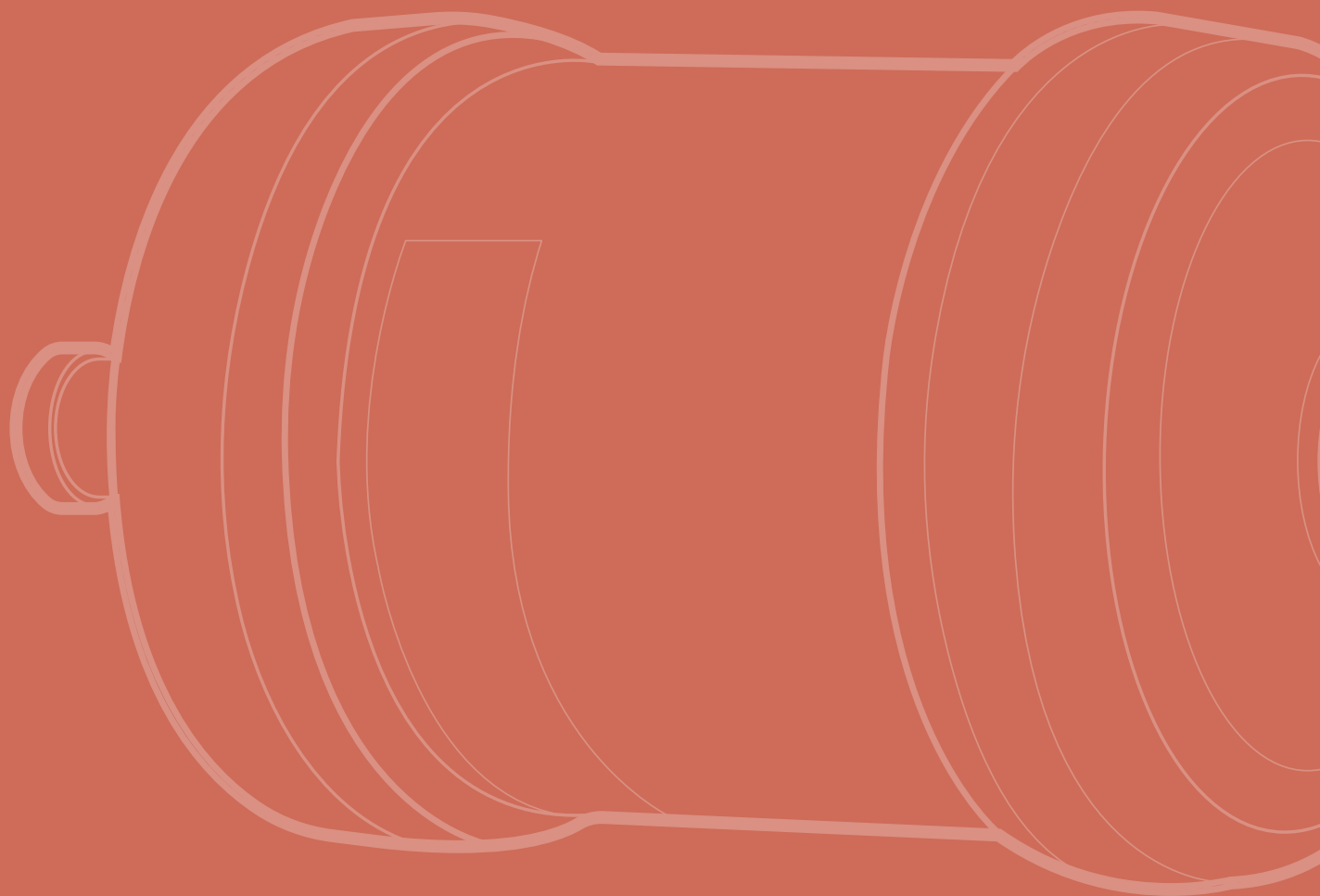


Description	Part No.
Run Capacitor - 4 MFD	UUCAP4
Run Capacitor - 20 MFD	CAP20
Run Capacitor - 30 MFD	CAP30
Run Capacitor - 40 MFD	CAP40
Run Capacitor - 50 MFD	CAP50
Start Capacitor - 60-75 MFD	CAP60-75
Start Capacitor - 80-100 MFD	CAP80-100
Start Capacitor - 100-125 MFD	CAP100-125
EBM Mains Lead - 1.5m	198661
EBM Mains Lead - 450mm	510280
Fan Guard for WPG200 - Black	198776
Fan Guard for WPG172 - Black	198774
2 Pin Femal Plug - PSCAPC.1000	AXIALCONN



SECTION SEVEN

In-Line Components



New **ball valve** for **high pressure applications**

140 bar

New high-pressure
GBCT ball valve
range extension



Safe construction for the most demanding requirements

The GBCT ball valve fulfills the the high temperature and pressure requirements for the discharge lines in transcritical CO₂ systems. It is developed specifically for intrinsic standstill security in CO₂ systems and covers a wide selection range up to 2 1/8 in.

Along with the 90 bar GBCH, the 140 bar GBCT completes our ball valve portfolio for CO₂ giving you the perfect match whether you are servicing the low pressure or the high pressure side of a system.



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Filter Driers



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Ball & Shut-off Valves



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Vibration Eliminators



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Check Valves

DCL, Hermetic Filter Drier

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

DCL hermetic filter driers, with a solid core of 80% Molecular Sieve and 20% activated alumina. They are hermetic and available in many sizes and connection types.



DCL - Flare

Type	Connection [in]	Part No.
DCL 032	1/4	023Z500000 1)
DCL 033	3/8	023Z500100 1)
DCL 052	1/4	023Z500200
DCL 053	3/8	023Z500300
DCL 082	1/4	023Z500400
DCL 083	3/8	023Z500500
DCL 084	1/2	023Z500600
DCL 162	1/4	023Z500700
DCL 163	3/8	023Z500800
DCL 164	1/2	023Z500900
DCL 165	5/8	023Z501000
DCL 166	3/4	023Z501100
DCL 303	3/8	023Z001200
DCL 304	1/2	023Z001300
DCL 305	5/8	023Z001400
DCL 306	3/4	023Z015600
DCL 414	1/2	023Z010300
DCL 415	5/8	023Z010300

DCL - FLARE / DCL, SOLDER (PURE COPPER)

1) Wire mesh in filter drier outlet

DCL - SOLDER (CU-PLATED) & (PURE COPPER)

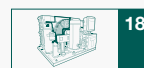
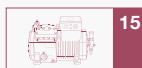
This product is approved for R290, R600 and R600a by ignition source assessment in accordance to standard EN13463-1. Only solder versions (cu-plated / pure copper) and connection sizes below 25 mm are approved for flammable refrigerants.

DCL - Solder (cu-plated)

Type	Connection [in]	Part No.
DCL 032s	1/4	023Z450100
DCL 032.5s	5/16	023Z450200
DCL 033s	3/8	023Z450400
DCL 052s	1/4	023Z450600
	5/16	023Z450700
DCL 053s	3/8	023Z450900
DCL 082s	1/4	023Z451100
	5/16	023Z451200
DCL 083s	3/8	023Z451400
DCL 084s	1/2	023Z451600
DCL 162s	1/4	023Z451800
DCL 163s	3/8	023Z452100
DCL 164s	1/2	023Z452300
DCL 165s	5/8	023Z452400
DCL 166s	3/4	023Z452500
DCL 167s	7/8	023Z452600
DCL 303s	3/8	023Z452800
DCL 304s	1/2	023Z453000
DCL 305s	5/8	023Z453100
DCL 306s	3/4	023Z453300
DCL 307s	7/8	023Z453400
DCL 309s	1 1/8	023Z453600
DCL 414s	1/2	023Z453800
DCL 415s	5/8	023Z453900
DCL 417s	7/8	023Z454000
DCL 419s	1 1/8	023Z454200
DCL 604s	1/2	023Z455400
DCL 607s	7/8	023Z454500
DCL 757s	7/8	023Z454800
DCL 759s	1 1/8	023Z455000

DCL - Solder (Pure Copper)

Type	Connection [in]	Part No.
DCL 1.52XL	1/4	023Z825500
DCL 032s	1/4	023Z501300
DCL 032.5s	5/16	023Z501400
DCL 033s	3/8	023Z501500
DCL 052s	1/4	023Z501800
DCL 053s	3/8	023Z501900
DCL 082s	1/4	023Z502200
DCL 083s	3/8	023Z502300
DCL 084s	1/2	023Z502600
DCL 085s	5/8	023Z514500
DCL 162s	1/4	023Z502800
DCL 163s	3/8	023Z502900
DCL 164s	1/2	023Z502300
DCL 165s	5/8	023Z503300
DCL 166s	3/4	023Z507000
DCL 167s	7/8	023Z503400
DCL 303s	3/8	023Z003000
DCL 304s	1/2	023Z003100
DCL 305s	5/8	023Z003200
DCL 306s	3/4	023Z003300
DCL 307s	7/8	023Z003400
DCL 309s	1 1/8	023Z003500
DCL 414s	1/2	023Z010400
DCL 415s	5/8	023Z010500
DCL 417s	7/8	023Z010600
DCL 419s	1 1/8	023Z010700
DCL 607s	7/8	023Z003600
DCL 609s	1 1/8	023Z003700
DCL 757s	7/8	023Z011500
DCL 759s	1 1/8	023Z011600



DML, Hermetic Filter Drier

DML Hermetic Filter Driers are optimised for refrigerants with mineral or benzene oils. The filter driers are hermetic and approved for up to 46 bar, depending on type.

The filter driers are delivered with flare or copper / copper plated steel connections.



DML - Flare

Type	Connection [in]	Part No.
DML 032	1/4	023Z503500 1)
DML 033	3/8	023Z503600 1)
	3/8	023Z509000
DML 052	1/4	023Z503700
DML 053	3/8	023Z503800
DML 082	1/4	023Z503900
DML 083	3/8	023Z504000
DML 084	1/2	023Z504100
DML 085	5/8	023Z507300
DML 162	1/4	023Z504200
DML 163	3/8	023Z504300
DML 164	1/2	023Z504400
DML 165	5/8	023Z504500
DML 166	3/4	023Z504600
DML 303	3/8	023Z004900
DML 304	1/2	023Z005000
DML 305	5/8	023Z005100
DML 306	3/4	023Z019300
DML 385	5/8	023Z018900
DML 413	3/8	023Z010800
DML 414	1/2	023Z010900
DML 415	5/8	023Z011000
DML 416	3/4	023Z019500

DML - FLARE

1) Wire mesh in filter drier outlet

DML - SOLDER (CU-PLATED)

This product is approved for R290, R600 and R600a by ignition source assessment in accordance to standard EN13463-1. Only solder versions (cu-plated / pure copper) and connection sizes below 25 mm are approved for flammable refrigerants.

DML - Solder (cu-plated)

Type	Connection [in]	Part No.
DML 032s	1/4	023Z455200
DML 032.5s	5/16	023Z455300
DML 033s	3/8	023Z455500
DML 034s	1/2	023Z455600
DML 052s	1/4	023Z455900
DML 052.5s	5/16	023Z456000
DML 053s	3/8	023Z456200
DML 054s	1/2	023Z456400
DML 055s	5/8	023Z456500
DML 082s	1/4	023Z456700
DML 083s	3/8	023Z457000
DML 084s	1/2	023Z457200
DML 085s	5/8	023Z457300
DML 162s	1/4	023Z457500
DML 163s	3/8	023Z457800
DML 164s	1/2	023Z458000
DML 165s	5/8	023Z458100
DML 166s	3/4	023Z458200
DML 167s	7/8	023Z458300
DML 303s	3/8	023Z458500
DML 304s	1/2	023Z458700
DML 305s	5/8	023Z458800
DML 306s	3/4	023Z458900
DML 307s	7/8	023Z459000
DML 309s	1 1/8	023Z459200
DML 414s	1/2	023Z459400
DML 415s	5/8	023Z459500
DML 417s	7/8	023Z459600
DML 419s	1 1/8	023Z459800
DML 604s	1/2	023Z460000
DML 607s	7/8	023Z460200
DML 609s	1 1/8	023Z460600
DML 757s	7/8	023Z460500
DML 759s	1 1/8	023Z460700



DCR, Filter Drier with Replaceable Solid Core

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

Core types:

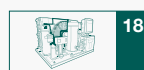
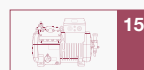
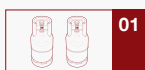
- 48-DC for HFC, HCFC systems and mineral or AB oils
- 48-DM for HFC, HCFC systems and POE or PAG oils
- 48 DA for acid adsorption after burnout
- 48-F strainer for retaining dirt

Cores / inserts are ordered separately.



Type	Number of cores	Steel connectors - Solder		Cover type	Max. working pressure PS [bar]	Max. working pressure MWP [psig]	Part No.
		ODF [in]	ODF [mm]				
DCR 0485	1	5/8	16	Plug	46	667	023U705000
DCR 0487	1	7/8	22	Plug	46	667	023U705100
DCR 0487	1	7/8	22	-	46	667	023U715100
DCR 0489	1	1 1/8	-	Plug	46	667	023U705300
DCR 04811	1	1 3/8	35	Plug	46	667	023U705400
DCR 04813	1	1 5/8	-	Plug	46	667	023U705500
DCR 04817	1	2 1/8	54	Plug	46	667	023U705700
DCR 04821	1	2 5/8	-	Plug	46	667	023U707600
DCR 0967	2	7/8	22	Plug	46	667	023U705800
DCR 0969	2	1 1/8	-	Plug	46	667	023U706000
DCR 09611	2	1 3/8	35	Plug	46	667	023U706100
DCR 09611	2	1 3/8	35	-	46	667	023U716100
DCR 09613	2	1 5/8	-	Plug	46	667	023U706200
DCR 09617	2	2 1/8	54	Plug	46	667	023U706400
DCR 1449	3	1 1/8	-	Plug	35(1) / 46(2)	507(1) / 667(2)	023U706600
DCR 14411	3	1 3/8	35	Plug	35(1) / 46(2)	507(1) / 667(2)	023U706700
DCR 14413	3	1 5/8	-	Plug	35(1) / 46(2)	507(1) / 667(2)	023U706800
DCR 14417	3	2 1/8	54	Plug	35(1) / 46(2)	507(1) / 667(2)	023U707000
DCR 19211	4	1 3/8	35	Plug	28(1) / 40(2)	406(1) / 580(2)	023U707100
DCR 19213	4	1 5/8	-	Plug	28(1) / 40(2)	406(1) / 580(2)	023U707200
DCR 19217	4	2 1/8	54	Plug	28(1) / 40(2)	406(1) / 580(2)	023U707400
DCR 19221	4	2 5/8	-	Plug	28(1) / 40(2)	406(1) / 580(2)	023U708600

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



DCR, Filter Drier with Replaceable Solid Core

Housing & Top Cover

Type	Number of cores	Copper connectors		Cover type	Max. working pressure PS [bar]	Max. working pressure MWP [psig]	Part No.
		Solder	ODF [in]				
DCR 0485s	1	5/8		Plug	46	667	023U725000
DCR 0487s	1	7/8		Plug	46	667	023U725100
DCR 0487s	1	7/8		-	46	667	023U757100
DCR 0489s	1	1 1/8		Plug	46	667	023U725300
DCR 04811s	1	1 3/8		Plug	46	667	023U725400
DCR 04813s	1	1 5/8		Plug	46	667	023U725500
DCR 04817s	1	2 1/8		Plug	46	667	023U725700
DCR 04821s	1	2 5/8		Plug	46	667	023U727600
DCR 0967s	2	7/8		Plug	46	667	023U725800
DCR 0969s	2	1 1/8		Plug	46	667	023U726000
DCR 0969s	2	1 1/8		-	46	667	023U727800
DCR 09611s	2	1 3/8		Plug	46	667	023U726100
DCR 09613s	2	1 5/8		Plug	46	667	023U726200
DCR 09617s	2	2 1/8		Plug	46	667	023U729000
DCR 09617s	2	2 1/8		-	46	667	023U729000
DCR 09621s	2	2 5/8		Plug	46	667	023U728100
DCR 14411s	3	1 3/8		Plug	351) / 462)	5071) / 6672)	023U726700
DCR 14411s	3	1 3/8		-	351) / 462)	5071) / 6672)	023U727500
DCR 14413s	3	1 5/8		Plug	351) / 462)	5071) / 6672)	023U726900
DCR 14413s	3	1 5/8		-	351) / 462)	5071) / 6672)	023U729700
DCR 14417s	3	2 1/8		Plug	351) / 462)	5071) / 6672)	023U727000
DCR 19211s	4	1 3/8		-	281) / 402)	4061) / 5802)	023U708300
DCR 19213s	4	1 5/8		Plug	281) / 402)	4061) / 5802)	023U727200
DCR 19213s	4	1 5/8		-	281) / 402)	4061) / 5802)	023U708200
DCR 19217s	4	2 1/8		Plug	281) / 402)	4061) / 5802)	023U727400

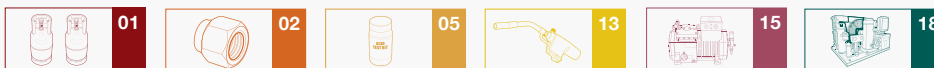
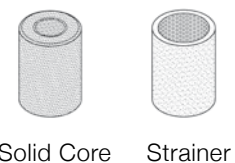
1) For usage with strainer or as a receiver application 2) For "drier" application all the permissible cores

DCR Inserts With Gasket

Type	Material	Part No.
48-DM solid core	100% molecular sieve	023U139200
48-DC solid core	80% molecular sieve and 20% Al3O2	023U438100
48-DA solid core	30% molecular sieve and 70% Al3O2	023U538100
48-F strainer	Felt-gasket, 15 µm	023U192100

DCR Inserts Without Gasket

Type	Material	Part No.
48-DM solid core	100% molecular sieve	-
48-DC solid core	80% molecular sieve and 20% Al3O2	023U438200
48-DA solid core	30% molecular sieve and 70% Al3O2	-



DMB, Hermetic Bi-Flow Filter Drier

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

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



DMB - Flare

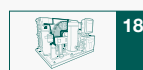
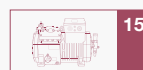
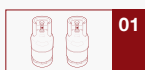
Type	Connection [in]	Part No.
DMB 082	1/4	023Z141200
DMB 083	3/8	023Z141100
DMB 084	1/2	023Z141000
DMB 163	3/8	023Z141500
DMB 164	1/2	023Z023Z141400
DMB 165	5/8	023Z141300
DMB 303	3/8	023Z141900
DMB 304	1/2	023Z141800
DMB 305	5/8	023Z141700

DMB - Solder (Pure Copper)

Type	Connection [in]	Part No.
DMB 082s	1/4	023Z144300
DMB 083s	3/8	023Z144200
DMB 084s	1/2	023Z144100
DMB 163s	3/8	023Z144600
DMB 164s	1/2	023Z144500
DMB 165s	5/8	023Z144400
DMB 304s	1/2	023Z144900
DMB 305s	5/8	023Z144800
DMB 307s	7/8	023Z144700

DMB - Solder (CU-Plated)

Type	Connection [in]	Part No.
DMB 082s	1/4	023Z147300
DMB 083s	3/8	023Z147200
DMB 084s	1/2	023Z147100
DMB 163s	3/8	023Z147600
DMB 164s	1/2	023Z147500
DMB 165s	5/8	023Z147400
DMB 303s	3/8	023Z148100
DMB 304s	1/2	023Z147900
DMB 305s	5/8	023Z147800
DMB 307s	7/8	023Z147700



DCB, Hermetic Bi-Flow Filter Drier

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

DCB hermetic bi-flow filter driers, with a solid core of 80% Molecular Sieve and 20% activated alumina. They are hermetic and available in many sizes and connection types.



DCB - Flare

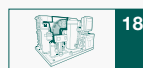
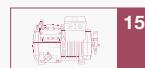
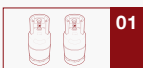
Type	Connection [in]	Part No.
DCB 082	1/4	023Z140200
DCB 083	3/8	023Z140100
DCB 084	1/2	023Z140000
DCB 162	1/4	023Z140600
DCB 163	3/8	023Z140500
DCB 164	1/2	023Z140400
DCB 165	5/8	023Z140300
DCB 303	3/8	023Z140900
DCB 304	1/2	023Z140800
DCB 305	5/8	023Z140700

DCB - Solder (Pure Copper)

Type	Connection [in]	Part No.
DCB 082s	1/4	023Z143400
DCB 083s	3/8	023Z143300
DCB 084s	1/2	023Z143200
DCB 163s	3/8	023Z143700
DCB 164s	1/2	023Z143600
DCB 165s	5/8	023Z143500
DCB 304s	1/2	023Z14400
DCB 305s	5/8	023Z143900
DCB 307s	7/8	023Z143800

DCB - Solder (CU-Plated)

Type	Connection [in]	Part No.
DMB 082s	1/4	023Z146400
DMB 083s	3/8	023Z143600
DMB 084s	1/2	023Z146200
DMB 163s	3/8	023Z146700
DMB 164s	1/2	023Z146600
DMB 165s	5/8	023Z146500
DMB 304s	1/2	023Z147000
DMB 305s	5/8	023Z146900
DMB 307s	7/8	023Z146800



DAS, Hermetic Burn-Out Filter Drier

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

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



DAS - Flare

Type	Connection [in]	Part No.
DAS 084V	1/2	023Z100200
DAS 164V	1/2	023Z100700
DAS 165V	5/8	023Z100800

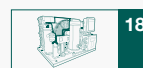
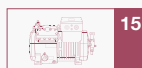
DAS - Solder (Pure Copper)

Type	Connection [in]	Part No.
DAS 084sVV	1/2	023Z100400
DAS 085sVV	5/8	023Z100500
DAS 086sVV	3/4	023Z100600
DAS 164sVV	1/2	023Z100900
DAS 165sVV	5/8	023Z101000
DAS 166sVV	3/4	023Z101100
DAS 167sVV	7/8	023Z101200
DAS 305sVV	5/8	023Z101300
DAS 306sVV	3/4	023Z101400
DAS 307sVV	7/8	023Z101500
DAS 309sVV	1 1/8	023Z101600
DAS 417sVV	7/8	023Z101700
DAS 419sVV	1 1/8	023Z101800
DAS 607sVV	7/8	023Z101900
DAS 609sVV	1 1/8	023Z102000

TOP TIP...

Have you had a compressor motor burn out?

Well, make sure you fit one of the Danfoss burn-out driers when you change the compressor in order to protect the new compressor against failure!



Type	Size	Connection Size (in)	Part No.
MSCD	15g	1/4" x 0.092"	MSCD15
MSCD	20g	1/4" x 0.092"	MSCD20
MSCD	30g	1/4" x 0.092"	MSCD30
MSCD	5g	3/16" x 0.092"	MSCD53
MSCD	5g	1/4"	MSCD54
CSD 1201	15g	1/4" x 0.092"	1458
R134a	15g	1/4" x 0.090"	1479
R134a	30g	1/4" x 1/4"	1527
TYPE-2	30g	1/4" x 1/4"	171984
Double Inlet/One Outlet	10g	1/4" x 1/4"	171986
tbc	5g	1/4" x 0.090"	274135
DRIER CU SERVICE 3/4" OD 15G	15g	3/4"	274151
XH9 3/	20g	3/4"	274186
Hercules	30g	1/4" x 5/16"	KCHC
Little Giant	10g	1/4" x 0.089-.092	KCLG
Drier Copper Spun 3/8-3/4 TR	18g	1/4"	1451
DXA-5 cw/charging valve 4007A	10g	1/4"	1545
Supco 3/4" Copper Drier	-	3/4"	SUD110
Supco 1" Copper Drier	-	1"	SUD111
Supco 1" Copper Drier	-	1"	SUD114



DID YOU KNOW...

US inventor **Willis Haviland Carrier** designed and built the first air conditioning system in 1902.



SGP, Sight Glass (High Pressure)

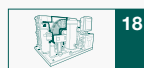
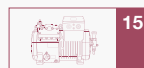
SGP are sight glasses for high pressure applications (Max Working Pressure PS / MWP: 52 bar / 754 psi). SGP is available with flare, solder and socket connections, and with and without moisture indicators. SGP I / SGP N and SGP RI / SGP RN are equipped with sensitive indicators that reflects a changes colour, depending on the moisture content in the refrigerant.

SGP X and SGP RX, without moisture indicator, are mainly used to indicate the condition of the refrigerant in the liquid line or the flow in the oil return line from the oil separator.



Available types

Solder Version ODF x ODF SGP X without indicator	Flare External x External SGP X without indicator	Flare Internal x External SGP I and SGP N with indicator
Solder Version ODF x ODM SGP I and SGP N with indicator	Solder Version ODF x ODF SGP I and SGP N with indicator	Flare External x External SGP I and SGP N with indicator
Socket SGP RX without indicator	Socket SGP RI and SGP RN with indicator	Saddle SGS



SGP N With N Type Indicator

Type	Version	Connection [in]	Part No.
SGP 6 N	Flare ext. x ext.	1/4 x 1/4	014L016100
SGP 10 N	Flare ext. x ext.	3/8 x 3/8	014L016200
SGP 12 N	Flare ext. x ext.	1/2 x 1/2	014L016300
SGP 16 N	Flare ext. x ext.	5/8 x 5/8	014L016500
SGP 19 N	Flare ext. x ext.	3/4 x 3/4	014L016600
SGP 6 N	Flare int. x ext. 1)	1/4 x 1/4	014L017100
SGP 10 N	Flare int. x ext. 1)	3/8 x 3/8	014L017200
SGP 12 N	Flare int. x ext. 1)	1/2 x 1/2	014L017300
SGP 16 N	Flare int. x ext. 1)	5/8 x 5/8	014L017400
SGP 19 N	Flare int. x ext. 1)	3/4 x 3/4	014L017500
SGP 6s N	ODF x ODF solder	1/4 x 1/4	014L018100
SGP 10s N	ODF x ODF solder	3/8 x 3/8	014L018200
SGP 12s N	ODF x ODF solder	1/2 x 1/2	014L018300
SGP 16s N	ODF x ODF solder	5/8 x 5/8	014L018400
SGP 19s N	ODF x ODF solder	3/4 x 3/4	014L018500
SGP 22s N	ODF x ODF solder	7/8 x 7/8	014L018600
SGP 22s N 2)	ODF x ODF solder	1 1/8 x 1 1/8	014L018700
SGP 6s N	ODF x ODM solder	1/4 x 1/4	014L020100
SGP 10s N	ODF x ODM solder	3/8 x 3/8	014L020200
SGP 12s N	ODF x ODM solder	1/2 x 1/2	014L020300
SGP 16s N	ODF x ODM solder	5/8 x 5/8	014L020400
SGP 22s N	ODF x ODM solder	7/8 x 7/8	014L020600

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

Note: Only solder versions are allowed for flammable refrigerants.

SGP I With I Type Indicator

Type	Connection type	Connection [in]	Part No.
SGP 6 I	Flare ext. x ext.	1/4 x 1/4	014L000700
SGP 10 I	Flare ext. x ext.	3/8 x 3/8	014L000800
SGP 12 I	Flare ext. x ext.	1/2 x 1/2	014L000900
SGP 16 I	Flare ext. x ext.	5/8 x 5/8	014L002400
SGP 19 I	Flare ext. x ext.	3/4 x 3/4	014L002800
SGP 6 I	Flare int. x ext.1)	1/4 x 1/4	014L002100
SGP 10 I	Flare int. x ext.1)	3/8 x 3/8	014L002200
SGP 12 I	Flare int. x ext. 1)	1/2 x 1/2	014L002500
SGP 16 I	Flare int. x ext. 1)	5/8 x 5/8	014L002600
SGP 19 I	Flare int. x ext. 1)	3/4 x 3/4	014L004300
SGP 6s I	ODF x ODF solder	1/4 x 1/4	014L003400
SGP 10s I	ODF x ODF solder	3/8 x 3/8	014L003500
SGP 12s I	ODF x ODF solder	1/2 x 1/2	014L003600
SGP 16s I	ODF x ODF solder	5/8 x 5/8	014L004400
SGP 19s I	ODF x ODF solder	3/4 x 3/4	014L004700
SGP 22s I	ODF x ODF solder	7/8 x 7/8	014L003900
SGP 6s I	ODF x ODM solder	1/4 x 1/4	014L012500
SGP 10s I	ODF x ODM solder	3/8 x 3/8	014L012600
SGP 12s I	ODF x ODM solder	1/2 x 1/2	014L012700
SGP 16s I	ODF x ODM solder	5/8 x 5/8	014L012800
SGP 22s I	ODF x ODM solder	7/8 x 7/8	014L013000

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

Note: Only solder versions are allowed for flammable refrigerants.

SGP - Socket Type & SGS Saddle

Type	Version	Connection		Floating ball [pc]	O-ring	Part No.
		1	2			
SGP 3/4 RX (no indicator)	G thread	G 3/4 A 1)	-	1	No	014L0004
	NPT	3/4 - 14 NPT 2)	-	1	No	014L000500
SGP 1/2 RX (no indicator)	NPT	1/2 - 14 NPT 2)	-	3	No	014L000200
SGP 1/2 RI (I type indicator)	NPT	1/2 - 14 NPT 2)	-	3	No	014L013100
SGP 24 RI (I type indicator)	M thread	M24 x 1	-	-	Yes	014L115400
SGP 1/2 RN (N type indicator)	NPT	1/2 - 14 NPT 2)	-	3	No	014L000600
SGP 24 RN (N type indicator)	M thread	M24 x 1	-	-	Yes	014L115500
SGP 20 RN (N type indicator)	M thread	M20 x 1.5	-	-	No	014L160300
SGS (saddle)	Tube fitting	M20 x 1.5	1 1/8	-	-	014-107300
	Tube fitting	M20 x 1.5	1 3/8	-	-	014-107100
	Tube fitting	M24 x 1	7/8	-	-	014-105900
	Tube fitting	M24 x 1	1 1/8	-	-	-
	Tube fitting	M24 x 1	1 3/8	-	-	014-105700
	Tube fitting	M24 x 1	1 5/8	-	-	014-105800
	Tube fitting	M24 x 1	2 1/8	-	-	014-106700

1) ISO 228-1. 2) ANSI / ASME B1.20.1 **Note:** Only solder versions are allowed for flammable refrigerants.

SGP X Without Indicator

Note: Only solder versions are allowed for flammable refrigerants.

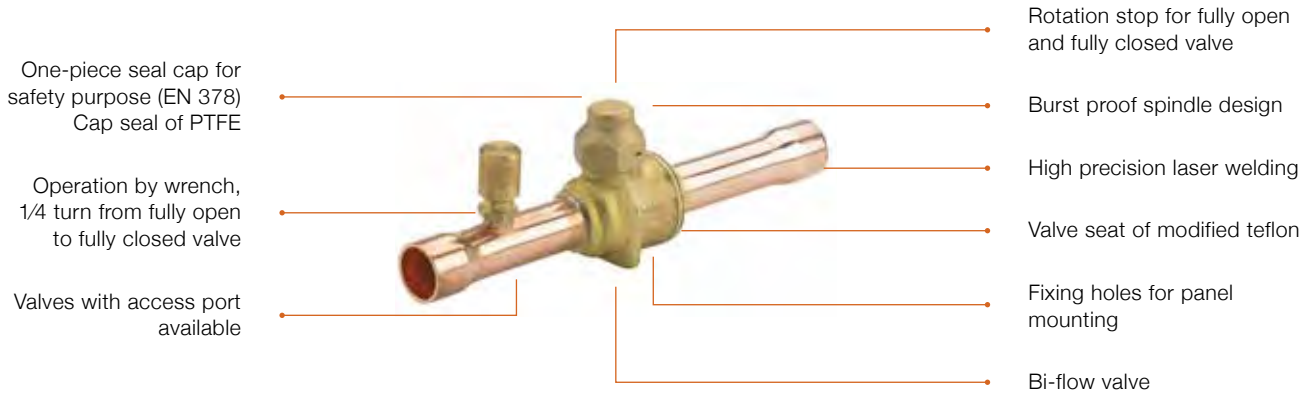
Type	Connection type	Connection [in]	Part No.
SGP 10 X	Flare ext. x ext.	3/8 x 3/8	014L008000
SGP 12s X	Solder ODF x ODF	1/2 x 1/2	014L008600
SGP 16s X	Solder ODF x ODF	5/8 x 5/8	014L008700
SGP 22s X	Solder ODF x ODF	7/8 x 7/8	014L120700



GBC Version 2, Shut-Off Ball Valve

GBC v2 shut-off ball valves are manually operated valves suitable for bi-directional flow. Shut-off ball valves are used in liquid, suction and hot gas lines in refrigeration, freezing and air conditioning systems.

The GBC v2 bi-directional shut-off ball valves can be delivered with or without external access port. The valves have one-piece wire seal cap to prevent unintentional cap removal or tampering between services.



GBC v2 Without Access Port, Solder ODF / ODF

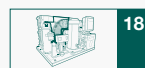
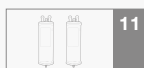
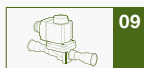
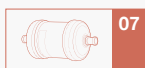
Type	Solder ODF / ODF Connection [in]	Max. Working Pressure PS / MWP		KV Value 1) [m3/h]	CV Value 1) [gal/min]	Part No.
		[bar]	[psig]			
GBC 6s	1/4	45	650	1.83	2.12	009L702000
GBC 10s	3/8	45	650	8.04	9.29	009L702100
GBC 12s	1/2	45	650	13.17	15.22	009L702200
GBC 16s	5/8	45	650	15.6	18.1	009L702300
GBC 18s	3/4	45	650	21.9	25.3	009L702400
GBC 22s	7/8	45	650	33.3	38.5	009L702500
GBC 28s	1 1/8	45	650	62	71	009L702600
GBC 35s	1 3/8	45	650	92	107	009L702700
GBC 42s	1 5/8	45	650	134	155	009L702800
GBC 54s	2 1/8	45	650	240	277	009L702900
GBC 67s	2 5/8	45	650	367	424	009L795900
GBC 67s RP	2 5/8	45	650	203	234	009L703600
GBC 79s	3 1/8	45	650	528	611	009L798000
GBC 79s RP	3 1/8	45	650	171	198	009L703700

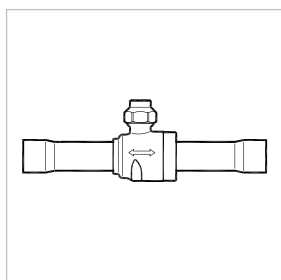
One-piece seal cap for safety purpose (EN 378) Cap seal of PTFE

GBC v2 With Access Port, Solder ODF / ODF

1) Calculated based on fluid dynamic equations. RP: Reduced Port

Type	Solder ODF / ODF Connection [in]	Max. Working Pressure PS / MWP		KV Value 1) [m3/h]	CV Value 1) [gal/min]	Part No.
		[bar]	[psig]			
GBC 6s	1/4	45	650	1.83	2.12	009L705000
GBC 10s	3/8	45	650	8.04	9.29	009L705100
GBC 12s	1/2	45	650	13.17	15.22	009L705200
GBC 16s	5/8	45	650	15.6	18.1	009L705300
GBC 18s	3/4	45	650	21.9	25.3	009L705400
GBC 22s	7/8	45	650	33.3	38.5	009L705500
GBC 28s	1 1/8	45	650	62	71	009L705600
GBC 35s	1 3/8	45	650	92	107	009L705700
GBC 42s	1 5/8	45	650	134	155	009G705800
GBC 54s	2 1/8	45	650	240	277	009L705900
GBC 67s	2 5/8	45	650	367	424	009L796000
GBC 67s RP	2 5/8	45	650	203	234	009L706600
GBC 79s	3 1/8	45	650	528	611	009L798100
GBC 79s RP	3 1/8	45	650	171	198	009L706700

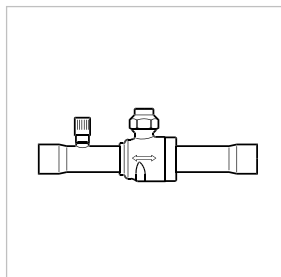




GBC V2 Without Access Port, Solder ODF / ODM

Type	Solder ODF / ODM Connection [in]	Max. Working Pressure PS / MWP		KV Value 1 [m ³ /h]	CV Value 1 [gal/min]	Part No.
		[bar]	[psig]			
GBC 22s	7/8	45	650	33.3	38.5	-
GBC 28s	1 1/8	45	650	62	71	-
GBC 35s	1 3/8	45	650	92	107	-
GBC 42s	1 5/8	45	650	134	155	-
GBC 79s	3 1/8	45	650	528	611	-

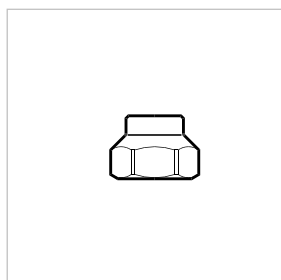
1) Calculated based on fluid dynamic equations.



GBC V2 With Access Port, Solder ODF / ODM

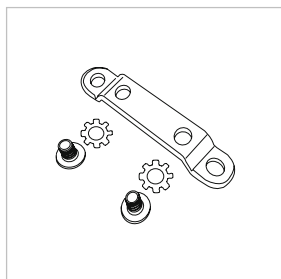
Type	Solder ODF / ODM Connection [in]	Max. Working Pressure PS / MWP		KV Value 1 [m ³ /h]	CV Value 1 [gal/min]	Part No.
		[bar]	[psig]			
GBC 28s	7/8	45	650	62	71	-
GBC 35s	1 1/8	45	650	92	107	-
GBC 42s	1 3/8	45	650	134	155	-
GBC 54s	1 5/8	45	650	240	277	-
GBC 67s	3 1/8	45	650	367	424	-
GBC 79s	3 1/8	45	650	528	611	-

1) Calculated based on fluid dynamic equations.



Spare Parts - Seal Cap Kit

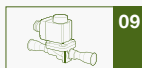
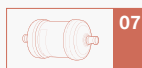
Type	Valve Connection Size [in]	Industrial Pack	Part No.
GBC 6s - GBC 22s	1/4 - 7/8	6	009L721000
GBC 28s - GBC 35s	1 1/8 - 1 3/8	4	009L721100
GBC 42s	1 5/8	4	009L721200



Spare Parts - Bracket Kit

Type	Valve Connection Size [in]	Industrial Pack	Part No.
GBC 6s - GBC 16s	1/4 - 5/8	12	009G708400
GBC 18s - GBC 22s	3/4 - 7/8	12	009G708500
GBC 28s	1 1/8	10	009G708700
GBC 35s	1 3/8	5	009G707800
GBC 42s	1 5/8	4	009G708800

Type	Media Temperature Range	Max. Working Pressure (PS/MWP)
GBC 6s - GBC 42s	-40 - 150 °C / -40 - 300 °F (short term for 150 °C / 300 °F) For long term use in high temperature application, please consult Danfoss.	45 bar / 650 psig
GBC 54s - GBC 79s	-40 - 121 °C / -40 - 250 °F	45 bar / 650 psig



GBCH Version 2, Shut-Off Ball Valve for R744 (CO2) High Pressure

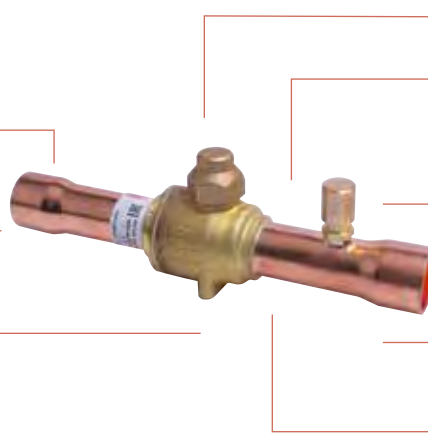
Danfoss shut-off ball valves, type GBCH v2 for CO₂ high pressure are manually operated shut-off valves. The valves are specifically designed for intrinsic standstill security, meaning that the valves can withstand pressures normally arising when the refrigeration system is shut off, i.e.

during servicing or during unexpected power failure. The valves are approved for use in all parts of the system with pressure ratings lower than the below stated Maximum Working Pressure, typically the liquid, suction, gas-bypass, lines.

Operation by wrench, 1/4 turn from fully open to fully closed valve

Rotation stop for fully open and fully closed valve

One-piece seal cap for safety purpose (EN 378)
Cap seal of PTFE



Relief hole

High precision laser welding

Burst proof spindle design

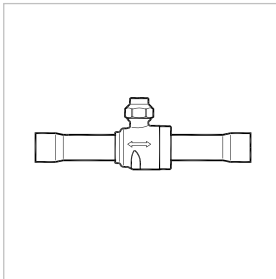
Valve seat of modified teflon

Bi-flow valve

Fixing holes for panel mounting

Selected O-ring material for CO₂ refrigerant

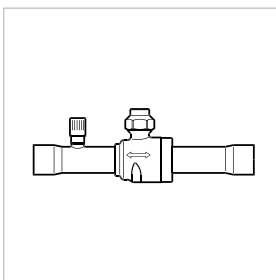
GBCH V2 Without Access Port, Solder ODF/ODF, Copper Connections



Type	Solder ODF / ODF Connection [in]	Max. Working Pressure PS / MWP		KV Value 1) [m ³ /h]	CV Value 1) [gal/min]	Part No.
		[bar]	[psig]			
GBCH 6s	1/4	90	1305	1.78	2.06	009L741500
GBCH 10s	3/8	90	1305	6.31	7.29	009L741600
GBCH 12s	1/2	90	1305	12.8	14.8	009L741700
GBCH 16s	5/8	90	1305	11.7	13.6	009L741800
GBCH 18s	3/4	90	1305	31	35.9	009L741900
GBCH 22s	7/8	90	1305	24.4	28.2	009L742000

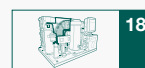
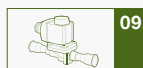
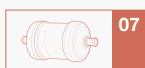
1) Calculation based on fluid dynamic equations

GBCH V2 With Access Port, Solder ODF/ODF, Copper Connections

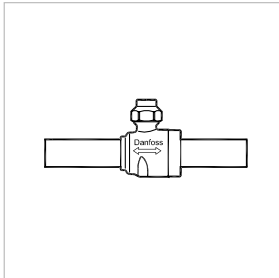


Type	Solder ODF / ODF Connection [in]	Max. Working Pressure PS / MWP		KV Value 1) [m ³ /h]	CV Value 1) [gal/min]	Part No.
		[bar]	[psig]			
GBCH 6s	1/4	90	1305	1.78	2.06	009L758100
GBCH 10s	3/8	90	1305	6.31	7.29	009L758200
GBCH 12s	1/2	90	1305	12.8	14.8	009L758500
GBCH 16s	5/8	90	1305	11.7	13.6	009L758600
GBCH 18s	3/4	90	1305	31	35.9	009L758800
GBCH 22s	7/8	90	1305	24.4	28.2	009L758900

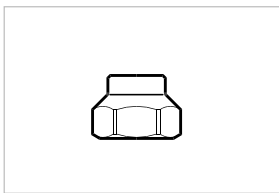
1) Calculation based on fluid dynamic equations



GBCH V2 Without Access Port, Butt Weld, Stainless Steel Connections

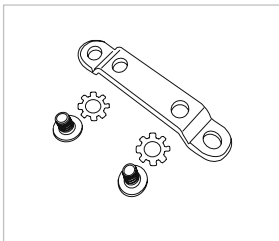


Type	Solder ODF / ODF Connection [mm]	Max. Working Pressure PS / MWP [bar] [psig]		KV Value 1 [m3/h]	CV Value 1) [gal/min]	Part No.
GBC 28s	28	90	1305	96	111	009L740600
GBC 35s	35	75	1085	106	123	009L741000
GBC 42s	42	75	1085	150	174	009L741100



Spare Parts - Seal Cap Kit

Type	Valve Connection Size [in]	Industrial Pack	Part No.
GBC 6s - GBC 22s	1/4 - 7/8	6	009L721000
GBC 28s - GBC 35s	1 1/8 - 1 3/8	4	009L721100
GBC 42s	1 5/8	4	009L721200



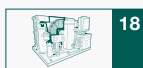
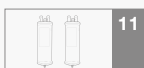
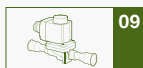
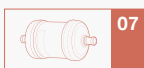
Spare Parts - Bracket Kit

Type	Valve Connection Size [in]	Industrial Pack	Part No.
GBC 6s - GBC 16s	1/4 - 5/8	12	009G708400
GBC 18s - GBC 22s	3/4 - 7/8	12	009G708500
GBC 28s	1 1/8	10	009G708700
GBC 35s	1 3/8	5	009G707800
GBC 42s	1 5/8	4	009G708800

TOP TIP...

Have you ever considered an alternative to Brazing?

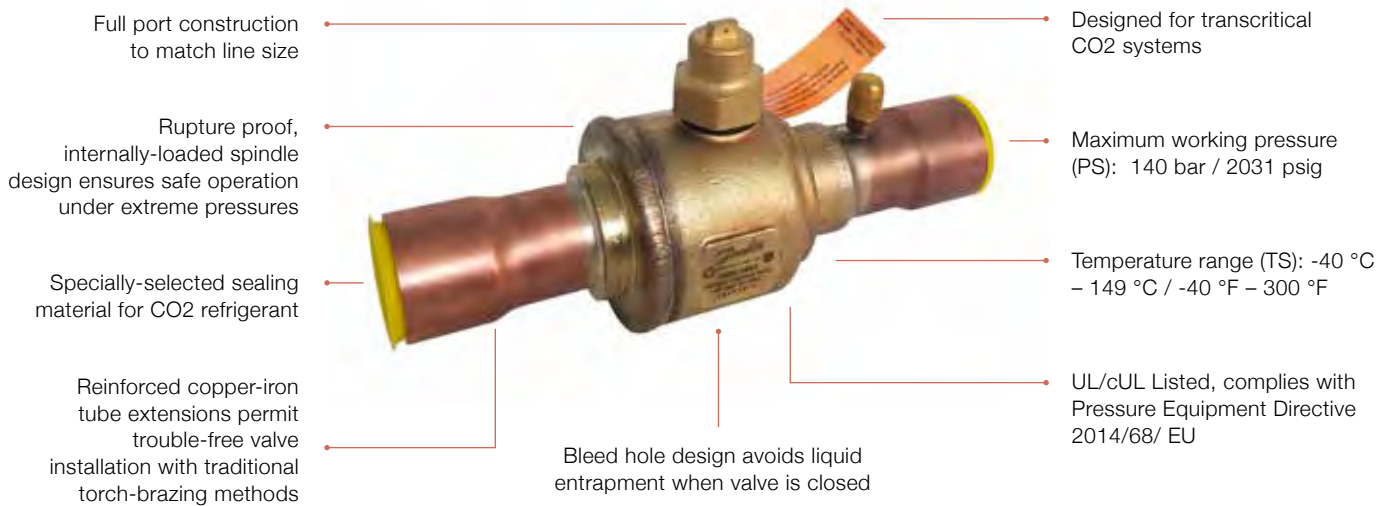
Hot work permits, handling heavy OFN bottles, setting up purging every time you need to braze a joint; these are all issues that you've become accustomed to. But they cost time and money! **Visit page 41 to find out how much easier, quicker and cleaner it is to join pipes using press fit fittings**



GBCT for Transcritical R744 / CO2 (140 bar / 2031 psig)

Danfoss shut-off ball valves, type GBCT for R744 (CO2) high pressure are manually operated shut-off valves for transcritical CO2 refrigeration systems, in order to open and to shut off inner flow path by operating the valve spindle.

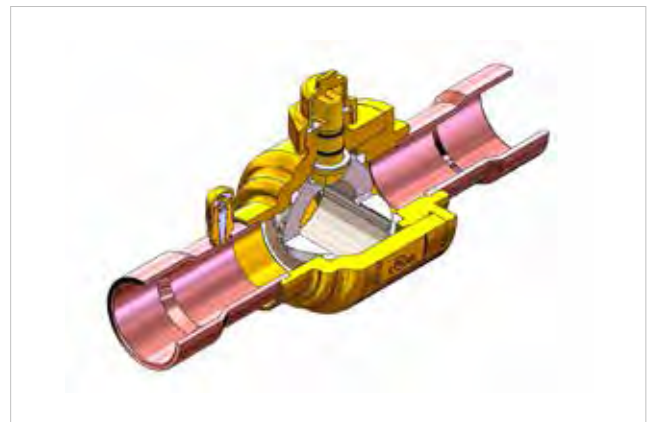
The valve structure and materials are designed and tested specifically for use with CO2 refrigerant. The valves are approved for use in transcritical CO2 refrigeration systems.



Technical data

Refrigerants	R 744 (CO2)
Oils	POE, PAG
Continuous operating temperature (COT)	-40 °C – 149 °C / -40 °F – 300 °F
"Design Pressure (DP)/ Maximum abnormal pressure (MAP)"	140 bar / 2031 psig
Flow direction	bi-flow

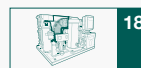
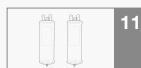
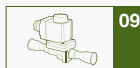
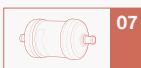
Danfoss recommends that valves are installed so that the HP side is oriented towards the highest pressure side of the system when the valve is in the closed position.



GBCT With & Without Access Port



Type	Connection	Kv value (m3/h)	Cv value (gal/min)	Height (mm)	Length (mm)	Depth (mm)	Weight (kg)	Part No. WITH Access Port	Part No. WITHOUT Access Port
GBCT 6s	1/4	0.9	1	57	127	13	0.21	009L658100	009L641500
GBCT 10s	3/8	3.7	4.3	57	132	13	0.22	009L658200	009L641600
GBCT 12s	1/2	5.4	6.2	57	139	13	0.22	009L658500	009L641700
GBCT 16s	5/8	10.4	12.1	57	148	13	0.23	009L658600	009L641800
GBCT 18s	3/4	16.4	19	87	148	19	0.66	009L658800	009L641900
GBCT 22s	7/8	27.7	27.5	87	185	19	0.68	009L658900	009L642000
GBCT 28s	1.1/8	42.3	48.9	102	185	25	1.31	009L645100	009L640600
GBCT 35s	1.3/8	67.1	77.6	103	205	32	1.95	009L645300	009L641000
GBCT 42s	1.5/8	83.1	96.1	113	240	38	2.93	009L645400	009L641100
GBCT 54s	2.1/8	171.3	198	144	275	51	6.07	009L645600	009L641200





Henry Ball Valves

Ball valves are used in a wide variety of air conditioning and refrigeration applications. They can be used for both liquid and gas applications. This type of valve is commonly used for isolating purposes. All valves up to and including 3 1/8" ODS size (part no.174081) are suitable for HCFC, HFC, CO₂, R290 and A2L refrigerants along with their associated oils. Larger sizes and the High Pressure Ball Valves are suitable for HCFC, HFC and CO₂ refrigerants.

The ball valve with sight glass (BVSG) combines the traditional ball valve with a sight glass and moisture indicator. A typical location for this combination product is in the liquid refrigerant line. The ball valve is used for isolating purposes; the sight glass for a visual display inside the line and the moisture indicator monitors the moisture content in the system. The new high pressure ball valve (HPBV) is suitable for transcritical CO₂ applications.

Henry Ball Valves

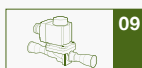
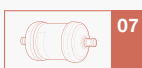
ODS (inch)	Port Size (mm)	Weight (kg)	MWP (barg)	Kv Value (m3/hr)	CE Cat	Part No.
1/4"	12.70	0.33	60	1.81	SEP	174150
3/8"	12.70	0.33	60	3.70	SEP	-
1/2"	12.70	0.33	60	6.02	SEP	-
5/8"	12.70	0.33	60	11.95	SEP	-
3/4"	19.05	0.62	60	18.06	SEP	-
7/8"	19.05	0.64	60	26.06	SEP	-
1.1/8"	25.40	0.95	60	52.72	Cat II	-
1.3/8"	31.75	1.52	60	73.27	Cat II	174077
1.5/8"	38.10	2.44	60	182.32	Cat II	174078
2.1/8"	50.80	4.58	60	245.10	Cat II	174079
2.5/8"	50.80	5.04	60	204.68	Cat II	174080
2.5/8"	63.50	8.73	60	258.86	Cat II	-
3.1/8"	63.50	8.73	60	278.64	Cat II	174081
3.1/8"	80.00	18.20	48	361.20	Cat I	-
3.5/8"	80.00	18.20	48	439.46	Cat I	174119
4.1/8"	80.00	18.20	48	447.20	Cat I	174120

Henry Ball Valves cw/ Schraeder

ODS (inch)	Port Size (mm)	Weight (kg)	MWP (barg)	Kv Value (m3/hr)	CE Cat	Part No.
1/4"	12.70	0.33	60	1.81	SEP	-
3/8"	12.70	0.33	60	3.70	SEP	-
1/2"	12.70	0.33	60	6.02	SEP	-
5/8"	12.70	0.33	60	11.95	SEP	-
3/4"	19.05	0.62	60	18.06	SEP	-
7/8"	19.05	0.64	60	26.06	SEP	-
1.1/8"	25.40	0.95	60	52.72	Cat II	-
1.3/8"	31.75	1.52	60	73.27	Cat II	174097
1.5/8"	38.10	2.44	60	182.32	Cat II	174098
2.1/8"	50.80	4.58	60	245.10	Cat II	174099
2.5/8"	50.80	5.04	60	204.68	Cat II	174100
2.5/8"	63.50	8.73	60	258.86	Cat II	-
3.1/8"	63.50	8.73	60	278.64	Cat II	174101

Henry High Pressure Ball Valves (CO₂)

ODS (inch)	Port Size (mm)	Weight (kg)	MWP (barg)	Kv Value (m3/hr)	CE Cat	Part No.
1/4"	12.70	0.33	130	1.81	SEP	-
3/8"	12.70	0.33	130	3.70	SEP	174122
1/2"	12.70	0.33	130	6.02	SEP	174123
5/8"	12.70	0.33	130	11.95	SEP	174124
3/4"	19.05	0.62	130	18.06	SEP	174125
7/8"	19.05	0.64	130	26.06	SEP	174126
1.1/8"	25.40	0.95	130	52.72	SEP	174127
1.3/8"	31.75	1.52	130	73.27	Cat 1	174128
1.5/8"	38.10	2.44	130	182.32	Cat 1	174129



BML / BMT, Shut-Off Diaphragm Valves

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

ODF solder or ODF solder with extended ends. In the same product category, BMT 6 is a three-way manual shut-off valve with similar characteristics.



BML Flare, With Hand Wheel

Type	Version	Flare Connection [in]	Max. Working Pressure PS / MWP		KV Value [m3/h]	CV Value [gal/min]	Part No.
			[bar]	[psi]			
BML 6	Straight way	1/4	28	406	0.3	0.35	009G010100
BML 10	Straight way	3/8	28	406	0.84	0.98	009G012700
BML 12	Straight way	1/2	28	406	1.5	1.75	009G014100
BML 15	Straight way	5/8	28	406	2.2	2.57	009G016800
BML 18	Straight way	3/4	28	406	2.9	3.38	009G018300

BML ODF Solder, With Hand Wheel

Type	Version	[in]	Max. Working Pressure PS / MWP		KV Value [m3/h]	CV Value [gal/min]	Part No.
			[bar]	[psi]			
BML 6s	Straight way	1/4	28	406	0.3	0.35	009G010200
BML 10s	Straight way	3/8	28	406	0.84	0.98	009G012200
BML 12s	Straight way	1/2	28	406	1.5	1.75	009G014200
BML 15s	Straight way	5/8	28	406	2.2	2.57	009G016200
BML 18s	Straight way	3/4	28	406	2.9	3.38	009G018100
BML 22s	Straight way	7/8	28	406	2.9	3.38	009G019100

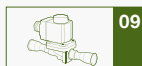
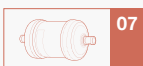
BML ODF Solder Extended Connections, With Hand Wheel

Type	Version	[in]	Max. Working Pressure PS / MWP		KV Value [m3/h]	CV Value [gal/min]	Part No.
			[bar]	[psi]			
BML 6s	Straight way	1/4	28	406	0.3	0.35	009G020200
BML 10s	Straight way	3/8	28	406	0.84	0.98	009G022200
BML 12s	Straight way	1/2	28	406	1.5	1.75	009G024200
BML 15s	Straight way	5/8	28	406	2.2	2.57	009G026200
BML 22s	Straight way	7/8	28	406	2.9	3.38	009G029100

BMT 3-Way Flare, With Hand Wheel

Note: Only solder versions are approved for flammable refrigerants now

Type	Version	Flare Connection [in]	Max. Working Pressure PS / MWP		KV Value [m3/h]	CV Value [gal/min]	Part No.
			[bar]	[psi]			
BMT 6	Three-way	1/4	28	406	0.3	0.35	009G010500





Henry Globe Valves

Globe Valves are used for isolating purposes. The Henry Technologies range includes two versions; with and without copper extensions.

Applications: Globe valves are used in both low and high side applications. The valves are suitable for HCFC and HFC refrigerants along with their associated oils.

Main features:

- Angled body combines compact design with low pressure drop
- Vented seal cap
- Non rising stem
- Flow direction arrow on valve body
- Premium quality neoprene O-ring seals

Conn Size (inch)	Weight (kg)	Kv Value (m3/hr)	CE Cat	Part No.
7/8" ODS	0.87	6.50	SEP	174060
1.1/8" ODS	0.80	11.00	SEP	174061
1.1/8" ODS	1.08	11.00	SEP	295388
1.3/8" ODS	1.75	18.10	Cat 1	174062
1.5/8" ODS	1.60	22.00	Cat 1	174063

*The ODS extensions for the "E" models are made from copper.

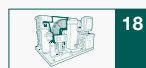
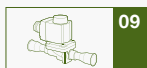
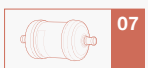
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Related Items:



Straightway



Rotalock Size (in)	Connection Size (in)	Part No.
1	3/8	127080
1	1/2	127088
1	5/8	127096
1.1/4	3/4	127104
1.1/4	7/8	127112
1.3/4	1.3/8	127128
1.3/4	1.5/8	127136
1.3/4	1.1/8	127120

Angleway



Rotalock Size (in)	Connection Size (in)	Part No.
1	3/8	127144
1	1/2	127152
1	5/8	127160
1	3/4	127168
1	7/8	127176
1.3/4	1.3/8	127172

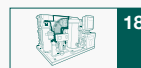
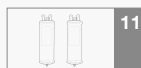
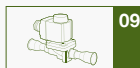
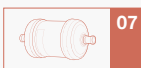
The VS series is based on the proven design of the V series with a few modifications. The VS series is constructed entirely of stainless steel and all joints are tig welded. Consequently there is no need to wet-rag the product during the installation process. The maximum working pressures are higher, as detailed in the table.



Type	Rotalock Size (in)	Connection Size (in)	Part No.
-	1	1/2	127230
SR1-WC4	1	3/8	127000
SR1-WF4	1	1/2	127008
SR2-WM4	1	5/8	127016
SR2-XM4	1.1/4	5/8	127024
SR3-X04	1.1/4	1.1/8	127048
SR3-XK4	1.1/4	3/4	127032
SR3-XN4	1.1/4	7/8	127040
SR4-YO4	1.3/4	1.1/8	127056
-	1	5/8	ROTOLOCK3

Rotalock Gasket

Size (in)	Part No.
1 1/4	127196
1.3/4	127204
1	127188



V Series



Each unit is constructed of a deep pitch corrugated hose covered with a stainless steel braid. The hose and braid are reinforced by ferrules at each end and connected to copper tube ends by a high temperature braze alloy. Units are suitable for use with HCFC, HFC and A2L refrigerants.

Type	Connection Size (in)	Overall Length (mm)	Body Length (Exc. Sweat Connections - mm)	Max. Working Pressure PS (bar)	Weight (kg)	CE Cat	Part No.
V-1/4	1/4	202	133	44.8	0.14	SEP	174400
V-3/8	3/8	215	141	44.8	0.14	SEP	174401
V-1/2	1/2	225	151	44.8	0.15	SEP	174402
V-5/8	5/8	247	169	44.8	0.21	SEP	174403
V-3/4	3/4	266	180	44.8	0.32	SEP	174404
V-7/8	7/8	301	211	44.8	0.31	SEP	174405
V-1.1/8	1.1/8	329	223	41.3	0.42	Cat II	174406
V-1.3/8	1.3/8	392	274	37.9	0.66	Cat II	174407
V-1.5/8	1.5/8	425	295	35.1	0.98	Cat II	174408
V-2.1/8	2.1/8	520	370	27.5	1.46	Cat II	174409
V-2.5/8	2.5/8	613	434	24.1	2.60	Cat II	174410
V-3.1/8	3.1/8	680	481	22.0	3.60	Cat II	174411
V-3.5/8	3.5/8	812	579	13.0	4.70	Cat II	174412
V-4.1/8	4.1/8	832	589	13.0	5.50	Cat II	174414

* Tolerances for overall length (+/-6mm) ** Tolerances for Body Length (+/-3mm)

CO₂ VS Series

The VS series is based on the proven design of the V series with a few modifications. The VS series is constructed entirely of stainless steel and all joints are tig welded. Consequently there is no need to wet-rag the product during the installation process. The maximum working pressures are higher, as detailed in the table. Units are also suitable for use with HCFC, HFC and A2L refrigerants in addition to CO₂.

Type	Connection Size (in)	Overall Length (mm)	Body Length (Exc. Sweat Connections - mm)	Max. Working Pressure PS (bar)	Weight (kg)	CE Cat	Part No.
VS-1/4	1/4	202	133	60.0	0.14	SEP	174430
VS-3/8	3/8	215	141	60.0	0.14	SEP	174431
VS-1/2	1/2	225	151	60.0	0.15	SEP	174432
VS-5/8	5/8	247	169	60.0	0.21	SEP	174433
VS-3/4	3/4	266	180	60.0	0.32	SEP	174434
VS-7/8	7/8	301	211	60.0	0.31	SEP	174435
VS-1.1/8	1.1/8	329	223	60.0	0.42	Cat II	174436
VS-1.3/8	1.3/8	392	274	60.0	0.66	Cat II	174437
VS-1.5/8	1.5/8	425	295	45.0	0.98	Cat II	174438
VS-2.1/8	2.1/8	520	370	40.0	1.46	Cat II	174439
VS-2.5/8	2.5/8	613	434	35.0	2.60	Cat II	174440
VS-3.1/8	3.1/8	680	481	30.0	3.60	Cat II	174441
VS-4.1/8	4.1/8	832	589	20.0	5.50	Cat II	174443

* Tolerances for overall length (+/-6mm) ** Tolerances for Body Length (+/-3mm)



Danfoss NRV / NRVH

NRV and NRVH check valves can be used in liquid, suction and hot gas lines in refrigeration and air conditioning plants. Special versions, with a max. working pressure of 90 bar / 1305 psig are available for CO₂ applications. The valves ensure the correct flow direction and prevent back-condensation from a warm part of the system to

the cold evaporator. The hermetic tight design of solder versions meet the environmental demands for today and future. A built-in damping piston makes the valves suitable for installation in lines where pulsation can occur, e.g. in the discharge line from the compressor.



NRV - Check Valve, Straight-Way, Flare

Type	Connection Type	Connection [in]	Pressure Drop Across Valve		KV - Value 2 [m ³ /h]	CV - Value 2 [gal/min]	Part No.
			Δp [bar] 1)	Δp [psig] 1)			
NRV6	Straight-way - flare	1/4	0.07	1.01	0.56	0.65	020-104000
NRV 10	Straight-way - flare	3/8	0.07	1.01	1.2	1.39	020-104100
NRV 12	Straight-way - flare	1/2	0.05	0.72	2.05	2.37	020-104200
NRV 16	Straight-way - flare	5/8	0.05	0.72	3.6	4.16	020-104300
NRV 19	Straight-way - flare	3/4	0.05	0.72	5.5	6.36	020-104400

1) Δp = the minimum pressure at which the valve is completely open.

2) The KV / CV value is the flow of water in [m³/h] / [gal/min] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.

NRV - Check Valve, Straight-Way, Solder ODF

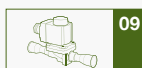
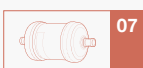
Type	Connection Type	Connection [in]	Pressure Drop Across Valve		KV - Value 2 [m ³ /h]	CV - Value 2 [gal/min]	Part No.
			Δp [bar] 1)	Δp [psig] 1)			
NRV 6s	Straight-way - Solder	1/4	0.07	1.01	0.56	0.65	020-101000
NRV 6s 3)	Straight-way - Solder	3/8	0.07	1.01	0.56	0.65	020-105700
NRV 10s	Straight-way - Solder	3/8	0.07	1.01	1.2	1.39	020-101100
NRV 10s 3)	Straight-way - Solder	1/2	0.07	1.01	1.2	1.39	020-105800
NRV 12s	Straight-way - Solder	1/2	0.05	0.72	2.05	2.37	020-101200
NRV 12s 3)	Straight-way - Solder	5/8	0.05	0.72	2.05	2.37	020-105200
NRV 16s	Straight-way - Solder	5/8	0.05	0.72	3.6	4.16	020-101800
NRV 16s 3)	Straight-way - Solder	3/4	0.05	0.72	3.6	4.16	020-105900
NRV 19s	Straight-way - Solder	3/4	0.05	0.72	5.5	6.36	020-101900
NRV 19s 3)	Straight-way - Solder	7/8	0.05	0.72	5.5	6.36	020-105400

1) Δp = the minimum pressure at which the valve is completely open.

2) The KV / CV value is the flow of water in [m³/h] / [gal/min] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.

3) Oversize connections.

This product is approved for R290, R600, R600a and R1270 by ignition source assessment in accordance to standard EN13463-1.



NRV - Check Valve, Angle-Way, Solder ODF

Type	Connection Type	Connection [in]	Pressure Drop Across Valve		KV - Value 2) [m3/h]	CV - Value 2) [gal/min]	Part No.
			Δp [bar] 1)	Δp [psig] 1)			
NRV 22s	Angle-way - solder	7/8	0.04	0.58	8.5	9.83	020-102000
NRV 22s 3)	Angle-way - solder	1 1/8	0.04	0.58	8.5	9.83	020-106000
NRV 28s	Angle-way - solder	1 1/8	0.04	0.58	16.5	19.07	020-102100
NRV 28s 3)	Angle-way - solder	1 3/8	0.04	0.58	16.5	19.07	020-105600
NRV 35s	Angle-way - solder	1 3/8	0.04	0.58	29	33.52	020-102600
NRV 35s 3)	Angle-way - solder	1 5/8	0.04	0.58	29	33.52	020-106100

1) Δp = the minimum pressure at which the valve is completely open.

2) The KV / CV value is the flow of water in [m3/h] / [gal/min] at a pressure drop across valve of 1 bar / 14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 2205 \text{ lbs/G}$.

3) Oversize connections.

NRVH - Check Valve, Straight-Way, Solder ODF

Type	Version	Connection [in]	Pressure Drop Across Valve		KV - Value 2) [m3/h]	CV - Value 2) [gal/min]	Part No.
			Δp [bar] 1)	Δp [psig] 1)			
NRVH 6s 3)	Straight-way - solder	3/8	0.3	4.35	0.56	0.65	020-106900
NRVH 10s	Straight-way - solder	3/8	0.3	4.35	1.2	1.39	020-104600
NRVH 10s 3)	Straight-way - solder	1/2	0.3	4.35	1.2	1.39	020-107000
NRVH 12s	Straight-way - solder	1/2	0.3	4.35	2.05	2.37	020-103900
NRVH 12s 3)	Straight-way - solder	5/8	0.3	4.35	2.05	2.37	020-106400
NRVH 16s	Straight-way - solder	5/8	0.3	4.35	3.6	4.16	020-103800
NRVH 16s 3)	Straight-way - solder	3/4	0.3	4.35	3.6	4.16	020-107100
NRVH 19s	Straight-way - solder	3/4	0.3	4.35	5.5	6.36	020-102300
NRVH 19s 3)	Straight-way - solder	7/8	0.3	4.35	5.5	6.36	020-106600

1) Δp = the minimum pressure at which the valve is completely open. The NRVH with a stronger spring is used in the discharge line from compressors connected in parallel.

2) The KV / CV value is the flow of water in [m3/h] / [gal/min] at a pressure drop across valve of 1 bar / 14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 2205 \text{ lbs/G}$.

3) Oversize connections.

This product is approved for R290, R600, R600a and R1270 by ignition source assessment in accordance to standard EN13463-1.

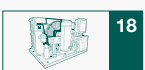
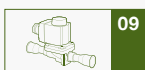
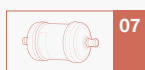
NRVH - Check Valve, Angle-Way, Solder ODF

Type	Connection Type	Connection [in]	Pressure Drop Across Valve		KV - Value 2) [m3/h]	CV - Value 2) [gal/min]	Part No.
			Δp [bar] 1)	Δp [psig] 1)			
NRVH 22s	Angle-way - solder	7/8	0.3	4.35	8.5	9.83	020-103200
NRVH 22s 3)	Angle-way - solder	1 1/8	0.3	4.35	8.5	9.83	020-107200
NRVH 28s	Angle-way - solder	1 1/8	0.3	4.35	16.5	19.07	020-102900
NRVH 28s 3)	Angle-way - solder	1 3/8	0.3	4.35	16.5	19.07	020-103300
NRVH 35s	Angle-way - solder	1 3/8	0.3	4.35	29	33.52	020-103400
NRVH 35s 3)	Angle-way - solder	1 5/8	0.3	4.35	29	33.52	020-107300

1) Δp = the minimum pressure at which the valve is completely open. The NRVH with a stronger spring is used in the discharge line from compressors connected in parallel.

2) The KV / CV value is the flow of water in [m3/h] / [gal/min] at a pressure drop across valve of 1 bar / 14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 2205 \text{ lbs/G}$.

3) Oversize connections.



NRV 10s H - Check Valve for R744 (CO₂)

Type	Description
Refrigerants	R744 (CO ₂)
Oil	POE, PAG
Temperature range	-50 – 140 °C / -58 – 285 °F
Max. working pressure (PS / MWP)	90 bar / 1305 psig
Approvals	C UL US LISTED, EAC

NRV 10s H - Check Valve, Straight-Way - Solder ODF

Type	Connection Type	Connection [in]	Differential Pressure to Start Opening the Valve		Pressure Drop Across Valve ΔP2		KV - Value 2)	CV - Value 2)	Part No.
			[bar] 1)	[psi] 1)	[bar] 1)	[psi] 1)	[m ³ /h]	[gal/min]	
NRV 10s H	Straightway Solder ODF	3/8	0.4	5.8	1	14.5	0.9	1.04	020-400000

1) ΔP1 = the minimum pressure at which the valve start opening.

ΔP2 = the minimum pressure at which the valve is completely open.

2) The KV / CV value is the flow of water in [m³/h] / [gal/min] at a pressure drop across valve of 1 bar / 14.5 psig, ρ = 1000 kg/m³ / 2205 lbs/G.

NRV / NRVH - Check Valves

Type	Description
Temperature Range	-50 – 140 °C / -58 – 285 °F
Max. Working Pressure (PS / MWP)	46 bar / 667 psig
Approvals	C UL US LISTED, EAC

Note: Only solder version, connection sizes from 6 s to 22 s are allowed for flammable refrigerant. R1234ze can be used for NRV size up to 35s according to the PED category I, Fluid II.



Danfoss NRVA

NRVA check valves can be used in liquid, suction and hot gas lines in refrigeration and air conditioning plants.

The valves ensure the correct flow direction and prevent back-condensation from a warm part of the system to the cold evaporator.



Type	Description
Pressure range	Max. working pressure PS / MWP: 40 bar g / 580 psig
Temperature range	-50 – 140 °C / -58 – 284 °F

NRVA - Complete Valves incl. DIN 2448 Flange

Type	Weld flange connection [in]	Δp 1)				KV value 2) [m ³ /h]	CV value 3) [gal/min]	Part No.
		With standard spring		With special spring				
		[bar]	[psig]	[bar]	[psig]			
NRVA 15	1/2	0.12	1.7	0.3	4.4	5	6	020-200000
NRVA 20	3/4	0.12	1.7	0.3	4.4	6	7	020-200100
NRVA 25	1	0.12	1.7	0.3	4.4	19	22	020-200200
NRVA 32	1 1/4	0.12	1.7	0.3	4.4	20	23	020-200300
NRVA 40	1 1/2	0.07	1	0.4	5.8	44	51	020-200400
NRVA 50	2	0.07	1	0.4	5.8	44	51	020-200500
NRVA 65	2 1/2	0.07	1	0.4	5.8	75	87	020-200600

1) Δp = the minimum pressure differential at which the valve is completely open. 2) The KV value is the flow of water in [m³/h] at a pressure drop across valve of 1 [bar, ρ] = 1000 [kg/m³]. 3) The CV value is the flow of water in [gal/min] at a pressure drop across valve of 1 [psig, ρ] = 10 [lbs/gal].

Special spring for NRVA used in liquid lines where cold, thick oil or impurities may be present

For type	Part No.
NRVA 15	020-230700
NRVA 20	020-230700
NRVA 25	020-231700
NRVA 32	020-231700
NRVA 40	020-232700
NRVA 50	020-232700
NRVA 65	020-232700

Valve Body Without Flanges

Type	Part No.
NRVA 15	020-202000
NRVA 20	020-202000
NRVA 25	020-202200
NRVA 32	020-202200
NRVA 40	020-202400
NRVA 50	020-202400
NRVA 65	020-202600

For ordering flanges; please consult the spare parts and Accessories documentation.

Staybolts & Gaskets

Type	Dimensions	Part No.
NRVA 15 / 20	M 12 × 115 mm	006-110700
NRVA 25 / 32	M 12 × 148 mm	006-113500
NRVA 40 / 50	M 12 × 167 mm	006-113700
NRVA 65	M 16 × 200 mm	006-113800

Related Items:



Henry NRV - Straight-Way, Flare

The function of a check valve is to allow fluid flow in one direction only. The Henry Technologies range of check valves are of the lift type, including 205, 116 and NRV models.

Applications:

Henry Technologies check valves are suitable for HCFC and HFC refrigerants, along with their associated oils. A typical application is to install a check valve downstream of an oil separator. This prevents condensed liquid refrigerant returning down the discharge line and into the separator.

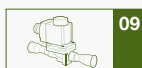
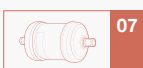
Main features:

- Robust design
- Flow direction arrow
- Quiet and efficient operation
- Minimum opening pressure
- Models with copper extensions – NRV E
- UL listed 116 series

Type	Connection Size (in)	Weight	Kv (m3/hr)	Bar	CE Cat	Part No.
NRV14	7/8	0.6	5	34.5	SEP	174450
NRV18	1.1/8	0.53	8.5	34.5	SEP	174451
NRV22-CE	1.3/8	1.3	13.5	34.5	Cat 1	174452
NRV26-CE	1.5/8	1.2	16	34.5	Cat 1	174453

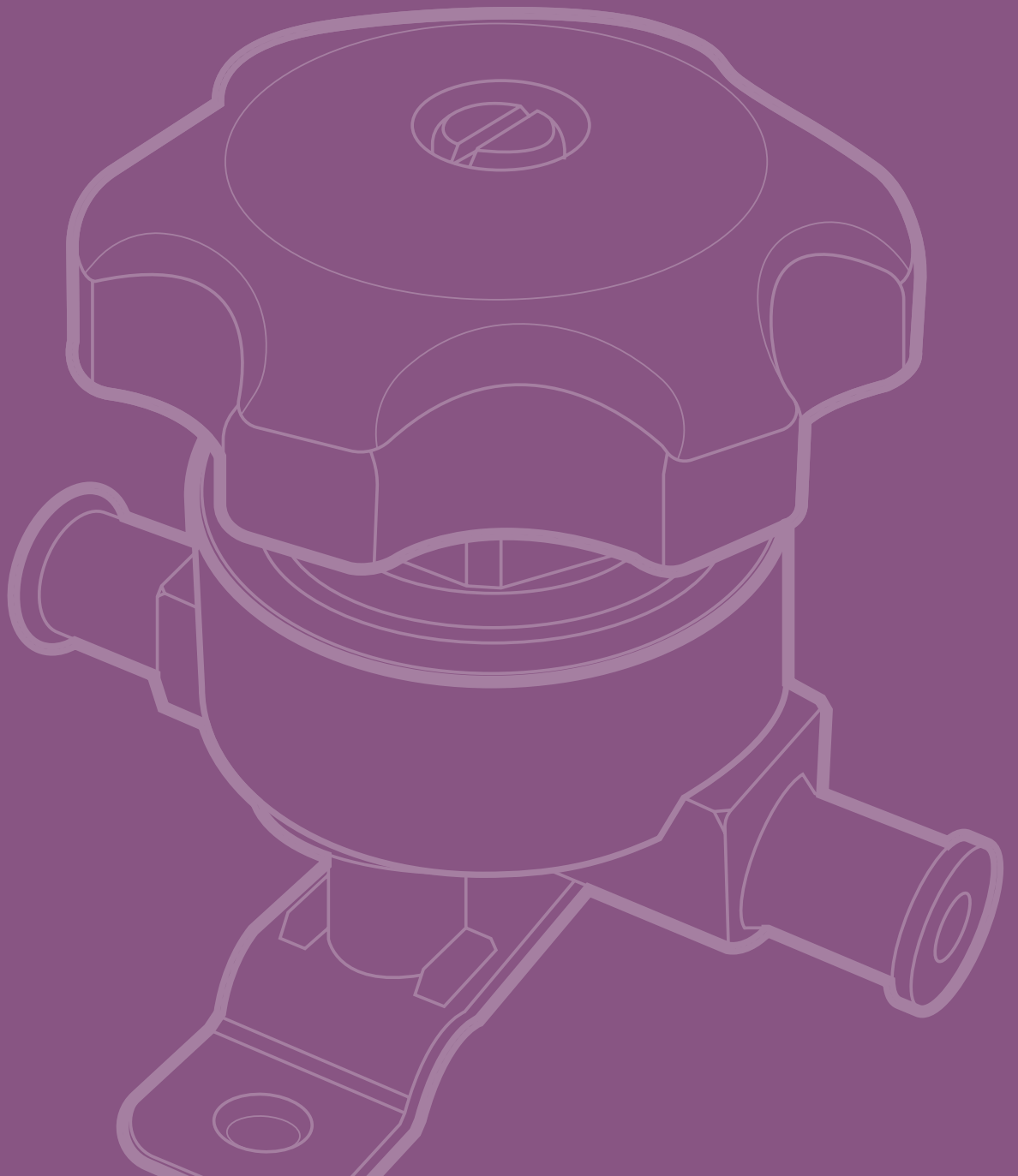
Type	Connection Size (in)	Weight	Kv (m3/hr)	Bar	CE Cat	Part No.
NRV14E	7/8	0.77	5	34.5	SEP	174454
NRV18E	1.1/8	0.79	8.5	34.5	SEP	174455
NRV22E-CE	1.3/8	1.7	13.5	34.5	Cat 1	174456
NRV26E-CE	1.5/8	1.6	16	34.5	Cat 1	174457

Type	Connection Size (in)	Weight	Kv (m3/hr)	Bar	CE Cat	Part No.
116 Series	5/8	0.22	2.25	60	SEP	295493
	3/8	0.24	1.38	60	SEP	295477
	1/2	0.23	1.9	60	SEP	295485
	7/8	0.92	3.1	60	SEP	295906



SECTION EIGHT

System Components



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Heat Exchangers





Vertical liquid receivers, supplied with 1" rotalock spud connections and 10mm single bolt fixing to base as standard.

MWP: 30 bar
MTP: 42.9 bar

Note: Top connection is inlet, the bottom connection is outlet.

Description	Inlet (")	Outlet (")	Model No.	Part No.
VLR 70x170	1"	1"	VLR70.170	123277
VLR 100x220	1"	1"	VLR100X220L	121517
VLR 100x240	1"	1"	VLR 100X240	121002
VLR 120x250	1"	1"	VLR 120X250	121010
VLR 130x310	1"	1"	VLR 130X310	121029
VLR 130x365	1"	1"	VLR130.365L	121541
VLR 160x265	1"	1"	VLR 160X265	121037
VLR 180x270	1"	1"	VLR 180X270	121045
VLR 160x345	1"	1"	VLR 160X345	121053
VLR 180x395	1"	1"	VLR 180X395	121061
VLR 220x365	1"	1"	VLR 220.355	120987
VLR 260x420	1"	1"	VLR 260.420.0	120995

Pressure Indicator

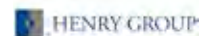


The function of the Pressure Indicator is to provide visual indication in the event of a rupture disc burst. If the disc has ruptured, the pressure relief valve will have discharged and must be replaced. (refer to Sentry safety device information).

Applications: The G16 and G20 Pressure Indicators are intended to be used as part of the Henry Sentry safety device assembly. The units are suitable for use with HCFC, HFC, HFO, CO2 and ammonia refrigerants, along with their associated oils.

Weight (g)	CE Cat	Model No.	Part No.
27	SEP	G16	174055
27	SEP	G20	298204

Pressure Relief Valves

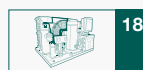


PRV

The function of a Pressure Relief Valve is to protect against overpressure. For safety reasons, excessive over-pressure in any part of the refrigeration system must be avoided.

Angle Relief Valve - Brass

Type	Inlet (")	Outlet (")	Maximum Setting pressure (psi)	Maximum Setting pressure (barg)	Model No.	Part No.
526E	3/8	3/8	400	27.6	526E-27.6BAR-CE	174469





HENRY GROUP

Compact 3-way Valve & PRV Assembly

933 & 935 VALVES DESIGNED TO COMPLIMENT
THE HENRY 5700 & 5701AX PRESSURE RELIEF VALVES



- SUITABLE FOR HCFC, HFC, HFO, CO₂, R290 REFRIGERANTS AND ASSOCIATED OIL
- MAXIMUM WORKING PRESSURE OF 130 BARG
- ALLOWABLE OPERATING TEMPERATURE -29°C TO +150°C

- HIGH FLOW CAPACITY
- FULLY ADJUSTABLE ROTALOCK INLET AND OUTLET CONNECTIONS AVAILABLE FOR EASE OF ORIENTATION DURING INSTALLATION

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Straight-through Relief Valves - Brass

Type	Inlet (")	Outlet (")	Maximum Setting pressure (psi)	Maximum Setting pressure (bar)	Certificate Included?	Model No.	Part No.
5232A	1/2	3/4	185	12.8	No	5232A-12.8	100200
	1/2	3/4	203	14	No	5232A-14 BAR-CE	174021
	1/2	3/4	203	14	Yes	5232A-CE	296032
	1/2	3/4	235	16.2	No	5232A-16.2 BAR-CE	174022
	1/2	3/4	300	20.7	No	5232A-20.7 BAR-CE	174023
	1/2	3/4	300	20.7	Yes	5232A-CE	296036
	1/2	3/4	309	21.3	No	5232A	179437
	1/2	3/4	350	24.1	No	5232A-24.1 BAR-CE	174024
	1/2	3/4	350	24.1	Yes	5232A-CE	296038
	1/2	3/4	360	24.8	No	5232A-24.8 BAR-CE	174025
	1/2	3/4	360	24.8	Yes	5232A-CE	296040
	1/2	3/4	362	25	No	5232A PRV 25 BAR	179438
	1/2	3/4	376	25.9	No	5232A-25.9 BAR	179440
	1/2	3/4	375	25.9	Yes	5232A-CE	296046
	1/2	3/4	400	27.6	No	5232A-27.6 BAR-CE	174026
	1/2	3/4	400	27.6	Yes	5232A-CE	296042
	1/2	3/4	450	31	No	5232A-31 BAR-CE	174027

X - Series

The 'X' Series of Pressure Relief Valves is based on the proven design of the standard range with some enhanced features.

The valves are EN ISO 4126 compliant and will reseal within 15% of set pressure following a discharge. Consequently a minimum amount of refrigerant is lost to the atmosphere. 5230 and 5231 models can also be used at pressures up to 46 bar.

Type	Inlet (")	Outlet (")	Maximum Setting pressure (psi)	Maximum Setting pressure (bar)	Model No.	Part No.
5230AX	1/4	1/2	400	27.6	5230AX-27.6 BAR	179444
5231AX	3/8	1/2	624	43	5231AX-43.0 BAR	174463
5231AX	3/8	1/2	653	45	5231AX-45.0 BAR	774774
5231AX	3/8	1/2	667	46	5231AX- 46BAR	175232
5231BX	1/2	5/8	300	20.7	5231BX-20.7 BAR	179442
5231BX	1/2	5/8	363	25	5231BX-25.0BAR	175236
5231BX	1/2	5/8	400	27.5	5231BX-27.5 BAR	179445
5231BX	1/2	5/8	464	32	5231BX-32.0 BAR	179448
5231BX	1/2	5/8	560	38.6	5231BX-38.6 BAR	177564
5231BX	1/2	5/8	609	42	5231BX-42.0 BAR	296002

Rupture Disk

The function of a Rupture Disk is to protect against over-pressure. For safety reasons, excessive over-pressure in any part of the refrigeration system must be avoided. A rupture disc is generally used in combination with a Henry Technologies pressure relief valve.

Main features

- Proven safe design & CE marked
- High flow capacity
- Compact
- Reverse acting, non-fragmenting disc
- 2 x 1/8 NPT pressure ports
- Helium leak tested
- Pressure settings up to 130 barg available on request
- EN ISO 4126-2 Compliant

Type	Inlet (")	Outlet (")	Maximum Setting pressure (psi)	Maximum Setting pressure (bar)	Weight (kg)	Model No.	Part No.
5525	3/8	3/8	350	24.1	0.28	5525-24.1 BAR-CE	174031
5526	1/2	1/2	203	14	0.3	5526-203	296864
5526	1/2	1/2	235	16.2	0.3	5526-16.2 BAR-CE	174036
5526	1/2	1/2	235	16.2	0.3	5526-235	298514
5526	1/2	1/2	300	20.7	0.3	5526-20.7 BAR-CE	174037
5526	1/2	1/2	300	20.7	0.3	5526-300	298530
5526	1/2	1/2	350	24.1	0.3	5526-350	298549
5526	1/2	1/2	360	24.8	0.3	5526-CE	296872
5526	1/2	1/2	376	25.9	0.3	5526-25.9 BAR	298570
5526	1/2	1/2	400	27.6	0.3	5526-400	298557
5526	1/2	1/2	400	27.6	0.3	5526-27.6 BAR-CE	174040
5526	1/2	1/2	450	31	0.3	5526-450	298565
5526	1/2	1/2	580	40	0.3	5526-40.0 BAR-CE	174048
5629	1.1/4	1.1/4	261	18	0.76	5629-18.0 BAR-CE	174467
5629	1.1/4	1.1/4	224	15.5	0.76	5629-15.5 BAR-CE	174498



Henry Safety Devices



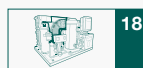
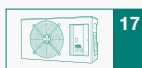
The function of a Safety Device Kit is to protect against over-pressure. For safety reasons, excessive over-pressure in any part of the refrigeration system must be avoided. The 'X' denotes that the kit includes an 'X' series PRV. Three kits are available, SDK1, SDK2 and SDK2X.

The SDK1 kit is a single safety device assembly. It comprises of a pressure relief valve, rupture disc, pressure indicator gauge and a 1/8" NPT rupture disc blanking plug. The SDK2 kit is a dual safety device assembly. It comprises of two pressure relief valves, two rupture discs, two pressure indicator gauges, two blanking plugs, a three-way valve and a 1/2" NPT pipe nipple.

Applications: A typical application for a Henry Technologies Safety Device Kit is to protect a liquid receiver from being over-pressurised. The kits are designed for use with HCFC, HFC, CO₂, A2L and R290 refrigerants, along with their associated oils.

Safety Device Kits

Model No.	Relief Valve		Rupture Disk		Indicator Gauge		Three-way Valve		Part No.
	Model No.	Qty.	Model No.	Qty.	Model No.	Qty.	Model No.	Qty.	
SDK2-27.6 BARCE	5231B-27.6BAR-CE	2	5526-27.6BAR-CE	2	G16	2	925	1	174053
SDK1-24.8	5231B-24.8BAR-CE	1	5526-24.8BAR-CE	1	G16	1	-	-	297172
SDK1-27.6	5231B-27.6BAR-CE	1	5526-27.6BAR-CE	1	G16	1	-	-	297175
SDK2-24.8 BARCE	5231B-24.8BAR-CE	2	5526-24.8BAR-CE	2	G16	2	925	1	174046
SDK1-24.1 BARCE	5231B-24.1BAR-CE	1	5526-24.1BAR-CE	1	G16	1	-	-	174049
SDK1-14.0	5231B-14.0BAR-CE	1	5526-14.0BAR-CE	1	G16	1	-	-	297160
SDK1-16.2	5231B-16.2BAR-CE	1	5526-16.2BAR-CE	1	G16	1	-	-	297163
SDK1-20.7	5231B-20.7BAR-CE	1	5526-20.7BAR-CE	1	G16	1	-	-	297166
SDK1-31.0	5231B-31.0BAR-CE	1	5526-31.0BAR-CE	1	G16	1	-	-	297178
SDK2-14.0	5231B-14.0BAR-CE	2	5526-14.0BAR-CE	2	G16	2	925	1	297181
SDK2-16.2	5231B-16.2BAR-CE	2	5526-16.2BAR-CE	2	G16	2	925	1	297184
SDK2-20.7	5231B-20.7BAR-CE	2	5526-20.7BAR-CE	2	G16	2	925	1	297187
SDK2-24.1	5231B-24.1BAR-CE	2	5526-24.1BAR-CE	2	G16	2	925	1	297190
SDK2-31.0	5231B-31.0BAR-CE	2	5526-31.0BAR-CE	2	G16	2	925	1	297199
SDK2-20.7	5231B-20.7BAR-CE	2	5526-20.7BAR-CE	2	G16	2	925	1	ZZZ295



Henry - Oil Regulator Shut-Off Valve

The function of Oil Regulator Shut-off valves is to provide a means for equipment isolation. Horizontal and vertical models are available.

Applications: These valves are positioned on the oil inlet and equalisation pipe lines of Henry Technologies Oil Level Regulators. This allows each oil level regulator to be isolated in the event that servicing is required on the compressor, oil level regulator, strainer, etc.

The valves are suitable for HCFC and HFC refrigerants, along with their associated oils.



Type	Weight (kg)	Connection Size (")		Model No.	Part No.
		Fixed	Swivel		
Horizontal	0.15	1/4 SAE Flare	1/4 SAE Female Flare	S-9106EH	177543
Horizontal	0.16	3/8 SAE Flare	3/8 SAE Female Flare	S-9106H	177541

Three-Way Shut off Valve

Henry - Three Way Dual Shut-Off Valve

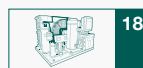
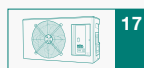
The function of a three-way valve is to permit replacement of one of the pressure relief devices, while the other is protecting the pressure vessel. In this way, a vessel is protected from over-pressure during servicing. It also allows a pressure relief device to be replaced in-situ, without removing the system refrigerant charge.

Applications: All three-way valves are suitable for HCFC and HFC refrigerants along with their associated oils. The 802 series is also suitable for ammonia.

Refrigeration standard, EN378, specifies that a three-way valve is required on vessels of CE Category II, III and IV. EN378 or an equivalent National Standard should be consulted for further guidance. It should be recognised however that a three-way valve can be fitted to a vessel of any size, to enable safe, easy and economical replacement of pressure relief devices.



Type	Weight (kg)	Connection Size (")		Kv (m3/hr)	Model No.	Part No.
		Inlet	Outlet			
92	0.57	1/2 MPT	1/2 FPT	2.83	925M	7311
92	0.47	1/2 FPT	1/2 FPT	2.83	925	1780
92	0.51	3/8 FPT	3/8 FPT	2.8	923	7312
92	0.57	3/8 MPT	3/8 FPT	2.8	923M	7313



Heat Exchanger

Danfoss - D22 Micro Plate Heat Exchanger

Key Features

- Standard- and high-pressure designs make it the ideal solution for any application or refrigerant.
- Two-in-one connection for easy installation.
- With innovative micro plate channel plate pattern for higher heat transfer to minimize weight and refrigerant charge.

Type	Weight (kg)	Number of Plates	Connection Size (")	Maximum Working Pressure (bar/psi)	Part No.
D22-10	1.27	10	3/4 - 5/8	30/435	021H129600
D22-16	1.42	16	3/4 - 5/8	30/435	021H129700
D22-26	1.93	26	3/4 - 5/8	30/435	021H129900



Liquid Level Switch

The function of a Liquid Level Switch is detect and monitor liquid levels.

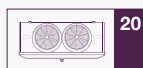
Applications: The level switch can be installed in a number of locations in the refrigeration system such as liquid receivers, suction line Accumulators and compressor crankcases. The range is designed for use with HCFC, HFC, A2L, CO₂ and ammonia refrigerants, along with their associated oils. A 1" NPT level switch is recommended for ammonia applications. For other refrigerant/oil combinations, please contact Henry Technologies.

Voltage	Resistive Rating	Mounthing Thread	Dimensions		Model N.	Part No.
			Length (mm)	Weight (kg)		
24V AC/DC	0.5A	1/2" NPT	192	0.22	S-9424	174701
24V AC/DC	0.5A	1/2" NPT	192	0.22	S-9424A	179272
208/240V - 50/60HZ	0.25A	1/2" NPT	192	0.22	S-9420	179248
24V AC/DC	0.5A	3/4" NPT	82	0.23	S-9424-3/4UK	174700



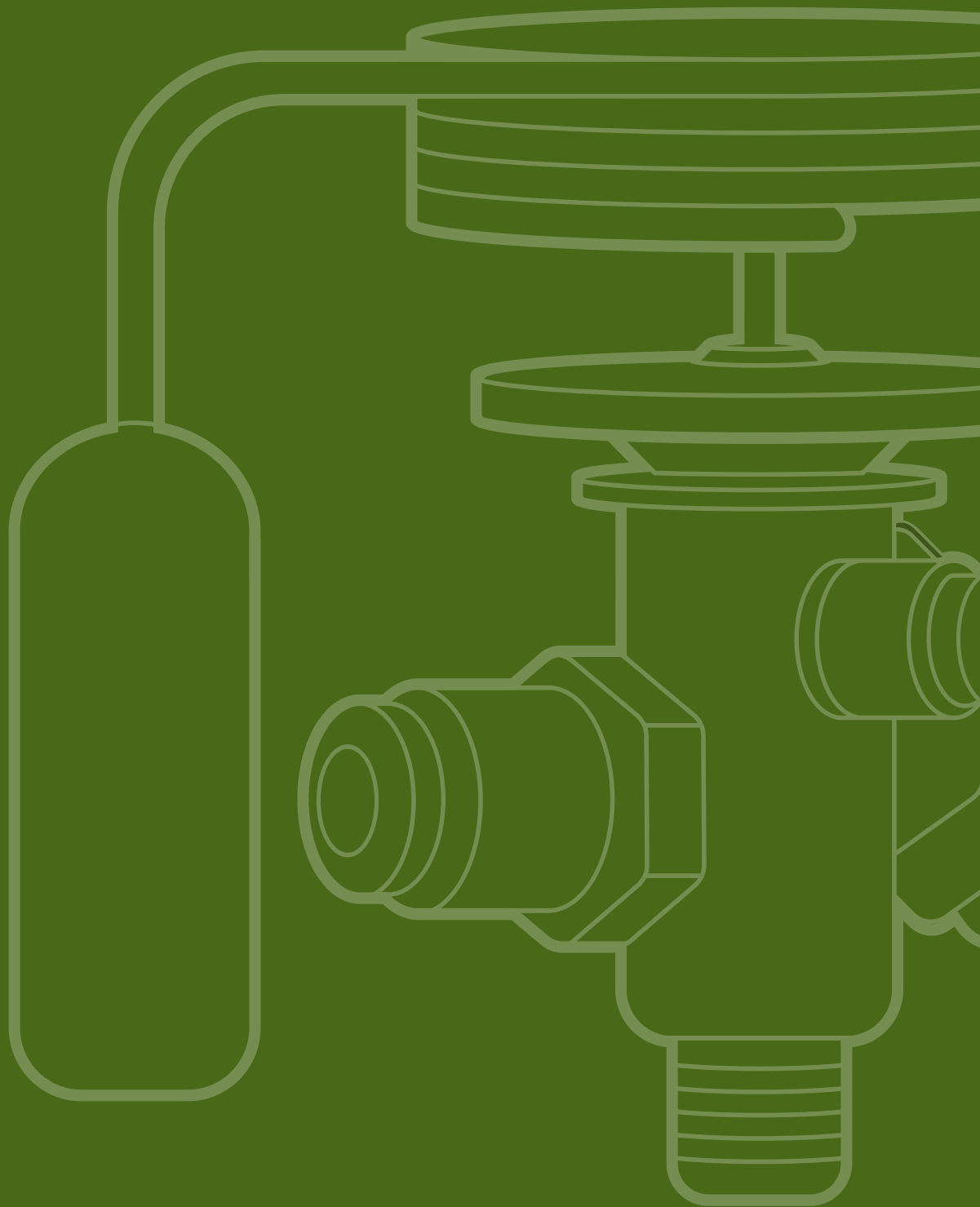
ⓘ DID YOU KNOW...

In 1834, the first working **vapor-compression refrigeration** system was built.



SECTION NINE

Mechanical Controls



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Pressure & Temperature Regulating Valves



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WVFX / WVO / WVS Pressure Operated Water Valves

Timers & Time Clocks



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Timers & Time Clocks

Thermostatic Expansion Valves

Danfoss T2 - TE2

T2 / TE2 thermostatic expansion valves are used for liquid injection into evaporators on both refrigeration and air conditioning systems. T2 / TE2 valves are supplied as a parts programme, with separate thermostatic element/valve body and orifice assembly.

Available as angleway valves with flare x flare or flare x solder connections, with internal and external equalisation.

Laser-welded stainless steel power element results in longer diaphragm life, improved pressure tolerance, high working pressure and excellent resistance to corrosion

Flare or solder outlet

Flare or solder pressure equalization

Interchangeable orifice assembly with dirt protection strainer



Stainless steel tube and bulb provides high resistance to vibration and great strength

Laser-engraved label

Easy adjustment of superheat setting

Flare inlet Solder adaptor available as an option

09 Mechanical Controls



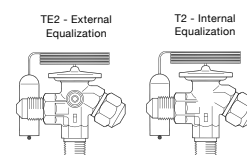
Original & best.

Danfoss T2 Expansion Valve
The genuine article



T2 - TE2

Thermostatic Element with Bulb Strap (Flare x Flare)

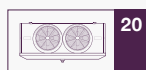
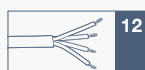


Type	Refrigerant	Range		MOP		Pressure equalization Flare		Connection flare inlet x outlet		Part No.
		[°C]	[°F]	[°C]	[°F]	[mm]	[in]	[mm]	[in]	
T2	R22 / R407C ¹⁾	-40 - 10	-40 - 50	-	-	-	-	10 x 12	3/8 x 1/2	068Z320600
		-40 - 10	-40 - 50	15	60	-	-	10 x 12	3/8 x 1/2	068Z320800
		-40 - 5	-40 - 25	0	32	-	-	10 x 12	3/8 x 1/2	068Z322400
		-40 - -15	-40 - 5	-10	14	-	-	10 x 12	3/8 x 1/2	068Z322600
		-60 - -25	-75 - -15	-	-	-	-	10 x 12	3/8 x 1/2	068Z320700
		-60 - -25	-75 - -15	-20	-5	-	-	10 x 12	3/8 x 1/2	068Z322800
TE2		-40 - 10	-40 - 50	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z320900
		-40 - 10	-40 - 50	15	60	6	1/4	10 x 12	3/8 x 1/2	068Z321100
		-40 - 5	-40 - 25	0	32	6	1/4	10 x 12	3/8 x 1/2	068Z322500
		-40 - -15	-40 - 5	-10	14	6	1/4	10 x 12	3/8 x 1/2	068Z322700
		-60 - -25	-75 - -15	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z321000
		-60 - -25	-75 - -15	-20	-5	6	1/4	10 x 12	3/8 x 1/2	068Z322900
T2	R407C	-40 - 10	-40 - 50	-	-	-	-	10 x 12	3/8 x 1/2	068Z349600
-40 - 10		-40 - 50	15	60	-	-	10 x 12	3/8 x 1/2	068Z351600	
TE2		-40 - 10	-40 - 50	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z350100
-40 - 10		-40 - 50	15	60	6	1/4	10 x 12	3/8 x 1/2	068Z351700	
T2	R134a	-40 - 10	-40 - 50	-	-	-	-	10 x 12	3/8 x 1/2	068Z334600
		-40 - 10	-40 - 50	15	60	-	-	10 x 12	3/8 x 1/2	068Z334700
		-40 - 5	-40 - 25	0	32	-	-	10 x 12	3/8 x 1/2	068Z339300
		-40 - -15	-40 - 5	-10	14	-	-	10 x 12	3/8 x 1/2	068Z336900
TE2		-40 - 10	-40 - 50	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z334800
		-40 - 10	-40 - 50	15	60	6	1/4	10 x 12	3/8 x 1/2	068Z334900
		-40 - 5	-40 - 25	0	32	6	1/4	10 x 12	3/8 x 1/2	068Z339200
		-40 - -15	-40 - 5	-10	14	6	1/4	10 x 12	3/8 x 1/2	068Z337000
T2	R404A / R507	-40 - 10	-40 - 50	-	-	-	-	10 x 12	3/8 x 1/2	068Z340000
		-40 - 10	-40 - 50	15	60	-	-	10 x 12	3/8 x 1/2	068Z340200
		-40 - 5	-40 - 25	0	32	-	-	10 x 12	3/8 x 1/2	068Z340600
		-40 - -15	-40 - 5	-10	14	-	-	10 x 12	3/8 x 1/2	068Z340800
		-60 - -25	-75 - -15	-	-	-	-	10 x 12	3/8 x 1/2	068Z340100
		-60 - -25	-75 - -15	-20	-5	-	-	10 x 12	3/8 x 1/2	068Z341000
TE2		-40 - 10	-40 - 50	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z340300
		-40 - 10	-40 - 50	15	60	6	1/4	10 x 12	3/8 x 1/2	068Z340500
		-40 - 5	-40 - 25	0	32	6	1/4	10 x 12	3/8 x 1/2	068Z340700
		-40 - -15	-40 - 5	-10	14	6	1/4	10 x 12	3/8 x 1/2	068Z340900
		-60 - -25	-75 - -15	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z340400
		-60 - -25	-75 - -15	-20	-5	6	1/4	10 x 12	3/8 x 1/2	068Z341100
T2	R407F / R407A	-40 - 10	-40 - 50	-	-	-	-	10 x 12	3/8 x 1/2	068Z371500
TE2		-40 - 10	-40 - 50	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z371400
T2	R448A / R449A	-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z372700
TE2		-40 - 10	-40 - 50	-	-	6	1/4	10 x 12	3/8 x 1/2	068Z372800

¹⁾ For R407C plants, please select valves from the dedicated R407C program Capillary tube: 1.5 m / 59 in



Thermostatic element + Orifice

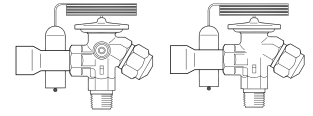


Thermostatic Expansion Valves



TE2 - External equalization

T2 - Internal equalization



T2 - TE2

Thermostatic Element with Bulb Strap (Flare x Solder)

Type	Refrigerant	Range		MOP		Pressure equalization solder		Connection inlet (Flare) x outlet (Solder)		Part no. Multi pack	
		[°C]	[°F]	[°C]	[°F]	[mm]	[in]	[mm]	[in]		
T2	R22 / R407C ¹⁾	-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z328100	
		-40 - 10	-40 - 50	15	60	-	-	-	3/8 x 1/2	068Z328700	
		-60 - -25	-75 - -15	-	-	-	-	-	3/8 x 1/2	068Z335700	
TE2		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z328400	
		-40 - 10	-40 - 50	15	60	-	1/4	-	3/8 x 1/2	068Z329000	
		-60 - -25	-75 - -15	-	-	-	1/4	-	3/8 x 1/2	068Z335900	
T2	R407C	-40 - 10	-40 - 50	15	60	-	-	-	3/8 x 1/2	068Z332900	
		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z344600	
		-40 - 10	-40 - 50	15	60	-	1/4	-	3/8 x 1/2	068Z344700	
T2		R134a	-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z338300
			-40 - 10	-40 - 50	15	60	-	-	-	3/8 x 1/2	068Z338700
			-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z338500
TE2	-40 - 10		-40 - 50	15	60	-	1/4	-	3/8 x 1/2	068Z338900	
	-40 - 10		-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z341400	
	-40 - 10		-40 - 50	15	60	-	-	-	3/8 x 1/2	068Z341600	
T2	R404A / R507	-40 - -15	-40 - -5	-10	-15	-	-	-	3/8 x 1/2	068Z342900	
		-60 - -25	-75 - -15	-	-	-	-	-	3/8 x 1/2	068Z341800	
		-60 - -25	-75 - -15	-20	-5	-	-	-	3/8 x 1/2	068Z342000	
		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z341500	
		-40 - 10	-40 - 50	15	60	-	1/4	-	3/8 x 1/2	068Z341700	
		-40 - -15	-40 - -5	-10	-15	-	1/4	-	3/8 x 1/2	068Z343000	
TE2		-60 - -25	-75 - -15	-	-	-	1/4	-	3/8 x 1/2	068Z341900	
		-60 - -25	-75 - -15	-20	-5	-	1/4	-	3/8 x 1/2	068Z342100	
		-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z371600	
		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z371300	
		-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z372900	
		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z373000	
T2	R407F / R407A	-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z371600	
TE2		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z371300	
T2	R448A / R449A	-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z372900	
TE2		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z373000	
T2	R452A	-40 - 10	-40 - 50	-	-	-	-	-	3/8 x 1/2	068Z380600	
TE2		-40 - 10	-40 - 50	-	-	-	1/4	-	3/8 x 1/2	068Z380700	

¹⁾ For R407C plants, please select valves from the dedicated R407C program Capillary tube: 1.5 m / 59 in

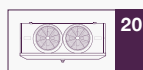
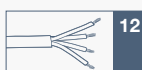
T2 - TE2

Assembly For Flare Version Range: -40 - 10 °C



Type	Orifice	R22		R407C		R134a		R513A		R404A / R507		R407A		R407F		R448A		R449A		R452A		Part No.
		[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
T2 / TE2	0X	0.9	0.25	0.92	0.26	0.68	0.19	0.58	0.16	0.64	0.18	0.88	0.25	1	0.28	0.9	0.26	0.88	0.25	0.69	0.20	068-200200
	00	1.8	0.51	1.8	0.51	1.2	0.34	1	0.29	1.3	0.37	1.7	0.49	2	0.56	1.8	0.51	1.7	0.49	1.3	0.38	068-200300
	01	3.5	1	3.5	1	2.1	0.59	1.8	0.51	2.6	0.75	3.4	1	3.9	1.1	3.4	0.97	2.7	0.78	068-201000		
	02	4.7	1.3	4.8	1.4	2.6	0.73	2.2	0.62	3.7	1	4.7	1.3	5.4	1.5	4.8	1.4	4.6	1.3	3.8	1.1	068-201500
	03	8	2.3	8.1	2.3	4.3	1.2	3.7	1	6.3	1.8	8	2.3	9.2	2.6	8.1	2.3	7.9	2.3	6.4	1.8	068-200600
	04	12.1	3.4	12.4	3.5	6.4	1.8	5.4	1.5	9.9	2.8	12.4	3.5	14.3	4.1	12.6	3.6	12.1	3.5	10.0	2.9	068-200700
	05	16.7	4.8	16.5	4.7	8.4	2.4	6.9	2	13	3.7	16.3	4.6	19	5.4	16.3	4.6	15.7	4.5	12.6	3.6	068-200800
06	19.7	5.6	19.7	5.6	10.1	2.9	8.6	2.5	15.5	4.4	19.6	5.6	22.9	6.5	19.8	5.7	19.1	5.5	15.8	4.5	068-200900	

The rated capacity is based on: Evaporating temperature $t_e = 4.4 \text{ °C} / 40 \text{ °F}$ Condensing temperature $t_c = 38 \text{ °C} / 100 \text{ °F}$ Refrigerant temperature ahead of valve $t_1 = 37 \text{ °C} / 98 \text{ °F}$



T2 - TE2 Orifice



Type	Orifice	R22		R407C		R134a		R513A		R404A / R507		R407A		R407F		R448A		R449A		R452A		Part No.
		[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
T2 / TE2	0X	0.9	0.25	0.92	0.26	0.68	0.19	0.58	0.16	0.64	0.18	0.88	0.25	1	0.28	0.9	0.26	0.88	0.25	0.69	0.20	068-208900
	00	1.8	0.51	1.8	0.51	1.2	0.34	1	0.29	1.3	0.37	1.7	0.49	2	0.56	1.8	0.51	1.7	0.49	1.3	0.38	068-209000
	01	3.5	1	3.5	1	2.1	0.59	1.8	0.51	2.6	0.75	3.4	1	3.9	1.1	3.5	1	3.4	0.97	2.7	0.78	068-209100
	02	4.7	1.3	4.8	1.4	2.6	0.73	2.2	0.62	3.7	1	4.7	1.3	5.4	1.5	4.8	1.4	4.6	1.3	3.8	1.1	068-209200
	03	8	2.3	8.1	2.3	4.3	1.2	3.7	1	6.3	1.8	8	2.3	9.2	2.6	8.1	2.3	7.9	2.3	6.4	1.8	068-209300
	04	12.1	3.4	12.4	3.5	6.4	1.8	5.4	1.5	9.9	2.8	12.4	3.5	14.3	4.1	12.6	3.6	12.1	3.5	10.0	2.9	068-209400
	05	16.7	4.8	16.5	4.7	8.4	2.4	6.9	2	13	3.7	16.3	4.6	19	5.4	16.3	4.6	15.7	4.5	12.6	3.6	068-209500
	06	19.7	5.6	19.7	5.6	10.1	2.9	8.6	2.5	15.5	4.4	19.6	5.6	22.9	6.5	19.8	5.7	19.1	5.5	15.8	4.5	068-209600

The rated capacity is based on: Evaporating temperature $t_e = 4.4\text{ }^\circ\text{C} / 40\text{ }^\circ\text{F}$ Condensing temperature $t_c = 38\text{ }^\circ\text{C} / 100\text{ }^\circ\text{F}$ Refrigerant temperature ahead of valve $t_i = 37\text{ }^\circ\text{C} / 98\text{ }^\circ\text{F}$

Solder Adaptor Without Orifice Assembly



The solder adaptor is for use with thermostatic expansion valves T2 and TE2. When the solder adaptor is fitted correctly it meets the sealing requirements of DIN 8964. The flare orifice in T2 and TE2 can be used with a solder adaptor when the orifice filter is replaced with a specific filter intended for solder adaptors. Only in this way the sealing requirements of DIN 8964 can be fulfilled. Solder adaptors for filter driers (FSA) must not be used on the T2 inlet.

Connection – ODF solder	Part No.
1/4 in	068-206200
6 mm	068-206300
6 mm	068-410100 1)
3/8 in	068-206000
10 mm	068-206100
10 mm	068-410000 1)

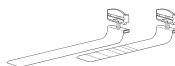
1) Including filter.

Filter as Accessories

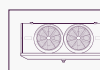


Filter type	Part No.
For flare connection	068-000300
For solder adaptor	068-001500

Bulb Strap as Accessories



Type	Length [Mm]	Max. Diameter of Suction Line		Part No.
		[mm]	[in]	
T2 / TE2 Accessories	110	28	1 1/8	068U350700
T2 / TE2 Accessories	190	50	2	068U350800



Thermostatic Expansion Valves

Danfoss TE 5 – TE 55

TE 5 – TE 55 thermostatic expansion valves regulate the injection of refrigerant liquid into evaporators for medium sized plants. Injection is controlled by the refrigerant superheat. Therefore the valves are especially suitable for liquid injection in “dry” evaporators where the superheat at the evaporator outlet should always be kept constant.

TE 5 – TE 55 valves are supplied as parts programme, built up of three main components - thermostatic element, orifice assembly. External pressure equalization is standard.

Laser-welded power element in stainless steel

- Longer diaphragm life
- High pressure tolerance and working pressure
- High corrosion resistance

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



Stainless steel capillary tube and bulb

- High corrosion resistance
- High strength and vibration resistance

Large parts programme ensures minimal stocks

Easy adjustment of superheat setting

More connection possibilities

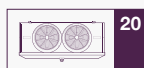
- Solder x solder
- Flare x flare
- Flanges
- Straightway or angleway



Features

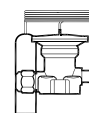
Stainless steel, hermetically tight solder version

- High connection strength
- High corrosion resistance
- Capillary tube joints of high strength and vibration resistance
- Bimetal connections
- Straightforward and fast soldering
- Laser-welded power element in stainless steel
- Longer diaphragm life
- High pressure tolerance and working pressure
- High corrosion resistance
- Compact design
- Small dimensions and low weight
- Can be supplied with MOP (Maximum Operating Pressure)
- Protects the compressor motor against excessive evaporating pressure



TE5 - TE 55

R22 / R407C Element for Expansion Valve - Including Bulb Strap

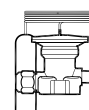


Type	Range		MOP		Pressure Equalization			Capillary Tube		Part no. Multi pack
	[°C]	[°F]	[°C]	[°F]	[mm]	[in]	Type	[m]	[in]	
TE 5	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B325000
	-40 - 10	-40 - 50	-	-	-	1/4	Solder ODF	3	118	067B342000
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B326700
	-40 - 5	-40 - 25	0	32	6	1/4	Flare	3	118	067B324900
	-40 - 15	-40 - 5	-10	15	6	1/4	Flare	3	118	067B325300
	-60 - 25	-75 - 15	-	-	6	1/4	Flare	3	118	067B326300
TE 12	-60 - 25	-75 - 15	-20	-5	6	1/4	Flare	3	118	067B325100
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B321000
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B322700
	-40 - 5	-40 - 25	0	32	6	1/4	Flare	3	118	067B320700
	-40 - 15	-40 - 5	-10	15	6	1/4	Flare	3	118	067B321300
	-60 - 25	-75 - 15	-20	-5	6	1/4	Flare	3	118	067B321100
TE 20	-60 - 25	-75 - 15	-	-	6	1/4	Flare	3	118	067B322500
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067B320900
	-60 - 25	-75 - 15	-20	-5	6	1/4	Flare	5	197	067B321200
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B327400
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B328600
	-40 - 5	-40 - 25	0	32	6	1/4	Flare	3	118	067B327300
TE 55	-40 - 15	-40 - 5	-10	15	6	1/4	Flare	3	118	067B327500
	-60 - 25	-75 - 15	-20	-5	6	1/4	Flare	3	118	067B327600
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067B329000
	-60 - 25	-75 - 15	-20	-5	6	1/4	Flare	5	197	067B328700
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067G320500
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067G322000
TE 55	-40 - 5	-40 - 25	0	32	6	1/4	Flare	3	118	067G320600
	-60 - 25	-75 - 15	-20	-5	6	1/4	Flare	3	118	067G320700
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067G320900
	-60 - 25	-75 - 15	-20	-5	6	1/4	Flare	5	197	067G321700

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

TE5 - TE 55

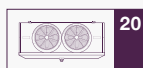
R134a Element for Expansion Valve - Including Bulb Strap



Type	Range		MOP		Pressure Equalization			Capillary Tube		Part No. Multi pack
	[°C]	[°F]	[°C]	[°F]	[mm]	[in]	Type	[m]	[in]	
TE 5	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B329700
	-40 - 10	-40 - 50	-	-	-	1/4	Solder ODF	3	118	067B343000
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B329800
TE 12	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B323200
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B323300
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067B336300
TE 20	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B329200
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B329300
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067B337000
TE 55	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067G322200
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067G322300
	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067G323000



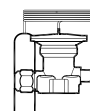
Element for expansion valve + Orifice + Valve body



Thermostatic Expansion Valves

TE5 - TE 55

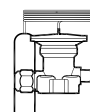
R407C Element for Expansion Valve - Including Bulb Strap



Type	Range		MOP		Pressure equalization			Capillary tube		Part no.
	[°C]	[°F]	[°C]	[°F]	[mm]	[in]	Type	[m]	[in]	
TE 5	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B327800
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B327700
TE 12	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B336600
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	3	118	067B336700
TE 20	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067B337100
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	5	197	067B337200
TE 55	-40 - 10	-40 - 50	-	-	6	1/4	Flare	5	197	067G324000
	-40 - 10	-40 - 50	15	60	6	1/4	Flare	5	197	067G324100

TE5 - TE 55

R407F / R407A Element for Expansion Valve - Including Bulb Strap



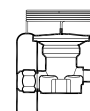
Type	Range		MOP		Pressure equalization			Capillary tube		Part no.
	[°C]	[°F]	[°C]	[°F]	[mm]	[in]	Type	[m]	[in]	
TE 5	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B350100
	-40 - -5	-40 - 25	0	32	6	1/4	Flare	3	118	067B350200
	-40 - -15	-40 - 5	-10	15	6	1/4	Flare	3	118	067B350300
	-40 - 10	-40 - 50	-	-	-	1/4	Solder ODF	3	118	067B350400
TE 12	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B353200
	-40 - -5	-40 - 25	0	32	6	1/4	Flare	3	118	067B353100
	-40 - -15	-40 - 5	-10	15	6	1/4	Flare	3	118	067B353300
TE 20	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B356100
	-40 - -5	-40 - 25	0	32	6	1/4	Flare	3	118	067B356000
	-40 - -15	-40 - 5	-10	15	6	1/4	Flare	3	118	067B356200
TE 55	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067G350000

On systems charged with R407A, static superheat (SS) will differ from standard 4K / 7.2 °F.

For range -40 - 10 °C / -40 - 50 °F, SS = 2.7 K / 4.9 °F. For range -40 - -5 °C / -40 - 25 °F and range -40 - -15 °C / -40 - 5 °F, SS = 2.8K / 5.0 °F.

TE5 - TE 55

R448A / R449A Element for Expansion Valve - Including Bulb Strap

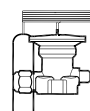


Type	Range		MOP		Pressure equalization			Capillary tube		Part no.
	[°C]	[°F]	[°C]	[°F]	[mm]	[in]	Type	[m]	[in]	
TE 5	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B325200
	-60 - -25	-75 - -15	-20	-5	6	1/4	Flare	3	118	067B360000
TE 12	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B251200
TE 20	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B329400
TE 55	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067G321900

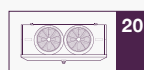
On systems charged with R449A, static superheat(SS) will be 2.7 K / 4.9 °F

TE5 - TE 55

R452A Element for Expansion Valve - Including Bulb Strap

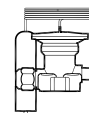


Type	Range		MOP		Pressure equalization			Capillary tube		Part no.
	[°C]	[°F]	[°C]	[°F]	[mm]	[in]	Type	[m]	[in]	
TE 5	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B360100
	-60 - -25	-75 - -15	-20	-5	6	1/4	Flare	3	118	067B360200
TE 12	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B365200
TE 20	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B368000
TE 55	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067G360000



TE5 - TE 55

R513A Element for Expansion Valve - Including Bulb Strap



Type	Range		MOP		Pressure equalization			Capillary tube		Part no.
	[°C]	[°F]	[°C]	[°F]	[mm]	[in]	Type	[m]	[in]	
TE 5	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B360300
TE 12	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B365100
TE 20	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067B368100
TE 55	-40 - 10	-40 - 50	-	-	6	1/4	Flare	3	118	067G360100

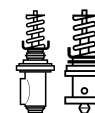
Bulb Strap Supplied Separately As Spare Part



Max. diameter of suction line		Quantity / box	Part no.
[mm]	[in]		
53	2 1/8	40 pcs	067N055700
78	3 1/8	40 pcs	067N055900

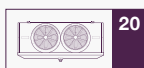
TE5 - TE 55

Orifice Assembly Rate Capacity



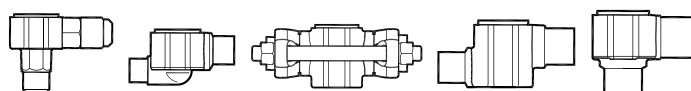
Type	Orifice	R407F		R407A		R448A/R449A		R452A		R404A/R507		R22		R513A		R134a		R407C		Part no.
		[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	
TE 5	0.5	11	3	9	2.5	9	2.5	7	2	7	2	9	2.5	5	1.5	5	1.5	11	3	067B278800
	01	18	5	18	5	18	5	14	4	14	4	16	4.5	11	3	11	3	18	5	067B278900
	02	28	8	25	7	25	7	21	6	19	5.5	25	7	14	4	16	4.5	25	7	067B279000
	03	35	10	32	9	32	9	28	8	25	7	32	9	18	5	21	6	32	9	067B279100
	04	46	13	42	12	46	13	39	11	35	10	42	12	25	7	28	8	46	13	067B279200
TE 12	05	70	20	56	16	53	15	46	13	49	14	56	16	30	8.5	35	10	53	15	067B270800
	06	95	27	74	21	70	20	63	18	63	18	74	21	39	11	49	14	74	21	067B270900
	07	113	32	95	27	91	26	81	23	81	23	95	27	53	15	63	18	91	26	067B271000
TE20	08	141	40	127	36	123	35	84	24	84	24	127	36	74	21	77	22	116	33	067B277100 ¹⁾
	09	158	45	148	42	141	40	98	28	102	29	148	42	81	23	91	26	134	38	067B277300 ¹⁾
TE 55	9B	123	35	109	31	113	32	84	24	84	24	113	32	70	20	74	21	109	31	067G270500 ¹⁾
	10	172	49	165	47	155	44	116	33	127	36	169	48	98	28	109	31	162	46	067G270100
	11	186	53	183	52	169	48	127	36	137	39	183	52	106	30	120	34	176	50	067G270400
	12	208	59	200	57	186	53	141	40	151	43	200	57	116	33	134	38	190	54	067G270700
	13	250	71	243	69	225	64	172	49	183	52	246	70	144	41	165	47	232	66	067G271000

The rated capacity is based on: Evaporating temperature $t_e = 4.4\text{ °C} / 40\text{ °F}$ Condensing temperature $t_c = 38\text{ °C} / 100\text{ °F}$ Refrigerant temperature ahead of valve $t_1 = 37\text{ °C} / 98\text{ °F}$
¹⁾ Recommend to use orifice no. 9B as alternative for orifice no. 08 and 09 on TE 55 when selecting the valve to work in range $-60 - -25\text{ °C} / -75 - -15\text{ °F}$.
 Please contact Danfoss for more information.



Thermostatic Expansion Valves

TE5 - TE 55 Valve Body



Type	Connection / Flow direction	Connection Type	Connection inlet x outlet (in)	Part no.
TE 5	Flare angleway	-	1/2 x 5/8	067B401300
	Solder angleway	ODF x ODF	1/2 x 5/8	067B400900
	Solder angleway	ODF x ODF	1/2 x 7/8	067B401000
	Solder angleway	ODF x ODF	5/8 x 7/8	067B401100
	Solder angleway	ODF x ODM	7/8 x 1 1/8	067B403400
	Solder straightway	ODF x ODF	1/2 x 5/8	067B400700
	Solder straightway	ODF x ODF	1/2 x 7/8	067B400800
	Solder straightway	ODF x ODF	5/8 x 7/8	067B403200
	Solder straightway	ODF x ODM	7/8 x 1 1/8	067B403300
	TE 12	Solder angleway	ODF x ODF	5/8 x 7/8
Solder angleway		ODF x ODM	7/8 x 1 1/8	067B402300
Solder straightway		ODF x ODF	5/8 x 7/8	067B402000
Solder straightway		ODF x ODM	7/8 x 1 1/8	067B402100
Solder flanges		ODF x ODF	5/8 x 7/8	067B402500
Solder flanges		ODF x ODF	7/8 x 1	067B402600
TE 20	Solder angleway	ODF x ODM	7/8 x 1 1/8	067B402300
	Solder straightway	ODF x ODM	7/8 x 1 1/8	067B402100
TE 55	Solder angleway	ODM x ODM	1 1/8 x 1 3/8	067G400400
	Solder straightway	ODM x ODM	1 1/8 x 1 3/8	067G400300

ODF = Internal Diameter ODM = External Diameter



TUB / TUBE / TCBE

TUB / TUBE / TCBE stainless steel thermostatic expansion valves are used for liquid injection into evaporators on both refrigeration and air conditioning systems. Valves are compact in design, light weight and have steel / copper bi-metal connections for fast soldering.

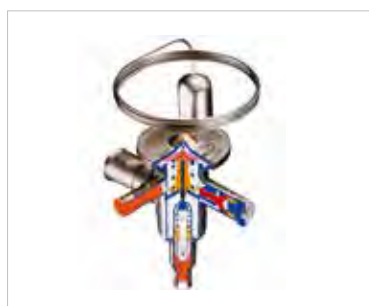
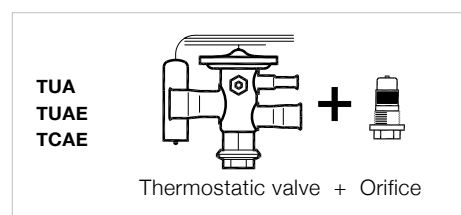
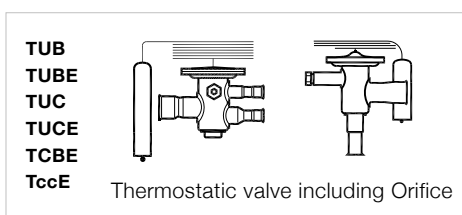
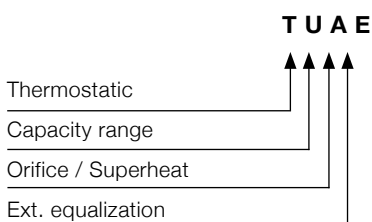
TUB has internal equalization, TUBE / TCBE external equalization. TUB / TUBE and TCBE are available in straightway or angleway versions, have a fixed orifice and adjustable superheat.

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

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



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



Orifice / Superheat

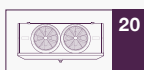
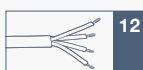
	Interchangeable	Adjustable
A	YES	YES
B	NO	YES
C	NO	NO

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

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

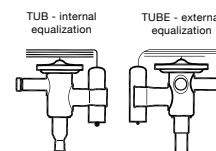
Applications:

- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Ice cube machines
- Transport refrigeration
- Applicable to R134A, R404A, R407C, R22, R507 and R410A
- The use of stainless steel makes the valves light and strong
- Bi-metal connections for safe, fast and convenient soldering
- Stainless steel capillary tube for superior strength and ductility
- Allen key superheat setting screw is convenient and space-saving compared to the standard screwdriver adjustment used in most conventional valves
- Can be supplied with MOP (Max. Operating Pressure) - protects the compressor motor against excessive evaporating pressure during normal operation
- Valves for special temperature ranges can be supplied
- 4 K / 7.2 °F opening superheat
- Bi-flow function
- Can be supplied as non adjustable OEM versions

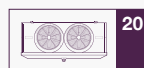


TUB / TUBE

Thermostatic element, angle way, with bulb strap

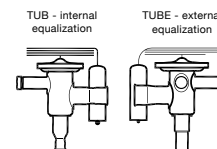


Type	Refrigerant	Orifice no. 2)	Range		Rated capacity Q _{nom.} 1)		Ext. pressure equalization		Connection inlet × outlet		Part no.
			[°C]	[°F]	[kW]	[TR]	[mm]	[in]	[mm]	[in]	
TUB	R22 / R407C	1	-40 - 10	-40 - 50	0.92	0.26	-	-	-	1/4 × 1/2	068U205700
		2	-40 - 10	-40 - 50	1.1	0.32	-	-	-	1/4 × 1/2	068U205800
		3	-40 - 10	-40 - 50	1.4	0.41	-	-	-	1/4 × 1/2	068U205900
		4	-40 - 10	-40 - 50	2.5	0.72	-	-	-	1/4 × 1/2	068U206000
		5	-40 - 10	-40 - 50	3.4	0.96	-	-	-	1/4 × 1/2	068U206100
		6	-40 - 10	-40 - 50	5.3	1.5	-	-	-	1/4 × 1/2	068U206200
		7	-40 - 10	-40 - 50	7	2	-	-	-	3/8 × 1/2	068U206300
		8	-40 - 10	-40 - 50	10.1	2.9	-	-	-	3/8 × 1/2	068U206400
TUBE	R22 / R407C	5	-40 - 10	-40 - 50	3.4	0.96	-	1/4	-	1/4 × 1/2	068U207100
		6	-40 - 10	-40 - 50	5.3	1.5	-	1/4	-	1/4 × 1/2	068U207200
		7	-40 - 10	-40 - 50	7	2	-	1/4	-	3/8 × 1/2	068U207300
		8	-40 - 10	-40 - 50	10.1	2.9	-	1/4	-	3/8 × 1/2	068U207400
TUBE	R407C	9	-40 - 10	-40 - 50	14.1	4	-	1/4	-	3/8 × 1/2	068U207500
		5	-40 - 10	-40 - 50	3.4	0.96	-	1/4	-	1/4 × 1/2	068U193500
		6	-40 - 10	-40 - 50	5.3	1.5	-	1/4	-	1/4 × 1/2	068U193600
		7	-40 - 10	-40 - 50	7	2	-	1/4	-	3/8 × 1/2	068U193700
		8	-40 - 10	-40 - 50	10.2	2.9	-	1/4	-	3/8 × 1/2	068U193800
TUB	R410A	9	-40 - 10	-40 - 50	14	4	-	1/4	-	3/8 × 1/2	068U193900
		1	-40 - 10	-40 - 50	1.34	0.38	-	-	-	1/4 × 1/2	068U195800
		2	-40 - 10	-40 - 50	1.7	0.48	-	-	-	1/4 × 1/2	068U195900
		3	-40 - 10	-40 - 50	2.1	0.60	-	-	-	1/4 × 1/2	068U196000
		4	-40 - 10	-40 - 50	4.1	1.2	-	-	-	1/4 × 1/2	068U196100
		5	-40 - 10	-40 - 50	5.3	1.5	-	-	-	1/4 × 1/2	068U196200
		6	-40 - 10	-40 - 50	8.5	2.4	-	-	-	1/4 × 1/2	068U196300
		7	-40 - 10	-40 - 50	11.2	3.2	-	1/4	-	3/8 × 1/2	068U197300
		8	-40 - 10	-40 - 50	15.8	4.5	-	1/4	-	3/8 × 1/2	068U197400
TUBE	R290	9	-40 - 10	-40 - 50	23.1	6.6	-	1/4	-	3/8 × 1/2	068U197500
		0	-40 - 10	-40 - 50	0.64	0.18	-	-	-	1/4 × 3/8	068U370100
		1	-40 - 10	-40 - 50	0.94	0.27	-	-	-	1/4 × 3/8	068U370200
		2	-40 - 10	-40 - 50	1.12	0.32	-	1/4	-	1/4 × 3/8	068U370300
		3	-40 - 10	-40 - 50	1.46	0.42	-	1/4	-	1/4 × 3/8	068U370400
		4	-40 - 10	-40 - 50	2.55	0.72	-	1/4	-	1/4 × 3/8	068U370500
		5	-40 - 10	-40 - 50	3.39	0.96	-	1/4	-	1/4 × 3/8	068U370600
		6	-40 - 10	-40 - 50	5.33	1.51	-	1/4	-	1/4 × 3/8	068U370700
		7	-40 - 10	-40 - 50	7.03	2	-	1/4	-	1/4 × 3/8	068U370800
		8	-40 - 10	-40 - 50	10.2	2.91	-	1/4	-	3/8 × 1/2	068U370900
TUB	R290	9	-40 - 10	-40 - 50	14.3	4.05	-	1/4	-	3/8 × 1/2	068U371000
		1	-40 - 10	-40 - 50	0.94	0.27	-	-	-	1/4 × 1/2	068U373100
		2	-40 - 10	-40 - 50	1.12	0.32	-	-	-	1/4 × 1/2	068U373200
		3	-40 - 10	-40 - 50	1.46	0.42	-	-	-	1/4 × 1/2	068U373300
		4	-40 - 10	-40 - 50	2.55	0.72	-	-	-	1/4 × 1/2	068U373500
TUBE	R290	5	-40 - 10	-40 - 50	3.39	0.96	-	1/4	-	1/4 × 1/2	068U373400



TUB / TUBE

Thermostatic element, angle way, with bulb strap

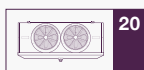
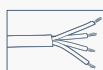


Type	Refrigerant	Orifice no. ²⁾	Range		Rated capacity Q _{nom} ¹⁾		Ext. pressure equalization		Connection inlet x outlet		Part no.
			[°C]	[°F]	[kW]	[TR]	[mm]	[in]	[mm]	[in]	
TUB	R134a / R513A	0	-40 - 10	-40 - 50	0.42	0.12	-	-	-	1/4 x 1/2	068U266000
		1	-40 - 10	-40 - 50	0.61	0.17	-	-	-	1/4 x 1/2	068U202700
		2	-40 - 10	-40 - 50	0.72	0.20	-	-	-	1/4 x 1/2	068U202800
		3	-40 - 10	-40 - 50	0.95	0.27	-	-	-	1/4 x 1/2	068U202900
		4	-40 - 10	-40 - 50	1.6	0.46	-	-	-	1/4 x 1/2	068U203000
		5	-40 - 10	-40 - 50	2.1	0.61	-	-	-	1/4 x 1/2	068U203100
TUBE		6	-40 - 10	-40 - 50	3.4	0.95	-	-	-	1/4 x 1/2	068U203200
		3	-40 - 10	-40 - 50	0.95	0.27	-	1/4	-	1/4 x 1/2	068U202000
		4	-40 - 10	-40 - 50	1.6	0.46	-	1/4	-	1/4 x 1/2	068U202100
		5	-40 - 10	-40 - 50	2.1	0.61	-	1/4	-	1/4 x 1/2	068U202200
		6	-40 - 10	-40 - 50	3.4	0.95	-	1/4	-	1/4 x 1/2	068U202300
		7	-40 - 10	-40 - 50	4.4	1.3	-	1/4	-	3/8 x 1/2	068U202400
TUB	R404A / R507	8	-40 - 10	-40 - 50	6.5	1.9	-	1/4	-	3/8 x 1/2	068U202500
		9	-40 - 10	-40 - 50	9	2.6	-	1/4	-	3/8 x 1/2	068U202600
		1	-40 - 10	-40 - 50	0.71	0.20	-	-	-	1/4 x 1/2	068U209400
		2	-40 - 10	-40 - 50	0.87	0.25	-	-	-	1/4 x 1/2	068U209500
		3	-40 - 10	-40 - 50	1.1	0.32	-	-	-	1/4 x 1/2	068U209600
		4	-40 - 10	-40 - 50	2	0.57	-	-	-	1/4 x 1/2	068U209700
TUBE		5	-40 - 10	-40 - 50	2.7	0.76	-	-	-	1/4 x 1/2	068U209800
		6	-40 - 10	-40 - 50	4.2	1.2	-	-	-	1/4 x 1/2	068U209900
		1	-40 - 10	-40 - 50	0.71	0.20	-	1/4	-	1/4 x 1/2	068U210300
		2	-40 - 10	-40 - 50	0.87	0.25	-	1/4	-	1/4 x 1/2	068U210400
		3	-40 - 10	-40 - 50	1.1	0.32	-	1/4	-	1/4 x 1/2	068U210500
		4	-40 - 10	-40 - 50	2	0.57	-	1/4	-	1/4 x 1/2	068U210600
TUBE	5	-40 - 10	-40 - 50	2.7	0.76	-	1/4	-	1/4 x 1/2	068U210700	
	6	-40 - 10	-40 - 50	4.2	1.2	-	1/4	-	1/4 x 1/2	068U210800	
	7	-40 - 10	-40 - 50	5.6	1.6	-	1/4	-	3/8 x 1/2	068U210900	
	8	-40 - 10	-40 - 50	8	2.3	-	1/4	-	3/8 x 1/2	068U211000	
	9	-40 - 10	-40 - 50	11.3	3.2	-	1/4	-	3/8 x 1/2	068U211100	

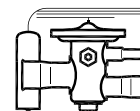
1) The rated capacity is based on: Evaporating temperature: te = 4.4 °C / 40 °F - Condensing temperature: tc = 38 °C / 100 °F - Liquid temperature: tl = 37 °C / 98 °F

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

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



TCBE - external equalization

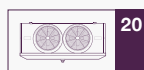
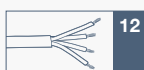


TCBE Thermostatic element, angle way, with bulb strap

Type	Refrigerant	Orifice no.	Range		MOP		Rated capacity Q _{nom.} 1)		Pressure equalization		Connection inlet x outlet		Part no.
			[°C]	[°F]	[°C]	[°F]	[kW]	[TR]	[mm]	[in]	[mm]	[in]	
TCBE	R22 / R407C	1	-40 - 10	-40 - 50	-	-	18.3	5.2	-	1/4	-	1/2 x 5/8	068U420100
		1	-40 - 10	-40 - 50	15	60	18.3	5.2	-	1/4	-	3/8 x 5/8	068U420400
		1	-40 - 10	-40 - 50	15	60	18.3	5.2	-	1/4	-	1/2 x 5/8	068U420500
		2	-40 - 10	-40 - 50	-	-	21.2	6	-	1/4	-	1/2 x 5/8	068U420200
		3	-40 - 10	-40 - 50	15	60	26.7	7.6	-	1/4	-	1/2 x 5/8	068U420700
TCBE	R134a / R513A	1	-40 - 10	-40 - 50	-	-	13	3.7	-	1/4	-	1/2 x 5/8	068U421700
		2	-40 - 10	-40 - 50	-	-	14.9	4.3	-	1/4	-	1/2 x 5/8	068U421800
		3	-40 - 10	-40 - 50	-	-	18.6	5.3	-	1/4	-	1/2 x 5/8	068U421900
TCBE	R404A / R507	2	-40 - 10	-40 - 50	-	-	15.1	4.3	-	1/4	-	1/2 x 5/8	068U423400
		3	-40 - 10	-40 - 50	-	-	19.8	5.4	-	1/4	-	1/2 x 5/8	068U423500
TCBE	R407C	1	-40 - 10	-40 - 50	-	-	17.8	5.1	-	1/4	-	1/2 x 5/8	068U424900
		1	-40 - 10	-40 - 50	15	60	17.8	5.1	-	1/4	-	1/2 x 5/8	068U425300
		2	-40 - 10	-40 - 50	-	-	20.4	5.8	-	1/4	-	1/2 x 5/8	068U425000
		2	-40 - 10	-40 - 50	15	60	20.4	5.8	-	1/4	-	1/2 x 5/8	068U425400
		3	-40 - 10	-40 - 50	-	-	25.2	7.2	-	1/4	-	1/2 x 5/8	068U425100
TCBE	R410A	1	-40 - 10	-40 - 50	-	-	21.2	6	-	1/4	-	3/8 x 5/8	068U426400
		1	-40 - 10	-40 - 50	-	-	21.2	6	-	1/4	-	1/2 x 5/8	068U426500
		2	-40 - 10	-40 - 50	-	-	24.5	7	-	1/4	-	1/2 x 5/8	068U426600
		2	-40 - 10	-40 - 50	15	60	24.5	7	-	1/4	-	1/2 x 5/8	068U427000
		3	-40 - 10	-40 - 50	-	-	30.6	8.7	-	1/4	-	1/2 x 5/8	068U426700
TCBE	R290	1	-40 - 10	-40 - 50	-	-	19.1	5.43	-	1/4	-	3/8 x 5/8	068U438300
		2	-40 - 10	-40 - 50	-	-	22.2	6.3	-	1/4	-	1/2 x 5/8	068U438400
		3	-40 - 10	-40 - 50	-	-	27.9	7.93	-	1/4	-	1/2 x 5/8	068U438500

1) The rated capacity is based on: Evaporating temperature, te = 4.4 °C / 40 °F - Liquid temperature, tl = 37 °C / 98 °F - Condensing temperature, tc = 38 °C / 100 °F

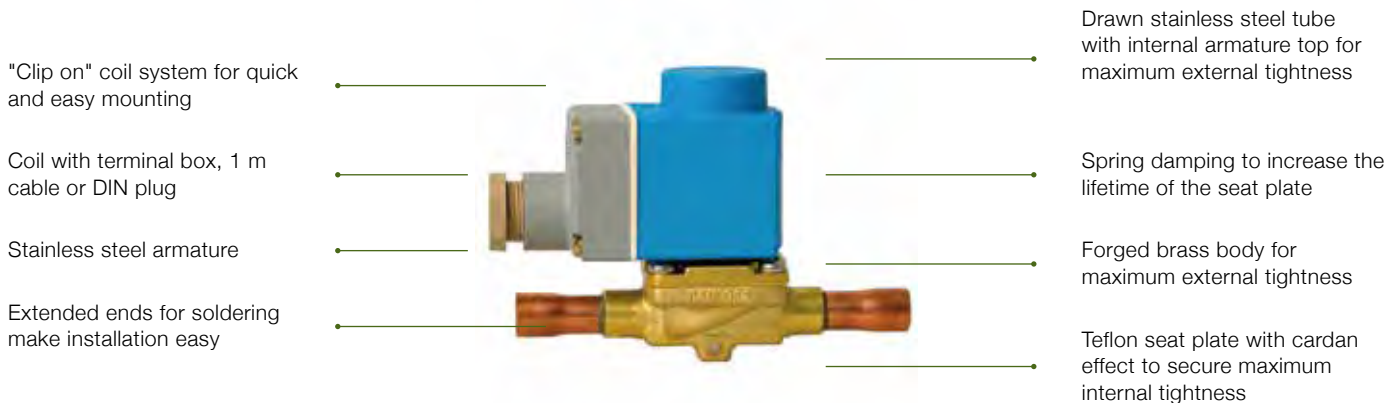
Capillary tube: 0.8 m / 31 in



EVR Version 2

EVR v2 solenoid valves are direct or servo operated solenoid valves for liquid, suction and hot gas lines with most refrigerants, including flammable refrigerants. They are suitable for condensing units and power packs in all refrigeration, freezing and air conditioning applications.

The valves can be delivered as normally open or normally closed valves and with or without manual operation. EVR v2 valves are available with flare, solder or flange connections.



Application:

- Food service and Cold rooms
 - Heat pump systems
 - Air conditioning units
 - Liquid coolers
 - Transport refrigeration
 - Complete programme of valves and coils for every application
 - Wide range of coils for AC and DC
 - Wide range of connection types and sizes
 - Normally open or normally closed
 - With or without manual operation
 - High reliability and durability due to maximum internal and external tightness
 - Applicable to R22 / R407C, R134a, R404A / R507, R410A, R407A, R32, R290, R600, R600a, R1234yf, R1234ze, R404A, R407A, R407C, R407F, R125, R152A, R448A, R449A, R452A and R450A
- EVR 2 – EVR 22 with solder connections and without manual stem are suitable for use with the flammable refrigerants R152A, R32, R290, R600, R600a, R1234yf and R1234ze

For a fully updated list of approved refrigerants, visit www.products.danfoss.com and search for individual code numbers, where refrigerants are listed as part of product specifications.

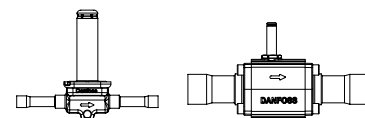
- Temperature range: -40 – 105 °C / -40 – 221 °F
- Media temperature: -40 – 105 °C / -40 – 221 °F
- Max. 130 °C / 266 °F during defrosting
- Max. working pressure (PS / MWP):
 - EVR v2 solder and flare connections: 45.2 bar / 655 psi
 - EVR v2 flange connections: 32 bar / 460 psi
- MOPD up to 38 bar / 550 psi
- 100% test of functionality, internal / external leakage and electrical characteristics



Solenoid Valves

EVR v2 Solder Connection, Normally Closed (NC)

Separate Valve Bodies

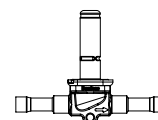


Type	Current type	Connection size (in)	Manual operation	Kv value [m³/h]	Part No.
EVR 2	AC / DC	1/4	No	0.15	032F120100
	AC / DC	1/4	No	0.15	032F710000
EVR 3	AC / DC	1/4	No	0.26	032F120600
	AC / DC	3/8	No	0.26	032F120400
EVR 4	AC / DC	3/8	No	0.70	032L711000
EVR 6	AC / DC	3/8	No	1.0	032L121200
	AC / DC	3/8	Yes	0.87	032L711600
	AC / DC	1/2	No	1.0	032L120900
	AC / DC	1/2	Yes	0.87	032L714400
	AC / DC	5/8	No	1.0	032L711700
EVR 8	AC / DC	1/2	No	1.15	032L712100
	AC / DC	1/2	Yes	1.09	032L714800
	AC / DC	5/8	No	1.15	032L712200
EVR 10	AC / DC	3/8	No	1.47	032L712500
	AC / DC	1/2	No	2.2	032L121700
	AC / DC	1/2	Yes	2.2	032L118800
	AC / DC	5/8	No	2.2	032L121400
	AC / DC	5/8	Yes	2.2	032L714900
EVR 15	AC / DC	5/8	No	3.3	032L122800
	AC / DC	5/8	Yes	3.3	032L122700
	AC / DC	7/8	No	3.3	032L122500
EVR 18	AC / DC	7/8	Yes	3.9	032L100400
EVR 20	AC / DC	7/8	No	6.0	032L124000
	AC / DC	7/8	Yes	6.0	032L125400
	AC / DC	1 1/8	No	6.0	032L124400
EVR 22	AC / DC	1 1/8	No	6.0	032L714500
	AC / DC	1 1/8	Yes	6.0	032L713700
	AC / DC	1 3/8	No	6.0	032L326700
EVR 25	AC / DC	1 1/8	Yes	9.8	032L220000
	AC / DC	1 1/8	No	9.8	032L220100
	AC / DC	1 3/8	Yes	9.8	032L220700
	AC / DC	1 3/8	No	9.8	032L220800
EVR 32	AC / DC	1 3/8	Yes	16.7	032L110500
	AC / DC	1 3/8	No	16.7	032L110600
	AC / DC	1 5/8	Yes	16.7	032L110300
	AC / DC	1 5/8	No	16.7	032L110400
	AC / DC	2 1/8	No	16.7	032L118000
	AC / DC	2 1/8	Yes	16.7	032L118100
EVR 40	AC / DC	1 5/8	Yes	24.2	032L110900
	AC / DC	1 5/8	No	24.2	032L111000
	AC / DC	2 1/8	Yes	24.2	032L111100
	AC / DC	2 1/8	No	24.2	032L111200



EVR v2 Solder Connection, Normally Closed (NC)

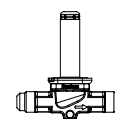
Separate Valve Bodies



Type	Current type	Connection size (in)	Manual operation	Kv value [m ³ /h]	Part No.
EVR 6	AC / DC	3/8	No	1.0	032L129000
EVR 10	AC / DC	1/2	No	2.2	032L129100
EVR 15	AC / DC	5/8	No	3.3	032L129900
	AC / DC	7/8	No	3.3	032L327000
EVR 20	AC / DC	7/8	No	6.0	032L126000
	AC / DC	1 1/8	No	6.0	032L126900
EVR 22	AC	1 3/8	No	6.0	032L326800

EVR v2 Flare Connection, Normally Closed (NC)

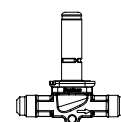
Separate Valve Bodies



Type	Current type	Connection size (in)	Manual operation	Kv value [m ³ /h]	Part No.
EVR 2	AC	1/4	No	0.15	032F805600
EVR 3	AC / DC	1/4	No	0.26	032F810700
	AC / DC	3/8	No	0.26	032F811600
EVR 6	AC / DC	3/8	No	1.0	032L807200
	AC / DC	1/2	No	1.0	032L807900
EVR 10	AC / DC	1/2	No	2.2	032L809500
	AC / DC	5/8	No	2.2	032L809800
EVR 15	AC / DC	5/8	Yes	3.3	032L810000
	AC / DC	5/8	No	3.3	032L810100

EVR v2 Flare Connection, Normally Open (NO)

Separate Valve Bodies



Type	Current type	Connection size (in)	Manual operation	Kv value [m ³ /h]	Part No.
EVR 6	AC / DC	3/8	No	1.0	032L808500
EVR 10	AC / DC	1/2	No	2.2	032L809000

The normal range of coils can be used for the NO valves, with the exception of the double frequency versions of 110 V, 50/60 Hz and 220 V, 50/60 Hz. Valve bodies are supplied without flare nuts. Separate flare nuts: - 6 mm or 1/4 in, Part No. 011L1101 - 10 mm or 3/8 in, Part No. 011L1135 - 12 mm or 1/2 in, Part No. 011L1103 - 16 mm or 5/8 in, Part No. 011L1167

EVR v2 Flare Connection, Normally Closed (NC)

Separate Valve Bodies

Type	Current type	Connection size (in)	Manual operation	Part No.
EVR 15	AC / DC	Flanges	No	032L122400
	AC / DC	Flanges	Yes	032L123400
EVR 20	AC / DC	Flanges	No	032L124300
	AC / DC	Flanges	Yes	032L125300

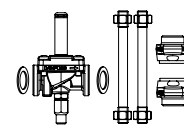
Related Items:



Solenoid Valves

EVR v2 Flange Sets, Normally Closed (NC)

Separate Valve Bodies

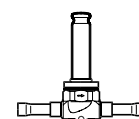


Type	Connection Size	Solder	Weld	Part No.
EVR 15	1/2	-	Yes	027N111500
	5/8	Yes	-	027L111700
	3/4	-	Yes	027N112000
	7/8	Yes	-	027L112300
EVR 20	3/4	-	Yes	027N122000
	7/8	Yes	-	027L122300
	1	-	Yes	027N122500
	1 1/8	Yes	-	027L122900

Example: EVR 15 without manual operation - Part No. 032L1224. 1/2 in weld flange set. - Part No. 027N1115. + coil with terminal box, 220 V, 50 Hz, - Part No. 018F6701.

EVRC Solder Connection, Normally Closed (NC)

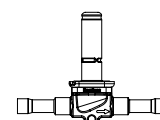
Separate Valve Bodies



Type	Current type	Connection size (in)	Manual operation	Kv value [m³/h] Flow in Arrow Direction	Kv value [m³/h] Flow Against Arrow Direction	Part No.
EVRC 15	AC / DC	5/8	No	2.7	2.5	032L125500
EVRC 20	AC / DC	7/8	No	3.6	5.0	032L125800

EVR v2 Flare Connection, Normally Closed (NC)

Separate Valve Bodies



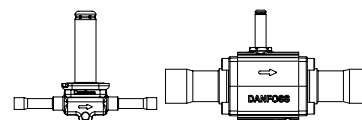
Type	Current type	Connection size (in)	Manual operation	Part No.
EVR 6	AC / DC	3/8	No	032L129000
EVR 10	AC / DC	1/2	No	032L129100
EVR 15	AC / DC	5/8	No	032L129900
	AC / DC	7/8	No	032L327000
EVR 20	AC / DC	7/8	No	032L126000
	AC / DC	1 3/8	No	032L126900
EVR 22	AC	1 3/8	No	032L326800

The normal range of coils can be used for the NO valves, with the exception of the double frequency versions of 110 V, 50/60 Hz and 220 V, 50/60 Hz.



EVR v2 Solder ODF Connections, Normally Closed (NC)

Separate Valve Bodies, UL Listed



Type	Current type	Connection size (in)	Manual operation	Part No.
EVR 2	AC / DC	1/4	No	032F120100
	AC / DC	1/4	No	032F710000
EVR 3	AC / DC	1/4	No	032F120600
	AC / DC	3/8	No	032F120400
EVR 4	AC / DC	3/8	No	032L711000
EVR 6	AC / DC	3/8	No	032L121200
	AC / DC	3/8	Yes	032L711600
	AC / DC	1/2	No	032L120900
	AC / DC	1/2	Yes	032L714400
	AC / DC	5/8	No	032L711700
EVR 8	AC / DC	1/2	No	032L712100
	AC / DC	1/2	Yes	032L714800
	AC / DC	5/8	No	032L712200
EVR 10	AC / DC	3/8	No	032L712500
	AC / DC	1/2	No	032L121700
	AC / DC	1/2	Yes	032L118800
	AC / DC	5/8	No	032L121400
	AC / DC	5/8	Yes	032L714900
EVR 15	AC / DC	5/8	No	032L122800
	AC / DC	5/8	Yes	032L122700
	AC / DC	7/8	No	032L122500
EVR 18	AC / DC	7/8	Yes	032L100400
EVR 20	AC / DC	7/8	No	032L124000
	AC / DC	7/8	Yes	032L125400
	AC / DC	1 1/8	No	032L124400
EVR 22	AC / DC	1 1/8	No	032L714500
	AC / DC	1 1/8	Yes	032L713700
	AC / DC	1 3/8	No	032L326700
EVR 25	AC / DC	1 1/8	Yes	032L220000
	AC / DC	1 1/8	No	032L220100
	AC / DC	1 3/8	Yes	032L220700
	AC / DC	1 3/8	No	032L220800
EVR 32	AC / DC	1 3/8	Yes	032L110500
	AC / DC	1 3/8	No	032L110600
	AC / DC	1 5/8	Yes	032L110300
	AC / DC	1 5/8	No	032L110400
	AC / DC	2 1/8	No	032L118000
	AC / DC	2 1/8	Yes	032L118100
EVR 40	AC / DC	1 5/8	Yes	032L110900
	AC / DC	1 5/8	No	032L111000
	AC / DC	2 1/8	Yes	032L111100
	AC / DC	2 1/8	No	032L111200

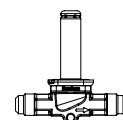
Related Items:



Solenoid Valves

EVR v2 Flare Connection, Normally Closed (NC)

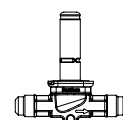
Separate Valve Bodies



Type	Current type	Connection size (in)	Manual operation	Part No.
EVR 2	AC / DC	1/4	No	032F805600
EVR 3	AC / DC	1/4	No	032F810700
	AC / DC	3/8	No	032F811600
EVR 6	AC / DC	3/8	No	032L807200
	AC / DC	1/2	No	032L807900
EVR 10	AC / DC	1/2	No	032L809500
	AC / DC	5/8	No	032L809800
EVR 15	AC / DC	5/8	Yes	032L810000
	AC / DC	5/8	No	032L810100

EVR v2 Flare Connection, Normally Closed (NC)

Separate Valve Bodies

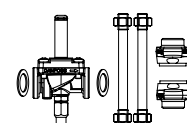


Type	Current type	Connection size (in)	Manual operation	Part No.
EVR 6	AC / DC	3/8	No	032L808500
EVR 10	AC / DC	1/2	No	032L809000
EVR 15	AC / DC	Flanges	No	032L122400
	AC / DC	Flanges	Yes	032L123400
EVR 20	AC / DC	Flanges	No	032L124300
	AC / DC	Flanges	Yes	032L125300

The normal range of coils can be used for the NO valves, with the exception of the double frequency versions of 110 V, 50/60 Hz and 220 V, 50/60 Hz. Valve bodies are supplied without flare nuts. Separate flare nuts: - 6 mm or 1/4 in, Part No. 011L1101 - 10 mm or 3/8 in, Part No. 011L1135 - 12 mm or 1/2 in, Part No. 011L1103 - 16 mm or 5/8 in, Part No. 011L1167

EVR v2 Flange Sets, Normally Closed (NC)

Separate Valve Bodies



Type	Connection size (mm)	Connection size (in)	Connection type Solder (mm)	Connection type Solder (in)	Part No.
EVR 15	-	1/2	-	Yes	027N111500
	-	3/4	-	Yes	027N112000
	-	7/8	Yes	-	027L112300
EVR 20	-	3/4	-	Yes	027N122000
	-	7/8	Yes	-	027L122300
	-	1	-	Yes	027N122500
	-	1 1/8	Yes	-	027L122900

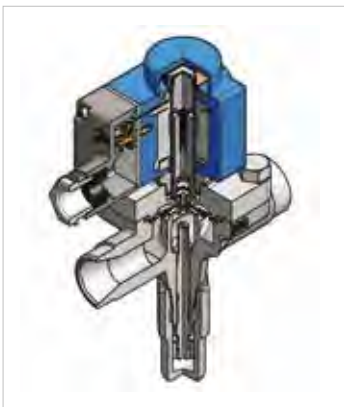
Example: EVR 15 without manual operation - Part No. 032L1224. 1/2 in weld flange set. - Part No. 027N1115. + coil with terminal box, 220 V, 50 Hz, - Part No. 018F6701.



EVRS / EVRST

EVRS and **EVRST** solenoid valves are made in stainless steel. EVRS 3 is direct operated, EVRS 10 / EVRS 15 / EVRS 20 are servo operated. EVRST 10 / EVRST 15 / EVRST 20 are forced servo operated valves. EVRS and EVRST are used in liquid, suction, hot gas and oil return lines.

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



Features:

- Stainless steel valve body and connections
- Max. working pressure 50 bar (suitable for CO₂ subcritical)
- Applicable to R717, R744, R401A, R402A, R404A, R407A, R407B, R407C, R407F, R409A, R410A, R421A, R502, R507, R134a and R22

For a fully updated list of approved refrigerants, visit www.products.danfoss.com and search for individual code numbers, where refrigerants are listed as part of product specifications.

- MOPD up to 38 bar with 20 watt AC coil
- Wide choice of AC and DC coils
- Designed for temperatures of media up to 105 °C
- Manual system on EVRS 10 / EVRS 15 / EVRS 20 & EVRST 10 / EVRST 15 / EVRST 20

EVRS / EVRST Solenoid Valves, Normally Closed (NC)

Type	Max. working pressure PS [bar g]	Connection Weld [in]	Pipe thread ISO 228/1	Manual stem [with / without]	Part No.
EVRS 3	50	3/8	-	without	032F308000
EVRS 3	50	-	G 1/4	without	032F308100
EVRS 10	50	1/2	-	with	032F308200
EVRST 10	50	1/2	-	with	032F308300
EVRS 15	50	3/4	-	with	032F308400
EVRST 15	50	3/4	-	with	032F308500
EVRS 20	50	1	-	with	032F543700
EVRST 20	50	1	-	with	032F543800

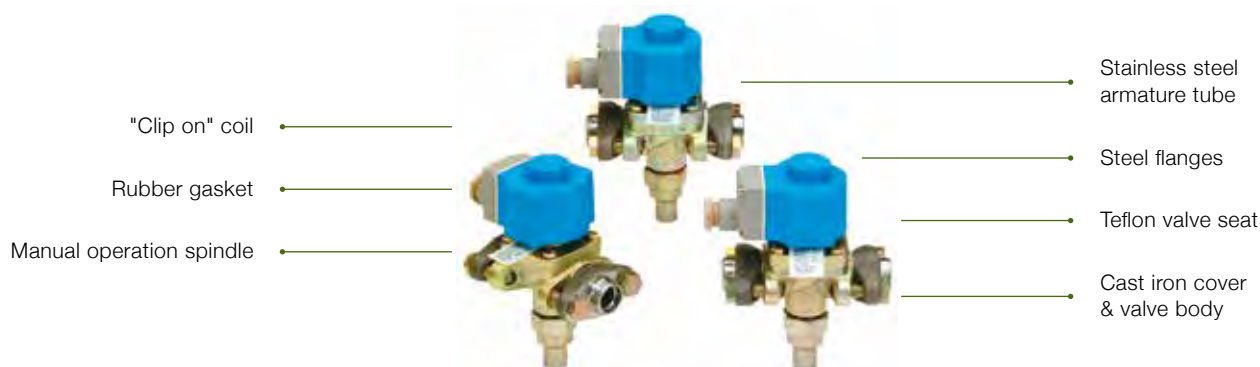


Solenoid Valves

EVRA / EVRAT

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

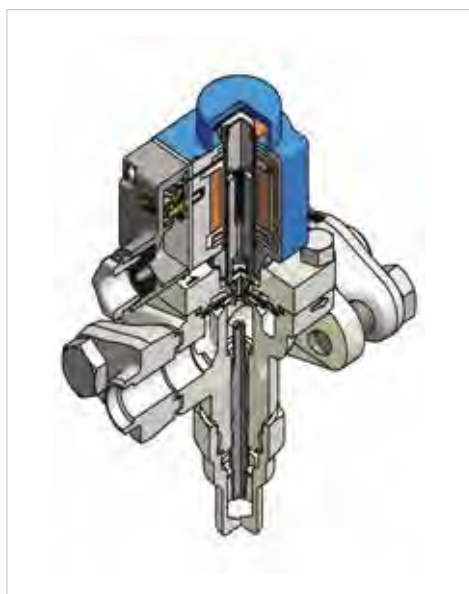
The EVRAT solenoid valve is thus suitable for use in all plants where the required opening differential pressure is 0 bar. EVRAT is available as a parts programme, i.e. separate valve body, flanges and coil. EVRAT 10 / EVRAT 15 / EVRAT 20 all have a spindle for manual operation.



EVRA / EVRAT Solenoid Valves Valve With Coil

Type	Manual Stem	Inlet connection type	Orifice size [mm]	Max OPD 10 W AC [bar]	Max OPD 20 W DC [bar]	Coil type	Coil connection	Supply voltage [V] AC	Frequency [Hz]	Power consumption [W]	Singlepack/ Multipack (12 pcs.)	Part No.
EVRA 3	No	Flange *)	3	21	14	BF230AS	Cable (1 m/3.3 ft)	220 – 230	50	10	Multipack	032F310231
	No	Flange *)	3	21	14	BE230AS	Connection Box	220 – 230	50	10	Multipack	032F310331
	No	Flange *)	3	21	14	BE230CS	Connection Box	220 – 230	50 / 60	10	Multipack	032F310332
EVRA 10	No	Flange *)	10	21	18	BE230AS	Connection Box	220 – 230	50	10	Multipack	032F620831
	Yes	Flange *)	10	21	18	BF230AS	Cable (1 m/3.3 ft)	220 – 230	50	10	Singlepack	032F621231
	Yes	Flange *)	10	21	18	BE230AS	Connection Box	220 – 230	50	10	Singlepack	032F621331
EVRA 15	Yes	Flange *)	10	21	18	BE230CS	Connection Box	220 – 230	50 / 60	10	Singlepack	032F621332
	No	Flange *)	15	21	18	BF230AS	Cable (1 m/3.3 ft)	220 – 230	50	10	Singlepack	032F621731
	No	Flange *)	15	21	18	BF230CS	Cable (1 m/3.3 ft)	220 – 230	50 / 60	10	Singlepack	032F621732
	No	Flange *)	15	21	18	BE230AS	Connection Box	220 – 230	50	10	Singlepack	032F621831
EVRA 20	No	Flange *)	15	21	18	BE230CS	Connection Box	220 – 230	50 / 60	10	Singlepack	032F621832
	No	Flange *)	20	21	13	BF230AS	Cable (1 m/3.3 ft)	220 – 230	50	10	Singlepack	032F622231
	No	Flange *)	20	21	13	BE230AS	Connection Box	220 – 230	50	10	Singlepack	032F622331
EVRA 25	No	Flange *)	20	21	13	BE230CS	Connection Box	220 – 230	50 / 60	10	Singlepack	032F622332
	Yes	Flange *)	25	21	14	BE230CS	Connection Box	220 – 230	50 / 60	10	Singlepack	032F803432





- Applicable to R717, R401A, R402A, R404A, R407A, R407B, R407C, R407F, R409A, R410A, R421A, R502, R507, R134a and R22
- For a fully updated list of approved refrigerants, visit www.products.danfoss.com and search for individual code numbers, where refrigerants are listed as part of product specifications.

Features:

- EVRA and EVRAT valves use a teflon gasket which ensures great tightness across the valve seat
- EVRA valves have a low pressure drop
- EVRAT valves have a minimum opening differential pressure of 0 (zero)
- EVRA and EVRAT valve range can be used with the wide range of standard Danfoss coils
- Strainer type FA can be mounted

- directly on the valve body except for EVRA 32 / EVRA 40
- EVRA 3 – EVRA 25 and EVRAT 10 / EVRAT 20 valves offer a wide range of flange connection dimensions in accordance with connection standards DIN, ANSI, SOC, Solder and FPT and a wide range of connection types
- Butt welding DIN (DIN 2448)
- Butt welding ANSI (ANSI B36.10 schedule 80) (3/8 – 1 1/2 in valve sizes)
- Butt welding ANSI (ANSI B36.10 schedule 40) (2 in valve sizes)
- Socket welding ANSI (ANSI B 16.11)
- Solder connection DIN (DIN 2856)
- Solder connection ANSI (ANSI B 16.22)
- FPT internal thread, NPT (ANSI / ASME B 1.20.1)
- EVRA 32 and EVRA 40 are supplied with integrated flanges for either:
 - Welding DIN (DIN 2448)
 - Welding ANSI (ANSI B 36.10)

EVRA / EVRAT Solenoid Valves Valve Without Coil



Type	Manual Stem	Inlet connection type	Inlet size [in]	Orifice size [mm]	Max OPD 10 W AC [bar]	Max OPD 12 W AC [bar]	Max OPD 20 W DC [bar]	Required coil type **)	Singlepack/Multipack (12 pcs.)	Part No.
EVRA 3	No	Flange *)	-	3	21	25	14	AC / DC	Multipack	032F305000
EVRA 10	Yes	Flange *)	-	10	21	25	18	AC / DC	Singlepack	032F621000
	No	Flange *)	-	10	21	25	18	AC / DC	Singlepack	032F621100
EVRAT 10	Yes	Flange *)	-	10	14	21	16	AC / DC	Singlepack	032F621400
EVRA 15	Yes	Flange *)	-	15	21	25	18	AC / DC	Singlepack	032F621500
EVRAT 15	Yes	Flange *)	-	15	14	21	16	AC / DC	Singlepack	032F621600
EVRAT 20	Yes	Flange *)	-	20	14	21	13	AC / DC	Singlepack	032F621900
EVRA 20	Yes	Flange *)	-	20	21	25	13	AC	Singlepack	032F622000
	Yes	Flange *)	-	20	19	21	16	AC / DC	Singlepack	032F622100
EVRA 25	Yes	Flange *)	-	25	21	25	14	AC / DC	Singlepack	032F622500
	No	Flange *)	-	25	21	25	14	AC / DC	Singlepack	032F622600
EVRA 32	Yes	Butt weld DIN	1 1/4	22.2	21	25	14	AC / DC	Singlepack	042H112600
	No	Butt weld DIN	1 1/4	22.2	21	25	14	AC / DC	Singlepack	042H112700
EVRA 40	Yes	Butt weld DIN	1 1/2	25.4	21	25	14	AC / DC	Singlepack	042H112800
	No	Butt weld DIN	1 1/2	25.4	21	25	14	AC / DC	Singlepack	042H112900
EVRA 32	Yes	Butt weld DIN	1 1/2	22.2	21	25	14	AC / DC	Singlepack	042H113100
EVRA 40	Yes	Butt weld DIN	2	25.4	21	25	14	AC / DC	Singlepack	042H113200
EVRA 32	Yes	Butt weld ANSI 36.10	1 1/4	22.2	21	25	14	AC / DC	Singlepack	042H114000
	Yes	Butt weld ANSI 36.10	1 1/2	22.2	21	25	14	AC / DC	Singlepack	042H114100
EVRA 40	Yes	Butt weld ANSI 36.10	1 1/2	25.4	21	25	14	AC / DC	Singlepack	042H114200
	Yes	Butt weld ANSI 36.10	2	25.4	21	25	14	AC / DC	Singlepack	042H114300

*) Includes flange gaskets and bolts. For ordering flanges; please download the data sheet DKRCI.PY.000.B from www.danfoss.com



Solenoid Coils

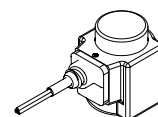
The coils are specially designed to operate in the aggressive environment of high humidity and temperature fluctuations that you find in most refrigeration systems. The Clip-on fastening system ensures a faultless installation and makes the coils easy to mount and dismount.

A Danfoss Clip-on coil can be mounted without any tools at all, and it is simple to dismount the coil by means of a screwdriver. The Clip-on coils are available for the entire range of Danfoss solenoid valves for refrigeration, freezing and air conditioning purposes.



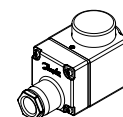
- Encapsulated coils with long operating life, even under extreme conditions
- Standard coils for AC or DC
- Standard coils available with 3-core cable, terminal box or DIN plugs
- Standard coils from 12 V to 420 V, 50, 60 or 50 / 60 Hz
- Coil version for max. opening differential pressure (MOPD) of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

BF Solenoid Coil with 1m 3-core Cable IP67



Type	Valve type	Tambient [°C]	Supply voltage [V]	Voltage variation [%]	Frequency [Hz]	Power consumption		Part No.
						[W]	[VA]	
BF024AS	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVR 40 EVRC EVRA EVRAT EVR / EVRST EVM (NC)	-40T80	24	-15, +10	50	12	20	018F625700
BF230AS		-40T80	230	-15, +10	50	12	22	018F625100
BF230AS		-40T80	220	-15, +10	50	11	20	018F625100
BF240AS		-40T80	240	-15, +10	50	11	19	018F625200
BF400AS		-40T80	380 / 400	±10	50	10	21	018F625300
BF024BS		-40T80	24	-15, +10	60	14	25	018F626500
BF115CS		-40T80	115	-15, +10	60	13	22	018F626000
BF115CS		-40T80	100	-15, +10	50	11	19	018F626000
BF220BS		-40T80	220	-15, +10	60	14	23	018F626400
BF110CS		-40T50	110	±10	50	15	29	018F628000
BF110CS		-40T50	110	±10	60	13	23	018F628000
BF230CS		-40T50	220 – 230	±10	50	16	31	018F628200
BF230CS		-40T50	220 – 230	±10	60	14	24	018F628200

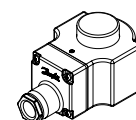




BE Solenoid Coil with Terminal Box IP67

Type	Valve type	Tambient [°C]	Supply voltage [V]	Voltage varia- tion [%]	Frequency [Hz]	Power consumption		Part No.
						[W]	[VA]	
BE012AS	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVRH 40 EVRC EVRA EVRAT EVRV / EVRST EVM (NC)	-40T80	12	-15, +10	50	10	18	018F670600
BE024AS		-40T80	24	-15, +10	50	12	21	018F670700
BE042AS		-40T80	42	-15, +10	50	10	21	018F670800
BE048AS		-40T80	48	-15, +10	50	10	21	018F670900
BE115AS		-40T80	115	-15, +10	50	11	19	018F671100
BE230AS		-40T80	230	-15, +10	50	12	22	018F670100
BE230AS		-40T80	220	-15, +10	50	11	19	018F670100
BE240AS		-40T80	240	-15, +10	50	11	19	018F670200
BE440CS		-40T80	380 – 400	-15, +10	50	13	23	018F670300
BE440CS		-40T80	440	-15, +10	60	14	24	018F670300
BE440AS		-40T80	420	-15, +10	50	11	21	018F670400
BE024BS		-40T80	24	-15, +10	60	14	25	018F671500
BE115CS		-40T80	100	-15, +10	50	11	19	018F671000
BE115CS		-40T80	115	-15, +10	60	13	22	018F671000
BE220BS		-40T80	220	-15, +10	60	13	23	018F671400
BE240CS		-40T80	200	-15, +10	50	11	20	018F671300
BE240CS		-40T80	240	-15, +10	60	15	25	018F671300
BE110CS		-40T50	110	±10	50	15	28	018F673000
BE110CS		-40T50	110	±10	60	13	22	018F673000
BE230CS		-40T50	220 - 230	±10	50	17	31	018F673200
BE230CS		-40T50	220 - 230	±10	60	14	24	018F673200

When replacing a coil with terminal box, it is sufficient to change the coil unit itself. Therefore, order coil with DIN plugs and protective cap.



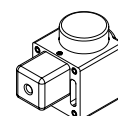
BG Solenoid Coil with Terminal Box IP67

Type	Valve type	Tambient [°C]	Supply voltage [V]	Voltage varia- tion [%]	Frequency [Hz]	Power consumption		Part No.	
						[W]	[VA]		
BG024AS	EVR 3 – EVR 40 EVRC EVRA EVRAT EVRV / EVRST EVM (NC/NO)	-40T80	24	-15, +10	50	11	21	018F680700	
BG048AS		-40T80	48	-15, +10	50	12	26	018F680900	
BG110AS		-40T80	110	-15, +10	50	13	25	018F681100	
BG230AS		-40T80	230	-15, +10	50	15	28	018F680100	
BG230AS		-40T80	220	-15, +10	50	13	25	018F680100	
BG240AS		-40T80	240	-15, +10	50	13	25	018F680200	
BG400AS		-40T80	380 / 400	-15, +10	50	12	26	018F680300	
BG024BS		-40T80	24	-15, +10	60	12	26	018F681500	
BG110BS		-40T80	110	-15, +10	60	16	29	018F681300	
BG220BS		-40T80	220	-15, +10	60	16	29	018F681400	
BG012DS		EVR 2 – EVR 15 (NC) EVR 25 – EVR 40 (NC/NO) EVR 6 – EVR 15 (NO) EVRC 10 – EVRC 15 EVRA 3 – EVRA 15 (NC) EVRA 25 – EVRA 40 (NC) EVRAT 10 – EVRAT 15 (NC) EVRV / EVRST 3 – EVRST 15 EVM (NC/NO)	-40T50	12	±10	DC	20	–	018F685600
BG024DS			-40T50	24	±10	DC	16	–	018F685700
BG048DS	-40T50		48	±10	DC	20	–	018F685900	
BG110DS	-40T50		110	±10	DC	16	–	018F686000	
BG115DS	-40T50		115	±10	DC	19	–	018F686100	
BG220DS	-40T50		220	±10	DC	20	–	018F685100	
BG012DS	EVR 20 to 22 (NC/NO) EVRC 20 EVRA 20 EVRAT 20 EVRST 20	-40T50	12	±10	DC	20	–	018F688600	
BG024DS		-40T50	24	±10	DC	20	–	018F688700	
BG048DS		-40T50	48	±10	DC	20	–	018F688900	
BG110DS		-40T50	110	±10	DC	20	–	018F689000	
BG220DS		-40T50	220	±10	DC	20	–	018F688100	

When replacing a coil with terminal box, it is sufficient to change the coil unit itself. Therefore, order coil with DIN plugs and protective cap.

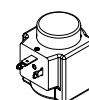


Solenoid Coils



BE Solenoid Coil with DIN Spade & Protection Cap IP20

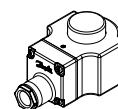
Type	Valve type	Tambient [°C]	Supply voltage [V]	Voltage variation [%]	Frequency [Hz]	Power consumption		Part No.
						[W]	[VA]	
BE024AS	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVRH 40 EVRC EVRA EVRAT EVRH/EVRST EVM (NC)	-40T80	24	-15, +10	50	12	21	018F618200
BE230AS		-40T80	230	-15, +10	50	12	22	018F617600
BE230AS		-40T80	220	-15, +10	50	11	19	018F617600
BE240AS		-40T80	240	-15, +10	50	11	19	018F617700
BE420AS		-40T80	420	-15, +10	50	10	21	018F617900
BE115CS		-40T80	100	-15, +10	50	11	19	018F618500
BE115CS		-40T80	115	-15, +10	60	13	22	018F618500
BE220BS		-40T80	220	-15, +10	50	13	23	018F618900
BE110CS		-40T50	110	±10	50	15	28	018F619200
BE110CS		-40T50	110	±10	60	13	22	018F619200
BE230CS		-40T50	220-230	±10	50	17	31	018F619300
BE230CS		-40T50	220-230	±10	60	14	24	018F619300



BB Solenoid Coil with DIN Spade *

Type	Valve type	Tambient [°C]	Supply voltage [V]	Voltage variation [%]	Frequency [Hz]	Power consumption		Part No.
						[W]	[VA]	
BB024AS	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRH 10 – EVRH 40 EVRC EVRA EVRAT EVRH/EVRST EVM (NC)	-40T80	24	-15, +10	50	11	19	018F735800
BB115AS		-40T80	115	-15, +10	50	11	19	018F736100
BB230AS		-40T80	220 - 230	-15, +10	50	11	19	018F735100
BB240AS		-40T80	240	-15, +10	50	11	19	018F735200
BB024BS		-40T80	24	-15, +10	60	14	23	018F736500
BB110CS		-40T50	110	±10	50	15	28	018F736000
BB110CS		-40T50	110	±10	60	13	22	018F736000
BB230CS		-40T50	220 - 230	±10	50	16	31	018F736300
BB230CS		-40T50	220 - 230	±10	60	13	24	018F736300

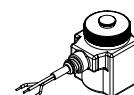
When replacing a coil with terminal box, it is sufficient to change the coil unit itself. Therefore, order coil with DIN plugs and protective cap. *) Can only be used with DIN plug.



BN Special Solenoid Coil with Terminal Box IP67

Type	Valve type	Tambient [°C]	Supply voltage [V]	Voltage variation [%]	Frequency [Hz]	Power consumption		Part No.
						[W]	[VA]	
BN024AS	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO)	-40T50	24	-15, +10	50	24	49	018F690300 ¹⁾
BN024BS	EVRH 4 – EVRH 40 EVRC/EVRA/EVRAT/ EVRH/EVRST/EVM (NC)	-40T50	24	-15, +10	60	22	42	018F690600 ¹⁾
BN230AS		-40T50	230	-15, +10	50	19	43	018F690500 ¹⁾

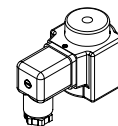
¹⁾ Recommended use for EVRH with high MOPD (38 bar).



BV Solenoid Coil with ATEX (Zone 2) Approval IP65

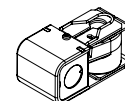
Coil type	Coil for valve type	Power consumption	Frequency [Hz]	Voltage [V] AC	Part No. With 1 m cable
BV	EVR 2 – EVR 40 (NC) EVR 6 – EVR 22 (NO) EVRC EVRA / EVRAT EVRH / EVRST EVM (NC / NO)	Holding: 11 W 21 VA	50	24	018Z612000
			50	110	018Z612100
			50	230	018Z612200
		Inrush: 44 VA	50	240	018Z612300
			60	24	018Z612500
			60	230	018Z612700





Coil with DIN Plug

	Description	Part No.
Terminal box	With built-in light emitting indicator diode for solenoid valves (only for AC)	018Z008900
DIN plug	Enclosure IP65, EN 175301-803A	042N015600

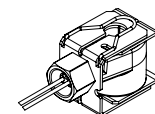


BJ Coils Junction Box NEMA 2 ~ (UL Listed) IP12-32

Coil type	Valve type	Power consumption [W]	Frequency [Hz]	Voltage [V] AC	Wire length		Part No.
					[in]	[cm]	
BJ	AKV / EVR EVRH / EVRA EVRAT / EVRS EVRST / EVM EV220B 6-50 EV210B EV215B EV225B EV250B	14	50 / 60	24	7	18	018F410000
		16	50 / 60	110	7	18	018F411000
		15	60	120			
	AKVH / EVRH	14	60	208 - 240	7	18	018F412000
		17	50	230			
		16	60	120			
		16	60	208	7	18	018F413200
		16	60	240	7	18	018F413400

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

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



BX Coils Conduit Boss NEMA 4 ~ (UL Listed) IP54

Coil type	Valve type	Power consumption [W]	Frequency [Hz]	Voltage [V] AC	Wire length		Part No.
					[in]	[cm]	
BX	AKV / EVR EVRH / EVRA EVRAT / EVRS EVRST / EVM EV220B 6-50 EV210B EV215B EV225B EV250B	14	50 / 60	24	18	46	018F410200
		14	50 / 60	24	71	180	018F410300
		14	50 / 60	24	98	250	018F410400
		16	50 / 60	110	18	46	018F411200
					36	91	018F411300
					71	180	018F411400
					98	250	018F411500
		14	60	208 - 240	18	46	018F412200
					98	250	018F412300
		AKVH / EVRH	16	60	120	98	250
	16		60	208	98	250	018F413300
		16	60	240	98	250	018F413500

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

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

Description	Part No.
SCM GSR Solenoid Valve Spare for SCM Cubo2Smart	48116
Fridgenius SVOM-15 Solenoid Coil	6187
Fridgenius SVOM-18 Solenoid Coil	600145



Danfoss RT Pressure Switch

RT pressure switches contain a pressure operated single-pole changeover contact, the position of which depends on the pressure in the inlet connection and the set scale value.

The RT series includes pressure switches for general applications within industrial and maritime refrigeration, as well as differential pressure switches for neutral zone regulation and special pressure switches with gold-plated contact surfaces for PLC applications.



Application:

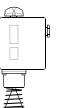
- General applications within industrial and marine refrigeration
- Pressure switches for fluorinated refrigerants and R717 (NH₃)
- High stability and accuracy
- Long operating life time
- Enclosure: IP66 to EN 60529 / IEC 60529, except for versions with ext. reset which are IP54

Features:

- Wide regulating range
- Suitable for both alternating and direct current (AC and DC)
- Interchangeable contact system
- Special versions with gold plated contact surfaces for PLC applications
- Versions for neutral zone regulation
- Insulation 400 V
- Ambient temperature: -50 – 70 °C for housing
- Cable connection: Pg 13.5
- Cable diameter: 6 – 14 mm

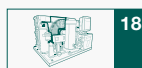
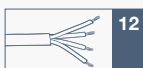
RT Safety Pressure Switches for:

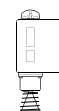
R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R507A, R717 (NH₃)



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

1) G external thread, ISO 228-1





RT Switches for:

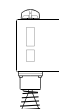
R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D

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

1) G external thread, ISO 228-1

RT Pressure Switches With Adjustable Neutral Zone for:

R22, R134a, R404A, R407A, R407C, R407F, R507A, R717 (NH3) *

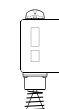


Type	Pressure	Regulation range [bar]	Mechanical differential Δp [bar]	Neutral zone Δp [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Part No.
RT 1AL	Low	-0.8 – 5	0.2	0.2 – 0.9	22	25	cutting ring $\varnothing 6$ mm	017L001666
	Low	-0.8 – 5	0.2	0.2 – 0.9	22	25	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017L003366
RT 200L	Low	0.2 – 6	0.25	0.25 – 0.7	22	25	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017L003266
RT 5AL	High	4 – 17	0.35	0.35 – 1.4	22	25	cutting ring $\varnothing 6$ mm	017L001766 2)
	High	4 – 17	0.35	0.35 – 1.4	22	25	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017L004066 2)
RT 117L	High	10 – 30	1	1 – 3	42	47	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017L004266 2)

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

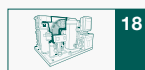
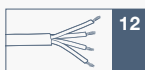
RT Differential Pressure Switches for:

R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R507A, R717 (NH3)

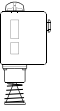


Type	Regulation range [bar]	Mechanical differential Δp [bar]	Operating range for LP bellows [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Part No.
RT 260A	0.5 – 4	0.3	-1 – 18	22	25	cutting ring $\varnothing 6$ mm	017D001466
	0.5 – 4	0.3	-1 – 18	22	25	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017D002166
	0.5 – 4	0.3	-1 – 18	22	25	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017D002266 2)
	0.5 – 6	0.5	-1 – 36	42	47	cutting ring $\varnothing 6$ mm	017D001566
	0.5 – 6	0.5	-1 – 36	42	47	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017D002366
	1.5 – 11	0.5	-1 – 31	42	47	cutting ring $\varnothing 6$ mm	017D001666
	1.5 – 11	0.5	-1 – 31	42	47	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017D002466
RT 262A	0.1 – 1.5	0.1	-1 – 9	11	13	cutting ring $\varnothing 6$ mm	017D001366
	0.1 – 1.5	0.1	-1 – 9	11	13	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017D002566
RT 265A 3)	1 – 6	0.5	-1 – 36	42	47	G 3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017D007266

1) G external thread, ISO 228-1 2) Manual reset 3) Filter monitor: Alarm $\Delta p = 0.8$ bar, cut-out $\Delta p = 1$ bar (factory setting)



RT Differential Pressure Switches with Adjustable Neutral Zone for: R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R507A, R717 (NH3)

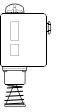


Type	Regulation range [bar]	Mechanical differential Δp [bar]	Adjustable Neutral zone [bar]	Operating range for LP bellows [bar]	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Part No.
RT 262 AL	0.1 – 1.5	0.1	1 – 0.33	-1 – 9	11	13	G1/2 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017D004366

1) G external thread, ISO 228-1

RT Safety Pressure Switches with EN 12263 Approval and CE Marked According To PED, Pressure Equipment Directive for:

R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R507A, R717 (NH3) *)

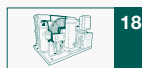
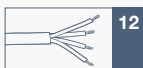


Type	Pressure	Regulation range [bar]	Differential (fixed) Δp [bar]	Reset	Max. working pressure [bar]	Max. test pressure [bar]	Connection type	Part No.
RT 6W	High	5 – 25	3	Auto	28 2)	38	1/4 in / 6 mm flare	017-503166
RT 6B	High	10 – 28	1	Man. (Max.)	28 2)	38	1/4 in / 6 mm flare	017-503466
RT 6S	High	10 – 28	1	Man. (Max.)	28 2)	38	1/4 in / 6 mm flare	017-507566
RT 30AW	High	1 – 10	0.8	Auto	22	25	G 1/2 A 1)	017-518766
RT 30AB	High	1 – 10	0.4	Man. (Max.)	22	25	G 1/2 A 1)	017-518866
RT 30AS	High	1 – 10	0.4	Man. (Max.)	22	25	G 1/2 A 1)	017-518966
RT 6AW	High	5 – 25	3	Auto	28 2)	38	cutting ring $\varnothing 6$ mm	017-513166
	High	5 – 25	3	Auto	28 2)	38	G3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017-503266
RT 6AB	High	10 – 28	1.5	Man. (Max.)	28 2)	38	cutting ring $\varnothing 6$ mm	017-513366
	High	10 – 28	1.5	Man. (Max.)	28 2)	38	G3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017-503566
RT 6AS	High	10 – 28	1.5	Man. (Max.)	28 2)	38	cutting ring $\varnothing 6$ mm	017-514666
	High	10 – 28	1.5	Man. (Max.)	28 2)	38	G3/8 A 1) + weld nipple $\varnothing 6.5 / 10$ mm	017-507666

1) G external thread, ISO 228-1

2) Max. working pressure acc. to PED is limited to 28 bar. If the unit is going to be used outside PED regulation, then MWP may be increased to 34 bar.

*) Only types with letter A are suitable for R717



KP Pressure Switch

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

The enhanced contact system for 16 A makes it possible to operate electrical motors up to 2 kW directly, without the use of contactors. KP pressure switches are available in IP30 and IP44 enclosures.

Range and differential easily adjustable with screwdriver

Manual trip function

Bellows without any welding points. Fail safe bellows versions available

Various pressure connections



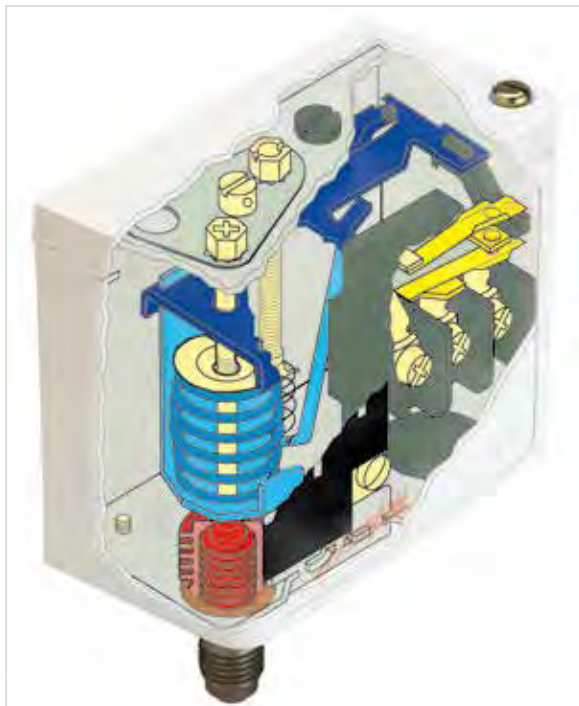
Available with manual and automatic reset

Compact design

Vibration proof

High contact rating:
AC-1 / AC-3: 16 A @ 400 V
AC-15: 10 A @ 400 V

Reliable and fully visible SPDT contact system



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

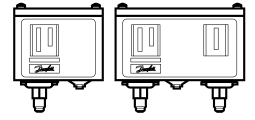
Features:

- Easy to handle compact design with large and visible scale plates
- Vibration and shock resistant
- Accurate and reliable compressor operation due to excellent electro-mechanical function
- High reliability both electrically and mechanically-a KP switch can be connected directly to a single-phase AC motor of up to approximately 2 kW or installed in the control circuit of DC motors and large AC motors
- Easy to install electrical connection which also facilitates rack mounting
- Bellows without any welding points, which makes them stress free and completely tight

- Wide range of approvals - Danfoss offers a wide range of approval suited for specific applications and geographical markets
- Available with flare, solder or capillary tube connections
- Pressure switches PED 97 / 23 / EC approved available
- Wide pressure ranges
The programme covers working ranges: -0.9 – 46.5 bar / -1.3 – 674 psi
- Versions with IP30 enclosure rating can be updated to IP44 or IP55 enclosure rating using top plate (IP44) or IP55 enclosure (IP55), available as Accessories

KP Pressure Switches for:

R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R438A, R448A, R449A, R450A, R452A, R507A, R513A

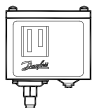


Type	Pressure	Low pressure (LP)		High pressure (HP)		Reset		Contact System	Connection type	Part No.
		Regulating range [bar]	Differential Δp [bar]	Regulating range [bar]	Differential Δp [bar]	Low pressure LP	High pressure HP			
KP 1	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-110166 4)
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1/4 in ODF solder	060-111266 4)
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	6 mm ODF solder	060-111066 4)
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-114166 2) 4)
	Low	-0.9 – 7.0	0.7	–	–	Man. (Min.)	–	SPDT	1/4 in / 6 mm flare	060-110366
	Low	-0.9 – 7.0	0.7	–	–	Man. (Min.)	–	SPDT	1/4 in ODF solder	060-111166
KP 2	Low	-0.2 – 5.0	0.4 – 1.5	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-112066 4)
	Low	-0.2 – 5.0	0.4 – 1.5	–	–	Auto	–	SPDT	6 mm ODF solder	060-112366 4)
KP 5	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	1/4 in / 6 mm flare	060-117166 4)
	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	1/4 in / ODF solder	060-117966 4)
	High	–	–	8 – 32	1.8 – 6.0	–	Auto	SPDT	6 mm ODF solder	060-117766 4)
	High	–	–	8 – 32	3	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-117366
	High	–	–	8 – 32	3	–	Man. (Max.)	SPDT	1/4 in ODF solder	060-118066
KP 15	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP signal	1/4 in / 6 mm flare	060-124166 4)
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP signal	1/4 in ODF solder	060-125466 4)
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP signal	1/4 in / 6 mm flare	060-124366
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP signal	1/4 in / 6 mm flare	060-114866 2)
	Dual	-0.9 – 7.0	0.7	8 – 32	4	Man. (Min.)	Man. (Max.)	SPDT+LP signal	1/4 in / 6 mm flare	060-124566
	Dual	-0.9 – 7.0	0.7	8 – 32	4	Conv. 3)	Conv. 3)	SPDT+LP signal	1/4 in / 6 mm flare	060-126166
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-126566 1) 4)
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	1/4 in ODF solder	060-129966 4)
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-126466 1)
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Auto	Man. (Max.)	SPDT+LP and HP signal	1/4 in ODF solder	060-128466 1)
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Conv. 3)	Conv. 3)	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-115466 4)
	Dual	-0.2 – 7.5	0.7 – 4.0	8 – 32	4	Conv. 3)	Conv. 3)	SPDT+LP and HP signal	1/4 in ODF solder	060-1066 4)
Dual	-0.9 – 7.0	0.7	8 – 32	4	Conv. 3)	Conv. 3)	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-122066	

1) Available in Asia market with code 060-xxxx91 2) Pressure switches with gold-plated contacts 3) Conv.: optional automatic or manual reset 4) Enclosure IP44

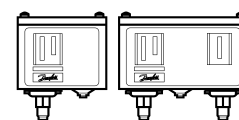
KP Pressure Switches for:

R290, R444B, R600, R600a, R1234ze, R1290



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

KP Pressure Switches PED 2014/68/EU approved; EN 12263 for: R22, R134a, R404A, R407A, R407C, R407F, R410A*), R422B, R422D, R438A, R448A, R449A, R450A, R452A, R507A, R513A



Type	Pressure	Low pressure (LP)		High pressure (HP)		Reset		Contact System	Connection type	Part No.
		Regulating range [bar]	Differential Δp [bar]	Regulating range [bar]	Differential Δp [bar]	Low pressure LP	High pressure HP			
KP 1	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-110166 2) 3)
	Low	-0.2 – 7.5	0.7 – 4.0	–	–	Auto	–	SPDT	6 mm ODF solder	060-111066 3)
	Low	-0.9 – 7	0.7	–	–	Man. (Min.)	–	SPDT	1/4 in / 6 mm flare	060-110366 2)
	Low	-0.9 – 7	0.7	–	–	Man. (Min.)	–	SPDT	6 mm ODF solder	060-110966
KP 2	Low	-0.2 – 5	0.4 – 1.5	–	–	Auto	–	SPDT	1/4 in / 6 mm flare	060-11206600 2) 3)
	Low	-0.2 – 5	0.4 – 1.5	–	–	Auto	–	SPDT	6 mm ODF solder	060-112366 3)
KP 6W 1)	High	–	–	8 – 42	4 – 10	–	Auto	SPDT	1/4 in / 6 mm flare	060-519066 3)
KP 6B 1)	High	–	–	8 – 42	4	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-519166
KP 7W 1)	High	–	–	8 – 32	4 – 10	–	Auto	SPDT	1/4 in / 6 mm flare	060-119066 3)
	High	–	–	8 – 32	4 – 10	–	Auto	SPDT	6 mm ODF solder	060-120366 3)
KP 7B 1)	High	–	–	8 – 32	4	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-119166
KP 7S 1)	High	–	–	8 – 32	4	–	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-119266 3)
KP 7BS 1)	Dual	–	–	8 – 32	4	–	Man. (Max.)	SPST	1/4 in / 6 mm flare	060-120066
KP 17W 1)	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-127566 3)
	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Auto	SPDT+LP and HP signal	6 mm ODF solder	060-127666 3)
KP 17W 1)	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Auto	SPDT+LP signal	1/4 in / 6 mm flare	060-126766 3)
KP 17B 1)	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Man. (Max.)	SPDT	1/4 in / 6 mm flare	060-126866
	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Man. (Max.)	SPDT	6 mm ODF solder	060-127466
KP 17WB 1)	Dual	0.2 – 7.5	0.7 – 4	8 – 32	4	Auto	Conv. 5)	SPDT+LP and HP signal	1/4 in / 6 mm flare	060-539766 3) 4)

1) W = PSH (pressure switch), B = PZH (pressure switch with ext. reset), S = PZHH (pressure switch with int. reset) 2) Available in Asia market with code 060-xxxx91
3) Enclosure IP44 4) Factory setting: LP side: range = 1 bar Pe, diff. = 1 bar; HP side: range = 18 bar Pe, diff. = 4 bar fixed 5) Conv.: optional automatic or manual reset
) only for KP6W, KP6B

KP Pressure Switches for: R717, R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R438A, R448A, R449A, R450A, R452A, R507A, R513A

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

1) Conv.: optional automatic or manual reset 2) Enclosure IP44 3) Available in Asia market with code 060-xxxx91

MP Differential Pressure Switch

MP 54 and MP 55 oil differential pressure switches are used as safety switches to protect refrigeration compressors against low lubricating oil pressure. If the oil pressure fails, the oil differential pressure switch stops the compressor after a certain time period.

MP 54 has a fixed differential pressure setting. It also incorporates a thermal time relay with a fixed release time setting. MP 55 and MP 55A have adjustable differential pressure and are available both with and without thermal time relay.

Dedicated for wide range of refrigerants

Models with different relay release time

Pg 13.5 screwed cable entry

Connection to pressure side of lubrication system, OIL



Connection to suction side of refrigeration plant, LP

Versions with adjustable or fixed differential

Electrical connection at the front of the unit

Suitable for both alternating and direct current (AC and DC)

Application:

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

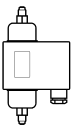
Features:

- Suitable for both alternating and direct current (AC and DC)
- Small contact differential
- Bellows without any welding points, which makes them stress free and completely tight
- Wide regulating range

- Screwed cable entry for cables: 6 – 14 mm diameter
- Electrical connection at the unit front
- Wide range of approvals - Danfoss offers a wide range of approvals suited for specific applications and geographical markets

MP Differential Pressure Switches for:

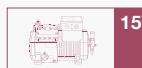
R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R448A, R449A, R450A, R452A, R507A, R513A



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

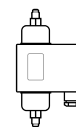
1) With glow lamp that remains on during normal operation. Note: If the operational light goes out, the compressor should not run longer than the release time.

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



MP Differential Pressure Switches for:

R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R448A, R449A, R450A, R452A, R507A, R513A



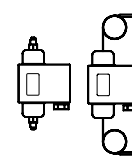
Type	Control differential Δp [psi]	Operation range, LP side [bar]	Relay release time [s]	Connection type	Part No.
MP 54	6.0	29 – 175	45	1/4 in Flare	060B200866
	6.0	29 – 175	45	1/4 in Flare nut with 36 in capillary tube	060B205066
	9.0	29 – 175	90	1/4 in Flare	060B200266
	9.0	29 – 175	120	1/4 in Flare	060B200366 2)
	9.0	29 – 175	120	1/4 in Flare nut with 36 in capillary tube	060B205366 2)
MP 55	4.3 – 65	29 – 175	45	1/4 in Flare nut with 36 in capillary tube	060B205466
	4.3 – 65	29 – 175	60	1/4 in Flare	060B201266 1)
	4.3 – 65	29 – 175	90	1/4 in Flare	060B200666
	4.3 – 65	29 – 175	120	1/4 in Flare	060B200766
	4.3 – 65	29 – 175	120	1/4 in Flare nut with 36 in capillary tube	060B205766

1) With glow lamp that remains on during normal operation of compressor. 2) Three-wire hook-up.

Note: When time delay is energized which also means that min. permissible oil pressure (differential Δp) is reached, light goes out.

MP Differential Pressure Switches for:

R717, R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R448A, R449A, R450A, R452A, R507A, R513A



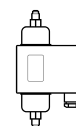
Type	Differential Δp [bar]	Operation range, LP side [bar]	Relay release time [s]	Connection type	Part No.
MP 55A	0.3 – 4.5	-1 – 12	45	G 3/8 A supplied with $\phi 6.5$ / 10 mm weld nipple	060B017466
	0.3 – 4.5	-1 – 12	45	M12x1.5 with 6 mm cutting ring	060B018266
	0.3 – 4.5	-1 – 12	60	G 3/8 A supplied with $\phi 6.5$ / 10 mm weld nipple	060B017566
	0.3 – 4.5	-1 – 12	60	M12x1.5 with 6 mm cutting ring	060B018366
	0.3 – 4.5	-1 – 12	60	G 3/8 A supplied with $\phi 6.5$ / 10 mm weld nipple	060B017966 1)
	0.3 – 4.5	-1 – 12	90	G 3/8 A supplied with $\phi 6.5$ / 10 mm weld nipple	060B017666
	0.3 – 4.5	-1 – 12	90	M12x1.5 with 6 mm cutting ring	060B018466
	0.3 – 4.5	-1 – 12	120	G 3/8 A supplied with $\phi 6.5$ / 10 mm weld nipple	060B017766
	0.3 – 4.5	-1 – 12	120	M12x1.5 with 6 mm cutting ring	060B018566
	0.3 – 4.5	-1 – 12	0 2)	G 3/8 A supplied with $\phi 6.5$ / 10 mm weld nipple	060B029866 2)
0.3 – 4.5	-1 – 12	0 2)	M12x1.5 with 6 mm cutting ring	060B029666	

1) With glow lamp that remains on during normal operation. Note: If the operational light goes out, the compressor should not run longer than the release time.

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

MP Differential Pressure Switches for:

R32, R290, R600, R600a, R1270



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



ACB / CCB Cartridge Pressure Switches

Cartridge pressure switches are small diaphragm type pressure switches for use in refrigeration and air conditioning systems. They as standard are equipped with a 6A contact system with automatic or manual reset. ACB / CCB are robust and reliable in use and the small size, lightness and high degree of protection means that they can be

mounted directly on the refrigeration system where pressure monitoring is required. Cartridge pressure switches are available in many different versions with different pressure settings and pressure connections.

Many types of cables, terminals and plugs as well as 6,35 mm spades electrical connection

High quality electric switch

Fig.: type with SPST manual reset

Depressor pin



Versions with manual or automatic reset available

IP65 for water-proof version

Metal diaphragm

Pressure connection Male / female flare or solder type



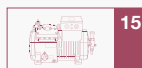
Application:

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

Features:

- Compact and easy to install
- Metal diaphragm:
 - excellent reliability and repeatability
 - lifetime of 100 000 cycles minimum
 - no contact chattering during changeover
- Flexible order quantity due to European production with short lead times
- Wide choice of specifications:
 - set-point
 - pressure connection
 - electrical connection

- Global coverage and widespread use by major OEMs
- Over 100 million pcs installed in the field
- CE, TÜV, UL and C-UL approvals (SPDT man. only CE approvals)
- Additional information about special versions: 1 A (250 V AC); 4 A (250 V AC) SPDT, 6 A (250 V AC) SPST and gold plated contact system 0.05 A (12 / 24 V DC)
- Normally Closed (NC), Normally Open (NO) or SPDT contact system
- Convenient electrical connection - spades or cables (1.5 m cable for standard version)
- Pressure range: -0.6 – 150 bar
- Automatic or manual reset
- IP65 (water proof version with cables)



CCB Cartridge Pressure Switches For CO2



Application	Reset	Cut out (bar)	Cut out (psi)	Cut in (bar)	Cut in (psi)	Contact system	Enclosure type W-waterproof	Connection type	Part No.
High pressure control	Auto	100±10	1450±145	70±20	1015±290	SPST-NC	W	6.35 mm / solder	061F980800 1)
	Auto	100±10	1450±145	70±20	1015±290	SPST-NC	W	6.35 mm / solder	061F990800 2)
	Auto	110±10	1595±145	80±20	1160±290	SPST-NC	W	6.35 mm / solder	061F980900 1)
	Auto	110±10	1595±145	80±20	1160±290	SPST-NC	W	6.35 mm / solder	061F990900 2)
	Auto	120±10	1740±145	90±20	1305±290	SPST-NC	W	6.35 mm / solder	061F981000 1)
	Auto	120±10	1740±145	90±20	1305±290	SPST-NC	W	6.35 mm / solder	061F991000 2)
	Auto	130±10	1885±145	100±20	1450±290	SPST-NC	W	6.35 mm / solder	061F981100 1)
	Auto	140±10	2030±145	100±20	1450±290	SPST-NC	W	6.35 mm / solder	061F981200 1)
	Auto	150±10	2175±145	100±20	1450±290	SPST-NC	W	6.35 mm / solder	061F981300 1)

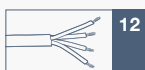
1) Models packed per 100 pcs. 2) Models packed per 20 pcs.

ACB Cartridge Pressure Switches for:

R22, R134a, R404A, R407C, R407A, R40C, R407F, R410A, R438A, R448A, R449A, R450A, R452A, R513A

Application	Reset	Cut out (bar)	Cut out (psi)	Cut in (bar)	Cut in (psi)	Contact system	Enclosure type W-waterproof	Connection type	Part No.
Fan Control	Auto	8.5 ± 1.2	125 ± 17	11 ± 0.8	11 ± 0.8	SPST-NO	W	6 mm / solder	061F849100
	Auto	8.5 ± 1.2	125 ± 17	11 ± 0.8	11 ± 0.8	SPST-NO	W	1/4 in / female flare	061F849000
	Auto	13 ± 1.5	190 ± 22	16 ± 1.0	16 ± 1.0	SPST-NO	W	6 mm / solder	061F833400
	Auto	13 ± 1.5	190 ± 22	16 ± 1.0	16 ± 1.0	SPST-NO	W	1/4 in / female flare	061F833300

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



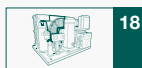
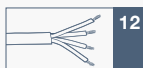
ACB Cartridge Pressure Switches for:

R22, R134a, R404A, R407C, R407A, R40C, R407F, R410A, R438A, R448A, R449A, R450A, R452A, R513A



Application	Reset	Cut out (bar)	Cut out (psi)	Cut in (bar)	Cut out (psi)	Contact system	Enclosure type W-waterproof 1) O-open type 2)	Connection type	Part No.
High pressure cut-out	Auto	18 ± 0.7	260 ± 10	13 ± 1.2	190 ± 17	SPST-NC	W	6 mm / solder	061F750400
	Auto	18 ± 0.7	260 ± 10	13 ± 1.2	190 ± 17	SPST-NC	W	1/4 in / solder	061F750500
	Auto	18 ± 0.7	260 ± 10	13 ± 1.2	190 ± 17	SPST-NC	W	1/4 in / female flare	061F750600
	Auto	18 ± 0.7	260 ± 10	13 ± 1.2	190 ± 17	SPDT	W	1/4 in / female flare	061F905700
	Auto	20 ± 1.0	290 ± 14	16 ± 1.5	230 ± 21	SPST-NC	O	1/4 in / solder	061F871000
	Auto	20 ± 1.0	290 ± 14	16 ± 1.5	230 ± 21	SPST-NC	O	1/4 in / female flare	061F870800
	Auto	23 ± 0.7	335 ± 10	19 ± 1.5	275 ± 17	SPST-NC	O	1/4 in / solder	061F870700
	Auto	23 ± 0.7	335 ± 10	19 ± 1.2	275 ± 17	SPST-NC	W	1/4 in / female flare	061F849400
	Auto	23 ± 0.7	335 ± 10	19 ± 1.2	275 ± 17	SPDT	W	1/4 in / female flare	061F905600
	Manual	23 ± 0.7	335 ± 10	19 ± 1.2	275 ± 17	SPDT	W	1/4 in / female flare	061F924300
	Auto	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	W	6 mm / solder	061F750700
	Auto	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	W	1/4 in / solder	061F750800
	Auto	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	W	1/4 in / female flare	061F750900
	Auto	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	O	1/4 in / solder	061F870500
	Auto	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	O	1/4 in / female flare	061F870100
	Auto	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPDT	W	1/4 in / female flare	061F905500
	Manual	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	W	6 mm / solder	061F970300
	Manual	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	W	1/4 in / solder	061F971400
	Manual	26 ± 1.0	380 ± 15	20 ± 1.5	290 ± 22	SPST-NC	W	1/4 in / female flare	061F971300
	Auto	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPST-NC	W	6 mm / solder	061F751000
	Auto	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPST-NC	W	1/4 in / solder	061F751300
	Auto	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPST-NC	W	1/4 in / female flare	061F751400
	Auto	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPST-NC	O	1/4 in / solder	061F870400
	Auto	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPST-NC	O	1/4 in / female flare	061F870000
	Auto	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPDT	W	1/4 in / female flare	061F905400
	Manual	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPDT	W	1/4 in / female flare	061F924200
	Manual	28 ± 1.0	405 ± 14	21 ± 1.5	305 ± 22	SPST-NC	W	1/4 in / female flare	061F952200
	Auto	31 ± 1.0	405 ± 14	24 ± 1.5	350 ± 22	SPST-NC	W	6 mm / solder	061F849300
	Auto	31 ± 1.0	405 ± 14	24 ± 1.5	350 ± 22	SPST-NC	W	1/4 in / female flare	061F849200
	Auto	31 ± 1.0	405 ± 14	24 ± 1.5	350 ± 22	SPST-NC	O	1/4 in / solder	061F870600
Auto	31 ± 1.0	405 ± 14	24 ± 1.5	350 ± 22	SPDT	W	1/4 in / female flare	061F905300	
Auto	42 ± 1.2	610 ± 17	33 ± 2.0	480 ± 29	SPST-NC	W	6 mm / solder	061F751500	
Auto	42 ± 1.2	610 ± 17	33 ± 2.0	480 ± 29	SPST-NC	W	1/4 in / solder	061F751600	
Auto	42 ± 1.2	610 ± 17	33 ± 2.0	480 ± 29	SPST-NC	W	1/4 in / female flare	061F751700	
Manual	42 ± 1.2	610 ± 17	33 ± 2.0	480 ± 29	SPST-NC	W	1/4 in / female flare	061F957500	
Auto	42 ± 1.2	610 ± 17	33 ± 2.0	480 ± 29	SPDT	W	1/4 in / female flare	061F905200	
Low pressure cut-out	Auto	0.5 ± 0.4	7 ± 6	1.5 ± 0.5	22 ± 4	SPST-NO	W	6 mm / solder	061F751800
	Auto	0.5 ± 0.4	7 ± 6	1.5 ± 0.5	22 ± 4	SPST-NO	W	1/4 in / solder	061F751900
	Auto	0.5 ± 0.4	7 ± 6	1.5 ± 0.5	22 ± 4	SPST-NO	W	1/4 in / female flare	061F752000
	Auto	0.5 ± 0.4	7 ± 6	1.5 ± 0.5	22 ± 4	SPST-NO	O	1/4 in / solder	061F740200
	Auto	0.5 ± 0.4	7 ± 6	1.5 ± 0.5	22 ± 4	SPST-NO	O	1/4 in / female flare	061F740000
	Auto	0.5 ± 0.4	7 ± 6	1.5 ± 0.5	22 ± 4	SPDT	O	1/4 in / solder	061F910600
	Auto	0.5 ± 0.4	7 ± 6	1.5 ± 0.5	22 ± 4	SPDT	O	1/4 in / female flare	061F910200
	Auto	0.7 ± 0.5	10 ± 7	1.7 ± 0.4	25 ± 6	SPST-NO	W	6 mm / solder	061F752100
	Auto	0.7 ± 0.5	10 ± 7	1.7 ± 0.4	25 ± 6	SPST-NO	W	1/4 in / solder	061F752200
	Auto	0.7 ± 0.5	10 ± 7	1.7 ± 0.4	25 ± 6	SPST-NO	W	1/4 in / female flare	061F752300
	Auto	0.7 ± 0.5	10 ± 7	1.7 ± 0.4	25 ± 6	SPDT	W	1/4 in / female flare	061F905800
	Auto	1.7 ± 0.5	25 ± 7	2.7 ± 0.4	39 ± 6	SPST-NO	W	6 mm / solder	061F752400
	Auto	1.7 ± 0.5	25 ± 7	2.7 ± 0.4	39 ± 6	SPST-NO	W	1/4 in / solder	061F752500
	Auto	1.7 ± 0.5	25 ± 7	2.7 ± 0.4	39 ± 6	SPST-NO	W	1/4 in / female flare	061F752600
	Auto	2.2 ± 0.3	32 ± 4.5	3.4 ± 0.3	50 ± 4.5	SPST-NO	W	6 mm / solder	061F741800

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



Ranco Pressure Switches

Type	Applications	HP/LP	Reset	Model N.	Part No.
016H6758	Single - HP	HP	Auto	O16H6758B01	016H6758B
016H6750	Single - HP	HP	Auto	O16H6750101	C0166750
016H6751	Single - HP	HP	Manual	O16H6751101	C0166751
052H6750	Single - HP	HP	Auto	O52H6750000	252336
052H6751	Single - HP	HP	Manual	O52H6751000	252344
016H6703	Single - LP	LP	Auto	O16H6703101	C0166703
016H6705	Single - LP	LP	Manual	O16H6705101	C0166705
017H4701	Dual - HP/LP	HP/LP	Auto/Auto	O17H4701101	C0174701
017H4703	Dual - HP/LP	HP/LP	Manual/Manual	O17H4703101	C0174703
017H4705	Dual - HP/LP	HP/LP	Manual/Auto	O17H4705101	C0174705

Accessories

Description	Model N.	Part No.
31696-1 Angle Bracket	31696001	600465
Pressure Transducer	SPKT00D8C0	48147
Pressure Transducer	SPKT00L1S0	48148
Phial Guard & Grommet	-	6818
Pressure Coupler 1/4" Flare 500ml	-	270806
48129-3 Flat Bracket	48129003	600466

ⓘ DID YOU KNOW...

The Ranco range of Pressure switches and Thermometers will be replaced by the **Eliwell D Controller**.



RT Thermostat

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

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



Application:

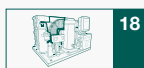
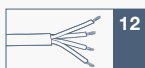
General applications within industrial and marine refrigeration

Features:

- Wide regulating range
- Suitable for both alternating and direct current (AC and DC)
- Interchangeable contact system
- High stability and accuracy
- Long operating life time
- Enclosure: IP66 to EN 60529 / IEC 60529, except for versions with ext. reset which are IP54
- Insulation 400 V
- Ambient temperature: -50 – 70 °C for housing
- Special versions for PLC applications
- Cable connection: Pg 13.5
- Cable diameter: 6 – 14 mm

Type of Sensor

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



RT Thermostats

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

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

RT Thermostats with Adjustable Natural Zone

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



KP Thermostat

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

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

- Setting knob
- Compact design
- Bellows without any welding points
- Reliable and fully visible SPDT contact system



- Sensor
- Available with manual and automatic reset
- Vibration proof
- High contact rating:
AC-1 / AC-3: 16 A at 400 V
AC-15: 10 A at 400 V



Application:

- Frost protection
- Defrost control
- Case and Room control

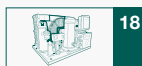
Features:

- Easy to handle compact design with large and visible scale plates
- Vibration and shock resistant
- High reliability both electrically and mechanically – a KP control can be connected directly to a single-phase AC motor of up to approximately 2 kW or installed in the control circuit of DC motors and large AC motors

- Wide range of approvals - Danfoss offers a wide range of approvals suited for specific applications and geographical markets
- Available with capillary sensor, air sensor or cylindrical pocket sensor
- Different sensing elements - As experts in charging technologies Danfoss offers temperature switches that operate in a wide temperature range
- Available with vapour charge or with adsorption charge
- IP30 can be increased to IP44 or IP55 using top plate or IP55 enclosure available as Accessories

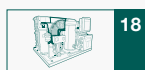
Thermostat Sensor Types

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



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

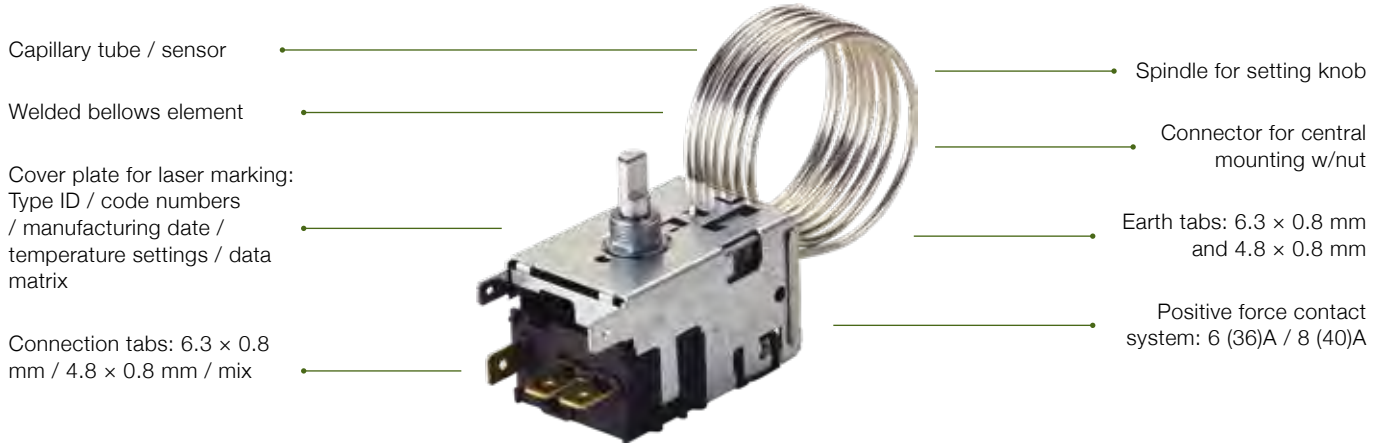
- 1) Sensor must always be placed colder than the thermostat housing and capillary tube. The thermostat will then regulate independent of ambient temperature.
- 2) Sensor can be placed warmer or colder than thermostat housing and capillary tube, but variations from 20 °C ambient temperature will influence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



077B Thermostats

077B thermostats have NC (Normally Closed) main contacts; i.e. they cut out the compressor current circuit on decreasing temperature. 077B thermostats are designed to operate at least 300,000 cycles at full load (6/36A and 8/40A respectively); internal quality audits reinforced

product performance by metering over 1,000,000 cycles. 077B thermostats are designed for temperature control in refrigerators and freezers and can be used as an evaporator or a room thermostat.



Application:

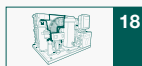
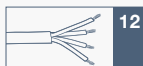
- Refrigerators
- Upright and chest freezers
- Liquid and bottle coolers
- Small commercial refrigeration

Features:

- World class quality with high CpK values that ensures a long and trouble-free lifetime
- Available with Enclosed Brake Device (EBD) for use in household appliances charged with hydrocarbon gases such as R600a or R290

- Available with a wide range of standard functions, various extra functions and Accessories
- Available with 6.3 × 0.8 mm, 4.8 × 0.8 mm terminals or a combination
- Approved by recognized authorities for specific applications and geographical markets
- Danfoss Appliance Controls are certified by Bureau Veritas in ISO14001, ISO9001 and OHSAS18001

077B thermostat type	Application	Function	Temperature °C at 760 mm Hg			Signal	Defrost	Capillary tube length	Part No.
			Warm Cut-in / cut-out	Middle Cut-in / cut-out	Cold Cut-in / cut-out				
077B0	Refrigerators	Without extra functionality	3.5 / -3 *	0 / -7	-5.4 / -12	-	-	1.0	077B002000
			-2 / -11 *	-5.5 / -15	-10 / -20.5	-	-	1.0	077B002100
			2.5 / -5 *	-	-13.5 / -24.5	-	-	1.2	077B003300
			2 / -5.5	-	-13.5 / -25 *	-	-	1.3	077B700100 1)
	Ice-cream cabinets and freezers without signal	Without extra functionality	-7.5 / -15 *	-	-22 / -33.1	-	-	2.0	077B010200
			-7.5 / -15	-	-21 / -32.5 *	-	-	2.3	077B700500 1)
	Liquid and bottle coolers	Without extra functionality (liquid)	15.5 / 9	12 / 5	8 / 0.5 *	-	-	1.2	077B002700
			10.5 / 5	0 / -7	3 / -4.5 *	-	-	1.2	077B002800
			10.9 / 5.2	-	-1 / -8.5 *	-	-	2.0	077B015500
			11.5 / 6 *	-	-1 / -8.5	-	-	2.0	077B700800 1)
Chest and Upright freezers	Without extra functionality	-15 / -23 *	-18 / -27	-22 / -32	-	-	0.8	077B002500	



077B thermostat type	Application	Function	Temperature °C at 760 mm Hg			Signal	Defrost	Capillary tube length	Part No.
			Warm Cut-in / cut-out	Middle Cut-in / cut-out	Cold Cut-in / cut-out				
077B02	Absorption coolers	With auxiliary contact	3.5 / -1 *)	-2 / -7	-7 / -12.5	-	-	1.2	077B022000
			3.5 / -1 *)	-	-5 / -11	-	-	1.5	077B700400 1)
077B20	Chest and Upright freezers	With signal contact, cutting in on rising temperature (active signal)	-15 / -23 *)	-18 / -27	-22 / -32	-12 *)	-	0.8	077B202000
			-10 / -17 *)	-	-24 / -34.7	-6 *)	-	2.0	077B207700
			-10 / -17 *)	-	-24 / -34.5	-6 *)	-	2.3	077B700600 1)
077B30		With signal contact, cutting out on rising temperature (passive signal)	-10 / -17 *)	-	-24 / -34.5	-6 *)	-	2.3	077B700700 1) 2)
077B40	Refrigerators with pushbutton defrost	With push button defrost	0 / -7.5 *)	-	-11 / -21	-	6	1.3	077B700200 1)
077B6/62	Two-temperature cabinets with automatic defrost	With constant cut-in temperature, automatic defrost and auxiliary contact	3.5 / -12.5	3.5 / -17.5	3.5 / -23 *)	-	-	1.0	077B602100
			3.5 / -11	-	3.5 / -27 *)	-	-	1.2	077B620800
			3.5 / -10	3.5 / -15	3.5 / -20 *)	-	-	1.0	077B622000
			3.5 / -11	-	3.5 / -27 *)	-	-	2.0	077B647600
			3.5 / -11	-	3.5 / -27.5 *)	-	-	1.6	077B700300 1)
			5 / -10 *)	-	5 / -30	-	-	1.5	077B632100

*) Adjustment position 1) Forming part of the 8 Service Thermostats, sold with Accessories in practical boxes 2) Available for After Market Sales

Service Thermostats

Application	No.	Warm pos. cut-in / cut out	Cold pos. cut-in / cut out	Signal	Defrost	Washer	Small knob	Push button	Mounting bracket	Seal cap	Small parts	Capillary tube length [m]	Remarks	Part No.
Refrigerators	1	2 / -5.5	-13.5 / -25 *)	-	-	x	x	-	x	-	x	1.3	-	077B700100 1)
Refrigerators with push button defrost	2	0 / -7.5 *)	-11 / -21	-	6	x	x	x	x	-	x	1.3	-	077B700200
Refrigerators with automatic defrost	3	3.5 / -11	3.5 / -27.5 *)	-	-	x	x	-	x	-	x	1.6	With auxiliary switch	077B700300 1)
Absorption refrigerators	4	3.5 / -1 *)	-5 / -11	-	-	x	x	-	x	-	x	1.5	With auxiliary switch	077B700400 1)
Ice-cream cabinets & freezers without signal	5	-7.5 / -15	-21 / -32.5 *)	-	-	-	x	-	x	x	x	2.3	-	077B700500 1)
Freezers with active signal	6	-10 / -17 *)	-24 / -34.5	-6 *)	-	-	x	-	x	x	x	2.3	With active signal	077B700600 1)
Freezers with passive signal	7	-10 / -17 *)	-24 / -34.5	-6 *)	-	-	x	-	x	x	x	2.3	With passive signal	077B700700
Bottle and liquid coolers	8	11.5 / 6 *)	-1 / -8.5	-	-	x	x	-	x	x	x	2.0	-	077B700800 1)

*) Adjustment position 1) With EBD (from January 2017)

Ranco Thermostats

Description	Part No.
Ranco 016H6902 Thermostat -5 To +25	253049
Ranco 016H6924 Thermostat -5 To +25	C0166924
Ranco 016H6951 Thermostat -18 To +13	C0166951
Ranco 016H6954 Thermostat -5 To +25	C0166954
Ranco 016H6981 Thermostat -5 To +25	C0166981

Other Thermostats

Description	Part No.
VC1 Ranco Varifix Thermostat Kit - Compressor Refrigerator	251658
VF3 Ranco Varifix Thermostat Kit - Freezer	251674
VS5 Ranco Varifix Thermostat Kit - Freezer	251704
VT9 Ranco Varifix Thermostat Kit	251755
VX0 Ranco Varifix Thermostat - Larder Refrigerator	251631
Supco General Thermostat -30 / +30 C	F2000

Accessories & Spares

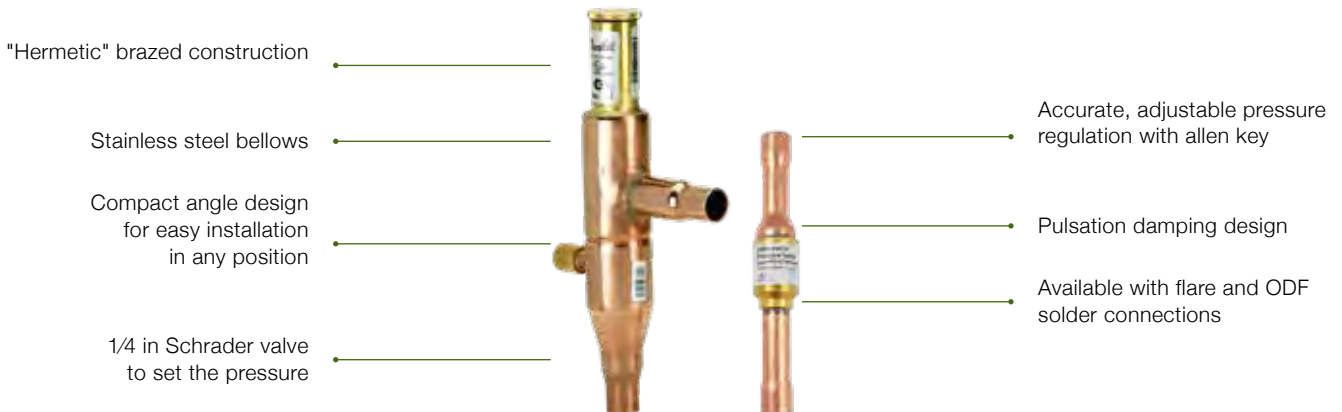
Description	Part No.
Ranco Thermostat Kit C17	252689
Ranco Thermostat Kit VK7	251739



KVR / NRD - Condensing Pressure Regulator / Differential Pressure Valve

Regulating system KVR and NRD is used to maintain a constant and sufficiently high condenser and receiver pressure in refrigeration and air conditioning plant with air-cooled condensers.

KVR can also be used together with receiver pressure regulator, type KVD.



- Accurate, adjustable pressure regulation
- Wide capacity and operating range
- Pulsation damping design
- Stainless steel bellows
- Compact angle design for easy installation in any position
- "Hermetic" brazed construction
- 1/4 in. Schrader valve for pressure gauge connection
- Available with flare and ODF solder connections
- KVR 12 - KVR 22 and NRD: May be used in the following EX range: Category 3 (Zone 2)

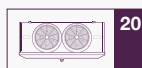
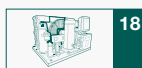
KVR 12, KVR 15, KVR 22, KVR 28, KVR 35, NRD

Type	Rated liquid capacity 1) (Evaporator capacity) [kW]				Rated hot gas 1) (Evaporator capacity) [kW]				Flare connect. 2) (in)	Part No.	Solder Connect. (in)	Part No.
	R22	R134a	R404A/ R507	R407C	R22	R134a	R404A/ R507	R407C				
KVR 12	50.4	47.3	36.6	54.4	13.2	11.6	12.0	14.3	1/2	034L009100	1/2	034L009300
KVR 15	50.4	47.3	36.6	54.4	13.2	11.6	12.0	14.3	5/8	034L009200	5/8	034L009700
KVR 22	50.4	47.3	36.6	54.4	13.2	11.6	12.0	14.3	-	-	7/8	034L009400
KVR 28	129	121	93.7	139.3	34.9	30.6	34.9	37.7	-	-	1 1/8	034L009500
KVR 35	129	121	93.7	139.3	34.9	30.6	34.9	37.7	-	-	1 3/8	034L010000
NRD	-	-	-	-	-	-	-	-	-	-	1/2	020B113200

The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m / s at the inlet of the regulator can give flow noise.

1) Rated capacity is based on: evaporating temperature $t_e = -10\text{ }^\circ\text{C}$ condensing temperature $t_c = 30\text{ }^\circ\text{C}$ pressure drop across the valve $\Delta p = 0.2\text{ bar}$ for liquid capacity $\Delta p = 0.4\text{ bar}$ for hot gas capacity offset = 3 bar. To select the product for other conditions or refrigerants, use Danfoss Coolselector@2.

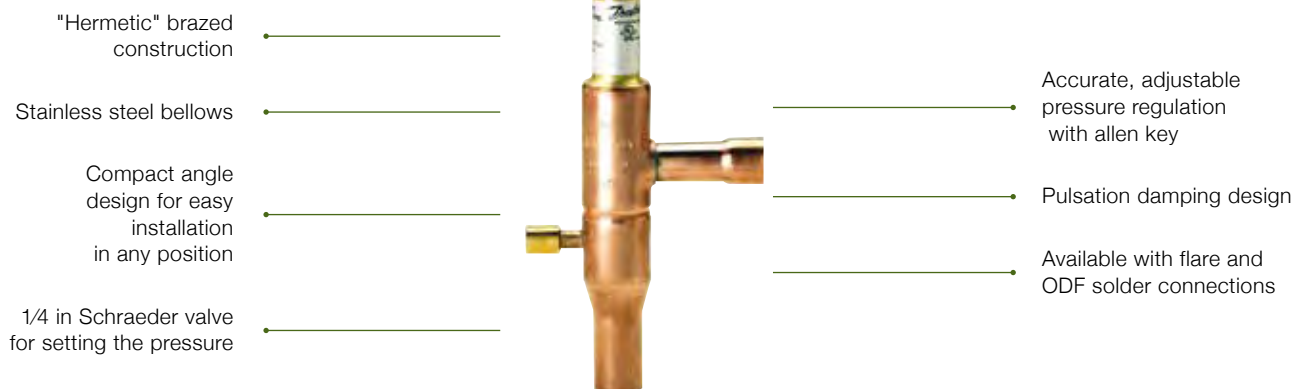
2) KVR are delivered without flare nuts. Separate flare nuts can be delivered: 1/2 in / 12 mm, Part No. 011L1103 - 5/8 in / 16 mm, Part No. 011L1167



KVP Evaporator Pressure Regulator

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

corresponding to a constant temperature on the evaporator. They also protect against too low an evaporating pressure by throttling down when the pressure falls below the set value.



Application:

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

Features:

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

- Wide capacity and operating range
- Regulation range: 0 – 5.5 bar / 0 – 80 psig
- KVP 12 – 22: applicable to R22, R1270, R134a, R290, R404A, R407A, R407C, R407F, R448A, R449A, R450A, R452A, R507A, R513A, R600, R600a
- KVP 12 – 22: May be used in the following EX range: Category 3 (Zone 2)
- KVP 28 – 35: applicable to R22, R134a, R404A, R407A, R407C, R407F, R448A, R449A, R450A, R452A, R507A, R513A
- Maximum working pressure: PS / MWP = 18 bar / 260 psig

KVP 12, KVP 15, KVP 22, KVP 28, KVP 35

Type	R22 [kW]	R22 [TR]	R134a [kW]	R134a [TR]	R404A / R507 [kW]	R404A / R507 [TR]	R407C [kW]	R407C [TR]	Connection type	Connection size	Part No.
KVP 12	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Flare 2) 3)	1/2	034L002100
	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Solder, ODF 3)	1/2	034L002300
KVP 15	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Flare 2) 3)	5/8	034L002200
	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Solder, ODF 3)	5/8	034L002900
KVP 22	4.0	1.3	2.8	0.9	3.6	1.2	3.7	1.2	Solder, ODF 3)	7/8	034L002500
KVP 28	8.6	2.8	6.1	1.9	7.7	2.6	7.9	2.6	Solder, ODF 3)	1 1/8	034L002600
KVP 35	8.6	2.8	6.1	1.9	7.7	2.6	7.9	2.6	Solder, ODF 3)	1 3/8	034L003200

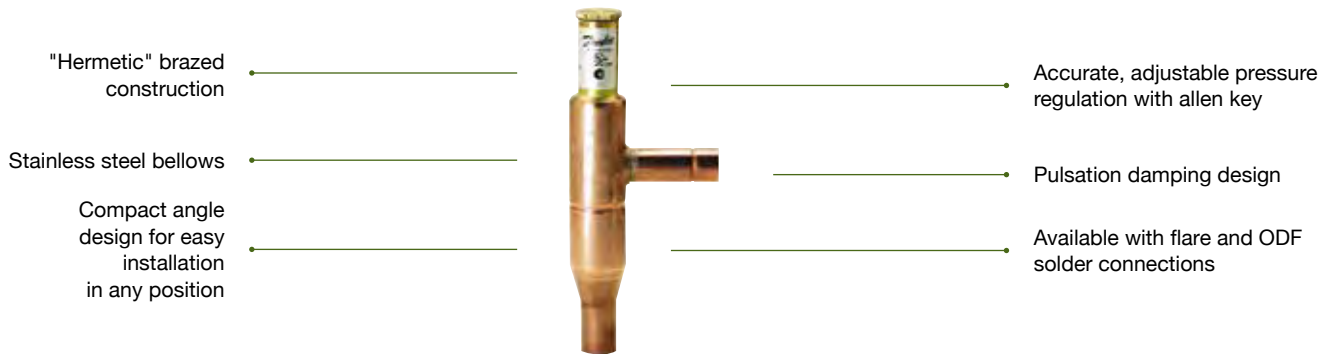
1) Rated capacity is the capacity of the regulator at – Evaporating temperature $t_e = -10\text{ }^\circ\text{C} / 14\text{ }^\circ\text{F}$ – Condensing temperature $t_c = 25\text{ }^\circ\text{C} / 100\text{ }^\circ\text{F}$ – Pressure drop in regulator $\Delta p = 0.2\text{ bar} / 2\text{ psi}$, offset = 0.6 bar / 9 psi 2) Supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - Part No. 011L1103, 5/8 in / 16 mm - Part No. 011L1167. 3) The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m/s at the inlet of the regulator can give flow noise. To select the product for other conditions or refrigerants, use Danfoss Coolselector®2.



KVC Hot Gas Bypass Regulator

KVC are hot gas bypass regulators used for the adaption of the compressor capacity to the actual evaporator load. Placed in a bypass between high and low pressure sides of the refrigeration system, KVC imposes a lower limit on the

compressor suction pressure by supplying the low pressure side with replacement capacity in the form of hot gas/cool gas from the high pressure side.



Application:

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

Features:

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

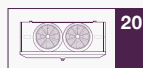
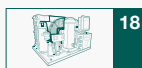
- Compact angle design for easy installation
- Wide capacity and operating range
- Regulation range: 0.2 – 6 bar / 3 – 87 psig
- Maximum working pressure PS / MWP = 28 bar / 406 psig
- Applicable to R22, R1270, R134a, R290, R404A, R407A, R407C, R407F, R448A, R449A, R450A, R452A, R507A, R513A, R600, R600a
- May be used in the following EX range: Category 3 (Zone 2)
- Medium temperature: -45 – 130 °C / -49 – 266 °F

Type	Rated capacity in [kW] / [TR] ¹⁾								Connection type	Connection size	Part No.
	R22		R134a		R404A / R507		R407C				
KVC 12 ²⁾	7.6	2.14	4.8	1.36	6.9	2.02	8.4	2.31	Flare ³⁾	½	034L014100
	7.6	2.14	4.8	1.36	6.9	2.02	8.4	2.31	Solder, ODF ³⁾	½	034L014300
KVC 15 ²⁾	14.9	4.17	9.4	2.65	13.6	3.93	16.4	4.50	Flare ³⁾	¾	034L014200
	14.9	4.17	9.4	2.65	13.6	3.93	16.4	4.50	Solder, ODF ³⁾	¾	034L014700
KVC 22 ²⁾	19.1	5.35	12.0	3.41	17.4	5.04	21.0	5.78	Solder, ODF ³⁾	¾	034L014400

¹⁾ Supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - Part No. 011L1103, 5/8 in / 16 mm - Part No. 011L1167.

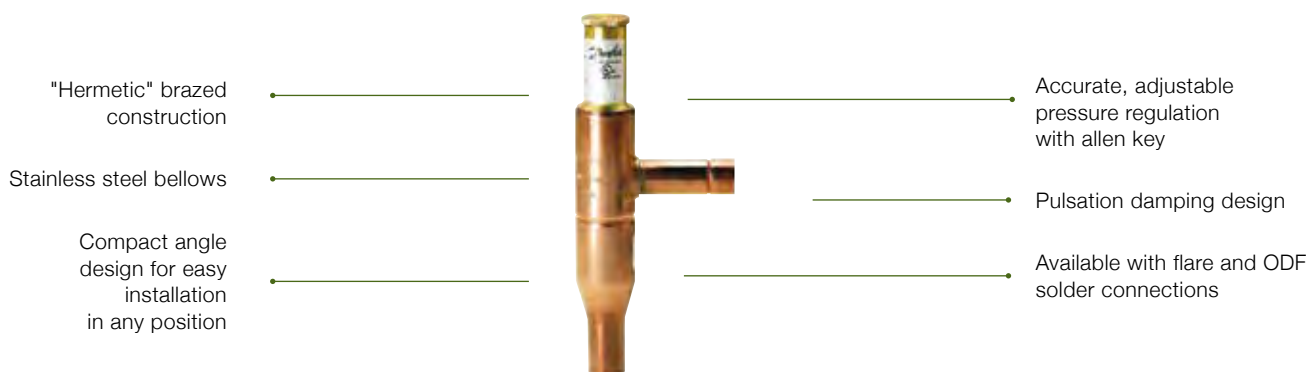
²⁾ The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m/s at the inlet of the regulator can give flow noise.

³⁾ If the discharge temperature becomes too high in relation to the compressor specification, the installation of an injection valve in a bypass between liquid line and compressor suction line is recommended. ⁴⁾ Rated capacity is the capacity of the regulator at: – Evaporating temperature $t_e = -10\text{ °C} / 14\text{ °F}$ – Condensing temperature $t_c = 25\text{ °C} / 77\text{ °F}$



KVL Crankcase Pressure Regulator

KVL crankcase pressure regulator valves are installed in the suction line ahead of the compressor. KVL protects the compressor motor against overload during start-up after long standstill periods or after defrost periods (high pressure in evaporator).



"Hermetic" brazed construction

Stainless steel bellows

Compact angle design for easy installation in any position

Accurate, adjustable pressure regulation with allen key

Pulsation damping design

Available with flare and ODF solder connections



Application:

- Traditional refrigeration
- Air conditioning units
- Transport refrigeration

Features:

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

- KVL 12 – 22: applicable to R22, R1270, R134a, R290, R404A, R407A, R407C, R407F, R448A, R449A, R450A, R452A, R507A, R513A, R600, R600a
- KVL 12 – 22: may be used in the following EX range: Category 3 (Zone 2)
- KVL 28 – 35: applicable to R22, R134a, R404A, R407A, R407C, R407F, R448A, R449A, R450A, R452A, R507A, R513A
- Maximum working pressure: PS / MWP = 18 bar / 261 psig

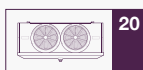
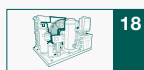
Type	Rated capacity in [kW] / [TR] 1)								Connection type	Connection size	Part No.
	R22 (kW)	R22 (TR)	R134a (kW)	R132a (TR)	R404A / R507 (kW)	R404A / R507 (TR)	R407C (kW)	R407C (TR)			
KVL 12	7.1	1.2	5.3	0.8	6.3	1.0	6.4	1.1	Flare 2)3)	1/2	034L004100
	7.1	1.2	5.3	0.8	6.3	1.0	6.4	1.1	Solder, ODF 3)	1/2	034L004300
KVL 15	7.1	1.2	5.3	0.8	6.3	1.0	6.5	1.1	Flare 2) 3)	5/8	034L004200
	7.1	1.2	5.3	0.8	6.3	1.0	6.5	1.1	Solder, ODF 3)	5/8	034L004900
KVL 22	7.1	1.2	5.3	0.8	6.3	1.0	6.5	1.1	Solder, ODF 3)	7/8	034L004500
KVL 28	17.8	4.1	13.2	2.6	15.9	3.4	16.4	3.8	Solder, ODF 3)	1 1/8	034L004600
KVL 35	17.8	4.1	13.2	2.6	15.9	3.4	16.4	3.8	Solder, ODF 3)	1 3/8	034L005200

1) Rated capacity is the capacity of the regulator at – Evaporating temperature $t_e = -10\text{ }^\circ\text{C} / 14\text{ }^\circ\text{F}$

- Condensing temperature $t_c = 25\text{ }^\circ\text{C} / 100\text{ }^\circ\text{F}$ – Pressure drop in regulator $\Delta p = 0.2\text{ bar} / 2\text{ psi}$

2) Supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in / 12 mm - Part No. 011L1103, 5/8 in / 16 mm - Part No. 011L1167.

3) The connection dimensions chosen must not be too small, since gas velocities in excess of 40 m / s at the inlet of the regulator can give flow noise. To select the product for other conditions or refrigerants, use Danfoss Coolselector®2.



WVFX / WVO / WVS Pressure Operated Water Valves

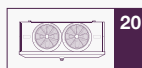
WVFX, WVO and WVS pressure operated water valves are used to regulate the flow of water in refrigeration plant with water-cooled condensers in order to ensure constant proportional regulation of condensing pressure. The water valve modulates the water flow to maintain the condensing pressure at a constant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

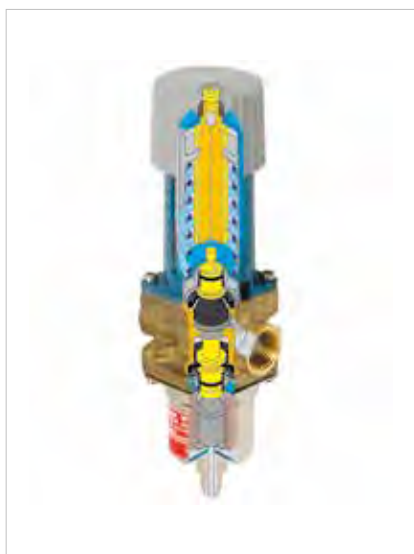
When the refrigeration plant is stopped, the cooling water flow is shut off automatically. Media: fresh water and neutral brine. For use with aggressive media such as sea water, WVFX 15, WVFX 20 and WVFX 25 are available in stainless steel versions.



WVFX / WVO - Pressure Operated Water Valves, Commercial Applications

Type	Connection			Range (refrigerant) [bar]	Part No.
	Water side ISO 228-1	Condenser side (in)	Condenser side (mm)		
WVFX 10	G 3/8	1/4	6 flare	3.5 – 16	003N110000
	G 3/8	1/4	6 flare	4.0 – 23	003N110500
	G 3/8	1/4	6 flare	15.0 – 29.0	003N141000
WVFX 15	G 1/2	1/4	6 flare	3.5 – 16	003N210000
	G 1/2	1/4	6 flare nut	4.0 – 23	003N220500
	G 1/2	1/4	6 flare	4.0 – 23	003N210500
WVFX 20	G 3/4	1/4	6 flare	15.0 – 29.0	003N241000
	G 3/4	1/4	6 flare	3.5 – 16	003N310000
	G 3/4	1/4	6 flare	4.0 – 23	003N310500
WVFX 25	G 3/4	1/4	6 flare nut	4.0 – 23	003N320500
	G 3/4	1/4	6 flare	15.0 – 29.0	003N341000
	G 1	1/4	6 flare	3.5 – 16	003N410000
WVFX 32	G 1	1/4	6 flare	4.0 – 23	003N410500
	G 1	1/4	6 flare	15.0 – 29.0	003N441000
	G 1 1/4	1/4	6 flare	4.0 – 17	003F123200
WVFX 40	G 1 1/2	1/4	6 flare	4.0 – 17	003F124000
WVFX - Pressure operated water valves, with stainless steel housing					
WVFX 15	G 1/2	1/4	6 flare	3.5 – 16	003N210100
	G 1/2	1/4	6 flare	4.0 – 23	003N210400
WVFX 20	G 3/4	1/4	6 flare	4.0 – 23	003N310400
WVFX 25	G 1	1/4	6 flare	3.5 – 16	003N410100
	G 1	1/4	6 flare	4.0 – 23	003N410400
WVO - Pressure operated water valves, commercial applications					
WVO 10	G 3/8	1/4	6 flare	8 – 12	003N520300
	G 3/8	1/4	6 flare	14 – 18	003N520600
	G 3/8	1/4	6 flare	16 – 20	003N520700
WVO 15	G 1/2	1/4	6 flare	14 – 18	003N521600





Applications:

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

Features:

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

- Low flow version - 0.63 m³/h (available on request)
- WVFX 10 – WVFX 40 are direct actuated valves
- WVS 32 – WVS 100 are servo-operated valves
- Very wide media temperature range: -25 – 130 °C
- Versions with capillary tube available on request

- Applicable to R22, R1270, R134a, R290, R404A, R407A, R407C, R407F, R410A ¹⁾, R448A, R449A, R450A, R452A, R507A, R513A, R600, R600a, R717 ²⁾
- ¹⁾ High pressure refrigerants version (45.2 MWP) only
- ²⁾ WVS, WVFX 10 – 25 and WVO with flare connection only; versions with capillary tube or with solder connections are not compatible with R717. WVFX 32 and WVFX 40 are not compatible with R717. May be used in the following EX range: Category 3 (Zone 2)

WVS - Pressure Operated Water Valve Parts Programme

Type	Connection ISO 228-1	Part No.	Part No.	Part No.	Part No.	Part No.
		Valve body	Pilot unit 2)	Pilot unit for R410A and R744 (CO ₂) 2)	Flange set 3)	Servo spring for differential pressure range: 1 – 10 bar
WVS 32	G 1 1/4	016D503200	016D101700	016D101800	–	016D132700
WVS 40	G 1 1/2	016D504000	016D101700	016D101800	–	016D057500
WVS 50	2 in. weld flange	016D505000 1)	016D101700	016D101800	027N305000	016D057600
WVS 65	2 1/2 in. weld flange	016D506500 1)	016D101700	016D101800	027N306500	016D057700
WVS 80	3 in. weld flange	016D508000 1)	016D101700	016D101800	027N308000	016D057800
WVS 100	4 in. weld flange	016D510000 1)	016D101700	016D101800	027N310000	016D057900

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

Accessories

Description	Part No.
1 m capillary tube 1/4 in., 6 mm flare coupling nuts at each end	060-017166
Bracket for WVFX 10 – WVFX 25	003N038800

Johnson Water Valves

Size (inch)	Model N.	Part No.
3/8"	V46AA-9600	392545
1/2"	V46AB-9510	392553
1/2"	V46BB-9600	392677
2"	V46BS-9300	V46BS-9300
3/4"	V46BC-9600	392685
1.1/4"	V46BE-9600	392707

Timers & Time Clocks



Description	Model No.	Part No.
OP-FM1STU00 24 Hour Synchronous Timer Module	OP-FM1STU00	190774
OP-TS111.1 24 Hour Synchronous Timeswitch	OP-TS111.1	190773



Danfoss

Shut-off ball valve
GBC 12s
009L7022
Straightway

1/2 in GPP
PS 45 bar/650 psi

CE EAC



Danfoss

Shut-off ball valve
GBC 12s
009L7022
Straightway

1/2 in GPP
PS 45 bar/650 psi

CE EAC



ball valve

022

Danfoss
MADE IN CHINA

UL LISTED
REFRIGERANT VALVE 5200

CE EAC

Danfoss A/S 6433
Næstved, Denmark

Shut-off ball valve
GBC 12s
009L7022
Straightway

1/2 in GPP
PS 45 bar/650 psi

CE EAC



Shut-off ball valve
GBC 12s
009L7022
Straightway

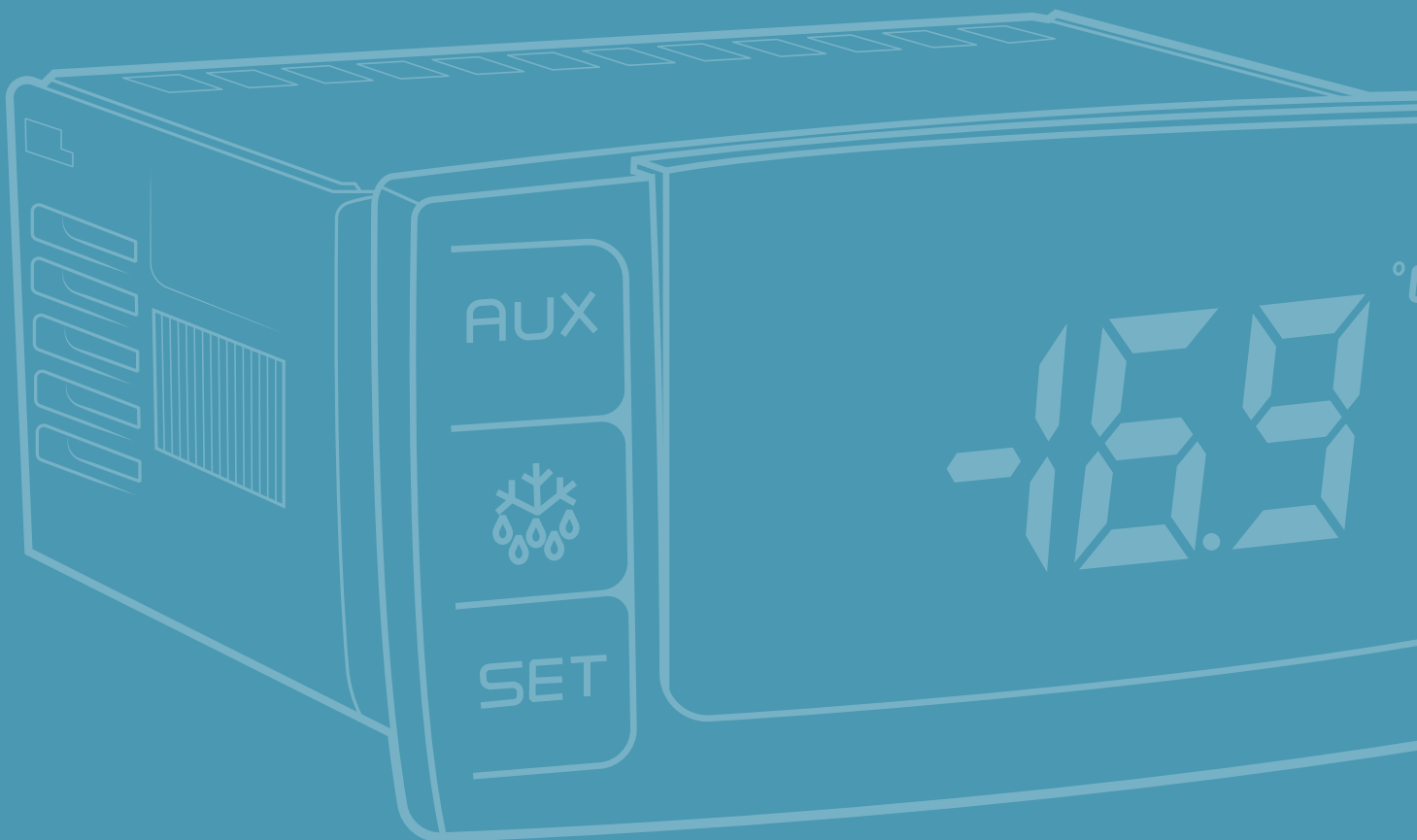
1/2 in GPP
PS 45 bar/650 psi

CE EAC



SECTION TEN

Electronic Controls, Valves & Drives



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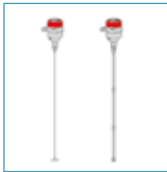
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Fan Speed Controls

Danfoss ETS 6 Electronic Expansion Valve

ETS 6 are compact and lightweight electronic expansion valves. Bi-flow operation is possible for heat pump systems. The valve operation is by means of a unipolar motor, which can be controlled by a number of controllers from Danfoss or third party vendors.

With a Danfoss EKE 1A, EKE 1B, EKE 1C and EIM 336 (current drivers) and an AKS sensor, an accuracy better than ± 0.5 K can be obtained.



Valve Type & Technical Data

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

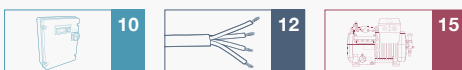
ETS 6 - Valve Excl. Coil

Type	Orifice no.	Nominal Capacity [kW]					Connection (solder)		Valve tube configuration	MWP [bar]	MOPD [bar]	Max. Reverse Pressure ¹⁾ [bar]	Flow direction charact.	Part No.
		R22	R134a	R404A /R507	R407C	R410A	A [mm]	B [mm]						
ETS 6 – 08	08	1.5	1.2	1.1	1.6	1.8	6.35	7.94	90°	47	35	20	Bi-flow	034G509500
ETS 6 – 10	10	2.6	2	1.8	2.7	3.1	7.94	7.94	90°	47	35	35	Bi-flow	034G500500
ETS 6 – 14	14	5.8	4.5	4.1	5.9	6.8	7.94	7.94	90°	47	35	20	Bi-flow	034G501500
ETS 6 – 18	18	10.3	8.1	7.3	10.6	12.1	6.35	6.35	90°	47	35	28	Bi-flow	034G502600
ETS 6 – 25	25	19.6	15.3	13.8	20.1	23	7.94	7.94	90°	47	35	22	Bi-flow	034G503500
ETS 6 – 32	32	28.8	22.5	20.3	29.6	33.9	7.94	7.94	90°	47	28	12 ²⁾	Bi-flow	034G505500
ETS 6 – 40	40	39.1	30.6	27.6	40.2	46	7.94	7.94	90°	47	21	7	Bi-flow	034G506500

Coil for ETS 6

Model No.	Voltage (current)	Enclosure	Insulation Class	Cable length [m]	Connector	Part No.
ETS 6 Coil	12 V DC (0.26A / phase)	IP66	Class "E" (UL Class 105 (A))	0.7	JST XHP-6	034G510500
				0.7	JST XHP-5	034G511500
				1.5	JST XHP-5	034G514500
				2.0	JST XHP 5 1	034G518500
				3.0	JST XHP-5	034G513500
				0.6	AMP UPC- 6	034G517500

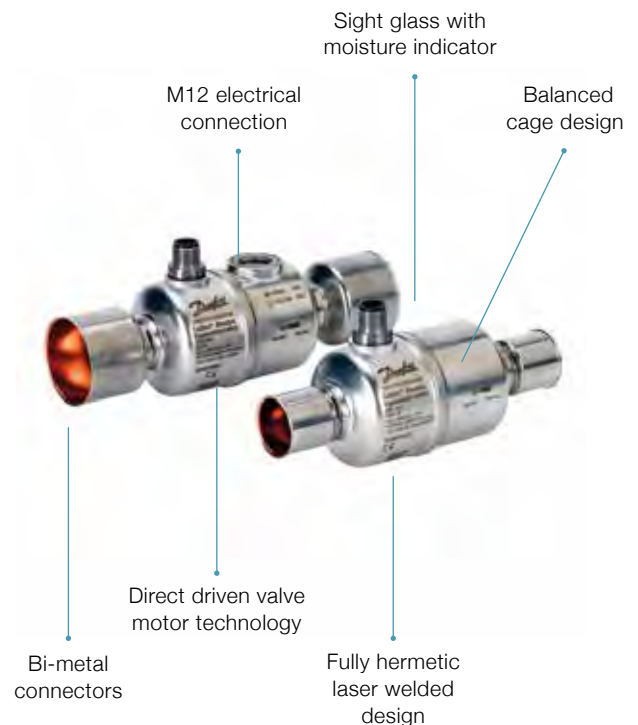
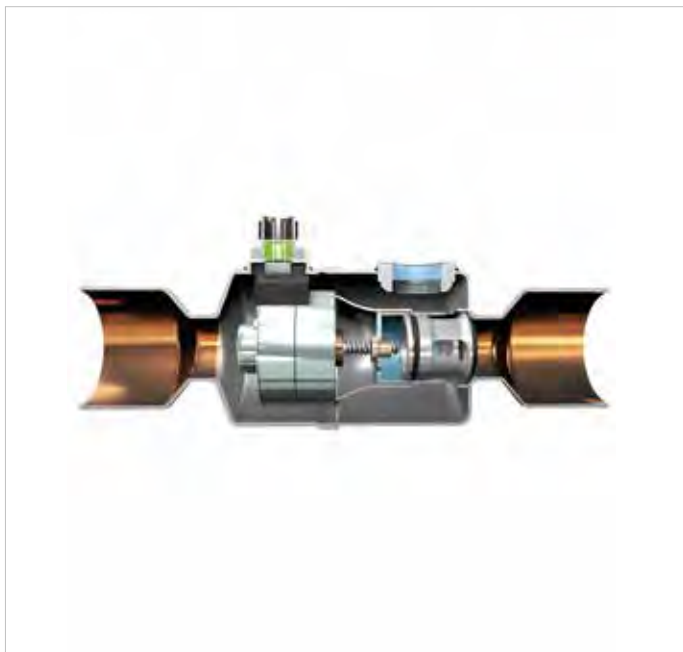
Related products: Electronic control Type EKE 1A, EKE 1B, EKE 1C and EIM 336 (current drivers), Temperature sensors and pressure transmitters Type AKS



Danfoss ETS 12C / ETS 24C / ETS 25C / ETS 50C / ETS 100C Electronic Expansion Valves

ETS Colibri® is an electric stepper motor valve. The valve has been designed for precise liquid injection into evaporators for air conditioning and refrigeration applications. The valves are compact, lightweight and in-line design includes a balanced cage and slider assembly operated by the direct driven motor technology.

This ensures solenoid tight shut-off in both flow directions, thus providing smooth operation of the system. The valve incorporates a powerful bi-polar motor which precisely controls flow regulation. ETS Colibri® valves are compatible with electronic control solutions from Danfoss and other manufacturers.



Applications:

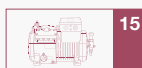
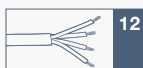
- Air Conditioning
 - Chillers, heat pumps
 - Roof top and ducted split systems
 - VRF and other split systems
 - Close control cooling
- Refrigeration
 - Cold Rooms, Food retail and Transport
- Applicable to R410A, R404A, R507, R134a, R407A, R407B, R407C, R407F, R32, R290, R1234ze, R1234yf, R449A, R449B, R452A, R1270, R600, R600a, R22, R23, R227, R417A, R444B, R447A, R448A, R454B, R422A, R422D, R427A,

R502, R513A, R413A, R438A, R450A, R455B, R454C, R454A, R452B, L40*)
For a fully updated list of approved refrigerants, visit www.products.danfoss.com and search for individual code numbers, where refrigerants are listed as part of product specifications.

Features:

- Precise control of liquid injection
- Linear Flow characteristic
- Higher MOPD and MWP
- ETS Colibri® approvals: CE, REACH, UL, LLC CDC EURO TYSK, EAC, ATEX II 3G Ex nA T6 (applied for)

- Supports variety of refrigerants, approved for oil free applications
- Fast opening/closing time of 4 sec.
- Solenoid tight shut-off
- Sight glass / moisture indicator
- Compact, lightweight and in-line design
- Bi-metal connectors allows fast and improved brazing process
- Internal and external corrosion resistant
- Manufactured according to ISO/TS16949



Valve Type & Technical Data

Refrigerant oil	POE, PVE, All mineral oils, ester oils and supports oil free
Complies with PED	Yes, Fluid group 1*) and group 2.
MOPD	40 bar / 580 psi
Max. working pressure PS/MWP	50 bar(g) / 725 psi(g)
Refrigerant temperature range (measured at the inlet of the valve)	-40 – 70 °C / -40 – 158 °F
Ambient temperature	-40 – 70 °C / -40 – 158 °F
Capacity control range	10% - 100% of total opening degree
Initial opening	5% = 30 full steps
Environmental transport / storage temperature and humidity	Max. +75 °C / 167 °F, Humidity: <100% RH
Material of construction	Body: Stainless Steel / Connector: Bimetal (stainless steel and copper)
Sightglass / moisture indicator	Type N moisture indicator
Motor enclosure	IP67
Stepper motor type	Bi-polar - permanent magnet
Step mode	Microstepping (recommended), 2 phase full step or half step
Phase current	800 mA peak / 600 mA RMS
Holding current	No permanent holding current needed. Max. 20% permanent holding current allowed with refrigerant flow through valve. For optimal performance, driver should keep 100% current on coils 10ms after last step

Phase resistance	10 Ω ±10% at 20 °C / 68 °F
Inductance	14 mH ±25%
Duty cycle	100% possible, requiring refrigerant flow through valve. Less than 50% over 120 sec period recommended
Nominal Power consumption	7.44 W RMS at 20 °C (total, both coils)
Total number of full steps	600
Step rate	Current control driver: a. Step type: Microstep (1/4th or higher): 160 full steps/sec. recommended b. Step type: Full step or Half steps: 50 full steps/sec. recommended Emergency close : 250 full steps/sec. OEMs with 3rd party controller, please contact Danfoss.
Step translation	0.0167 mm / step
Full travel time	3.75 at 160 steps/sec
Opening stroke	10 mm / 0.4 in.
Reference position	Overdriving against the full close position
Overdriving performance	1% (6 full steps) Overdrive is recommended for optimum performance 628 steps in closing direction recommended for initialisation Overdriving in open position not recommended
Electrical connection	According to EN 61076-2-101
Compatible controllers / driver	Danfoss EKE 1A, EKE 1B, EKE 1C, MCX061V, MCX152V Certain third party controllers / drivers. Contact Danfoss for details

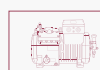
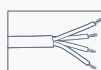
*) Variants with connector size 1-1/8 in. and smaller.

ETS Colibri - Without Sight Glass



Type	K _v value [m ³ /h]	C _v value [gpm]	Rated capacity ¹⁾										Connection		Part No. single pack
			R410A		R407C		R1234ze		R134a		R290		ODF × ODF (A × B)		
			[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	
ETS 12C	0.60	0.69	105	29.8	95.1	27.0	53.6	15.2	68.0	19.0	91.0	26.0	½ × ½	–	034G750000
	0.60	0.69	105	29.8	95.1	27.0	53.6	15.2	68.0	19.0	91.0	26.0	¾ × ¾	16 × 16	034G750100
	0.60	0.69	105	29.8	95.1	27.0	53.6	15.2	68.0	19.0	91.0	26.0	7/8 × 7/8	22 × 22	034G750200
ETS 24C	1.20	1.39	170	48.5	155	44.0	87.3	24.8	111	31.5	149	42.0	½ × ½	–	034G790000
	1.20	1.39	170	48.5	155	44.0	87.3	24.8	111	31.5	149	42.0	¾ × ¾	16 × 16	034G790100
	1.20	1.39	170	48.5	155	44.0	87.3	24.8	111	31.5	149	42.0	7/8 × 7/8	22 × 22	034G790200

¹⁾ The above estimated capacities, are based on the following conditions: Evaporating temperature t_e : 5 °C / 40 °F Liquid temperature t_l : 28 °C / 82 °F Condensing temperature t_c : 32 °C / 90 °F. Full stroke opening in normal flow direction. Capacity is ± 10% in full open state in reverse flow direction. Note: for fast and precise selection of valve, use Danfoss' CoolSelector2® software. You can download it from <http://coolselector.danfoss.com>



ETS Colibri - With Sight Glass



Type	K _v value [m ³ /h]	C _v value [gpm]	Rated capacity ¹⁾										Connection		Part No. single pack
			R410A		R407C		R1234ze		R134a		R290		ODF × ODF (A × B)		
			[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	
ETS 25C	1.20	1.39	170	48.5	155	44.0	87.3	24.8	111	31.5	149	42.0	7/8 × 7/8	22 × 22	034G760200
ETS 50C	2.50	2.89	323	92.0	294	83.5	166	47.1	210	59.7	282	80.0	7/8 × 7/8	22 × 22	034G770000
	2.50	2.89	323	92.0	294	83.5	166	47.1	210	59.7	282	80.0	7/8 × 1 1/8	22 × 28	034G770100
	2.50	2.89	323	92.0	294	83.5	166	47.1	210	59.7	282	80.0	1 1/8 × 1 1/8	28 × 28	034G770200
	2.50	2.89	323	92.0	294	83.5	166	47.1	210	59.7	282	80.0	1 1/8 × 1 1/8	28 × 35	034G770300
ETS 100C	5.00	5.78	635	181	577	164	325	92.5	413	117	554	157	1 1/8 × 1 1/8	28 × 28	034G780000
	5.00	5.78	635	181	577	164	325	92.5	413	117	554	157	1 1/8 × 1 1/8	28 × 35	034G780100
	5.00	5.78	635	181	577	164	325	92.5	413	117	554	157	1 3/8 × 1 3/8	35 × 35	034G780200
	5.00	5.78	635	181	577	164	325	92.5	413	117	554	157	1 3/8 × 1 3/8	-	034G780300

¹⁾ The above estimated capacities, are based on the following conditions: Evaporating temperature t_e : 5 °C / 40 °F Liquid temperature t_l : 28 °C / 82 °F Condensing temperature t_c : 32 °C / 90 °F. Full stroke opening in normal flow direction. Capacity is ± 10% in full open state in reverse flow direction. Note: for fast and precise selection of valve, use Danfoss' CoolSelector2® software. You can download it from <http://coolselector.danfoss.com>

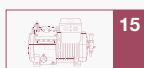
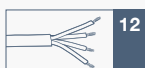
M12 Angle Cable



Jacket	PVC Black
Cable outer sheath	Oil - resistant
Water proof rating	IP 67
Operating temperature range	-40 – 80 °C
Wire type	Twisted pair, cross section 20 AWG / 0.5 mm ²
Cable outer diameter	7.0 mm
Minimum bending radius	10 x cable diameter
Cable combustibility / test	Flame retardant / VW-1 / CSA FT - 1
M12 standard	EN 61076-2-101
Reference standard	UL style 2464 and DIN VDE 0812
LVD directive	2014/35/EU
Approval	CE, RoHS, UL, EAC, LLC CDC EURO TYSK

Cable	Cable length (L)	Insulation	Packing format	Part No.
PVC - Black	2 m / 6.6 ft	SR-PVC	Single pack	034G707300
PVC - Black	8 m / 26.2 ft	SR-PVC	Single pack	034G707400

Caution: M12 angle cable is not approved for flammable applications.



Danfoss ETS 12.5 - ETS 400 Electronic Expansion Valves

ETS 12.5 - ETS 400 are electronic expansion valves for precise liquid injection in evaporators for air conditioning and refrigeration applications. The valve piston and linear positioning design is fully balanced, providing bi-flow feature

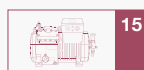
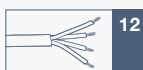
as well as solenoid tight shut function in both flow directions. ETS valves are operated with a current or voltage driver such as Danfoss Controllers EKE 1A, EKE 1B, EKE 1C, MCX.

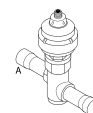


Valve Type & Technical Data

Refrigerant oil	All mineral oils and ester oils. Full life time of ETS can only be ensured if oil is present in the system
PED compliance	Yes
MOPD normal flow	33 bar / 479 psig
MOPD reverse flow	ETS 12.5, ETS 25, ETS 50, ETS 100: 33 bar / 479 psig ETS 250, ETS 400: 10 bar / 145 psig
Max. working pressure (PS / MWP)	ETS 12.5, ETS 25, ETS 50, ETS 100: 45.5 bar / 660 psig ETS 250, ETS 400: 34 bar / 493 psig
Refrigerant temperature range	-40 – 65 °C / -40 – 150 °F
Ambient temperature	-40 – 60 °C / -40 – 150 °F
Material of construction	ETS 50, ETS 100: Body and AST enclosure in brass, connections in bi-metal (stainless steel / copper) ETS 12.5, ETS 250, ETS 400: Body and AST enclosure in brass, connections in copper
Motor enclosure	IP67
Stepper motor type	Bi-polar - permanent magnet
Step mode	2 phase full step
Phase resistance	52 Ω ±10%
Phase inductance	85 mH

Holding current	Depends on application. Full current allowed (100% duty cycle)
Step angle	7.5° (motor) 0.9° (lead screw) Gearing ratio 8.5:1
Nominal voltage	(Constant voltage drive) 12 V DC -4% / 15%, 150 steps / second
Phase current	(Using chopper drive) 100 mA RMS -4% / 15%
Max. total power	Voltage / current drive: 5.5 / 1.3 W (UL: NEC class 2)
Step rate	150 steps / sec (constant voltage drive). 0-300 steps / sec 300 recommended (chopper current drive)
Total steps	ETS 12.5, ETS 25, ETS 50 2625 (160 / 0) steps ETS 100 3530 (160 / 0) steps ETS 250, ETS 400 3810 (160 / 0) steps
Full travel time	ETS 12.5, ETS 25, ETS 50 17 / 8.5 secs (volt / current) ETS 100 23 / 11.5 secs (volt / current) ETS 100 23 / 11.5 secs (volt / current)
Lifting height	ETS 12.5, ETS 25, ETS 50 13 mm / 0.5 in ETS 100 16 mm / 0.63 in ETS 250 and ETS 400 17.2 mm / 0.68 in
Reference position	Overdriving against the full close position
Electrical connection	M12 connector

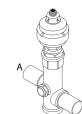




ETS 12.5 / ETS 25 - Valve Included Actuator (Without Sight Glass)

Type	Rated capacity ¹⁾										Connection		Part no.
	R410A		R407C		R22		R134a		R404A		ODF × ODF (A × B)		
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	
Straightway, Single pack													
ETS 12.5	70	20	63	18	57	16	45	13	43	12	1/2 × 1/2	–	034G420900
	70	20	63	18	57	16	45	13	43	12	–	12 × 12	034G420800
	70	20	63	18	57	16	45	13	43	12	5/8 × 5/8	16 × 16	034G421000
	70	20	63	18	57	16	45	13	43	12	7/8 × 7/8	22 × 22	034G421100
ETS 25	144	41	129	37	117	34	93	27	88	25	1/2 × 1/2	–	034G420100
	144	41	129	37	117	34	93	27	88	25	–	12 × 12	034G420000
	144	41	129	37	117	34	93	27	88	25	5/8 × 5/8	16 × 16	034G420200
	144	41	129	37	117	34	93	27	88	25	7/8 × 7/8	22 × 22	034G420300
Angleway, Single pack													
ETS 12.5	70	20	63	18	57	16	45	13	43	12	1/2 × 1/2	–	034G421300
	70	20	63	18	57	16	45	13	43	12	–	12 × 12	034G421200
	70	20	63	18	57	16	45	13	43	12	5/8 × 5/8	16 × 16	034G421400
	70	20	63	18	57	16	45	13	43	12	7/8 × 7/8	22 × 22	034G421500
ETS 25	144	41	129	37	117	34	93	27	88	25	1/2 × 1/2	–	034G420500
	144	41	129	37	117	34	93	27	88	25	–	12 × 12	034G420400
	144	41	129	37	117	34	93	27	88	25	5/8 × 5/8	16 × 16	034G420600
	144	41	129	37	117	34	93	27	88	25	7/8 × 7/8	22 × 22	034G420700

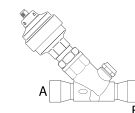
¹⁾ The rated capacity is based on: Evaporating temperature te : 5 °C / 41 °F Liquid temperature tl : 28 °C / 82 °F Condensing temperature tc : 32 °C / 90 °F
Full stroke opening in normal flow direction.



ETS 50 / ETS 100 - Valve Included Actuator (With Sight Glass)

Type	Rated capacity ¹⁾										Connection		Part no.
	R410A		R407C		R22		R134a		R404A		ODF × ODF (A × B)		
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	
ETS 50	262	75	240	69	215	62	170	48	161	46	7/8 × 7/8	22 × 22	034G170800
	262	75	240	69	215	62	170	48	161	46	7/8 × 1 1/8	22 × 28	034G170500
	262	75	240	69	215	62	170	48	161	46	1 1/8 × 1 1/8	28 × 28	034G170600
	262	75	240	69	215	62	170	48	161	46	1 1/8 × 1 3/8	28 × 35	034G170400
ETS 100	488	140	447	128	400	115	316	91	300	86	1 1/8 × 1 1/8	28 × 28	034G050700
	488	140	447	128	400	115	316	91	300	86	1 1/8 × 1 3/8	28 × 35	034G050100
	488	140	447	128	400	115	316	91	300	86	1 3/8 × 1 3/8	35 × 35	034G050800
	488	140	447	128	400	115	316	91	300	86	1 3/8 × 1 1/2	–	034G050500

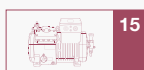
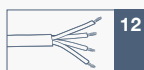
¹⁾ The rated capacity is based on: Evaporating temperature te : 5 °C / 41 °F Liquid temperature tl : 28 °C / 82 °F Condensing temperature tc : 32 °C / 90 °F
Full stroke opening in normal flow direction.



ETS 250 / ETS 400 - Valve Included Actuator (With Sight Glass)

Type	Rated capacity ¹⁾								Connection		Part no.
	R407C		R22		R134a		R404A		ODF × ODF (A × B)		
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[in]	[mm]	
ETS 250	1212	349	1106	319	874	252	828	239	1 1/8 × 1 1/8	28 × 28	034G260000
	1212	349	1106	319	874	252	828	239	1 1/8 × 1 3/8	35 × 35	034G260100
	1212	349	1106	319	874	252	828	239	1 3/8 × 1 3/8	–	034G260200
	1212	349	1106	319	874	252	828	239	–	42 × 42	034G261100
ETS 400	1933	556	1764	509	1394	402	1320	381	1 3/8 × 1 3/8	–	034G350000
	1933	556	1764	509	1394	402	1320	381	2 1/8 × 2 1/8	54 × 54	034G350100

¹⁾ The rated capacity is based on: Evaporating temperature te : 5 °C / 41 °F Liquid temperature tl : 28 °C / 82 °F Condensing temperature tc : 32 °C / 90 °F
Full stroke opening in normal flow direction.



Cable

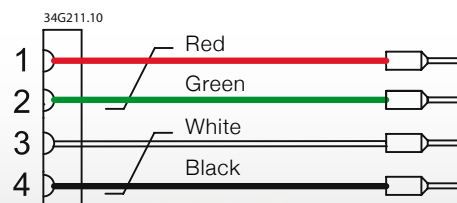
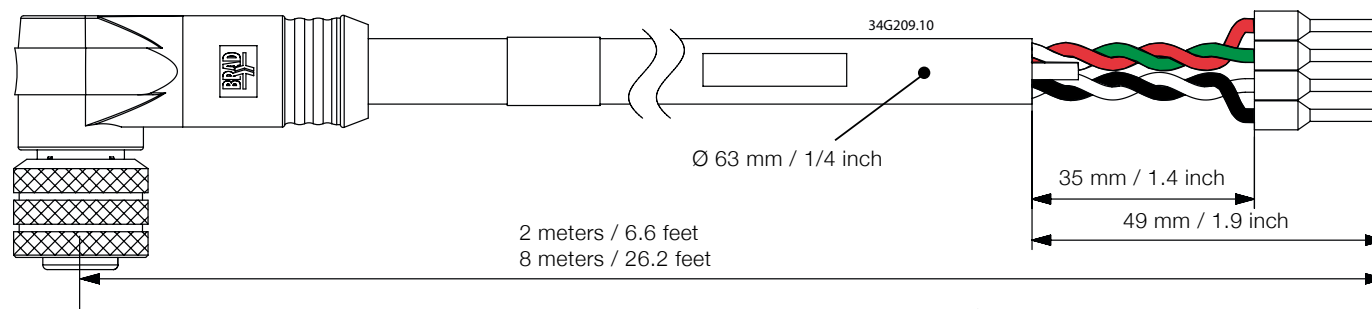


Type	Cable length (L)	Insulation	Packing format	Part No.
PVC - Black	2 m / 6.6 ft	SR-PVC	Single pack	034G707300
	8 m / 26.2 ft	SR-PVC	Single pack	034G707400

Caution: M12 angle cable is not approved for flammable applications.

Accessories

Type	Description	Type designation	Part No.
AST-G service driver	Hand held driver for installation and servicing.	AST-G driver	034G001300



Danfoss AKV 10P / AKV 10PS Electronic Expansion Valves

AKV 10P and **AKV 10PS** are electronic operated expansion valves designed for refrigerating plants. The AKV 10P and AKV 10PS valves are normally controlled by a controller from Danfoss range of ADAP- KOOL® controllers, that ensures a

precise liquid injection into evaporators. AKV 10P and AKV 10PS valves are fully serviceable valves and are supplied as a parts programme with separate valve body and coil (with terminal box, cable or DIN plug).



Applications:

- Traditional refrigeration
- Cold rooms
- Water chillers
- Applicable to R744, R22, R23, R134a, R404A, R407A, R407C, R407F, R410A, R422B, R422D, R448A, R449A, R449B, R450A, R452A, R507, R513A
- For a fully updated list of approved refrigerants, visit www.products.danfoss.com and search for individual code numbers, where refrigerants are listed as part of product specifications.
- Precise control of liquid injection
- The AKV 10P/10PS valves cover a capacity range from 0.2 – 12.5 kW / 0.06 – 3.55 TR (404A / R507) and are divided into 8 capacity ranges
- Supports variety of refrigerants
- Solenoid tight shut-off
- Fully serviceable valve
- Superior valve technology that provides soft pulse operation
- Approvals: REACH, UL, LLC CDC EURO TYSK, EAC
- The AKV 10P/10PS valves are supplied as a parts programme, as follows:
 - separate valve incl. exchangeable orifice
 - separate coil
- The valve requires no adjustment
- Manufactured according to ISO/TS16949

Direct Operated Valve for AKV 10P

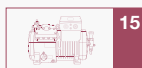
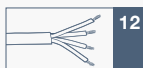
Valve type	AKV 10P0 to AKV 10P7
Working principle	PWM (Pulse-width modulation)
Recommended period of cycle time	6 Seconds
Regulation range (Capacity range)	10 – 100%
Connection type	Solder
Evaporating temperature	-60 – 60 °C / -76 – 140 °F
Ambient temperature	-50 – 50 °C / -58 – 122 °F
MOPD, AKV 10P0 to AKV 10P6	35 bar / 508 psig
MOPD, AKV 10P7	18 bar / 261 psi
Min. OPD, AKV 10P0 to AKV 10P7	0 bar / 0 psi
Filter, replaceable	Internal 100 µm
Max. working pressure	90 barg / 1305 psig
MAP (Max. Abnormal Pressure)	1305 psig
COT (Continuous Operation Temperature)	140 °F

Note: It is recommended to selected Servo operated AKV 10PS valves for those application where higher MOPD (with low coil power) and high dampening is required.

Servo Operated Valve for AKV 10PS

Valve type	AKV 10PS4 to AKV 10PS7
Working principle	PWM (Pulse-width modulation)
Recommended period of cycle time	6 Seconds
Regulation range (Capacity range)	10 – 100%
Connection type	Solder
Evaporating temperature	-60 – 60 °C / -76 – 140 °F
Ambient temperature	-50 – 50 °C / -58 – 122 °F
MOPD	35 bar / 508 psig
Min. OPD, AKV 10PS4 to AKV 10PS7	0.1 bar / 1.45 psi
Filter, replaceable	Internal 53 µm
Max. working pressure	90 barg / 1305 psig
MAP (Max. Abnormal Pressure)	1305 psig
COT (Continuous Operation Temperature)	140 °F
Recommended Danfoss Drier	ELIMINATOR® Hermetic filter drier, type DML / DMSC

Note: It is recommended to selected Servo operated AKV 10PS valves for those application where higher MOPD (with low coil power) and high dampening is required.



AKV 10P Electronic Expansion Valves

Valve type / orifice No.	R744 2)				R407A 1)		R404A/ R507 1)		Kv value	Cv value	Connection size Solder ODF/ODF		Part No.
	Refrig. [kW]	Freezing [kW]	Refrig. [TR]	Freezing [TR]	[kW]	[TR]	[kW]	[TR]	[m ³ /h]	[gpm]	[in]	[mm]	
AKV 10P0	0.44	0.69	0.13	0.20	0.34	0.10	0.21	0.06	0.003	0.0035	3/8 x 1/2	-	068F521000
AKV 10P0	0.44	0.69	0.13	0.20	0.34	0.10	0.21	0.06	0.003	0.0035	-	10 x 12	068F520000
AKV 10P1	1.17	1.84	0.33	0.53	0.90	0.26	0.8	0.23	0.09	0.104	3/8 x 1/2	-	068F521100
AKV 10P1	1.17	1.84	0.33	0.53	0.90	0.26	0.8	0.23	0.09	0.104	-	10 x 12	068F520100
AKV 10P2	2.06	3.25	0.59	0.93	1.59	0.45	1.3	0.37	0.016	0.021	3/8 x 1/2	-	068F521200
AKV 10P2	2.06	3.25	0.59	0.93	1.59	0.45	1.3	0.37	0.016	0.021	-	10 x 12	068F520200
AKV 10P3	3.14	4.97	0.90	1.41	2.43	0.69	2.0	0.57	0.024	0.028	3/8 x 1/2	-	068F521300
AKV 10P3	3.14	4.97	0.90	1.41	2.43	0.69	2.0	0.67	0.024	0.028	-	10 x 12	068F520300
AKV 10P4	6.10	9.64	1.74	2.75	4.71	1.34	3.1	0.88	0.046	0.053	3/8 x 1/2	-	068F521400
AKV 10P4	6.10	9.64	1.74	2.75	4.71	1.34	3.1	0.88	0.046	0.053	-	10 x 12	068F520400
AKV 10P5	8.49	13.4	2.42	3.82	6.55	1.87	4.9	1.39	0.064	0.074	3/8 x 1/2	-	068F521500
AKV 10P5	8.49	13.4	2.42	3.82	6.55	1.87	4.9	1.39	0.064	0.074	-	10 x 12	068F520500
AKV 10P6	15.1	23.9	4.31	6.81	11.7	3.32	7.8	2.22	0.114	0.132	3/8 x 1/2	-	068F521600
AKV 10P6	15.1	23.9	4.31	6.81	11.7	3.32	7.8	2.22	0.114	0.132	-	10 x 12	068F520600
AKV 10P7	24.6	39.3	7.00	11.1	18.9	5.39	12.5	3.55	0.185	0.214	1/2 x 5/8	-	068F521700
AKV 10P7	24.6	39.3	7.00	11.1	18.9	5.39	12.5	3.55	0.185	0.214	-	12 x 16	068F520700

AKV 10PS Electronic Expansion Valves

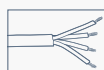
Valve type / orifice No.	R744 2)				R407A 1)		R404A/ R507 1)		Kv value	Cv value	Connection size Solder ODF/ODF		Part No.
	Refrig. [kW]	Freezing [kW]	Refrig. [TR]	Freezing [TR]	[kW]	[TR]	[kW]	[TR]	[m ³ /h]	[gpm]	[in]	[mm]	
AKV 10PS4	6.10	9.64	1.74	2.75	4.71	1.34	3.1	0.88	0.046	0.053	3/8 x 1/2	-	068F404400
AKV 10PS4	6.10	9.64	1.74	2.75	4.71	1.34	3.1	0.88	0.046	0.053	-	10 x 12	068F403400
AKV 10PS5	8.49	13.4	2.42	3.82	6.55	1.87	4.9	1.39	0.064	0.074	3/8 x 1/2	-	068F404500
AKV 10PS5	8.49	13.4	2.42	3.82	6.55	1.87	4.9	1.39	0.064	0.074	-	10 x 12	068F403500
AKV 10PS6	15.1	23.9	4.31	6.81	11.7	3.32	7.8	2.22	0.114	0.132	3/8 x 1/2	-	068F404600
AKV 10PS6	15.1	23.9	4.31	6.81	11.7	3.32	7.8	2.22	0.114	0.132	-	10 x 12	068F403600
AKV 10PS7	24.6	39.3	7.00	11.1	18.9	5.39	12.5	3.55	0.185	0.214	1/2 x 5/8	-	068F404700
AKV 10PS7	24.6	39.3	7.00	11.1	18.9	5.39	12.5	3.55	0.185	0.214	-	10 x 16	068F403700

1) Rated capacities are based on: Condensing temperature $t_c = 38\text{ }^\circ\text{C} / 100\text{ }^\circ\text{F}$ Liquid temperature $t_l = 37\text{ }^\circ\text{C} / 98\text{ }^\circ\text{F}$ Evaporating temperature $t_e = 4\text{ }^\circ\text{C} / 39\text{ }^\circ\text{F}$

2) Rated capacities are based on: Condensing temperature $t_c = 0\text{ }^\circ\text{C} / 32\text{ }^\circ\text{F}$ Evaporating temperature Refrig. $t_e = -10\text{ }^\circ\text{C} / 14\text{ }^\circ\text{C}$ Evaporating temperature Freezing. $t_e = -30\text{ }^\circ\text{C} / -22\text{ }^\circ\text{F}$ Subcooling = $1\text{ }^\circ\text{C} / 1.8\text{ }^\circ\text{F}$ CV value is calculated from Kv value in above table

Spare Parts

Kit	Description	Part No.
Kit 1	Orifice kit direct operated AKV 10P0-3	068F515100
Kit 2	Orifice kit direct operated AKV 10P4-7	068F515200
Kit 3	Armature kit direct operated AKV 10P0-7	068F515300
Kit 4	Filter kit direct operated AKV 10P	068F515400
Kit 5	Orifice kit servo operated AKV 10PS4-7	068F515500
Kit 6	Filter kit servo operated AKV 10PS	068F515600
Kit 7	Armature kit servo operated AKV 10PS4-7	068F516100



Standard Coil for AKV 10P / AKV 10PS

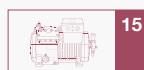
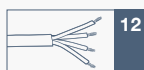


Coil type	MOPD (Max. Operation Pressure Differential)			Connection	Multi pack Part No.	Industrial pack Part No.
	Voltage [V AC]	Frequency [Hz]	Power consumption [W]			
BE230CS	230	50	17	terminal box	018F673200	-
BE230CS	230	50	17	DIN plugs	018F619300	-
BF230CS	230	50	17	1 m cable	018F628200	018F823200
BF230CS	230	50	17	3 m cable	-	018F829000
BF230CS	230	50	17	8 m cable	018F496100	018F829100
BE240CS	240	60	15	terminal box	018F671300	-
BE240CS	240	60	15	terminal box	018F681400	-
BE240CS	240	60	15	1 m cable	018F626400	-
BG110BS	240	60	15	terminal box	018F681300	-

UL Coil for AKV 10P / AKV 10PS



Coil type	Wire length		Voltage	Frequency	Power consumption	Part No.
	[in]	[cm]	[V AC]	[Hz]	[W]	
Junction box NEMA 2 for AKV 10P / AKV 10PS						
BJ024CS	-	-	24	50 / 60	14	018F410000
BJ120CS	-	-	110	50	16	018F411000
BJ120CS	-	-	120	60	15	-
BJ240CS	-	-	208 - 240	60	14	018F412000
BJ240CS	-	-	230	50	17	-
Conduit boss NEMA 4 for AKV 10P / AKV 10PS						
BX024CS	18	46	24	50 / 60	14	018F410200
BX024CS	71	180	24	50 / 60	14	018F410300
BX024CS	98	250	24	50 / 60	14	018F410400
BX120CS	18	46	110	50	16	018F411200
BX120CS	18	46	120	60	15	-
BX120CS	36	91	110	50	16	018F411300
BX120CS	36	91	120	60	15	-
BX120CS	71	180	110	50	16	018F411400
BX120CS	71	180	120	60	15	-
BX120CS	98	250	110	50	16	018F411500
BX120CS	98	250	120	60	15	-
BX240CS	18	46	208 - 240	60	14	018F412200
BX240CS	98	250	230	50	17	-
BX240CS	18	46	208 - 240	60	14	018F412300
BX240CS	98	250	230	50	17	-



Danfoss AKV 15 / AKV 20 Electronic Expansion Valves

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

The AKV valves are supplied as a parts programme with separate valve body and coil (with terminal box, cable or DIN plug). AKV has an exchangeable orifice.



Available with ODF solder connections (AKV 15 and AKV 20 – straightway).

The orifice assembly is replaceable

Both expansion valve and solenoid valve

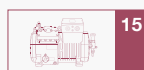
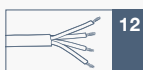
Technical Data

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

AKV 15 - Valve Excluding Coil

Valve type	Rated capacity ¹⁾								Kv value [m ³ /h]	Cv value [gpm]	Connections	
	R22 / R407C		R134a		R404A / R507		R407C				Solder ODF	
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]			Inlet x outlet [in]	Part no.
Solder ODF [in]												
AKV 15 – 1	25.5	7.25	21.2	6.02	19.6	5.57	25.2	7.16	0.25	0.28	¾ x ¾	068F500000
AKV 15 – 2	40.8	11.6	33.8	9.61	31.4	8.92	40.4	11.4	0.40	0.46	¾ x ¾	068F500500
AKV 15 – 3	64	18.2	53	15.1	49.4	14.0	63	18.1	0.63	0.72	7/8 x 7/8	068F501000
AKV 15 – 4	102	29.0	84	24.0	78	22.2	101	28.7	1.0	1.15	1 ½ x 1 ½	068F501500
Solder ODF [mm]												
AKV 15 – 1	25.5	7.25	21.2	6.02	19.6	5.57	25.2	7.16	0.25	0.28	18 x 18	068F500100
AKV 15 – 2	40.8	11.6	33.8	9.61	31.4	8.92	40.4	11.4	0.40	0.46	18 x 18	068F500600
AKV 15 – 3	64	18.2	53	15.1	49.4	14.0	63	18.1	0.63	0.72	22 x 22	068F501000
AKV 15 – 4	102	29.0	84	24.0	78	22.2	101	28.7	1.0	1.15	28 x 28	068F501600

¹⁾ The Rated capacity is based on: Evaporating temperature te: 5 °C / 41 °F Liquid temperature tl: 28 °C / 82 °F Condensing temperature tc: 32 °C / 90 °F



Electronic Expansion Valves

AKV 20 - Valve Excluding Coil

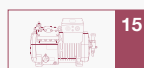
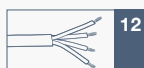
Valve type	Rated capacity ¹⁾								Kv value	Cv value	Connections	
	R22 / R407C		R134a		R404A / R507		R407C				Solder ODF	
	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[kW]	[TR]	[m ³ /h]	[gpm]	Inlet x outlet [in]	Part no.
Solder ODF [in]												
AKV 20 - 1	102	29	84	24	78	22.2	101	28.7	1	1.15	1 3/8 x 1 3/8	042H202000
AKV 20 - 2	163	46.3	135	38.3	125	35.5	170	48.3	1.6	1.85	1 3/8 x 1 3/8	042H202200
AKV 20 - 3	255	72	212	60	196	55	252	71	2.5	2.89	1 5/8 x 1 5/8	042H202400
AKV 20 - 4	408	116	338	96	314	89	404	114	4	4.62	2 1/8 x 2 1/8	042H202700
AKV 20 - 5	643	182	533	151	494	140	637	181	6.3	7.28	2 1/8 x 2 1/8	042H202900
Solder ODF [mm]												
AKV 20 - 1	102	29	84	24	78	22.2	101	28.7	1	1.15	35 x 35	042H202000
AKV 20 - 2	163	46.3	135	38.3	125	35.5	170	48.3	1.6	1.85	35 x 35	042H202200
AKV 20 - 3	255	72	212	60	196	55	252	71	2.5	2.89	42 x 42	042H202500
AKV 20 - 4	408	116	338	96	314	89	404	114	4	4.62	54 x 54	042H202700
AKV 20 - 5	643	182	533	151	494	140	637	181	6.3	7.28	54 x 54	042H202900
Weld [in]												
AKV 20 - 1	102	29	84.6	24	78	22.2	101	28.7	1	1.15	1 1/4 x 1 1/4	042H202100
AKV 20 - 2	163	46.3	135	38.3	125	35.5	170	48.3	1.6	1.85	1 1/4 x 1 1/4	042H202300
AKV 20 - 3	255	72	212	60	196	55	252	71	2.5	2.89	1 1/4 x 1 1/4	042H202600
AKV 20 - 4	408	116	338	96	314	89	404	114	4	4.62	1 1/2 x 1 1/2	042H202800
AKV 20 - 5	643	182	533	151	494	140	637	181	6.3	7.28	2 x 2	042H203000

1) The Rated capacity is based on: Evaporating temperature te: 5 °C / 41 °F Liquid temperature tl: 28 °C / 82 °F Condensing temperature tc: 32 °C / 90 °F

Coils for AKV Valve

DC coils	Connection	Valve size and orifice no.			Part no.
		AKV 15 - 1 AKV 15 - 2 AKV 15 - 3 AKV 15 - 4	AKV 20 - 1 AKV 20 - 2 AKV 20 - 3	AKV 20 - 4 AKV 20 - 5	
220 V DC 20 W, standard	Terminal box	+	+	+	018F685100
100 V DC 18 W, special	Terminal box	+	+	+	018F678000
230 V DC 18 W, special	Terminal box	+	+	+	018F678100 ¹⁾
	DIN spade + cap	+	+	+	018F699100 ¹⁾
230 V DC 18 W, special	2.5 m / 8.2 ft cable	+	+	+	018F628800 ¹⁾
	4.0 m / 13.0 ft cable	+	+	+	018F627800 ¹⁾
	8.0 m / 26.0 ft cable	+	+	+	018F627900 ¹⁾
AC coils					
240 V AC 10 W, 50 Hz	Terminal box	+	-	-	018F670200
	DIN spade + cap	+	-	-	018F617700
240 V AC 10 W, 60 Hz	Terminal box	+	-	-	018F671300
240 V AC 12 W, 50 Hz	Terminal box	+	+	-	018F680200
	Terminal box	+	-	-	018F670100
230 V AC 10 W, 50 Hz	DIN spade + cap	+	-	-	018F617600
	Terminal box	+	-	-	018F671400
230 V AC 10 W, 60 Hz	DIN spade + cap	+	-	-	018F618900
	Terminal box	+	-	-	018F673200
230 V AC 10 W, 50 / 60 Hz	DIN spade + cap	+	-	-	018F619300
	Terminal box	+	+	-	018F680100
230 V AC 12 W, 50 Hz	Terminal box	+	+	-	018F681400
230 V AC 12 W, 60 Hz	Terminal box	+	+	+	018F690500
115 V AC 10 W, 50 Hz	Terminal box	+	-	-	018F671100
115 V AC 10 W, 60 Hz	Terminal box	+	-	-	018F671000
	DIN spade + cap	+	-	-	018F618500
110 V AC 12 W, 50 Hz	Terminal box	+	+	-	018F681100
110 V AC 12 W, 60 Hz	Terminal box	+	+	-	018F681300
24 V AC 10 W, 50 Hz	Terminal box	+	-	-	018F670700
	DIN spade + cap	+	-	-	018F618200
24 V AC 10 W, 60 Hz	Terminal box	+	-	-	018F671500
24 V AC 12 W, 50 Hz	Terminal box	+	+	+	018F680700
24 V AC 12 W, 60 Hz	Terminal box	+	+	+	018F681500
24 V AC 20 W, 50 Hz	Terminal box	+	+	+	018F690300
24 V AC 20 W, 60 Hz	Terminal box	+	+	+	018F690600

¹⁾ Recommended for commercial refrigeration plant.



Danfoss AKVA Electronic Expansion Valve

AKVA are electronic expansion valves designed for ammonia refrigerating plants. The AKVA valves can be used for flooded evaporation (high / low pressure), pump separators and direct expansion.

The AKVA valves are normally controlled by a controller from Danfoss' range of ADAP-KOOL® controllers.

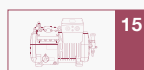
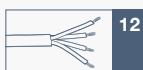


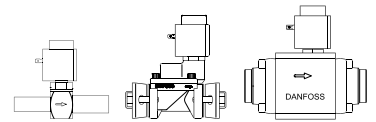
- Applicable to R717, R744, R134a, R22, R401A, R402A, R404A, R407A, R407B, R407C, R407F, R409A, R410A, R421A, R502 and R507
- The valve requires no adjustment
- Wide regulation range
- Replaceable orifice assembly
- Wide range of coils for DC and AC
- Quick reaction in whole range of stated capacity
- In some applications AKVA can be used both as expansion valve & solenoid valve
- The AKVA 10 valves cover a capacity range from 4 kW to 100 kW (R 717) and are divided up into 8 capacity ranges
The AKVA 10 valve bodies are made in stainless steel and have weld connections.
- The AKVA 15 valves have flange connections
- The valve covers a capacity range from 125 kW to 500 kW (R 717) and are divided up into 4 capacity ranges
- The AKVA 20 valves cover a capacity range from 500 kW to 3150 kW (R 717) and are divided up into 5 capacity ranges
The AKVA 20 valve has weld connections

Technical Data

	AKVA 10	AKVA 15	AKVA 20
Tolerance of coil voltage	10 / -15%	10 / -15%	10 / -15%
Enclosure to IEC 529	IP67	IP67	IP67
Working principle (Pulse-width modulation)	PWM	PWM	PWM
Recommend period of time	6 seconds	6 seconds	6 seconds
Capacity (R717)	4 – 100 kW	125 – 500 kW	500 – 3150 kW
Regulation range	10 – 100%	10 – 100%	10 – 100%
Connection	Weld	Weld	Weld
Media temperature	- 50 – 60 °C	- 40 – 60 °C	- 40 – 60 °C
Ambient temperature	- 50 – 50 °C	- 40 – 50 °C	- 40 – 50 °C
Leak of valve seat	< 0.02% of K _v value	< 0.02% of K _v value	< 0.02% of K _v value
MOPD	18 bar	22 bar	18 bar
Strainer	Internal 100 µm replaceable	external 100 µm *)	external 100 µm *)
Max. working pressure	PS = 42 bar g	PS = 42 bar g	PS = 42 bar g

*) On plants with ammonia and similar industrial plant a strainer must be mounted in front of AKVA 15 and AKVA 20. AKVA 10 has built-in strainer and external strainer is not necessary. See the sections FIA and FIA SS for more information on available Danfoss strainers.



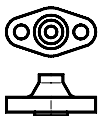


AKVA Valve - Excluding Coil

Valve type	Rated capacity ¹⁾ NH ₃		Kv value [m ³ /h]	Connections - inlet x outlet [in]	Part no.
	[kW]	[TR]			
AKVA 10 - 1	4	1.1	0.010	3/8 x 1/2	068F326100
	4	1.1	0.010	1/2 x 3/4	068F328100
AKVA 10 - 2	6.3	1.8	0.015	3/8 x 1/2	068F326200
	6.3	1.8	0.015	1/2 x 3/4	068F328200
AKVA 10 - 3	10	2.8	0.022	3/8 x 1/2	068F326300
	10	2.8	0.022	1/2 x 3/4	068F328300
AKVA 10 - 4	16	4.5	0.038	3/8 x 1/2	068F326400
	16	4.5	0.038	1/2 x 3/4	068F328400
AKVA 10 - 5	25	7.1	0.055	3/8 x 1/2	068F326500
	25	7.1	0.055	1/2 x 3/4	068F328500
AKVA 10 - 6	40	11.4	0.103	3/8 x 1/2	068F326600
	40	11.4	0.103	1/2 x 3/4	068F328600
AKVA 10 - 7	63	17.9	0.162	1/2 x 3/4	068F326700
AKVA 10 - 8	100	28.4	0.251	1/2 x 3/4	068F326800
AKVA 15 - 1	125	35	0.25	Flange	068F502000 ²⁾
AKVA 15 - 2	200	60	0.40	Flange	068F502300 ²⁾
AKVA 15 - 3	300	90	0.63	Flange	068F502600 ²⁾
AKVA 15 - 4	500	140	1.0	Flange	068F502900 ²⁾
AKVA 20 - 1	500	140	1.0	1 1/4 x 1 1/4	042H210100
AKVA 20 - 2	800	240	1.6	1 1/4 x 1 1/4	042H210200
AKVA 20 - 3	1250	350	2.5	1 1/4 x 1 1/4	042H210300
AKVA 20 - 4	2000	600	4.0	1 1/2 x 1 1/2	042H210400
AKVA 20 - 5	3150	900	6.3	2 x 2	042H210500

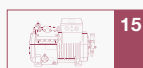
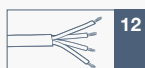
¹⁾ Rated capacities are based on Condensing temperature t_c = 32 °C Liquid temperature t_l = 28 °C Evaporating temperature t_e = 5 °C

²⁾ Incl. bolts and gaskets but without flanges

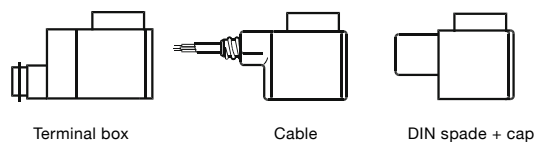


AKVA 15 - Flange Set

Valve type	Connection [in]	Part No.
AKVA 15 - 1 to 4	3/4	027N122000
	1	027N122500



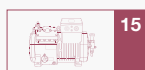
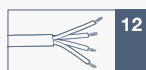
Coils for AKVA Valve



Valve size and orifice no.					
AKVA 10 - 1 AKVA 10 - 2 AKVA 10 - 3 AKVA 10 - 4 AKVA 10 - 5	AKVA 10 - 6	AKVA 10 - 7 AKVA 10 - 8	AKVA 15 - 1 AKVA 15 - 2 AKVA 15 - 3 AKVA 15 - 4	AKVA 20 - 1 AKVA 20 - 2 AKVA 20 - 3	AKVA 20 - 4 AKVA 20 - 5

DC coils	Connection							Part no.
220 V DC 20 W, standard	Terminal box	+	+	+	+	+	+	018F685100
100 V DC 18 W, special	Terminal box	+	+	+	+	+	+	018F678000
230 V DC 18 W, special	Terminal box	+	+	+	+	+	+	018F678100 ¹⁾
	DIN spade	+	+	+	+	+	+	018F699100 ¹⁾
230 V DC 18 W, special	2.5 m / 8.2 ft cable	+	+	+	+	+	+	018F628800 ¹⁾
	4.0 m / 13.0 ft cable	+	+	+	+	+	+	018F627800 ¹⁾
	8.0 m / 26.0 ft cable	+	+	+	+	+	+	018F627900 ¹⁾
AC coils								
240 V AC 10 W, 50 Hz	Terminal box	+	+	-	+	-	-	018F670200
	DIN spade + cap	+	+	-	+	-	-	018F617700
240 V AC 10 W, 60 Hz	Terminal box	+	+	-	+	-	-	018F671300
240 V AC 12 W, 50 Hz	Terminal box	+	+	+	+	+	-	018F680200
220 V AC 10 W, 50 Hz	Terminal box	+	+	-	+	-	-	018F670100
	DIN spade + cap	+	+	-	+	-	-	018F617600
220 V AC 10 W, 60 Hz	Terminal box	+	+	-	+	-	-	018F671400
	DIN spade + cap	+	+	-	+	-	-	018F618900
230 V AC 10 W, 50 / 60 Hz	Terminal box	+	+	-	+	-	-	018F673200
	DIN spade + cap	+	+	-	+	-	-	018F619300
220 V AC 12 W, 50 Hz	Terminal box	+	+	-	+	+	-	018F680100
220 V AC 12 W, 60 Hz	Terminal box	+	+	-	+	+	-	018F681400
230 V AC 20 W, 50 Hz	Terminal box	+	+	+	+	+	+	018F690500
115 V AC 10 W, 50 Hz	Terminal box	+	+	-	+	-	-	018F671100
115 V AC 10 W, 60 Hz	Terminal box	+	+	-	+	-	-	018F671000
	DIN spade + cap	+	+	-	+	-	-	018F618500
110 V AC 12 W, 50 Hz	Terminal box	+	+	-	+	+	-	018F681100
110 V AC 12 W, 60 Hz	Terminal box	+	+	-	+	+	-	018F681300
24 V AC 10 W, 50 Hz	Terminal box	+	-	-	+	-	-	018F670700
	DIN spade + cap	+	-	-	+	-	-	018F618200
24 V AC 10 W, 60 Hz	Terminal box	+	-	-	+	-	-	018F671500
24 V AC 12 W, 50 Hz	Terminal box	+	-	-	+	+	+	018F680700
24 V AC 12 W, 60 Hz	Terminal box	+	-	-	+	+	+	018F681500
24 V AC 20 W, 50 Hz	Terminal box	+	+	+	+	+	+	018F690300
24 V AC 20 W, 60 Hz	Terminal box	+	+	+	+	+	+	018F690600

¹⁾ Recommended for commercial refrigeration plant.



Carel E2V Expansion Valve (exc orifice) - HCFC, HFC



The CAREL E2V electronic expansion valves for low capacity applications combine high reliability and precise control, guaranteed by the equal percentage characteristic of the movable element and the 15mm stroke without axial rotation. The wide range available can cover all applications that require cooling capacities up to 40kW. The possibility of operation with fluid flow in both directions is especially useful when the valve is used for heat pump applications, moreover simplifying refrigerant

circuit layout and reducing installation costs. Fitted on all sizes, the Teflon gasket on the movable element guarantees perfect tightness on closing. The E2V-B valve is made using high quality laser welding and premium grade materials, such as AISI 316; these characteristics ensures perfect tightness on closing. The valve is supplied fully assembled and ready for use, to simplify system installation and commissioning and to reduce related costs.

Valve

Part No	54023
Description	Carel Electronic Expansion Valve 35
Compatible refrigerants	HCFC, HFC
Maximum working pressure	60 bar
Maximum operating pressure differential	35 bar
Number of steps	480
Operating temperature range	-40c to +70c
Connections	5/8" ODS in, 5/8" ODS out

Orifices

Size	Fitting	Part No.
3	1/2"-1/2" ODF Solder	58966
3	12mm Solder	58967
5	1/2"-1/2" ODF Solder	58968
5	12mm Solder	58969
9	1/2"-1/2" ODF Solder	58970
9	12mm Solder	58971
11	1/2"-1/2" ODF Solder	58972
11	12mm Solder	58973
14	1/2"-1/2" ODF Solder	58974
14	12mm Solder	58975
18	1/2"-1/2" ODF Solder	58976
18	12mm Solder	58977
24	16mm Solder	58978
24	5/8"-5/8" ODF Solder	58979

Carel E2V - CW (c/w orifice) CO² (R744)



E2V-CW series simplifies installation, with copper fittings suitable for applications up to 140 bars (2030 PSI). Description ends with orifice size



LOOKING FOR PROBES?
Please see page 273

Valve & Orifice

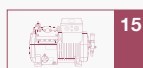
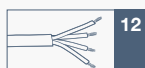
Description	Fitting	Maximum working pressure	Part No.
E2V-CW-3	3/8"-3/8" ODF Solder	140Bar	7894
E2V-CW-5	3/8"-3/8" ODF Solder	140Bar	7895
E2V-CW-9	3/8"-3/8" ODF Solder	140Bar	778776
E2V-CW-11	3/8"-3/8" ODF Solder	140Bar	778777
E2V-CW-14	3/8"-3/8" ODF Solder	140Bar	778778
E2V-CW-18	3/8"-3/8" ODF Solder	140Bar	778779
E2V-CW-24	3/8"-3/8" ODF Solder	140Bar	778780

* Stator Coil not supplied with valve - For MPXPro and Utracella use 58954

Coils & Cables

Type	Description	Part No.
Stator	Carel E2V Bipolar Coil IP69	58954
Cable	Carel E2V Bipolar Coil Cable IP67 3m *	58980
Cable	Carel E2V Bipolar Coil Cable IP67 6m *	58955
Cable	Caerl E2V Bipolar Coil Cable IP67 9m *	58981

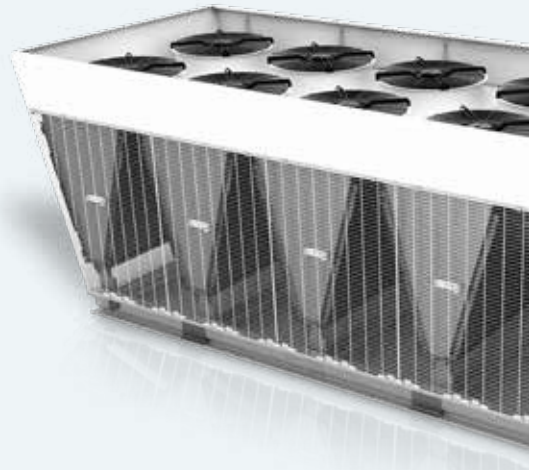
* For use with 58954 - Carel Bipolar Coil IP69



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Connected Efficiency

Electronic Controls & Thermostats



Carel IR33 Universal Electronic Controllers



The IR33 series of universal electronic controllers from Carel are a panel mounted controller offering an updated and upgraded module to replace its IR32 predecessor. The IR33 series controllers feature two independent control loops and now, with the addition of auto-tuning and a real-time clock for cycle and alarm management, the IR33 range of controllers are suitable for a range of applications.



Carel EASY Range



The Easy range of electronic controllers are electronic microprocessor controllers fitted with an LED display developed for the management of refrigerating units, display cabinets and showcases. The EasyCool controller is designed for the management of static refrigerating units operating at temperatures above 0°C. The EasyFreeze is designed for static refrigeration units operating below 0°C.



Eliwell Universal



The Eliwell universal controller series is the ideal solution for the measurement of all the measurable quantities in commercial refrigeration and light industry. They are ideal for all industrial applications requiring high precision temperature control. Reliability, versatility and extremely high configurability make Eliwell thermoregulators the right answers for all control needs in industrial applications.



Eliwell ID Plus



ID 971 and 974 temperature controllers are suitable in applications with normal or low temperature refrigeration units. The controllers are built with 2 PTC thermostatic probe inputs and 2 relay outputs for compressor and defrost management. The temperature readings are displayed by 3 digits and a minus sign to which the decimal point can be configured by parameter.



Eliwell IC Plus



The IC 902 is a range of single stage electronic on/off temperature controllers that operate heating and cooling applications. They are available for a PTC Temperature Sensor input as default and an 8A relay output for load management.



Eliwell ID Next



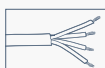
Controller with one activation point, capable of operation in conjunction with both heated applications and static cold storage units at normal temperatures (over 0°C)



Danfoss ERC & EKC



Danfoss Multi-purpose refrigeration controllers with varying defrost, compressor and evaporator controls. A full technical breakdown can be found later on in this section.



Family	Model	Part No.	Type	Relay & Qty	Probes Supplied	Operating Range	Compressor	Defrost	Fan Control	Voltage 230 V	Voltage 12V	Enclosure IP Rating	Dimensions (W x H)
IR33	IR33S0EP00	5369	on/off temperature controller	16A x 1	N-N-	-10°C - + 50°C	✓	-	-N-	✓	N-N-	IP65	77mm x 35mm
	IR33F7EN00	5370		16A x 3	N-N-	-50°C - + 90°C	✓	✓	✓	✓	N-N-	IP65	77mm x 35mm
	IR33C7HR00	5371		16A x 4	N-N-	-10°C - + 60°C	✓	✓	✓	✓	N-N-	IP65	77mm x 35mm
	IR33C0HB00	5405		16A x 4	N-N-	-10°C - + 60°C	✓	✓	✓	✓	N-N-	IP65	77mm x 35mm
	IR33C0LR00	5376		16A x 4	N-N-	-10°C - + 50°C	✓	✓	✓	✓	N-N-	IP65	77mm x 35mm
Easy	Easy Cool	5616	on/off temperature controller	2	N-N-	-10°C - + 50°C	✓	✓	N-N-	✓	N-N-	IP65	81mm x 36mm
	Easy Freeze	5617		3	N-N-	-10°C - + 50°C	✓	✓	✓	✓	N	IP65	81mm x 36mm
UNI	UNICOLD	UNICOLD	Heat/Cool Thermostat	1	✓	-5°C - + 55°C	✓	-N-	N-N-	✓	N-N-	IP65	76mm x 35mm
	UNICHILL	UNICHILL		3	✓	-5°C - + 55°C	✓	✓	✓	✓	N-N-	IP65	76mm x 35mm
	UNIFREEZE	UNIFREEZE		3	✓	-5°C - + 55°C	✓	✓	✓	✓	N-N-	IP65	76mm x 35mm
IC Plus 902	ICPLUS902	IC+902	Heat/Cool Thermostat	6A x 1	N-N-	-50 □ +110 °C	✓	N-N-	N-N-	N-N-	✓	IP65	74mm x 32mm
	IDP11D03E0000	255283		6A x 1	N-N-	-50 □ +110 °C	✓	N-N-	N-N-	N-N-	✓	IP65	74mm x 32mm
IC Plus 915	ICP22D1350000	256712	Two stage Thermostat	2	N-N-	-5°C - + 55°C	2 ✓ ✓	N-N-	N-N-	N-N-	✓	IP65	74mm x 32mm
ID Plus 902	IDP11D07E0000	IDP902230	Heat/Cool Thermostat	1	N-N-	-5°C - + 55°C	✓	N-N-	N-N-	✓	N-N-	IP65	71mm x 29mm
ID Plus 961	IDP17D07E0000	IDP961230	on/off temperature controller	1	N-N-	-5°C - + 55°C	✓	N-N-	N-N-	✓	N-N-	IP65	71mm x 29mm
	IDP17D03E0000	IDP96112		1	N-N-	-5°C - + 55°C	✓	N-N-	N-N-	N-N-	✓	IP65	71mm x 29mm
ID Plus 971	IDP29DB7E0000	IDP971230	on/off temperature controller	2	N-N-	-5°C - + 55°C	✓	✓	N-N-	✓	N-N-	IP65	71mm x 29mm
	IDP29DB3E0000	IDP97112		2	-N-	-5°C - + 55°C	✓	✓	N-N-	N-N-	✓	IP65	71mm x 29mm
ID Plus 974	IDP2EDB7E0000	IDP974230	on/off temperature controller	3	N-N-	-5°C - + 55°C	✓	✓	✓	✓	N-N-	IP65	71mm x 29mm
	IDP2EDB3E0000	IDP97412		3	N-N-	-5°C - + 55°C	✓	✓	✓	✓	N-N-	IP65	71mm x 29mm
ID Next 902 P	IDN902P6D103000	268950	on/off temperature controller	10Ax 1	N-N-	-5°C - + 55°C	✓	N-N-	N-N-	N-N-	✓	IP65	71mm x 29mm
	IDN902P6D107000	268951		1	N-N-	-5°C - + 55°C	✓	N-N-	N-N-	✓	N-N-	IP65	71mm x 29mm
IDNext 961 P	IDN961P7D103000	268952	on/off temperature controller	1	N-N-	-5°C - + 55°C	✓	N-N-	N-N-	N-N-	✓	IP65	71mm x 29mm
	IDN961P7D107000	268953		1	N-N-	-5°C - + 55°C	✓	N-N-	N-N-	✓	N-N- N-	IP65	71mm x 29mm
IDNext 974 P/B	IDN974PED303000	268954	on/off temperature controller	3	N-N-	-5°C - + 55°C	✓	✓	✓	N-N-	✓ N-	IP65	71mm x 29mm
	IDN974PED307000	268955		3	-N-	-5°C - + 55°C	✓	✓	✓	✓	N-N-	IP65	71mm x 29mm
IDNext 974 P/CI	IDN974PND527000	268957	on/off temperature controller	2	-N-	-5°C - + 55°C	✓	✓	N-N-	✓	N-N-	IP65	71mm x 29mm
IDNext 974 P/C	IDN974PED507000	268956	on/off temperature controller	3	-N-	-5°C - + 55°C	✓	✓	✓	✓ N-	N-N-	IP65	71mm x 29mm

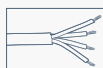
*Dimensions relate to fascia, panel mounting

Eliwell Probes



Description	Length (m)	Part No.
NTC Sensor	1.5m	PELX320
PTC Sensor	1.5m	PELE320
PTC Sensor	3m	PELE325
Eliwell display 1.5m probe plastic tip	1.5m	EWTL300A

Description	Length (m)	Part No.
Eliwell probe 1.5m	1.5m	PTCPROBE
Eliwell Lead RVCKA723000000 for 256948	-	29048000
NTC Sensor/probe	1.5m	NTCPROBE
NTC Sensor/probe	3m	NTCPROBE3M
PTC Sensor/probe	3m	255818



Danfoss ERC 211 / ERC 213 / ERC 214 Temperature Controllers

ERC 21X is a smart multipurpose refrigeration controller with temperature and defrost management. The controller has been designed to fulfill today's requirements of advanced commercial refrigeration applications.

Ease of Use

four push buttons, easy menu structure, pre-installed application solutions ensure superior usability

Simple Installation

high effect 16 A relay enable direct connection of heavy loads, without use of intermediate relays. A wide range of compatible types of sensors, screw connection terminals ensure high flexibility in installation



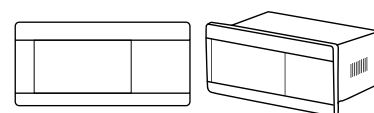
Unit Protection

special software features like compressor protection from fluctuation in power supply or from high condensing temperature ensure the safety & reliability operation of the unit

Energy efficiency

defrost on demand Day / Night mode, and smart evaporator fan management ensure energy efficiency

- **Thermostat**
 - ON / OFF thermostat
 - day / night, continuous cycle, emergency mode
 - pre-installed applications
 - compatible with wide range of sensors (NTC 5 K and 10 K, Pt1000, PTC)
- **Defrost**
 - natural, electrical and hot gas defrost
 - defrost on demand
 - start via push button, DI input or time interval
 - stop on time, temperature or push button
- **Compressor**
 - voltage protection
 - anti-cycle timers for optimum compressor protection
 - high-effect 16 A relays for connection of compressors
- **Evaporator Fan**
 - fan delay function
 - smart evaporator fan management for energy saving
 - fan stop at high evaporator temperature
- **Alarms**
 - high and low temperature alarm
 - sensor failure alarm
 - high and low voltage alarm
 - condenser cleaning alarm
 - door open alarm
 - external alarm input
- **Multi-purpose DI input**
 - two multipurpose DI input for defrost start, day / night control, main switch, reference displacement and continuous cycle control
- **Display & programming**
 - bigger and high efficient LED Display
 - display temperatures in °C / °F
 - parameter settings/readouts and alarm conditions can be read on the display
- **Other functions**
 - zero cross switching in all relays
 - three levels password protection
 - door function with alarm monitoring
 - delay of outputs at power up
 - keypad lock and unlock feature
 - galvanic Isolation



Technical Data

Features	Description
Power supply	115 V AC / 230 V AC 50 – 60 Hz, galvanic isolated low voltage regulated power supply
Rated power	Less than 0.7 W
Input	4 inputs: 2 analogue, 1 analogue / digital and 1 digital
Sensors	NTC 5000 Ohm at 25 °C - NTC 10000 Ohm at 25 °C - PTC 1000 Ohm at 25 °C - PT1000
Accuracy	Measuring range: -40 – 105 °C / -40 – 221 °F Controller: ± 1 K below -35 °C, ± 0,5 K between -35 – 25 °C, ± 1 K above 25 °C
Output	1 Compressor relay: 16 (16 A) EN60730 - 16 (16 A) CQC; 16 A (60 FLA / 10 LRA) UL60730 Aux relay 1: 8 A, 2 FLA / 12 LRA, UL60730 - 8 A, 2 (2 A), EN60730 Aux relay 2: 3 A, 2 FLA / 12 LRA, UL60730 - 3 A, 2 (2 A), EN60730 Aux relay 3: 2 A
Display	LED display, 3 digits, decimal point and multi functionality icons, °C + °F scale
Operating conditions	-10 – 55 °C / 14 – 131 °F, 90% Rh
Storage conditions	-40 – 70 °C / -40 – 158 °F, 90% Rh
Protection	Front: IP65 Rear: water and dust protection corresponds to IP31, accessibility of connectors limit rear part rating to IP00
Environmental	Pollution degree III (can be mounted inside a refrigerated cabinet), non-condensing
Resistance to heat and fire	Category D (UL94-V0)
EMC category	Category I
Approvals	UL (recognition) CB certification (ENEC, CE, CQC)

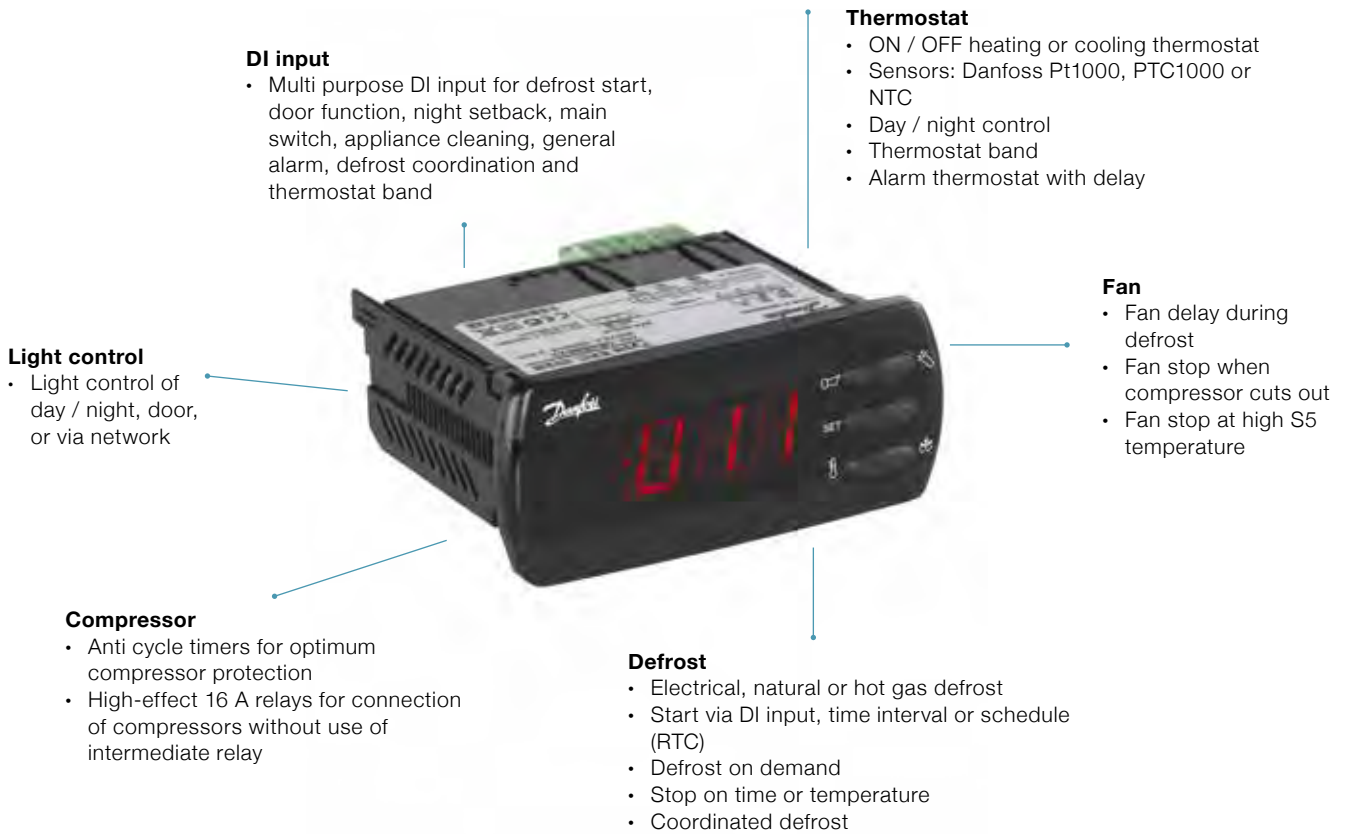
ERC 211 / ERC 213 / ERC 214 Temperature Controllers

Type	Description	Part no.
ERC 211	Red LED, 120 V, 1 relay	080G3290
	Red LED, 240 V, 1 relay	080G3293
ERC 213	Red LED, 120 V, 3 relay	080G3291
	Red LED, 240 V, 3 relay	080G3294
ERC 214	Red LED, 120 V, 4 relay	080G3292
	Red LED, 240 V, 4 relay	080G3295



Danfoss EKC 202 Refrigeration Controller

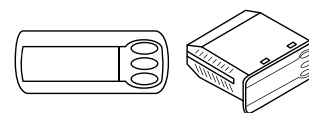
The series of EKC 202 controllers can be used for a wide range of different refrigeration applications - from control of air temperatures and defrost to more advanced applications, including control of light and fans.



- Integrated refrigeration-technical functions
- Defrost on demand in 1:1 systems
- Buttons and seal imbedded in the front
- IP65 density from the front panel
- Digital input for either:**
 - door contact function with alarm
 - defrost start
 - start/stop of regulation
 - night operation
 - change-over between two temp reference
 - case cleaning function
- Instant programming via programming key
- HAccP Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)

EKC 202 Controller

Type	Description	Part no.
EKC 202A	Refrigeration controller	084B852100
EKC 202B	Refrigeration controller with fan function	084B852200
EKC 202C	Refrigeration controller for electric defrost	084B852300
EKC 202C-MS	Refrigeration controller multi sensor (only NTC)	084B854300



Technical Data

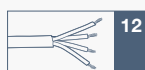
Features	Description															
Supply voltage	230 V AC 10 – 15%. 1.5 V A															
Sensors for EKC 202A, 202B, 202C	Pt 1000 ohm (0 °C) PTC 1000 ohm (25 °C) NTC 5000 ohm (25 °C) M 2020															
Sensors for EKC 202C-MS	NTC 2000 ohm (25 °C) NTC 2500 ohm (0 °C) NTC 3000 ohm (25 °C) NTC 5000 ohm (25 °C) M 2020 NTC 10000 ohm (25 °C) NTC 10000 ohm (25 °C) Beta 3435															
Accuracy	Measuring range: -60 – 99 °C Controller: ± 1 K below -35 °C, ± 0,5 K between -35 – 25 °C, ± 1 K above 25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad															
Display	LED, 3 digits															
Digital inputs	Signal from contact functions Requirements to contacts: gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer															
Electrical connection cable	Max. 1.5 mm ² multi-core cable on supply and relays Power current terminals are mounted on the circuit board Max. 1 mm ² on sensors - and DI inputs															
Relays *)	<table border="1"> <thead> <tr> <th></th> <th>CE (250 V AC)</th> <th>UL (**)</th> </tr> </thead> <tbody> <tr> <td>DO1. Refrigeration</td> <td>8 (6) A</td> <td>10 A Resistive - 5 FLA, 30 LRA</td> </tr> <tr> <td>DO2. Defrost</td> <td>8 (6) A</td> <td>10 A Resistive - 5 FLA, 30 LRA</td> </tr> <tr> <td>DO3. Fan</td> <td>6 (3) A</td> <td>6 A Resistive - 3 FLA, 18 LRA - 131 V A Pilot duty</td> </tr> <tr> <td>DO4. Alarm or light</td> <td>4 (1) A Min. 100 mA **)</td> <td>4 A Resistive - 131 V A Pilot duty</td> </tr> </tbody> </table>		CE (250 V AC)	UL (**)	DO1. Refrigeration	8 (6) A	10 A Resistive - 5 FLA, 30 LRA	DO2. Defrost	8 (6) A	10 A Resistive - 5 FLA, 30 LRA	DO3. Fan	6 (3) A	6 A Resistive - 3 FLA, 18 LRA - 131 V A Pilot duty	DO4. Alarm or light	4 (1) A Min. 100 mA **)	4 A Resistive - 131 V A Pilot duty
	CE (250 V AC)	UL (**)														
DO1. Refrigeration	8 (6) A	10 A Resistive - 5 FLA, 30 LRA														
DO2. Defrost	8 (6) A	10 A Resistive - 5 FLA, 30 LRA														
DO3. Fan	6 (3) A	6 A Resistive - 3 FLA, 18 LRA - 131 V A Pilot duty														
DO4. Alarm or light	4 (1) A Min. 100 mA **)	4 A Resistive - 131 V A Pilot duty														
Environments	0 – 55 °C, During operations, -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations															
Enclosure	IP65 from front - Buttons and packing are imbedded in the front															
Escapement reserve for the clock	4 hours															
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2															



*) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be kept **) Gold plating ensures make function with small contact loads
***) UL-approval based on 30000 couplings

EKC 202 Accessories

Type	Description	Part no.
EKA 178A	Data communication module MODBUS	084B856400
EKA 179A	RS485 LON	084B856500
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B857700
EKA 182A	Copy key EKC - EKC	084B856700
EKA 183A	Programming key EKC	084B858200
AKS 12	Pt 1000 Sensor, 1.5 m	084N003600
EKS 111	PTC 1000 Sensor, 1.5 m	084N117800
EKS 211	NTC 5000 Sensor, 1.5 m	084N122000
EKS 221	NTC 10000 Beta 3435 Sensor, 3.5 m	084N320600



Danfoss EKC 202D1 Refrigeration Controller

The controller is used for evaporator control refrigeration appliances in supermarkets. With many predefined applications one unit will offer you many options. Flexibility has been planned both for new installations and for service in the refrigeration trade.

Light control

- Light control of day / night, door, or via network
- Door function with alarm monitoring
- Manual control of outputs
- Case cleaning function

DI input

- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band

Thermostat

- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC5000
- Day / night control
- Thermostat band
- Alarm thermostat with delay

Fan

- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high "S5" temperature

Supplementary options

- RS 485 network card for connection to network
- Battery back-up card for real time clock
- "Copy key" programming key

Compressor

- Anti cycle timers for optimum protection
- High-effect 16 A relays for connection of compressors without use of intermediate relays

Defrost

- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

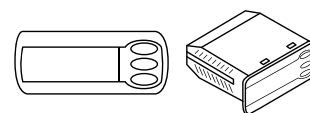
- 3 applications in the same unit
- The controller has integrated refrigeration-technical functions, so that it can replace a whole collection of thermostats and timers

- Buttons and seal imbedded in the front
- Easy to remount data communication
- Quick setup
- Two temperature references

- Digital inputs for various functions
- Clock function with backup

Type	Description	Part no.
EKC 202D1	Refrigeration controller without data communication but prepared for a module	084B855400

Technical Data



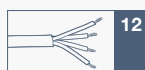
Features	Description	
Supply voltage	230 V AC 10 – 15%. 2.5 V A	
Sensors 3 pcs off either	Pt 1000 ohm (0 °C) PTC (1000 ohm / 25 °C) NTC-M2020 (5000 ohm / 25 °C)	
Accuracy	Measuring range: -60 – 99 °C Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above +25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad	
Display	LED, 3 digits	
Digital inputs	Signal from contact functions Requirements to contacts: gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer	
Electrical connection cable	Max. 1.5 mm ² multi-core cable	
Relays *)	CE (250 V AC)	
	DO1. Refrigeration	8 (6) A
	DO2. Defrost	8 (6) A
	DO3. Fan	6 (3) A
	DO4. Alarm	4 (1) A Min. 100 mA **)
Environments	0 – 55 °C, During operations -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations	
Enclosure	IP65 from front Buttons and packing are embedded in the front	
Escapement reserve for the clock	4 hours	
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2	



**) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be kept **) Gold plating ensures make function wiht small contact loads

Accessories

Type	Description	Part no.
EKA 163A	External display for EKC 202D1	084B856200
EKA 178A	Data communication module MODBUS	084B856400
EKA 179A	Data communication module Lon RS 485	084B856500
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B857700
EKA 182A	Copy key EKC - EKC	084B856700
AKS 12	Pt 1000 Sensor 1.5 m	084N003600
EKS 111	PTC 1000 Sensor 1.5 m	084N117800
EKS 211	NTC 5000 Sensor 1.5 m	084N122000



Danfoss EKC 302 Refrigeration Controller

The series of EKC 302 controllers can be used for a wide range of different refrigeration applications - from control of air temperatures and defrost to more advanced applications, including control of light and fans. For DIN rail mounting.

DI input

- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band

Light control

- Light control of day / night, door, or via network

Compressor

- Anti cycle timers for optimum compressor protection
- High-effect 16 A relays for connection of compressors without use of intermediate relay



Thermostat

- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC
- Day / night control
- Thermostat band
- Alarm thermostat with delay

Defrost

- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

Fan

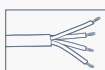
- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high "S5" temperature

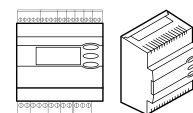
- Integrated refrigeration-technical functions
- Defrost on demand in 1:1 systems
- Buttons and seal imbedded in the front

- Digital input for either:
 - door contact function with alarm
 - defrost start
 - start / stop of regulation
 - night operation
 - change-over between two temperature reference
 - case cleaning function

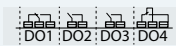
- Fixed MODBUS data communication
- Instant programming via programming key
- HAccP
Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)
- EKC 302D: Several applications in the same unit

Type	Description	Part no.
EKC 302A	Refrigeration controller	084B416200
EKC 302B	Refrigeration controller with fan and defrost function	084B416300
EKC 302D	Refrigeration controller with fan and defrost function	084B416400





Technical Data

Features	Description																		
Supply voltage	230 V AC 10 – 15%. 1.5 V A																		
Sensors for EKC 302	Pt 1000 ohm (0 °C) PTC 1000 ohm (25 °C) NTC 5000 ohm (25 °C) M 2020																		
Accuracy	Measuring range: -60 – 99 °C Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above 25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad																		
Display	LED, 3 digits																		
Digital inputs	Signal from contact functions Requirements to contacts: gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer																		
Electrical connection cable	Max. 1.5 mm ² multi-core cable on supply and relays Power current terminals are mounted on the circuit board Max. 1 mm ² on sensors - and DI inputs																		
Relays *)	 IEC 60 730 <table border="1"> <tbody> <tr> <td rowspan="2">DO1. Refrigeration</td> <td>10 (6) A and (5 FLA, 30 LRA)</td> <td>1)</td> </tr> <tr> <td>16 (8) A and (10 FLA, 60 LRA)</td> <td>2)</td> </tr> <tr> <td rowspan="2">DO2. Defrost</td> <td>6 (3) A and (3 FLA, 18 LRA)</td> <td>1)</td> </tr> <tr> <td>10 (6) A and (3 FLA, 30 LRA)</td> <td>2)</td> </tr> <tr> <td rowspan="2">DO3. Fan</td> <td>6 (3) A and (3 FLA, 18 LRA)</td> <td>1)</td> </tr> <tr> <td>10 (6) A and (5 FLA, 30 LRA)</td> <td>2)</td> </tr> <tr> <td>DO4. Alarm</td> <td>4 (1) A Min. 100 mA **)</td> <td></td> </tr> </tbody> </table>	DO1. Refrigeration	10 (6) A and (5 FLA, 30 LRA)	1)	16 (8) A and (10 FLA, 60 LRA)	2)	DO2. Defrost	6 (3) A and (3 FLA, 18 LRA)	1)	10 (6) A and (3 FLA, 30 LRA)	2)	DO3. Fan	6 (3) A and (3 FLA, 18 LRA)	1)	10 (6) A and (5 FLA, 30 LRA)	2)	DO4. Alarm	4 (1) A Min. 100 mA **)	
DO1. Refrigeration	10 (6) A and (5 FLA, 30 LRA)		1)																
	16 (8) A and (10 FLA, 60 LRA)	2)																	
DO2. Defrost	6 (3) A and (3 FLA, 18 LRA)	1)																	
	10 (6) A and (3 FLA, 30 LRA)	2)																	
DO3. Fan	6 (3) A and (3 FLA, 18 LRA)	1)																	
	10 (6) A and (5 FLA, 30 LRA)	2)																	
DO4. Alarm	4 (1) A Min. 100 mA **)																		
Environments	0 – 55 °C, During operations, -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations																		
Enclosure	IP20																		
Escapement reserve for the clock	4 hours																		
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2																		

*) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be kept **) Gold plating ensures make function with small contact loads

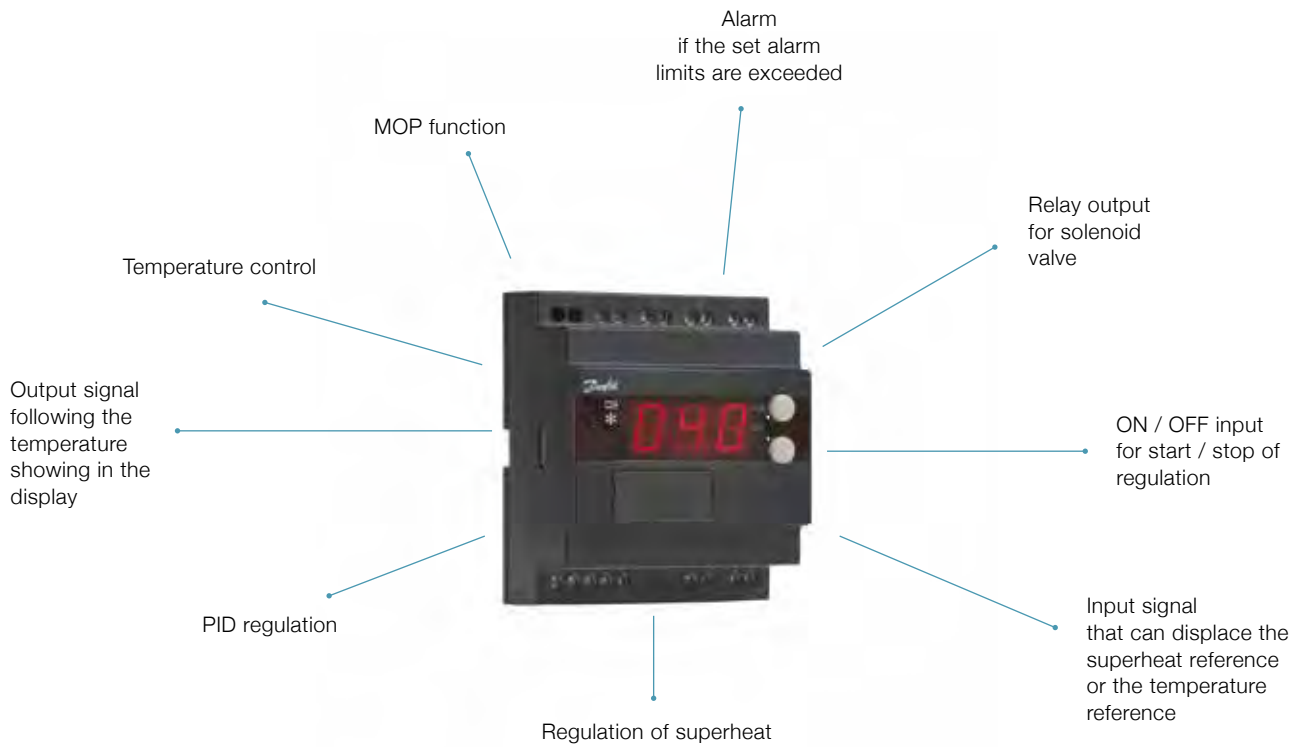
Accessories

Type	Description	Part no.
EKA 178B	Data communication module MODBUS	084B857100
EKA 175	RS485 LON	084B857900
EKA 183A	Programming key EKC	084B858200
AKS 12	Pt 1000 Sensor 1.5 m	084N003600
EKS 111	PTC 1000 Sensor 1.5 m	084N117800
EKS 211	NTC 5000 Sensor 1.5 m	084N122000



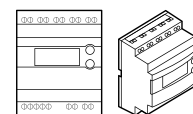
Danfoss EKC 315A Refrigeration Control

The controller and valve can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration: Cold store (air coolers), Processing plant (water chillers) and A/C plants.



- The evaporator is charged optimally - even when there are great variations of load and suction pressure
- Energy savings - the adaptive regulation of the refrigerant injection ensures optimum utilisation of the evaporator and hence a high suction pressure
- Exact temperature control - the combination of adaptive evaporator and temperature control ensures great temperature accuracy for the media
- The superheating is regulated to the lowest possible value at the same time as the media temperature is controlled by the thermostat function

Type	Description	Part no.
EKC 315A	Superheat controller	084B708600
EKC 315A	Superheat controller, pressure transmitter signal from AKS 32R	084B708500
EKC 315A	I-pack of 084B7085	084B712800



Technical Data

Features	Description
Supply voltage	24 V AC \pm 15%, 50 / 60 Hz, 80 V A (the supply voltage is galvanically separated from the input and output signals)
Power consumption	Controller: 5 V A AKV coil: 55 V A
Input signal	Current signal: 4 – 20 mA or 0 – 20 mA Pressure transmitter: 4-20 mA from AKS 33 Digital input from external contact function
Sensor input	2 pcs. Pt 1000 ohm
Output signal	Current signal: 4 – 20 mA or 0 – 20 mA Load: Max. 200 ohm
Relay output	1 pcs. SPST: AC-1: 4 A (ohmic)
Alarm relay	1 pcs. SPST: AC-15: 3 A (inductive)
ICAD	ICAD mounted on ICM Current signal: 4 – 20 mA or 0 – 20 mA
Data communication	Possible to connect a data communication module
Environments	-10 – 55 °C, during operations -40 – 70 °C, during transport 20 – 80% Rh, not condensed No shock influence / vibrations
Enclosure	IP20
Weight	300 g
Mounting	DIN rail
Display	LED, 3 digits
Terminals	max. 2.5 mm ² multicore
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD-tested acc. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN50081-1 and EN 50082-2

The installation of data communications must comply with the requirements described in literature sheet no. RC8AC

Accessories

Type	Description	Part no.
EKA 174	Data communication module (Accessories), (RS 485 module) with galvanic separation	084B712400
EKA 175	RS485 LON	084B857900
AKS 11	Pt 1000 Sensor	084N000300
AKS 32R	Pressure transmitter -1/12 bar	060G103600
AKS 33	Pressure transmitter -1/12 bar, 0.3%	060G204900
AKS 3000	Pressure transmitter -1/12 bar, 1%	060G132300



Danfoss AK-cc 210 Universal Refrigeration Controller

The controller is used for evaporator control refrigeration appliances in supermarkets. With many predefined applications one unit will offer you many options. Flexibility has been planned both for new installations and for service in the refrigeration trade.

DI input

- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band

Thermostat

- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC5000
- Day / night control
- Thermostat band
- Alarm thermostat with delay

Fan

- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high "S5" temperature

Light control

- Light control of day / night, door, or via network
- Other functions:
 - "S5" sensor can be used for monitoring of condenser temperature or as product sensor
 - Door function with alarm monitoring
 - Manual control of outputs
 - Case cleaning function



Supplementary options

- RS 485 network card for connection to network
- Battery back-up card for real time clock
- "Copy key" programming key

Compressor

- Anti cycle timers for optimum protection
- High-effect 16 A relays for connection of compressors without use of intermediate relays

Defrost

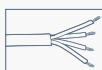
- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

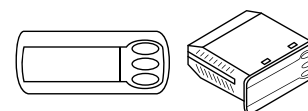
- Many applications in the same unit
- The controller has integrated refrigeration-technical functions, so that it can replace a whole collection of thermostats and timers

- Buttons and seal imbedded in the front
- Can control two compressors
- Easy to remount data communication
- Quick setup
- Two temperature references
- IBExU approved relays

- HAccP (Hazard Analysis and Critical Control Points):
 - temperature monitoring and registration of period with too high temperature
 - factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)
- Digital inputs for various functions
- Clock function with backup

Type	Description	Part no.
AK-cc 210	Refrigeration controller without data communication but prepared for a module	084B852000





Technical Data

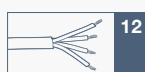
Features	Description		
Supply voltage	230 V AC 10 – 15%. 2.5 V A		
Sensors 3 pcs off either	Pt 1000 ohm (0 °C) PTC (1000 ohm / 25 °C) NTC-M2020 (5000 ohm / 25 °C)		
Accuracy	Measuring range: -60 – 99 °C Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above +25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad		
Display	LED, 3 digits		
Digital inputs	Signal from contact functions Requirements to contacts: gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer		
Electrical connection cable	Max. 1.5 mm ² multi-core cable		
Relays *)	CE (250 V AC)	UL (***) (240 V AC)	
	DO1. Refrigeration	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO2. Defrost	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO3. Fan	6 (3) A	6 A Resistive 3 FLA, 18 LRA - 131 VA Pilot duty
	DO4. Alarm	4 (1) A Min. 100 mA **)	4 A Resistive 131 VA Pilot duty
Environments	0 – 55 °C, During operations -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations		
Enclosure	IP65 from front Buttons and packing are embedded in the front		
Escapement reserve for the clock	4 hours		
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2 Relays are tested acc. to IEC 60079-15		

**) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be kept **) Gold plating ensures make function wiht small contact loads

***) UL-approval based on 30000 couplings

Accessories

Type	Description	Part no.
EKA 163A	External display for AK-cc 210	084B856200
EKA 178A	Data communication module MODBUS	084B856400
EKA 179A	Data communication module Lon RS 485	084B856500
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B857700
EKA 182A	Copy key EKC - EKC	084B856700
AKS 12	Pt 1000 Sensor 1.5 m	084N003600
EKS 111	PTC 1000 Sensor 1.5 m	084N117800
EKS 211	NTC 5000 Sensor 1.5 m	084N122000



Danfoss AK-cc 250A Universal Refrigeration Controller

The controller is used for evaporator control refrigeration appliances in supermarkets. With many predefined applications one unit will offer you many options. Flexibility has been planned both for new installations and for service in the refrigeration trade.

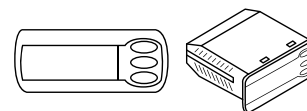


- Many applications in the same unit
- The controller has integrated refrigeration-technical functions, so that it can replace a whole collection of thermostats and timers

- Buttons and seal imbedded in the front
- Can control two compressors
- Fixed MODBUS data communication
- Easy to remount data communication
- Quick setup
- Two temperature references

- HAccP (Hazard Analysis and Critical Control Points):
 - temperature monitoring and registration of period with too high temperature
 - factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)
- Digital inputs for various functions
- Clock function with backup

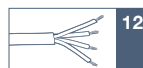
Type	Description	Part no.
AK-cc 250A	Refrigeration controller with MODBUS data communication for Pt or PTC sensors	084B852800



Technical Data

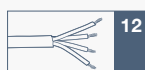
Features	Description		
Supply voltage	230 V AC 10 – 15%. 2.5 V A		
Sensors for AK-cc 250A, 3 pcs off either	Pt 1000 ohm (0 °C) PTC (1000 ohm / 25 °C) NTC-M2020 (5000 ohm / 25 °C)		
Accuracy	Measuring range: -60 – 99 °C Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above +25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad		
External display	EKA 163 A (only in stand alone)		
Digital inputs	Signal from contact functions Requirements to contacts: Gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer		
Electrical connection cable	Max. 1.5 mm ² multi-core cable		
Relays *)		CE (250 V AC)	UL *** (240 V AC)
	DO1. Refrigeration	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO2. Defrost	8 (6) A	10 A Resistive 5 FLA, 30 LRA
	DO3. Fan	6 (3) A	6 A Resistive 3 FLA, 18 LRA - 131 VA Pilot duty
	DO4. Alarm	4 (1) A Min. 100 mA **)	4 A Resistive 131 VA Pilot duty
Environments	0 – 55 °C, During operations -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations		
Enclosure	IP65 from front Buttons and packing are embedded in the front		
Escapement reserve for the clock	4 hours		
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2		

*) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be kept
) Gold plating ensures make function wiht small contact loads *) UL-approval based on 30000 couplings



Accessories

Type	Description	Part no.
EKA 163A	External display for AK-cc 250	084B856200
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B857700
EKA 182A	Copy key EKC - EKC	084B856700
AKS 12	Pt 1000 Sensor 1.5 m	084N003600
EKS 111	PTC 1000 Sensor 1.5 m	084N117800



Danfoss AK-cc 350 Universal Refrigeration Controller

The controller is used for evaporator control refrigeration appliances in supermarkets. With many predefined applications one unit will offer you many options. Flexibility has been planned both for new installations and for service in the refrigeration trade. For DIN rail mounting.

Thermostat

- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC5000
- Day / night control
- Thermostat band
- Alarm thermostat with delay

DI input

- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band

Fan

- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high "S5" temperature

Light control

- Light control of day / night, door, or via network
- Other functions:
- "S5" sensor can be used for monitoring of condenser temperature or as product sensor
- Door function with alarm monitoring
- Manual control of outputs
- Case cleaning function

Supplementary options

- Programming key

Compressor

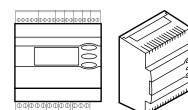
- Anti cycle timers for optimum protection
- High-effect 20 A relay for connection of compressor without use of intermediate relays

Defrost

- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

- Many applications in the same unit
- The controller has integrated refrigeration-technical functions, so that it can replace a whole collection of thermostats and timers
- Buttons and seal imbedded in the front
- Can control two compressors
- Fixed MODBUS data communication
- Quick setup
- Two temperature references
- HAccP(Hazard Analysis and Critical Control Points):
 - temperature monitoring and registration of period with too high temperature
 - factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)
- Digital inputs for various functions
- Clock function with backup

Type	Description	Part no.
AK-cc 350	Refrigeration controller with MODBUS data communication	084B416500



Danfoss AK-cc 350 Universal Refrigeration Controller

Features	Description	
Supply voltage	230 V AC 10 – 15%. 2.5 V A	
Sensors for AK-cc 350A, 3 pcs off either	Pt 1000 PTC (1000 ohm / 25 °C)	
Accuracy	Measuring range: -60 – 99 °C Controller: ±1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above 25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad	
Display	LED, 3-digits	
External display	EKA 163 A (only in stand alone)	
Digital inputs	Signal from contact functions Requirements to contacts: Gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer	
Electrical connection cable	Max. 1.5 mm ² multi-core cable	
Relays *)	DO1. Refrigeration	IEC 60 730 10 (6) A and (5 FLA, 30 LRA) 1) 16 (8) A and (10 FLA, 60 LRA) 2)
	DO2. Defrost	6 (3) A and (3 FLA, 18 LRA) 1)
		10 (6) A and (3 FLA, 30 LRA) 2)
	DO3. Fan	6 (3) A and (3 FLA, 18 LRA) 1)
		10 (6) A and (5 FLA, 30 LRA) 2)
DO4. Alarm	4 (1) A Min. 100 mA **)	
Environments	0 – 55 °C, During operations -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations	
Enclosure	IP20	
Escapement reserve for the clock	4 hours	
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2	

*) DO1 is a 20 A relay. DO2 and DO3 are 16 A relays. DO4 is a 10 A relay. The max. load listed above must be observed when connecting without zero-crossing control. When connecting with zero-crossing, the load must be increased to the value indicated by 2)

**) Gold plating ensures make function with small contact loads

Accessories

Type	Description	Part no.
EKA 163A	External display for AK-cc 350	084B856200
EKA 183A	Programming key	084B858200
AKS 12	Pt 1000 Sensor 1.5 m	084N003600



Danfoss AK-cc 450 Controller for Appliance Control

Complete refrigeration appliance control with great flexibility to adapt to all types of refrigeration appliances and cold storage rooms. For cooling with brine and for cooling with a thermostatic expansion valve.

Defrost

- Electrical, natural or hot gas defrost
- Start of defrost via schedule, digital input or network
- Coordination of defrost across several controls
- Case cleaning function for documentation of HACCP procedure
- Stop of defrost on time and / or temperature

Thermostat

- ON / OFF or modulating control
- Product sensor "S6" with separate alarm limits
- Day / night control
- Switch between thermostat settings via digital input
- Pulsing of fans when thermostat is satisfied
- Heat thermostat

Light control

Supplementary options

- Rail heat control via day / night load or dew point
- Door function
- Control of night blinds
- Integrated MODBUS communication with the option of mounting a LonWorks communication card



Calibration

- Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)

Compressor

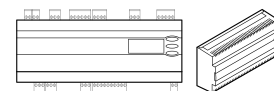
- Control of two compressors

- Energy optimisation of the whole refrigeration appliance

- One controller for several different refrigeration appliances
- Integrated display at the front of the controller

- Quick set-up with predefined settings
- Built-in data communication
- Built-in clock function with power reserve
- IBExU approved relays

Type	Description	Part no.
AK-cc 450	Case controller with MODBUS data communication	084B802200



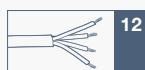
Technical Data

Features	Description
Supply voltage	230 V AC 10 – 15%. 5 V A, 50 / 60 Hz
Sensors	Pt 1000 PTC 1000 ohm / 25 °C (All 4 must be of the same type)
Accuracy	Measuring range: -60 – 120 °C Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above + 25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad
Display	LED, 3-digits
External display	EKA 163B or 164B. (any EKA 163A or 164A)
Digital inputs DI1, DI2	Signal from contact functions Requirements to contacts: gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer
Digital input DI3	230 V AC
Electrical connection cable	Max. 1.5 mm ² multi-core cable
Solid state output	DO1 (for solenoid coil) Max. 240 V AC, Min. 28 V AC Max. 0.5 A Leak < 1 mA Max. 1 pcs. coil
Relays *)	DO3, DO4 4 (3) A DO2, DO5, DO6 4 (3) A CE (250 V AC)
Environments	0 – 55 °C, During operations -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations
Enclosure	IP20
Mounting	DIN-rail or wall
Weight	0.4 Kg
Data communication	Fixed / Build-in: MODBUS Extension options: LON RS485 / DANBUSS - TCP / IP(OEM) / MODBUS The controller cannot be hooked up with a monitoring unit type m2
Power reserve for the clock	4 hours
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9, A1, A2 - EMC tested acc. EN50082-1 and EN 60730-2-9, A2. Relays are tested acc. to IEC 60079-15

*) DO3 and DO4 are 16 A relays. DO2, DO5 and DO6 are 8 A relays. Max. load must be observed

Accessories

Type	Description	Part no.
EKA 175	Data communication module LON RS 485	084B857900
EKA 176	Data communication module DANBUSS	084B858300
EKA 178B	Data communication module MODBUS	084B857100
EKA 163B	External display with plug for direct connection	084B857400
EKA 164B	External display with operation buttons and plug for direct connections	084B857500
EKA 163A	External display with screw terminals	084B856200
EKA 164A	External display with operation buttons and screw terminals	084B856300



Danfoss AK-CC 550A Controller for Appliance Control

AK-cc 550A is a complete refrigeration appliance control with great flexibility to adapt to all types of refrigeration appliances and cold storage rooms.

Defrost

- Electrical, natural or hot gas defrost
- Start of defrost via schedule, digital input or network
- Coordination of defrost across several controls
- Case cleaning function for documentation of HACCP procedure
- Stop of defrost on time and / or temperature
- Adaptive defrosting based on evaporator performance

Thermostat

- ON / OFF or modulating control
- Product sensor "S6" with separate alarm limits
- Day / night control
- Switch between thermostat settings via digital input
- Pulsing of fans when thermostat is satisfied
- Heat thermostat

Calibration

- Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)

Supplementary options

- Rail heat control via day / night load or dew point
- Door function
- Control of night blinds
- Integrated MODBUS communication with the option of mounting a LonWorks communication card
- Adaptive control of superheat



Compressor

- Control of two compressors

Light control

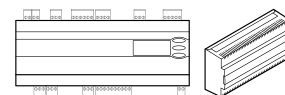
- Energy optimisation of the whole refrigeration appliance

- One controller for several different refrigeration appliances
- Integrated display at the front of the controller

- Quick set-up with predefined settings
- Built-in data communication
- Built-in clock function with power reserve
- Can be used on CO₂ systems

Type	Description	Part no.
AK-cc 550A	Case controller with MODBUS data communication	084B803000

Technical Data

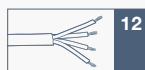


Features	Description
Supply voltage	230 V AC 10 – 15%. 5 V A, 50 / 60 Hz
Sensor S2	Pt 1000
Sensor S3, S4, S5, S6	Pt 1000 PTC 1000 ohm / 25 °C (All 4 must be of the same type)
Accuracy	Measuring range: -60 – 120 °C Controller: ± 1 K below -35 °C, ± 0.5 K between -35 – 25 °C, ± 1 K above 25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad
Measuring of Pe	Pressure transmitter: AKS 32R
Display	LED, 3-digits
External display	EKA 163B or 164B. (any EKA 163A or 164A)
Digital inputs DI1, D2	Signal from contact functions Requirements to contacts: Gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer
Digital input DI3	230 V AC
Electrical connection cable	Max. 1.5 mm ² multi-core cable
Solid state output	DO1 (for AKV coil) Max. 240 V AC, Min. 28 V AC Max. 0.5 A Leak < 1 mA Max. 1 pcs. AKV
Relays *)	DO3, DO4 4 (3) A DO2, DO5, DO6 4 (3) A CE (250 V AC)
Environments	0 – 55 °C, During operations -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations
Enclosure	IP20
Mounting	DIN-rail or wall
Weight	0.4 Kg
Data communication	Fixed: MODBUS Extension options: LON RS485 / DANBUSS - TCP / IP(OEM) / MODBUS The controller cannot be hooked up with a monitoring unit type m2
Power reserve for the clock	4 hours
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9, A1, A2 - EMC tested acc. EN50082-1 and EN 60730-2-9, A2

*) DO3 and DO4 are 16 A relays. DO2, DO5 and DO6 are 8 A relays. Max. load must be observed

Accessories

Type	Description	Part no.
EKA 175	Data communication module LON RS 485	084B857900
EKA 176	Data communication module DANBUSS	084B858300
EKA 178B	Data communication module MODBUS	084B857100
EKA 163B	External display with plug for direct connection	084B857400
EKA 164B	External display with operation buttons and plug for direct connections	084B857500
EKA 163A	External display with screw terminals 084B8562 EKA	084B856200
EKA 164A	External display with operation buttons and screw terminals	084B856300



Danfoss AK-cc 750A Controller for Evaporator Control

AK-cc 750A controllers are complete regulating units which together with valves and sensors constitute complete evaporator controls for refrigeration appliances and freezing rooms within commercial refrigeration. Generally speaking they replace all other automatic controls containing, inter alia, day and night thermostats, defrost, fan control, rail heat control, alarm functions, light control, thermo valve control, solenoid valve, etc.

Energy optimisation

- Adaptive superheat via the AKV electronic expansion valve
Optimum utilisation of evaporator at all load conditions, precondition for major energy savings via optimised suction pressure and floating condensing pressure control
- Adaptive defrost: Intelligent defrost skip based on performance monitoring of evaporator
- Dew point pulsing of rail heat: Pulsing of rail heat according to the actual load condition
- Pulsing of fans: Pulsing of fans at thermostat cut out

Service and commissioning

- Easy performance check
Provides vital info for performance check
- Versatile controller
- A single controller covering several applications
- Flexible IO configuration
- Built-in LON communication
- Fast and easy commissioning
- Preset setup for fast start-up
- Only 5 settings required



Food quality / HACCP compliance

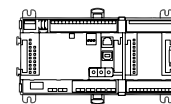
- Modulating temperature control & accurate temperature control
- **Measuring accuracy**
Factory calibration guarantees a better measuring accuracy than required in the EN 12830 and EN 13485 standards without subsequent calibration on site (Pt 1000 ohms sensor)
- **Product temperature**
Separate product temperature for compliance with EN 12830 and EN 13485
- **Case cleaning**
Case cleaning function for documentation of case cleanings carried out according to HACCP procedures

- Control of 1 to 4 evaporator sections
- Adaptive superheat control ensures optimum evaporator usage in all operational circumstances
- Electronic injection with AKV valve
- Traditional temperature regulation using ON / OFF or modulating control of solenoid valve for both DX and indirect brine system
- Weighted thermostat and alarm thermostat
- Defrost on demand based on evaporator capacity
- Appliance cleaning function
- Light control using door switch or network signal depending on day / night operation
- Rail heat pulsing depending on day / night operation or dew point
- Monitoring of door alarm and control of light / refrigeration depending on location of door switch
- Log function for registration of historical parameter values and alarm modes
- Full energy optimisation functions (dew point, fans, defrost, blinds etc.)
- Remote display connections (up to 4 displays)
- Built in RS 485 LON communication
- Flexible I/O configuration

Type	Language	Part no.
AK-cc 750A	English, Danish, Swedish, Finnish, Russian, Czech, Polish, Chinese, German, French, Italian, Dutch, Spanish, Portuguese	080Z014000

Software

Type	Description	Part no.
AK-ST 500	Software for operation of AK controllers	080Z016100



Technical Data

Features	Description	
Supply voltage	24 V DC / AC \pm 20%	
Power consumption	8 V A	
Analogue inputs	Pt 1000 ohm / 0 °C	Dissolution: 0.1 °C, Accuracy: \pm 0.5 °C
	Pressure transmitter type AKS 32R/AKS 32 (1 – 5 V) Voltage signal 0 – 10 V	Dissolution 1 mV Accuracy \pm 10 mV Max. connection of 5 pressure transmitters on one module
	Contact function (ON / OFF)	ON at R < 20 ohm, OFF at R > 2 K ohm (Gold plated contacts not necessary)
ON/OFF supply voltage inputs	Low voltage 0 / 80 V DC / AC	OFF : U < 2 V ON: U > 10 V
	High voltage 0 / 260 V AC	OFF : U < 24 V ON: U > 80 V
Relay outputs SPDT	AC-1 (ohmic)	5 A
	AC-15 (inductive)	3 A
	U	Min. 24 V - Max. 230 V Low and high voltage must not be connected to the same output group
	Fuse	5 A (F)
Solid state outputs	Can be used for loads that are frequently cut in and out e.g. decompression, rail heating, fans and AKV valve	Max. 240 V AC, Min. 48 V AC - Max. 0.5 A, Leak < 1 mA Max. 1 AKV
Ambient temperature	During transport	-40 – 70 °C
	During operation	-20 – 55 °C, 0 – 95% RH (non condensing) - No shock influences / vibrations
Enclosure	Material	PC / ABS
	Enclosure	IP10, VBG 4
	Mounting	For mounting on wall or DIN rail
Weight with screw terminals	Modules in 100- / 200- / controller series	Approx. 200 g / 500 g / 600 g
Approvals	Complies with EU low voltage directive and EMC requirements	LVD tested according to EN 60730 EMC tested - Immunity according to EN 61000-6-2, Emission according to EN 50081-1
	UL file number	E166834

Accessories Extension Modules & Survey for Inputs & Outputs

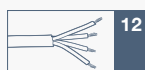
Type	Analog inputs	ON / OFF outputs		ON / OFF supply voltage (DI signal)		Analog outputs	Stepper outputs	Module with switches	Part no.
	For sensors, pressure transmitters	Relay (SPDT)	Solid state	Low voltage (max. 80 V)	High voltage (max. 260 V)	0 -10 V d. c.	For valves with step control	For override of relay outputs	
Controller	11	4	4	-	-	-	-	-	-
AK-XM 101A	8	-	-	-	-	-	-	-	080Z000700
AK-XM 102A	-	-	-	8	-	-	-	-	080Z000800
AK-XM 102B	-	-	-	-	8	-	-	-	080Z001300
AK-XM 103A	4	-	-	-	-	4	-	-	080Z003200
AK-XM 204A	-	8	-	-	-	-	-	-	080Z001100
AK-XM 204B	-	8	-	-	-	-	-	x	080Z001800
AK-XM 205A	8	8	-	-	-	-	-	-	080Z001000
AK-XM 205B	8	8	-	-	-	-	-	x	080Z001700
AK-XM 208C	8	-	-	-	-	-	4	-	080Z002300

Remote Displays

Type	Description	Part no.
EKA 163B	Display unit	084B857400
EKA 164B	Display unit with operation buttons	084B857500
MMIGRS2	Graphic display with operation	080G029400
	Remote display, Wall, S	080G029500
	Remote display, Panel, I	080G029700

Miscellaneous

Type	Description	Part no.
AK-CM 102	Communication modules for controllers where modules cannot be connected continuously	080Z006400



Danfoss EKE 1A / EKE 1B / EKE 1C Superheat Controllers

The flexible pre-programmed EKE 1 series of superheat controllers from Danfoss provides ultimate software control, allowing you to tailor the performance of your system to your exact requirements.

EKE is ideal for controlling a wide range of commercial air conditioning and refrigeration applications, such control helps you to achieve the highest efficiency in the system reducing the operational cost by up to 20% with minimal

effort. EKE is generally used where there is a requirement for accurate control of superheat or temperature control in connection with air conditioning and refrigeration.

The superheat is regulated to the lowest possible value in the shortest period. It regulates the superheat of the evaporator by charging optimally even when there are great variations of load resulting in a reduction of energy consumption and operational cost.

Efficiency

- Adaptive superheat control several control algorithms available to match your application that guarantee low and stable superheat.
- Compressor feed forward provides proper superheat by synchronizing valve reactivity to compressor speed.
- Heating & cooling selection mode
- Optimizes evaporator performance by allowing 2 different sets of superheat settings
- Fast start-up ensures optimal superheat in the shortest period of time by quickly opening the valve and avoiding low pressure cut-out during start-up.



System Protection

- Fail Safe Operation: In case of sensor error, system can continue cooling in emergency.
- Low Operating Pressure (LOP): Allows applications to start-up at lower ambient conditions to prevent compressor from stopping. High Condensing Temperature Protection (HCTP) ensures that the load on the condenser is reduced, in cases where the condensing temperature gets too high
- Superheat Close: When the superheat is below a set minimum value, the valve will close faster in order to protect the compressor
- Max Operating Pressure (MOP): Keeps evaporating pressure below the MOP set point.

Ease of Use/Installation/Applied Costs

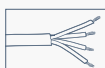
- Share Power Supply: Galvanic isolation eliminates the need of one transformer for every EKE.
- Share Pressure Signal: 1 sensor can be used with multiple controllers.
- Valves & Sensors: Compatible with a wide range of valves and sensors.
- Commutation Filter: The filter is inside the EKE and eliminates the need of external filter for greater cable lengths.
- KoolProg: The Koolprog wizard tool will guide the user to set up the controller in a fast and easy way.

Applications:

- Chillers
- Processing plant / Cabinet cooling
- Cold store (air coolers)
- A/C plant / Air conditioning
- Heat pumps. Residential Heat Pump
- Transport cooling

- Power Supply
 - 24 V AC or 24 V power supply, Easy wiring layout
- Drives bipolar and unipolar valves with selectable driving method
- Plug and Play installation. Easy and fast configuration via Wizard
- Analog and Digital Inputs
 - Various programmable Analog and digital inputs available
- External and flexible large graphical display
- Connectivity available with
 - CAN / CAN RJ / Modbus RS485 RTU

- Key Software
 - Energy saving Superheat Control logic: Minimum stable superheat, LoadAp, Fixed SH, Delta Temperature
 - Safety protection: MOP, LOP, min. S4, HCTP, SH close
 - Improved and fast starts up with rapid temperature pull down time
 - Feature focus on specific application e.g Heat pump, chiller
 - Ensure longevity of the stepper valve



Type	Description	Part no. single pack
EKE 1A	Superheat controller 1 temperature sensor	080G530000
EKE 1B	Superheat controller 2 temperature sensor	080G535000

Technical Data

		EKE 1A	EKE 1B	EKE 1C
Power supply				
Power supply type	24 V AC / DC \pm 20%	•	•	•
Share power supply		•	•	•
Battery backup input	18 – 24 V DC	•	•	•
Data Communication				
MODbus	RS 485 RTU	–	•	•
Wired CANbus	To link Danfoss products	–	–	•
CANbus RJ	Danfoss MMI service port	•	•	•
Inputs				
Temperature Sensor Type	PT1000	–	–	•
	NTC 10 K, type EKS	•	•	•
	NTC 10 K, type AccPBT	•	•	•
	NTC 10 K, type Sensata	•	•	•
No of temperature sensors	1	2	3	
Pressure Transmitter types	Ratiometric 0.5 – 4.5 V DC	•	•	•
	0 – 20 mA signal	–	–	•
	1 – 5 V / 0 – 10 V	•	•	•
No of pressure sensors	1	1	2 or (1 P and 1 ext. ref.)	
Share Pressure Signal	Up to 5 devices	•	•	–
	Via wired CANbus	–	–	•
Read external sensor value	Via MODbus	–	•	•
External reference	4 – 20 mA	–	–	•
	0 – 20 mA	–	–	•
	User defined current	–	–	•
	0 – 10 V	•	•	•
	1 – 5 V	•	•	•
	User defined voltage	•	•	•
No. of external reference		1	1	1
Digital Input Dry contact	(4 possible functions)	3	2	2
Outputs				
Digital output		1	1	1
Class of insulation	Class II	•	•	•
Relay	SPDT	1	1	1
Relay functions	Alarm or NC function	•	•	•

Accessories

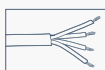
Type	Description	Part no. single pack
MMIGRS2 Remote Display	Graphic display with operation	080G029400

Danfoss EKE 347 Liquid Level Controller

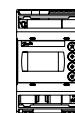
The EKE347 controller is used for regulation of the liquid level in pump reservoirs, separators, intermediate coolers, economisers, condensers and receivers. The controller is communicating with a transmitter that continuously measures the liquid level in the actual reservoir. By comparing the measured value with the level setpoint entered by the customer, the controller dictates the valve to increase or decrease the liquid flow to or from the reservoir.



- User friendly and easy setup Wizard for first time configuration
- Programming menu with 3 access levels and separate passwords
- With the AKS 4100 / 4100U liquid level transmitter it is possible to set the refrigerant level within a wide range
- EKE 347 can be used with ICM or AKV / A expansion valves
- ICM are direct operated motor valves driven by digital stepper motor type ICAD
- AKVA or AKV are pulse-width modulating expansion valves
- EKE 347 include as standard RS 485 based MODBUS-RTU bus communication interface to third party equipment like PLC
- Connection to other EKE347 controllers possible
- Wired remote display possible

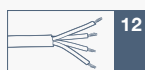


Type	Description	Part no.
EKE 347	Liquid level controller	080G500000
MMIGRS2	Remote display, Panel, S	080G029400



Technical Data

Features	Description
Supply voltage	24 V AC \pm 20%, 50 / 60 Hz or 24 V DC \pm 20% (the supply voltage is galvanically separated from the input and output signals. Input / output are not individual galvanic isolated)
Power consumption	Controller: 15 VA / 10 W 20 W coil for AKV: 55 VA
Input signal *) Ri =0(4)-20 mA: 33 ohm 0(2)-10 V: 100 kohm	Level signal *) : 4 – 20 mA or 0 – 10 V ICM valve feedback signal *) : From ICAD 0 / 4 – 20 mA Contact function start / stop of regulation
Relay output	3 pcs. SPDT (Lower level alarm, Upper level alarm, Common alarm / NC Solenoid) 3 A (ohmic) 1 A (inductive) Max 240 V AC or 24 V AC / DC. can be used, but same voltage type must be used on DO3 and DO2
Current output	0 – 20 mA or 4 – 20 mA Max. load: 500 ohm
Valve connection	ICM - via current output AKV / A- via 24 V AC. Pulse-Width Modulating output
Data communication	MODBUS RTU: Communication to system controller, MODBUS on RS485: galvanic isolation (500 V DC) CAN: Communication to other EKE controllers
Environments	-20 – 55 °C, during operation -30 – 80 °C, during storage 90% Rh, not condensed No shock influence / vibrations
Enclosure	IP20 / IP40 for the front mounted into a panel
Weight	193 g
Mounting	DIN rail
Display	Graphical LCD display
Terminals	plugs 1.5 or 2.5 mm ² multicore
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD-tested acc. to EN 60730-1 and EN 60730-2-9 EMC-tested acc. to EN61000-6-3 and EN 61000-6-2



Danfoss AK-PC 551 Capacity Controller

AK-PC 551 is used for capacity regulation of compressors and condensers in small refrigeration applications. A maximum of 8 compressors and one condenser can be regulated: One suction group + one condenser group - Two suction groups + one shared condenser, max. 4 + 4 steps - One compressor group, max. 8 steps - One condenser group, max. 8 steps.

Solid State Outputs

max. 2 pcs.

- Control of capacity valve on a Copeland digital scroll
- Control of unloaders on a Copeland stream compressor.
- Control of unloaders on a Bitzer CR11 Ecoline compressor.

If the outputs are not used for these functions, they can be used as ordinary relay outputs

Analogue Outputs

max. 2 pcs

speed control of compressors and condenser fans



Digital Inputs

max. 8 pcs signal from automatic safety control, day / night signal

Relay Outputs

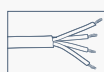
max. 6 pcs connection of compressors, condenser fans

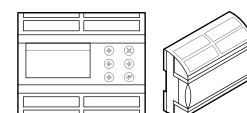
Analogue Inputs

max. 8 pcs signal from pressure transmitters, temperature sensors, voltage signal

- Energy savings via: optimisation of suction pressure, night time increase, floating condensing pressure & load limitation

Type	Description	Part no.
AK-PC 551	230 V, LCD, 2SSR, RS485, S	080G028100
AK-PC 551	24 V, LCD, 2SSR, RS485, S	080G028300
AK-PC 551 kit	230 V, for remote display, 2SSR, RS485, S + MMIGRS2 + 1.5m CABLE	080G028200
AK-PC 551 kit	24 V, for remote display, 2SSR, RS485, S + MMIGRS2 + 1.5m CABLE	080G028800



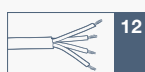


Technical Data

Features	Description
Supply voltage	24 V AC \pm 15%, 50 / 60 Hz, 17 V A
	24 V DC (20 – 60 V), 17 V A
	230 V AC (85 – 265 V) 50 / 60 Hz, 20 V A
8 analog input	Pressure measuring: Ratiometric pressure transmitter type AKS 32R 1 – 5 volt pressure transmitter type AKS 32 0 – 20 (4 – 20) mA pressure transmitter type AKS 33
	Temperature measurement Pt 1000 ohm / 0 °C NTC - 86 K from digital scroll / stream
8 digital input	From contact function E.g. to: Start / stop of regulation Monitoring of safety circuits General alarm function
Relay output to capacity control	4 pcs. SPDT (8 A): AC-1: 6 A (ohmic)
	4 pcs. SPDT (8 A): AC-15: 4 A (inductive)
	2 pcs. SPST (16 A): AC-1: 10 A (ohmic)
	2 pcs. SPST (16 A): AC-15: 3.5 A (inductive)
	2 pcs. Solid State. PWM for scroll -unload
	$I_{max.} = 0.5 \text{ A}$
	$I_{min.} = 50 \text{ mA}$
	$Leak < 1.5 \text{ mA}$
2 Voltage output	0-10 V DC $R_i = 1 \text{ kohm}$, Separate 24 V supply required
Display output	For type MMIGRS2
Data communication	Modbus for AK-SM 850
Environments	-20 – 60 °C, During operations
	-40 – 70 °C, During transport
	20 – 80% Rh, not condensed
	No shock influence / vibrations
Enclosure	IP20
Weight	0.4 kg
Mounting	DIN-rail
Connection terminals	max. 2.5 mm ² multi core
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9 EMC-tested acc. EN61000-6-2 and 3

Accessories

Type	Description	Part no.
MMIGRS2	MMIGRS2, Remote Display, Panel, S	080G029400
AccCBI	Telephone Cable User Interface Connector, 1.5 M Cable	080G007500
AccCBI	Telephone Cable User Interface Connector, 3 M Cable	080G007600



Danfoss AK-PC 351 Capacity Controller

AK-PC 351 is used for capacity regulation of compressors and condensers in small refrigeration applications. A maximum of 4 compressors and one condenser can be regulated: One suction group + one condenser group, max. 6 steps - One compressor group, max. 4 steps - One condenser group, max. 4 steps.

Solid State Output 1 pcs control of bypass on a digital scroll or for controlling unloader on a stream compressor. If the output is not used for the function, it can be used as ordinary relay output

Analogue Inputs max. 4 pcs signal from pressure transmitters, temperature sensors

Analogue Outputs max. 2 pcs speed control of compressors and condenser fans



Digital Inputs max. 8 pcs signal from automatic safety control, day / night signal

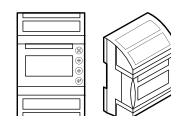
Relay Outputs max. 5 pcs connection of compressors, condenser fans

Energy Savings via:
 - optimisation of suction pressure
 - night time increase
 - floating condensing pressure

- Energy savings via: optimisation of suction pressure, night time increase, floating condensing pressure.

Type	Description	Part no.
AK-PC 351	24 V AC / 20 – 60 V DC, LCD, RS485, 1SSR S	080G028900





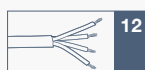
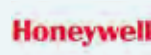
Technical Data

Features	Description
Supply voltage	24 V AC \pm 15%, 50 / 60 Hz, 17 V A 24 V DC (20 – 60 V), 17 V A
4 analog Input	Pressure measuring: Ratiometric pressure transmitter type AKS 32R 1 – 5 volt pressure transmitter type AKS 32 / 0 – 20 (4 – 20) mA pressure transmitter type AKS 33 Temperature measurement: Pt 1000 ohm / 0 °C / NTC - 86 K from digital scroll / stream
8 digital input	From contact function E.g. to: Start / stop of regulation / Monitoring of safety circuits / General alarm function
Relay output to capacity control	5 pcs. SPST (5 A): AC-1: 5 A (ohmic)
	5 pcs. SPST (5 A): AC-15: 2 (inductive)
	1 pc. Solid State PWM for scroll -unload Imax. = 0.5 A Imin. = 50 mA Leak < 1.5 mA
2 Voltage output	0-10 V DC Ri = 1 kohm
Display output	For type MMIGRS2
Data communication	Modbus for AK-SM 850
Environments	-20 – 60 °C, During operations
	-40 – 70 °C, During transport
	20 – 80% Rh, not condensed
	No shock influence / vibrations
Enclosure	IP40
Weight	0.2 kg
Mounting	DIN-rail
Connection terminals	max. 2.5 mm ² multi core
Approvals	EU Low Voltage Directive and EMC demands re - CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9 EMC-tested acc. EN61000-6-2 and 3



Did you know we stock a whole range of probes?

Discover our full range of probes on page 273 & 274



Danfoss AK-PC 651 Capacity Controller

AK-PC 651 is used for capacity regulation of compressors and condensers in small refrigeration applications. A maximum of 10 compressors and one condenser can be regulated: One suction group + one condenser group - One compressor group, max. 10 steps - One condenser group, max. 8 steps.

Digital inputs max.
18 pcs signal from automatic safety control, day / night signal

Analyse inputs
max. 10 pcs signal from pressure transmitters, temperature sensors, voltage signal

Analyse outputs
max. 4 pcs speed control of compressors and condenser fans

Solid state outputs
max. 2 pcs.
- Control of capacity valve on a Copeland digital scroll
- Control of unloaders on a Copeland stream compressor.
- Control of unloaders on a Bitzer CR11 Ecoline compressor.

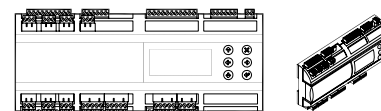
If the outputs are not used for these functions, they can be used as ordinary relay outputs

Relay outputs
max. 13 pcs connection of compressors, condenser fans

Energy savings via:
- optimisation of suction pressure
- night time increase
- floating condensing pressure
- load limitation

- Energy savings via: optimisation of suction pressure, night time increase, floating condensing pressure & load limitation.

Type	Description	Part no.
AK-PC 651	230 V, LCD,2SSR, RS485, S	080G031200

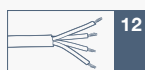


Technical Data

Features	Description
Supply voltage	230 V AC (85 – 265 V) 50 / 60 Hz, 26 V A
10 analog Input	<p>Pressure measuring: Ratiometric pressure transmitter type AKS 32R 1 – 5 volt pressure transmitter type AKS 32 0 – 20 (4 – 20) mA pressure transmitter type AKS 33</p> <p>Temperature measurement Pt 1000 ohm / 0 °C NTC - 86 K from digital scroll / stream</p>
18 digital input (14 for low voltage + 4 for high voltage or low voltage)	<p>From contact function E.g. to: Start / stop of regulation Monitoring of safety circuits General alarm function</p>
Relay output to capacity control	<p>7 pcs. SPST (8 A): AC-1: 6 A (ohmic), AC-15: 4 A (inductive)</p> <p>4 pcs. SPDT (8 A): AC-1: 6 A (ohmic), AC-15: 4 A (inductive)</p> <p>2 pcs. SPDT (16 A): AC-1: 7 A (ohmic), AC-15: 3.5 A (inductive)</p> <p>2 pcs. Solid State. PWM for scroll -unload</p> <p style="text-align: right;">I_{max.} = 0.5 A I_{min.} = 50 mA Leak < 1.5 mA</p>
4 Voltage output	0-10 V DC R _i = 1 kohm, Separate 24 V supply required
Display output	For type MMIGRS2
Data communication	Modbus for AK-SM 850
Environments	<p>-20 – 60 °C, During operations</p> <p>-40 – 70 °C, During transport</p> <p>20 – 80% Rh, not condensed</p> <p>No shock influence/vibrations</p>
Enclosure	IP20
Weight	0.8 kg
Mounting	DIN-rail
Connection terminals	max. 2.5 mm ² multi core
Approvals	<p>EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9 EMC-tested acc. EN61000-6-2 and 3</p>

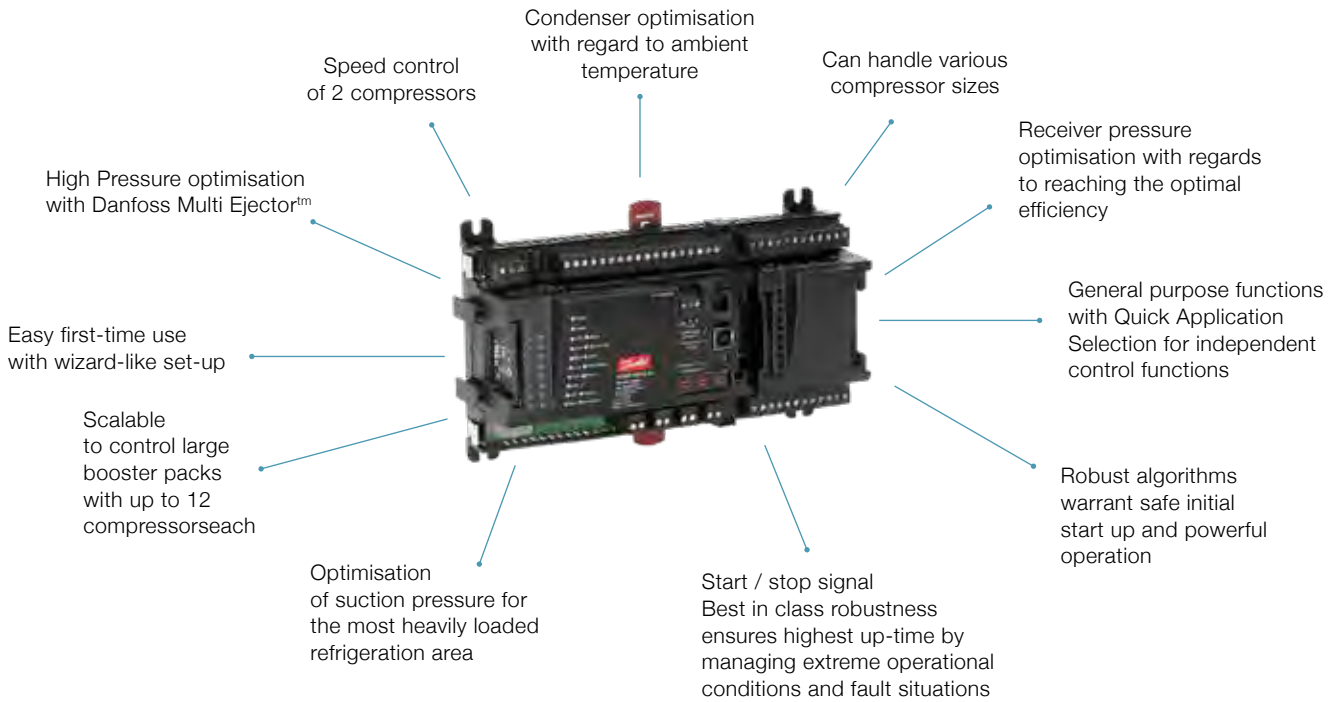
Accessories

Type	Description	Part no.
MMIGRS2	MMIGRS2, remote display, panel, s	080G029400
AccCBI	Telephone cable user interface connector, 1.5m cable	080G007500
AccCBI	Telephone cable user interface connector, 3m cable	080G007600



Danfoss AK-PC 782A Capacity Controller

AK-PC 782A is a powerful and flexible controller that provides precise regulation, improved efficiency, and enhanced user friendliness for pack control in transcritical CO₂ booster packs. The controller flexibility and efficiency makes it the obvious choice for all sizes of packs in all climates.



- One controller for the entire CO₂ booster pack
- High pressure control
- Danfoss Multi Ejector™ control
- Parallel compressor control
- Heat recovery functions
- Floating receiver pressure control
- Built in RS485 Lon communication
- Oil system pressurisation and flow management

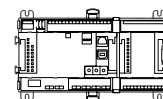
Type	Description	Part no.
AK-PC 782A	English, German, French, Italian, Dutch, Spanish, Portuguese, Danish, Finnish, Russian, Czech, Polish, Chinese	080Z019200

Software

Type	Description	Part no.
AK-ST 500	Software for operation of AK controllers	080Z016100

Remote Displays

Type	Description	Part no.
EKA 163B	Display unit	084B857400
EKA 164B	Display unit with operation buttons	084B857500
MMIGRS2	Graphic display with operation	080G029400



Technical Data

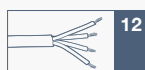
Features	Description	
Supply voltage	24 V DC / AC \pm 20%	
Power consumption	8 V A	
Analogue inputs	Pt 1000 ohm / 0 °C	Dissolution: 0.1 °C Accuracy: \pm 0.5 °C
	Pressure transmitter type AKS 32R / AKS 2050 / AKS 32 (1 – 5 V)	Dissolution 1 mV Accuracy \pm 10 mV Max. connection of 5 pressure transmitters on one module
ON / OFF supply voltage inputs	Low voltage 0 / 80 V AC / DC	OFF : U < 2 V ON: U > 10 V
	High voltage 0 / 260 V AC	OFF : U < 24 V ON: U > 80 V
Relay outputs SPDT	AC-1 (ohmic)	5 A
	AC-15 (inductive)	3 A
Solid state outputs	U	Min. 24 V - Max. 230 V Low and high voltage must not be connected to the same output group
	Can be used for loads that are frequently cut in and out e.g. unloaders, solenoid valve	Max. 240 V AC, Min. 48 V AC - Max. 0.5 A Leak < 1 mA Max. 1 AKV
Ambient temperature	During transport	-40 – 70 °C
	During operation	-20 – 55 °C, 0 – 95% RH (non condensing) - No shock influences / vibrations
Enclosure	Material	PC / ABS
	Enclosure	IP10, VBG 4
	Mounting	For mounting on wall or DIN rail
Weight with screw terminals	Modules in 100- / 200- / controller series	Approx. 200 g / 500 g / 600 g
Approvals	Complies with EU low voltage directive and EMC requirements	LVD tested according to EN 60730 EMC tested - Immunity according to EN 61000-6-2, Emission according to EN 50081-1
	UL file number	E166834

Accessories Extension Modules & Surveys for Inputs & Outputs

Type	Analog inputs	ON / OFF outputs		ON / OFF supply voltage (DI signal)		Analog outputs	Stepper outputs	Module with switches	Part no.
	For sensors, pressure transmitters	Relay (SPDT)	Solid state	Low voltage (max. 80 V)	High voltage (max. 260 V)	0 -10 V d. c.	For valves with step control	For override of relay outputs	
Controller	11	4	4	-	-	-	-	-	-
AK-XM 101A	8	-	-	-	-	-	-	-	080Z000700
AK-XM 102A	-	-	-	8	-	-	-	-	080Z000800
AK-XM 102B	-	-	-	-	8	-	-	-	080Z001300
AK-XM 103A	4	-	-	-	-	4	-	-	080Z003200
AK-XM 204A	-	8	-	-	-	-	-	-	080Z001100
AK-XM 204B	-	8	-	-	-	-	-	x	080Z001800
AK-XM 205A	8	8	-	-	-	-	-	-	080Z001000
AK-XM 205B	8	8	-	-	-	-	-	x	080Z001700
AK-XM 208C	8	-	-	-	-	-	4	-	080Z002300

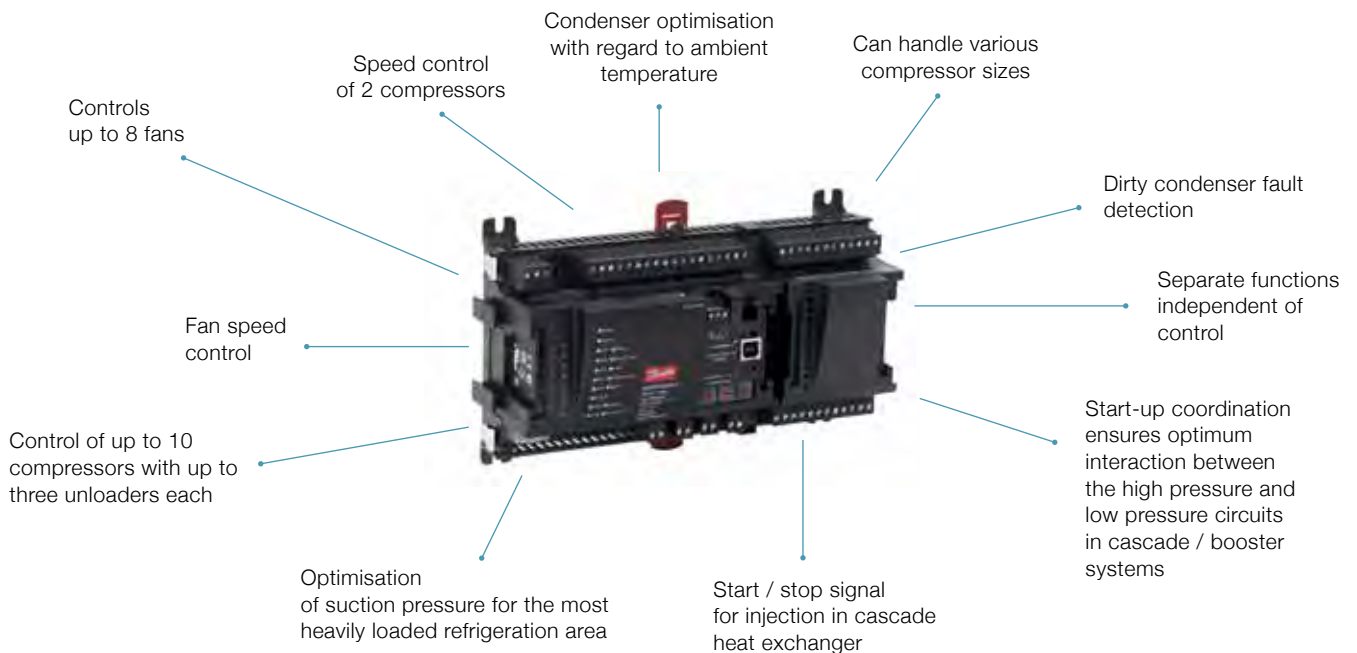
Miscellaneous

Type	Description	Part no.
AK-CM 102	Communication modules for controllers where modules cannot be connected continuously	080Z006400



Danfoss AK-PC 781A Capacity Controller

The controller is a complete regulating unit for capacity control of compressors and condensers in commercial refrigeration systems. These controllers are particularly well suited to capacity control of cascade or booster systems. Full capacity control of both circuits can be obtained by using two controllers.



- Integrated oil management
- Also suitable for use in CO₂ systems
- Heat recovery functions
- CO₂ gas pressure control
- Parallel compression for a transcritical CO₂ systems
- Built in RS485 Lon communication

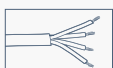
Type	Description	Part no.
AK-PC 781A	English, German, French, Italian, Dutch, Spanish, Portuguese, Danish, Finnish, Russian, Czech, Polish, Chinese	080Z019100

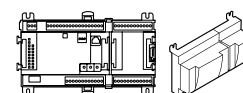
Software

Type	Description	Part no.
AK-ST 500	Software for operation of AK controllers	080Z016100

Remote Displays

Type	Description	Part no.
EKA 163B	Display unit	084B857400
EKA 164B	Display unit with operation buttons	084B857500
MMIGRS2	Graphic display with operation	080G029400





Technical Data

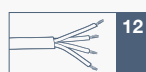
Features	Description	
Supply voltage	24 V DC / AC \pm 20%	
Power consumption	8 V A	
Analogue inputs	Pt 1000 ohm / 0 °C	Dissolution: 0.1 °C, Accuracy: \pm 0.5 °C
	Pressure transmitter type AKS 32R / AKS 2050 / AKS 32 (1 – 5 V)	Dissolution 1 mV, Accuracy \pm 10 mV Max. connection of 5 pressure transmitters on one module
	Contact function (ON / OFF)	On at R < 20 ohm Off at R > 2K ohm (Gold plated contacts not necessary)
ON / OFF supply voltage inputs	Low voltage 0 / 80 V AC / DC	OFF : U < 2 V ON: U > 10 V
	High voltage 0 / 260 V AC	OFF : U < 24 V ON: U > 80 V
Relay outputs SPDT	AC-1 (ohmic)	5 A
	AC-15 (inductive)	3 A
Solid state outputs	U	Min. 24 V - Max. 230 V Low and high voltage must not be connected to the same output group
	Can be used for loads that are frequently cut in and out e.g. unloaders, solenoid valve	Max. 240 V AC, Min. 48 V AC - Max. 0.5 A Leak < 1 mA Max. 1 AKV
Ambient temperature	During transport	-40 – 70 °C
	During operation	-20 – 55 °C, 0 – 95% RH (non condensing) - No shock influences / vibrations
Enclosure	Material	PC / ABS
	Enclosure	IP10, VBG 4
	Mounting	For mounting on wall or DIN rail
Weight with screw terminals	Modules in 100- / 200- / controller series	Approx. 200 g / 500 g / 600 g
Approvals	Complies with EU low voltage directive and EMC requirements	LVD tested according to EN 60730 EMC tested - Immunity according to EN 61000-6-2, Emission according to EN 50081-1
	UL file number	E166834

Accessories Extension Modules & Surveys for Inputs & Outputs

Type	Analog inputs	ON / OFF outputs		ON / OFF supply voltage (DI signal)		Analog outputs	Stepper outputs	Module with switches	Part no.
	For sensors, pressure transmitters	Relay (SPDT)	Solid state	Low voltage (max. 80 V)	High voltage (max. 260 V)	0 - 10 V d. c.	For valves with step control	For override of relay outputs	
Controller	11	4	4	-	-	-	-	-	-
AK-XM 101A	8	-	-	-	-	-	-	-	080Z000700
AK-XM 102A	-	-	-	8	-	-	-	-	080Z000800
AK-XM 102B	-	-	-	-	8	-	-	-	080Z001300
AK-XM 103A	4	-	-	-	-	4	-	-	080Z003200
AK-XM 204A	-	8	-	-	-	-	-	-	080Z001100
AK-XM 204B	-	8	-	-	-	-	-	x	080Z001800
AK-XM 205A	8	8	-	-	-	-	-	-	080Z001000
AK-XM 205B	8	8	-	-	-	-	-	x	080Z001700
AK-XM 208C	8	-	-	-	-	-	4	-	080Z002300

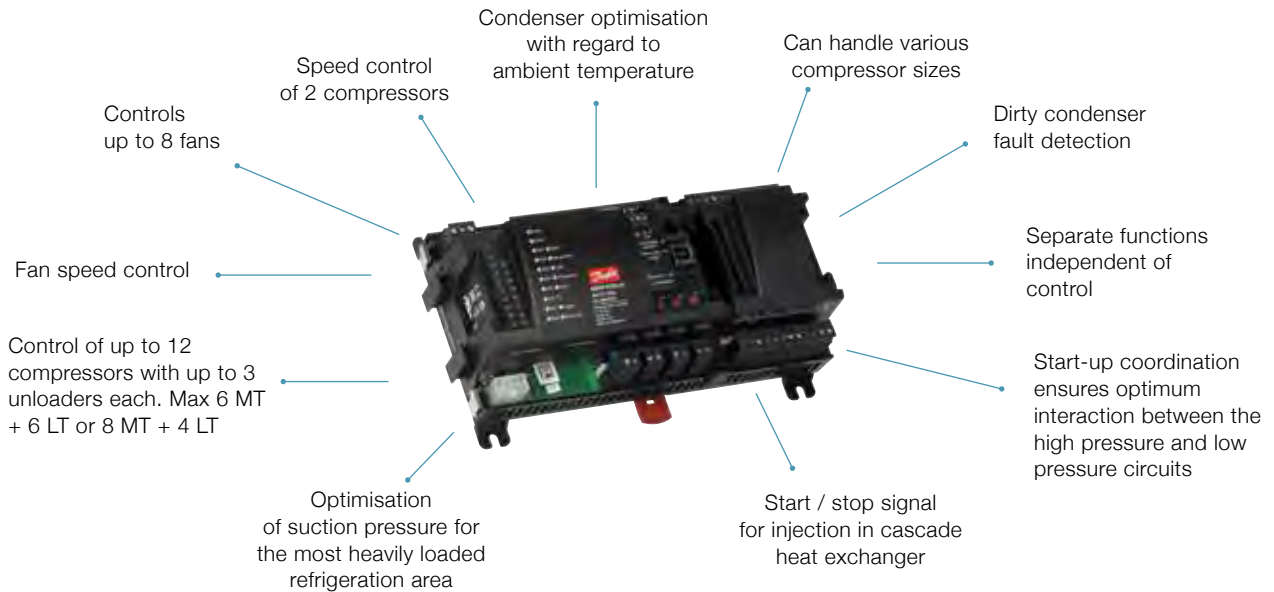
Miscellaneous

Type	Description	Part no.
AK-CM 102	Communication modules for controllers where modules cannot be connected continuously	080Z006400



Danfoss AK-PC 783A Capacity Controller with Cascade Control

The controller is a complete regulating unit for capacity control of compressors and condensers in refrigeration plants with cascade function. The controller controls the high-pressure circuit, low-pressure circuit and cascade circuit.



- Integrated oil equalization on MT
- Heat recovery functions
- Up to 3 screw compressors
- Built in RS485 Lon communication
- Digital scroll compressors

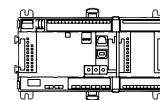
Type	Language	Part no.
AK-PC 781A	English, German, French, Italian, Dutch, Spanish, Portuguese, Danish, Finnish, Russian, Czech, Polish, Chinese	080Z019100

Software

Type	Description	Part no.
AK-ST 500	Software for operation of AK controllers	080Z016100

Remote Displays

Type	Description	Part no.
EKA 163B	Display unit	084B857400
EKA 164B	Display unit with operation buttons	084B857500
MMIGRS2	Remote display, Wall, S	080G029500
	Remote display, Panel, I	080G029700
	Graphic display with operation	080G029400



Technical Data

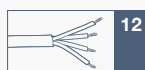
Features	Description	
Supply voltage	24 V DC / AC \pm 20%	
Power consumption	8 V A	
Analogue inputs	Pt 1000 ohm / 0 °C	Dissolution: 0.1 °C, Accuracy: \pm 0.5 °C
	Pressure transmitter type AKS 32R / AKS 2050 / AKS 32 (1 – 5 V)	Dissolution 1 mV, Accuracy \pm 10 mV Max. connection of 5 pressure transmitters on one module
	Contact function (ON / OFF)	On at R < 20 ohm, Off at R > 2K ohm (Gold plated contacts not necessary)
ON / OFF supply voltage inputs	Low voltage 0 / 80 V AC / DC	OFF : U < 2 V ON: U > 10 V
	High voltage 0 / 260 V AC	OFF : U < 24 V ON: U > 80 V
Relay outputs SPDT	AC-1 (ohmic)	5 A
	AC-15 (inductive)	3 A
	U	Min. 24 V - Max. 230 V Low and high voltage must not be connected to the same output group
Solid state outputs	Can be used for loads that are frequently cut in and out e.g. unloaders, solenoid valve	Max. 240 V AC, Min. 48 V AC - Max. 0.5 A Leak < 1 mA Max. 1 AKV
Ambient temperature	During transport	-40 – 70 °C
	During operation	-20 – 55 °C, 0 – 95% RH (non condensing) - No shock influences / vibrations
Enclosure	Material	PC / ABS
	Enclosure	IP10, VBG 4
	Mounting	For mounting on wall or DIN rail
Weight with screw terminals	Modules in 100- / 200- / controller series	Approx. 200 g / 500 g / 600 g
Approvals	Complies with EU low voltage directive and EMC requirements	LVD tested according to EN 60730 EMC tested - Immunity according to EN 61000-6-2, Emission according to EN 50081-1
	UL file number	E166834

Accessories Extension Modules & Surveys for Inputs & Outputs

Type	Analog inputs	ON / OFF outputs		ON / OFF supply voltage (DI signal)		Analog outputs	Stepper outputs	Module with switches	Part no.
	For sensors, pressure transmitters	Relay (SPDT)	Solid state	Low voltage (max. 80 V)	High voltage (max. 260 V)	0 -10 V d. c.	For valves with step control	For override of relay outputs	
Controller	11	4	4	-	-	-	-	-	-
AK-XM 101A	8	-	-	-	-	-	-	-	080Z000700
AK-XM 102A	-	-	-	8	-	-	-	-	080Z000800
AK-XM 102B	-	-	-	-	8	-	-	-	080Z001300
AK-XM 103A	4	-	-	-	-	4	-	-	080Z003200
AK-XM 204A	-	8	-	-	-	-	-	-	080Z001100
AK-XM 204B	-	8	-	-	-	-	-	x	080Z001800
AK-XM 205A	8	8	-	-	-	-	-	-	080Z001000
AK-XM 205B	8	8	-	-	-	-	-	x	080Z001700
AK-XM 208C	8	-	-	-	-	-	4	-	080Z002300

Miscellaneous

Type	Description	Part no.
AK-CM 102	Communication modules for controllers where modules cannot be connected continuously	080Z006400



Danfoss AK-SM 800 Series System Manager

The System Manager controller from Danfoss is the global control and supervisory solution for the food retail industry. The System Manager uses the latest technology to provide the maximum benefit to the end user, both in terms of energy saving optimization, control options and full web user

access. Designed specifically for the food retail and food processing / handling market, the System Manager provides comprehensive functionality and support tools to cover small to large stores.



• Product highlights:

- direct support to EM-800 (AKM not supported / needed)
- supports centralized and decentralized control strategy; compatible with Danfoss case and pack controllers and Danfoss I/O
- open XML data transfer allowing remote access to key system parameters

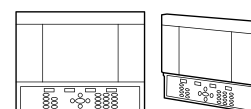
• Design features:

- active TFT SVGA color screen 800x600
- front alarm status LED
- removable keyboard panel (revealing connections)
- easy access to USB flash drive
- wall and panel mounting options
- built in alarm relay output

• Hardware capability features:

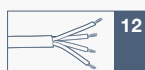
- built in web server
- no back up battery required
- RS485 LonWorks®
- ethernet
- EKC Modbus
- USB

Type	Description	Options	Part no.
AK-SM 810	C-Store Refrigeration/HVAC/Lighting, No display, No buttons	Convenience Store with 32 device capacity	080Z400600
AK-SM 820	C-Store (Refrigeration / HVAC / Lighting)	Convenience Store version with 32 device capacity	080Z400400
AK-SM 850	Refrigeration (including lighting)	Refrigeration version with 120 device capacity	080Z400100
AK-SM 880	Full (Refrigeration / HVAC / Lighting)	Full store version with 120 device capacity	080Z400800
AK-SM 800AL	Alarm logger	AK-SM 8xx accessory	080Z401400



Technical Data

SM800 version comparison	AK-SM 810, SM820 - C-Store Version	SM850 - Refrig version	SM880 - Full version
Refrigeration Control			
All SM800 variants come with Centralized I/O and Pack / Case control options. EKC AK2 SLV FC102	Max 32 generic device support	Max 120 generic support	Max 120 generic support
Lighting Control			
All SM800 variants come with built in lighting control via I/O modules. The number of zones differ	10	30	30
HVAC			
Only the SM820 and SM880 support built in HVAC control via I/O	10	n/a	45
Alarms			
Capacity	250	250	250
Miscellaneous Points (via IO Module)			
Relay (R), Sensor (S), ON / OFF (O / F), Variable (V)	R=20, S=20, O / F=20, V=20	R=70, S=80, O / F=70, V=70	R=70, S=80, O / F=70, V=70
Master Control			
Po Optimization, Master Schedules, AKC ON Note: Adaptive Defrost not currently supported	X	X	X
Misc Calculations			
Boolean Logic statements	96	96	96
History			
The SM800 has the ability to record datapoints for history and view	600 points	600 points	600 points
Leak Detectors			
Refrigerant gas detectors (connected via AK I/O)	10	50	50
Energy Meters			
Pulse Input (via I/O module), Carlo Garvazi, Wattnode, Wattnode Plus Modbus, Veris Modbus	32	80	80
Service Tool Support			
Tunneling via front end (IP connection only)	X	X	X



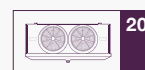
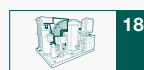
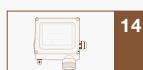
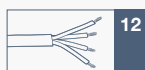
Optyma™ Control Single-Phase

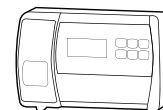
The Optyma™ Control is particularly suitable for the Optyma™ and Optyma™ Plus condensing units from Danfoss but is also compatible with other condensing units on the market. The control features an attractive new design and simple flexible programming. It offers both control and protection in a single unit, thanks to the unique built-in differential magnetothermic circuit breaker, which guarantees safety by cutting the general power supply.



- Direct control of defrosting elements, evaporator fans, room light with outputs directly connectable to the various units
- Automatic fuse protect the refrigeration unit
- Stylish ABS housing with transparent cover for access to the automatic fuse, all with an IP65 protection rating so that panel can be used outside the room
- LED indicators and large display show system status
- User-friendly keypad
- Display resolution to 0.1 °C
- Standard and ADAP-KOOL® compatible Modbus data communication

Type	Description	Part no.
AK-RC 101	Optyma™ Control, single-phase	080X822000

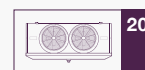
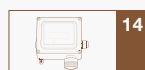
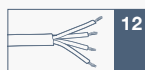
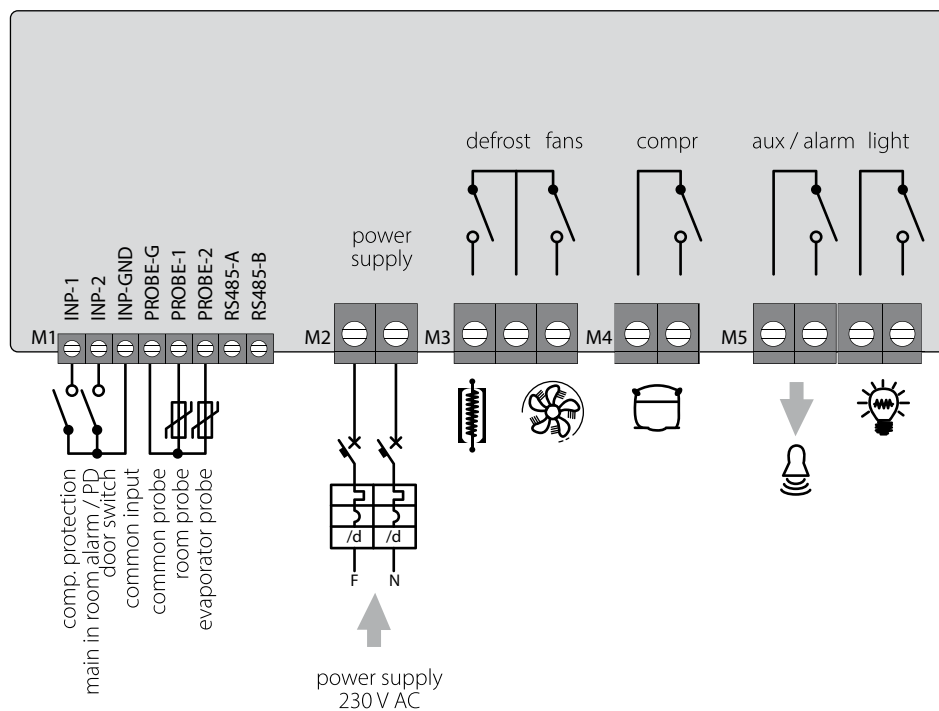




Technical Data

Features	Description
Power supply	Voltage 230 V AC \pm 10%, 50 / 60 Hz
	Max absorbed power (electronic control) ~ 7 V A
Ambient conditions	Operating temperature -5 – 50 °C
	Storage temperature -30 – 70 °C
	Relative humidity < 90% RH
General characteristics	Connectable sensor types NTC 10 K 1%
	Resolution 0.1 °K
	Probe read precision \pm 0.5 °K
	Read range -45 – 45 °C
Output characteristics max. applicable load (230 V AC)	Compressor 1500 W (AC3)
	Defrost 3000 W (AC1)
	Fans 500 W (AC3)
	Room light 800 W (AC1)
	Configurable alarm contact / aux (voltage-free contact) 100 W
General electric protection	Bipolar differential magnetothermic circuit breaker 16 A Id = 300 mA switching power 4.5 kA Id = 30 mA (on request)
Insulation and mechanical characteristics	Cover protection rating IP65
	Cover material self-extinguishing ABS
	Type of insulation Class II
	Box dimensions 262 x 168 x 97

AK-RC 101 Connection Diagram



Optyma™ Control Three-Phase

The Optyma™ Control is particularly suitable for the Optyma™ and Optyma™ Plus condensing units from Danfoss but is also compatible with other condensing units on the market. The control features an attractive new design and simple flexible programming. It offers both control and protection in a single unit, thanks to the unique built-in differential magnetothermic circuit breaker, which guarantees safety by cutting the general power supply.

Electronic control with wide LED display and easy-to-use buttons

Auxiliary relay with activation configurable by parameter

RS485 Modbus for data communication and integration into a complete ADAP-KOOL® system

Easy wiring on the internal terminal block



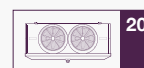
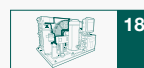
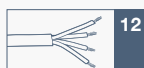
Direct control of the compressor, condenser fans, compressor oil heater, defrosting heaters, evaporator fans, solenoid valve, room light and all standard-compliant electrical safeguards

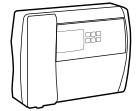
Differential magnetothermic circuit breaker (for cutting the general power supply) accessible from the front panel

Adjustable motor circuit breaker for compressor protection accessible from the front panel

- LED icons to signal plant status
- Electronic control with wide LED display and easy to use buttons
- Display and adjustment of cold room temperature accurate to 0.1 °C
- Display of evaporator temperature from parameter
- System control activation / deactivation
- Alarm signalling: sensor errors, minimum and maximum temperature alarm, compressor protection (man-in-cold-room alarm in preset models)
- Evaporator fan control
- Automatic and manual defrost control (static, heating element)
- Direct or pump-down control of motor compressor unit (selectable by terminal block connection in preset models)
- Room light activation, via panel key or door switch
- Auxiliary relay with activation configurable by parameter
- Parameter access with password (4 different selectable restriction levels)
- General automatic fuse accessible from the front panel, which cuts the general power supply
- Adjustable motor protector for compressor protection accessible from the front panel (in preset models)
- Standard and ADAP-KOOL® compatible Modbus data communication

Type	Description	Part no.
AK-RC 103	Optyma™ Control, three-phase (3 kW) 4.5-6.3 A	080Z320100
AK-RC 103	Optyma™ Control, three-phase (3 kW) 7-10 A	080Z320200
AK-RC 103	Optyma™ Control, three-phase (5 kW) 11-16 A	080Z320600
AK-RC 103	Optyma™ Control, three-phase (5 kW) 14-20 A	080Z320700

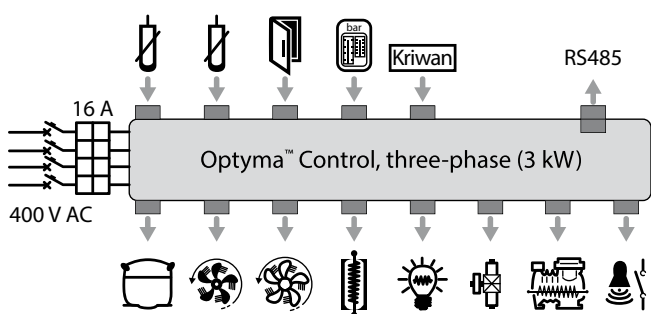




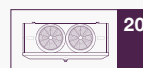
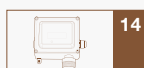
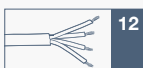
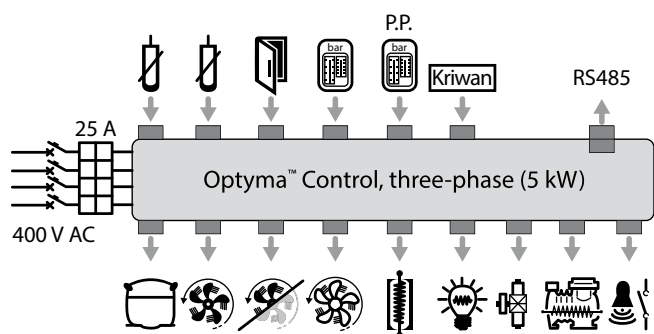
Technical Data

Features	Optyma™ Control AK-RC 103, three-phase (3 kW)	Optyma™ Control AK-RC 103, three-phase (5 kW)
Case dimensions	400 × 300 × 135 mm	400 × 300 × 135 mm
Protection rating	IP65	IP65
Power supply (3F + N + T)	400 V AC ± 10% 50 / 60 Hz	400 V AC ± 10% 50 / 60 Hz
Load type	three-phase	three-phase
Operating temperature	-5 – 40 °C	-5 – 40 °C
Storage temperature	-25 – 55 °C	-25 – 55 °C
Relative ambient humidity	< 90% RH	< 90% RH
Main switch / general protection	4 poles magnetothermic 16 A	4 poles magnetothermic 25 A
Compressor protection	motor circuit breaker	motor circuit breaker
Defrosting	electrical	electrical
Status indicators	LED + display	LED + display
Alarm signals	LED + buzzer	LED + buzzer
Ambient probe	NTC 10 K 1%	NTC 10 K 1%
Evaporator probe	NTC 10 K 1%	NTC 10 K 1%
Door switch	present	present
High/low pressure switch	present	present
Kriwan® connection	present	present
Compressor functioning mode selection	pump-down / thermostat	pump-down / thermostat
Compressor	370 W – 3000 W	3000 W – 5500 W
Condenser fans output 1	800 W (1 ph)	800 W (1 ph)
Condenser fans output 2 (separated)		total (1 ph)
Evaporator fans	500 W (1 ph)	2000 W (1 ph/3 ph)
Defrosting heaters	6000 W	9000 W
Room light	800 W (AC1) resistive load	800 W (AC1) resistive load
Solenoid valve	present	present
Compressor oil heater	present	present
Alarm relay	100 W	100 W

AK-RC-103 - Three Phase (3kW)



AK-RC-103 - Three Phase (5kW)





Carel Mastercella

The Mastercella control panel has an IP65 rated front panel and comes in 2 versions; 3 or 5 relay. They can handle compressors up to circa 2hp. Defrost control is via natural defrost, electric defrost or hot gas. It can also be used with stand-alone EVD modules for electronic expansion valve management. It can also be connected to a supervision system using the RS485 serial card.

No. of Relays:
A = 3
D = 5

Power Supply:
E = 230V
F = 230V + Disconnect switch



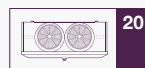
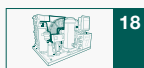
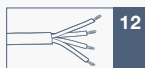
Relay power:
0 = 16A, 16A, 8A, 8A, 16
5 = 30A, 16A, 8A, 8A, 2HP

Options:
R = Green Display + Infrared
N = Green Display
B = RTC + Green Display + Infrared

Type	Description	Part no.
MD33D5FB00	Carel Mastercella control panel	5387

Specifications

Description	5 relays (CMP 30 A) with RTC and disconnect switch
Dimensions	200x240x93 mm
Ingress protection	IP54
Power supply	230 Vac
Power input	11.3 VA, 50 mA~ max
Inputs	
Total	5
Analogue (type)	2 (NTC/NTC*HT)
Digital (type)	3 (configurable)
Outputs (EN60730-1/UL873) - sum of load currents max. 12 A	
Compressor	30 A (12(10A)/12 A res. 2HP 72LRA C300)
Defrost	16 A (10(5)/10 A res. 5FLA 18LRA C300)
Evaporator Fan	8 A (8(4) on NO, 6(4) on NC, 2(2) on NC and NO/8 A res. 2FLA 12LRA C300)
AUX 1 (configurable)	8 A (8(4) on NO, 6(4) on NC, 2(2) on NC and NO / 8 A res. 2FLA 12LRA C300)
AUX 2 (configurable)	2HP (12(10 A)/12A res. 12FLA 72LRA C300)
Additional functions/modules	
Electronic valve management	Optional, not modular (with WM00EUC000)
Residual current circuit breaker	-
Three-phase power management	-
Other specifications	
Connectivity (serial) RS485	Optional (with IROPZSEM30)
Internal clock	Yes
Infrared receiver	Yes
Main disconnect switch	Yes





Carel Ultracella

The Ultracella control panel has an IP65 rated front panel and comes with 6 relays. Compressors up to 2 HP can be controlled directly. Defrost control is via natural defrost, electric defrost or hot gas.

Data logs can be taken from the system using its USB datalogging function. Humidification/dehumidification and dual evaporator management is also possible. It can be combined with two EVD modules for managing two electronic expansion valves and direct or remote power modules for three-phase load management. There is the ability to connect the panel to a supervisor system using the built-in RS485. It can also interface with condensing units using CAREL DC INVERTER technology.

W B 0 0 0 _ _ 0 F 0

Display Lines: S = 1 D = 2
Display Colour: R = White G = Green

Type	WB000DW0F0
Part No.	58963

Description	Two line display, White LED
Dimensions	128x290x100 mm
Ingress protection	IP65
Power supply	230 Vac
Power input	18 VA, 100 mA~ max

Total Inputs	8
Analogue (type)	3 (NTC, PT1000), 1 (NTC, 0-10 Vdc), 1 (0-5 Vdc, 4-20 mA)
Digital (type)	3 (configurable)

Compressor	2HP (12(10 A)/12A res. 12FLA 72LRA C300)
Defrost	2HP (12(10 A)/12A res. 12FLA 72LRA C300)
Evaporator Fan	16A (10(5)/10 A res. 5FLA 18LRA C300)
Light	16A (10(5)/10 A res. 5FLA 18LRA C300)
AUX 1 (configurable)	8A (8(4) on NO, 6(4) on NC, 2(2) on NC and NO/8 A res. 2FLA 12LRA C300)
AUX 2 (configurable)	8A (8(4) on NO, 6(4) on NC, 2(2) on NC and NO / 8 A res. 2FLA 12LRA C300)
Analog output	0 to 10 Vdc, 10 mA max

Electronic valve management	Optional (with WM00E*N*00 for one evaporator or WM00E*S*00 for two evaporators)
Residual current circuit breaker	Optional (with WM00P000*N)
Three-phase power management	Optional (remote with WT00E* or WT00F*, direct with WT00S* or WT00C*)

Connectivity (serial) RS485	Yes (1 BMS, 1 FieldBus)
Internal clock	Yes
Datalogger function	Yes (USB)
Humidity management	Yes

Type	WB000SW0F0
Part No.	58952

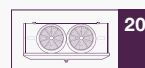
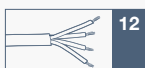
Description	Single line display, White LED
Dimensions	128x290x100 mm
Ingress protection	IP65
Power supply	230 Vac
Power input	18 VA, 100 mA~ max

Total Inputs	8
Analogue (type)	3 (NTC, PT1000), 1 (NTC, 0-10 Vdc), 1 (0-5 Vdc, 4-20 mA)
Digital (type)	3 (configurable)

Compressor	2HP (12(10 A)/12A res. 12FLA 72LRA C300)
Defrost	2HP (12(10 A)/12A res. 12FLA 72LRA C300)
Evaporator Fan	16A (10(5)/10 A res. 5FLA 18LRA C300)
Light	16A (10(5)/10 A res. 5FLA 18LRA C300)
AUX 1 (configurable)	8A (8(4) on NO, 6(4) on NC, 2(2) on NC and NO/8 A res. 2FLA 12LRA C300)
AUX 2 (configurable)	8A (8(4) on NO, 6(4) on NC, 2(2) on NC and NO / 8 A res. 2FLA 12LRA C300)
Analog output	0 to 10 Vdc, 10 mA max

Electronic valve management	Optional (with WM00E*N*00 for one evaporator or WM00E*S*00 for two evaporators)
Residual current circuit breaker	Optional (with WM00P000*N)
Three-phase power management	Optional (remote with WT00E* or WT00F*, direct with WT00S* or WT00C*)

Connectivity (serial) RS485	Yes (1 BMS, 1 FieldBus)
Internal clock	Yes
Datalogger function	Yes (USB)
Humidity management	Yes



Universal Control Panel



Features:

- Eliwell EWPlus 974 Controller
- Illuminated coldroom Lightswitch
- Indications via coldroom display only
- 1ph evaporator fans up to 4.5A
- Electric & Air defrost options
- MCB protected drain heater
- MCB protected door heater
- 1ph fans up to 4.5A
- 3ph Electric Defrost up to 12.4kw

Type	GBUE-EEW-02E
Description	Universal GBUE Evaporator Panel 3ph
Part No.	55581

Evaporator Control Panel



Features:

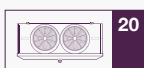
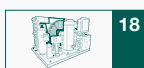
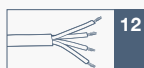
- Eliwell EWPlus 974 Controller
- LED indicators – PANEL LIVE/DEFROST ON
- MCB protection on 1ph and 3ph Evaporator fans
- Various Air defrost and Electric defrost options
- Common MCB for Drain/Door Heater
- MCB protected coldroom lights output
- 1ph fans up to 4.5A
- 3ph Electric Defrost up to 12.4kw

Type	GBSE-EEW-02E
Description	Evaporator GBSE Evaporator Panel 1ph
Part No.	5986



ⓘ DID YOU KNOW...

The world's largest refrigeration unit is the **“Hadron Collider”** which is an amazing **27 kilometres** long and uses **9300 magnets** and over **10,000 tonnes** of liquid nitrogen for cooling.



Carel Trapped Personnel Alarm



The Carel ColdWatch trapped personnel alarm kit can be fitted inside low temperature cold rooms, allowing personnel to call for help in the event of being trapped inside the cold room. The alarm is triggered by pressing an emergency button inside the room, activating the audible signal-warning light on the control panel outside.

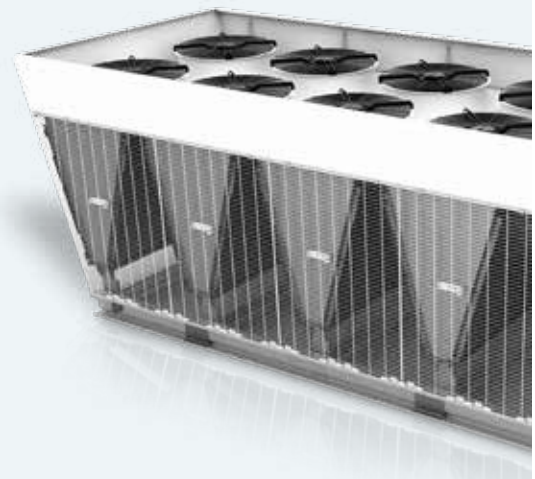
The kit includes a control unit, to be installed outside the cold room, fitted with audible siren and flashing light, a backup battery which provides power in the event of blackouts and the emergency button, to be installed inside the cold room, the LED on the pushbutton is on all the time, so the button can be identified in the dark.

Part No.	5339
Main power supply	24 Vac ($\pm 15\%$), 50/60 Hz or 22 to 40 Vdc
Battery	12 Vdc, 10 hours
Visual Signal	Flashing red LED
Sound Emitted	95 dB at 1 m

Large Refrigeration or Heavy Commercial Project?

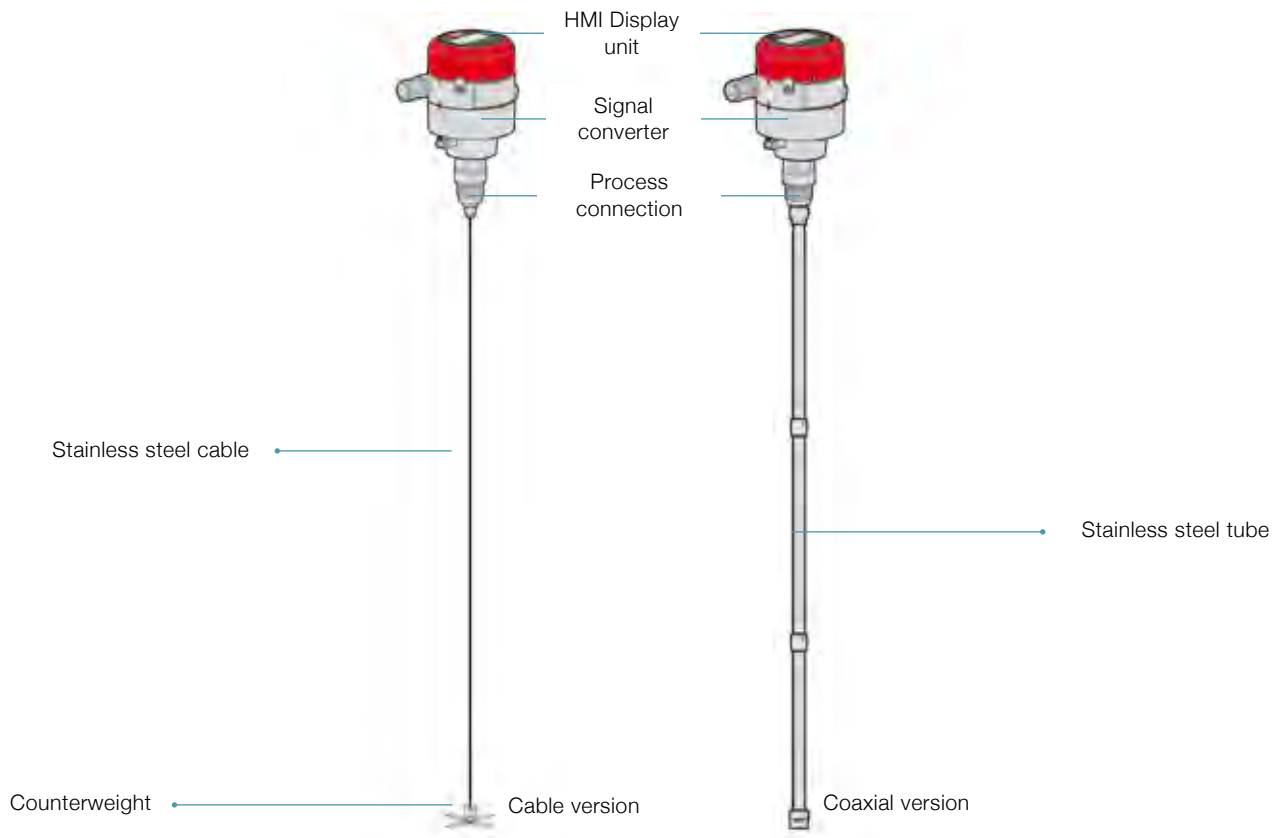
Make sure you call our team of experts for competitive pricing on all your heavy commercial refrigeration projects, as well as assistance with technical support and equipment selection.

Get in touch with your local branch today!



AKS 4100 / AKS 4100U

The AKS 4100 / AKS 4100U liquid level sensor is designed specifically to measure liquid levels in a wide range of refrigeration applications. The liquid level sensor is based on a proven technology called Time Domain Reflectometry (TDR) or Guided Micro Wave. AKS 4100 / AKS 4100U liquid level sensor can be used to measure the liquid level of many different refrigerants in vessels, Accumulators, receivers, standpipes, etc.



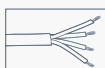
- AKS 4100 / AKS 4100U is available in two different versions:
- Cable version
 - Coaxial version

- Both cable and coaxial versions are available with two different mechanical process connections:
- AKS 4100: G1 inch pipe thread. Aluminium gasket included
 - AKS 4100U: $\frac{3}{4}$ inch NPT

Accessories

Type	Description	Part No.
AKS 4100 / AKS 4100U HMI	Service / Display unit with rear cover and mounting bracket	084H454000
	Service / Display unit with rear cover and mounting bracket	084H459000
	Display	084H454800
	Display	084H459800
AKS 4100 / AKS 4100U	Signal Converter without HMI, excluding cable gland	084H454100

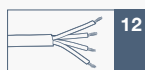
For spare parts (service kits and gaskets) please see the spare parts documentation.



Type	Description	HMI with / without	Part No.
AKS 4100	with 5 m (197 in) ø2 mm (ø0.08 in) stainless cable and counterweight	with	084H450100
		with	084H455000
		without	084H450000
AKS 4100U		with	084H452100
		with	084H457100
		without	084H452000

Type	Description	Probe length		HMI with / without	Part No.
		[mm]	[in]		
AKS 4100	Coaxial D22 1)	280	-	with	084H451700
		280	-	with	084H456700
		280	-	without	084H451800
	Coaxial D14	500	-	with	084H451000
		500	-	with	084H456000
		500	-	without	084H450300
		800	-	with	084H451100
		800	-	with	084H456100
		800	-	without	084H450400
		1000	-	with	084H451200
		1000	-	with	084H456200
		1000	-	without	084H450500
		1200	-	with	084H451300
		1200	-	with	084H456300
		1200	-	without	084H450600
		1500	-	with	084H451400
		1500	-	with	084H456400
		1500	-	without	084H450700
		1700	-	with	084H451500
		1700	-	with	084H456500
		1700	-	without	084H450800
		2200	-	with	084H451600
2200	-	with	084H456600		
2200	-	without	084H450900		
AKS 4100U	Coaxial D22 1)	-	11	with	084H453600
		-	11	with	084H458600
		-	11	without	084H453700
	Coaxial D14	-	19.2	with	084H453000
		-	19.2	with	084H458000
		-	19.2	without	084H452400
		-	30	with	084H453100
		-	30	with	084H458100
		-	30	without	084H452500
		-	45	with	084H453200
		-	45	with	084H458200
		-	45	without	084H452600
		-	55	with	084H453300
		-	55	with	084H458300
		-	55	without	084H452700
		-	65	with	084H453400
		-	65	with	084H458400
		-	65	without	084H452800
		-	85	with	084H453500
		-	85	with	084H458500
-	85	without	084H452900		

AKS 4100 Coaxial 280mm and AKS 4100U Coaxial 11 in. are only released for R717/NH3



Danfoss AKS / DST P100

AKS and DST P100 pressure transmitters are used for commercial air-conditioning and for commercial and industrial refrigeration applications. They are made in stainless steel to be compatible with fluorinated and natural refrigerants and laser welding with no soft seals ensure

hermetic tightness for decades. AKS and DST P100 pressure transmitters utilize temperature calibrations methods and sensing technologies optimized for the refrigeration and air-conditioning segments.

Dedicated temperature calibration to increase accuracy when used for suction or discharge pressure regulation



Compact AKS 32R; AKS 3000 and DST P100 with solder or female flare pressure ports

Parts in touch with refrigerants are all laserwelded, free of soft gaskets

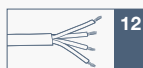
- Designed for precise and energy optimized control
- Robust design optimized for
 - air-conditioning
 - refrigeration plant
 - supermarket installation
 - natural refrigerants like CO₂ and R717
- Pressure ranges up to 159 bar
- High test pressure, ≥ 33 bar
- Available with 4 – 20 mA, 1 – 5 V DC or 10 – 90% Vs ratiometric signals
- Available with a variety of pressure connection, incl. ¼ inch female flare with valve depressor and ⅜ inch solder connection, ensuring a 100% hermetic installation

AKS 32R & AKS 2050 with 10-90% Ratiometric Output Signal

4.75 – 8 V DC supply voltage, accuracy 0.3% FS (typical), pressure reference gauge (relative)

Type	Pressure rang [bar]	Max. overload pressure [bar]	Electrical connection	Pressure connection	Part no.
AKS 32R	-1 – 12	33	EN 175301-803-A without plug	⅜ – 20 UNF flare ¼ in	060G103600
	-1 – 12	33	EN 175301-803-A with Pg 9 plug	⅜ – 20 UNF flare ¼ in	060G633900
	-1 – 34	55	EN 175301-803-A without plug	⅜ – 20 UNF flare ¼ in	060G009000
	-1 – 34	55	EN 175301-803-A with Pg 9 plug	⅜ – 20 UNF flare ¼ in	060G634000
	-1 – 12	33	EN 175301-803-A without plug	⅜ – 20 UNF ¼ in female flare	060G632300 ³⁾
	-1 – 12	33	EN 175301-803-A with Pg 9 plug	⅜ – 20 UNF ¼ in female flare	060G596100 ³⁾
	0 – 32	55	EN 175301-803-A with Pg 9 plug	⅜ – 20 UNF ¼ in female flare	060G596200 ³⁾
	-1 – 34	55	EN 175301-803-A without plug	⅜ – 20 UNF ¼ in female flare	060G634100 ³⁾
	-1 – 12	33	EN 175301-803-A without plug	Solder, ODF, ⅜ in	060G355100
	-1 – 34	55	EN 175301-803-A without plug	Solder, ODF, ⅜ in	060G355200
	0 – 16	33	EN 175301-803-A with Pg 9 plug	Solder, ODF, ⅜ in	060G615600 ¹⁾
	0 – 50	55	EN 175301-803-A with Pg 9 plug	Solder, ODF, ⅜ in	060G615700 ¹⁾
AKS 2050	-1 – 12	33	EN 175301-803-A without plug	Thread ISO 228/1 – G ⅜ A (BSP)	060G103800
	-1 – 59	100	EN 175301-803-A without plug	Thread ISO 228/1 – G ⅜ A (BSP)	060G575000 ²⁾
	-1 – 99	150	EN 175301-803-A without plug	Thread ISO 228/1 – G ⅜ A (BSP)	060G575100 ²⁾
	-1 – 159	250	EN 175301-803-A without plug	Thread ISO 228/1 – G ⅜ A (BSP)	060G575200 ²⁾

¹⁾ Pressure reference Absolute ²⁾ With pulse-snubber ³⁾ With deflator



AKS 32 & AKS 2050 Accessories

Type	Electrical connection	Comments	Part no.
Cable with plug	Plug 3 + E (female)	5 m cable	060G103400
Plug	EN 175301-803-A	Pg 9	060G000800

AKS 32 with 1-5V Output Signal

9 - 30 V DC supply voltage, accuracy 0.3% FS (typical), pressure reference gauge (relative)

Type	Pressure range [bar]	Max. overload pressure [bar]	Electrical connection	Pressure connection	Part no.
AKS 32	-1 - 12	33	EN175301-803-A Pg9 plug	1/16 - 20 UNF flare 1/4 in	060G206900
	-1 - 34	40	EN175301-803-A Pg9 plug	1/16 - 20 UNF flare 1/4 in	060G207100

AKS 33 with 4-20mA Output Signal

10 - 30 V DC supply voltage, accuracy 0.3% FS (typical), pressure reference gauge (relative)

Type	Pressure range [bar]	Max. overload pressure [bar]	Electrical connection	Pressure connection	Part no.
AKS 33	-1 - 6	33	EN175301-803-A Pg9 plug	1/16 - 20 UNF flare 1/4 in	060G204800
	-1 - 12	33	EN175301-803-A Pg9 plug	1/16 - 20 UNF flare 1/4 in	060G204900
	0 - 25	33	EN175301-803-A Pg 9 plug	1/16 - 20 UNF flare 1/4 in	060G204500
	-1 - 34	55	EN175301-803-A Pg 9 plug	1/16 - 20 UNF flare 1/4 in	060G205100
	-1 - 6	33	EN175301-803-A Pg 9 plug	G 3/8 EN 837	060G210400
	-1 - 12	33	EN175301-803-A Pg 9 plug	G 3/8 EN 837	060G210500
	-1 - 34	55	EN175301-803-A Pg 9 plug	G 3/8 EN 837	060G210700

AKS 3000 with 4-20mA Output Signal

10 - 30 V DC supply voltage, accuracy 0.3% FS (typical), pressure reference gauge (relative)

Type	Pressure range [bar]	Max. overload pressure [bar]	Electrical connection	Pressure connection	Part no.
AKS 3000	-1 - 12	33	EN175301-803-A Pg9 plug	1/16 - 20 UNF flare 1/4 in	060G132300
	0 - 30	55	EN175301-803-A Pg9 plug	1/16 - 20 UNF flare 1/4 in	060G132700
	-1 - 12	33	EN175301-803-A Pg 9 plug	G 1/2 EN 837	060G189600
	0 - 25	40	EN175301-803-A Pg 9 plug	G 3/8 EN 837	060G104100
	0 - 40	100	EN175301-803-A Pg 9 plug	G 3/8 EN 837	060G106600
	-1 - 12	33	EN175301-803-A Pg 9 plug	1/16 - 20 UNF 1/4 in female flare	060G584600
	-1 - 6	33	EN175301-803-A Pg 9 plug	1/16 - 20 UNF 1/4 in female flare	060G389900
	0 - 30	55	EN175301-803-A Pg 9 plug	1/16 - 20 UNF 1/4 in female flare	060G395800

DST P100 Pressure Transmitter for Cooling Applications

DST P100 with 10 - 90% radiometric output signal. SV±10% supply voltage, accuracy ±1% FS (within specified temp range)

Type	Operating range	Units	Colour code electrical connector	Focus temperature range (1% TEB)	Pressure port	Part no.
	[bar sg]			[°C]	[flare]	
DST P100	0 - 150	psia	Green	-20 - 40	1/16 UNF, female ¹⁾	075G1701400
	0 - 200	psia	Green	-20 - 40		075G1701600
	0 - 400	psi sg	Black	0 - 80		075G1701900
	0 - 500	psi sg	Black	0 - 80		075G1702100
	-1 - 12	bar sg	Green	-20 - 40		075G1701300
	-1 - 34	bar sg	Black	0 - 80		075G1701800
	0 - 10	bar sg	Green	0 - 80		075G1701200
	0 - 20	bar sg	Green	-20 - 40		075G1701500
	0 - 30	bar sg	Black	0 - 80		075G1701700
	0 - 50	bar sg	Black	0 - 80		075G1702000

¹⁾ 1/4 in. flare with a deflator pin Electrical connector colour coding: Black: High pressure profile Green: Low pressure profile



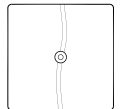
Danfoss EKS / AKS

AKS temperature sensors are used for exacting applications within air-conditioning as well as commercial and industrial refrigeration applications. The Pt 1000 sensor element meets the DIN/EN 60751 class B requirements and ensures an accurate and reliable temperature signal applicable for

regulation, safety and data logging. EKS temperature sensors are a family of cost efficient temperature sensors based on thermistors with NTC or PTC characteristics which are used with Danfoss EKC controllers.



AK-HS - Temperature Sensors for Monitoring & Data Logging in HAccP Systems



Type	Signal	Temperature range [°C]	Measuring accuracy	Enclosure	Cable length [m]	Part no.
AK-HS 1000	Pt 1000	-30 – 50	EN 60751 Class B	IP 54	5.5	084N100700

EKS - Temperature Sensors for Measuring Air Temperatures



PTC characteristics matches controllers types EKC 101, EKC 201, EKC 301, cc & AK. NTC characteristics matches controllers, types EKC and cc.

Type	Signal	Temperature range [°C]	Sensor tube	Electrical connection	Cable length [m]	Part no.
EKS 111	PTC 1000	-55 – 100	Round	Cable with pins	1.5	084N117800
	PTC 1000	-55 – 100	Round	Cable with pins	3.5	084N117900
	PTC 1000	-55 – 100	Round	Cable with AMP-plug	1.5	084N118100
	PTC 1000	-55 – 100	Round	Cable with AMP-plug	3.5	084N118200
EKS 211	NTC 5000	-40 – 80	Round	Cable	1.5	084N122000
	NTC 5000	-40 – 80	Round	Cable	3.5	084N122100

May not be used for food safety logs and regulation of superheat

EKS - Temperature sensors for measuring temperatures

The sensor characteristics matches to OPTYMA room controllers and MCX unit controllers.

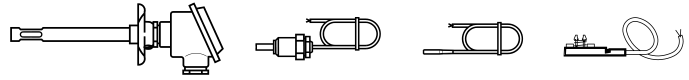
Type	Signal	Temperature range [°C]	Sensor tube	Electrical connection	Cable length [m]	Part no.
EKS 221	NTC 10000	-50 – 120	Round	Cable	3.5	084N321000
	NTC 10000	-50 – 120	Round	Cable	8.5	084N320900

Sensor house in thermo plastic rubber. NTC: Negative temperature coefficient thermistor, the higher the temperature, the lower the resistance. PTC: Positive temperature coefficient thermistor, the higher the temperature, the higher the resistance.



AKS - Temperature Sensors for Measuring Temperature

Recommended for accurate temperature measurement in superheating, food safety logs and other important applications



Type	Signal	Measure range [°C]	Sensor tube	Electrical connection	Cable length x[m]	Part no.
AKS 12	Pt 1000	-40 – 80	Round	Cable	1.5	084N003600
	Pt 1000	-40 – 80	Round	AMP plug	5.5	084N004500
AKS 11	Pt 1000	-50 – 100	Concave	Cable	3.5	084N000300
	Pt 1000	-50 – 100	Concave	Cable	5.5	084N000500
	Pt 1000	-50 – 100	Concave	Cable	8.5	084N000800
AKS 21A	Pt 1000	-70 – 180	Round	Cable	3.5	084N200700
	Pt 1000	-70 – 180	Round	Cable with AMP-plug	3.5	084N200800
	Pt 1000	-70 – 180	Round	Cable	2.0	084N202400
AKS 21M	Pt 1000	-70 – 180	Round	Cable	2.5	084N200300
AKS 21W	Pt 1000	-70 – 180	Sensor pipe	Cable	2.5	084N201700
AKS 21D	Pt 1000	-40 – 80	Channel bulb	Terminal socket Type B	-	084N203500

Carel Temperature Probes



Carel passive temperature probes, when connected to the controller, provide a resistance value which is then converted to a temperature by the electronic controller. The probes are used mainly in HVAC/R applications and can accommodate all your needs in different installations. The series of temperature probes includes various models that differ based on the performance of the system and field of application.

Features and Benefits

- NTC, PTC or PT100 models available
- Probes to be used with Carel electronic controllers (parametric and programmable)

The NTC temperature probe provides a resistance value when connected to a temperature controller it is then converted to a temperature by the controller. The probe is used in HVAC/R applications and satisfies various needs in different installations

Description	Length (m)	Part No.
NTC Air & Defrost Sensor	0.8m	58987
NTC Air & Defrost Sensor	1.5m	5365
NTC Air & Defrost Sensor	2.5m	58988
NTC Air & Defrost Sensor	3m	58989
NTC Air & Defrost Sensor	3.5m	58990
NTC Air & Defrost Sensor	6m	5594

Description	Length (m)	Part No.
NTC Temperature Probe	3m	5933
NTC Temperature Probe	6m	5934
NTC Temperature Probe	1.5m	5932

Description	Length (m)	Part No.
NTC Gas Cooler Probe	1.5m	48138
NTC Compressor Probe	1.5m	48139
NTC Outdoor Temp Probe	1.5m	48140
SPK Probe Cable	2m	48146

Description	Length (m)	Part No.
NTC Pipe Sensor For EVD	0.8	58985
NTC Pipe Sensor For EVD	1.5	58986
NTC Pipe Sensor	6	5672

Related Items:



10



10

Temperature Sensors & Probes

Eliwell Probes



Description	Length (m)	Part No.
NTC Sensor	1.5m	PELX320
PTC Sensor	1.5m	PELE320
PTC Sensor	3m	PELE325
Eliwell display 1.5m probe plastic tip	1.5m	EWTL300A
Eliwell probe 1.5m	1.5m	PTCPROBE
Eliwell Lead RVCKA723000000 for 256948	-	29048000
NTC Sensor/probe	1.5m	NTCPROBE
NTC Sensor/probe	3m	NTCPROBE3M
PTC Sensor/probe	3m	255818

Other Probes

Description	Part No.
KS01 Ribbon Probe	6528
ELM Probe TP002K 7m	TP002K
Thermomax Probe 5m	4610
RDM PT1000 Air Probe	298823

Fan Speed Controls

Danfoss - XGE / RGE Fan Speed Controllers



RGE and **XGE** are fan speed controllers made by Danfoss Saginomiya. RGE is available in single and three phase versions. RGE is a simple and efficient all-in-one pressure sensor and fan speed control, featuring a reliable sensing mechanism using bellows.

For compact units, the XGE provides the ideal solution for reliable fan control. It can be mounted directly onto the

refrigeration line, adjustment is made by the turn of a setting screw, and electrical connection is very versatile. It can also be panel mounted where space is insufficient on the refrigeration line.

RGE and XGE can be used for all commonly used refrigerants, including R410A. XGE-EC version for EC fan motors.

Easily accessible
adjusting screw

Waterproof housing with IP65

1/4 inch female or male
connection (or 1/4 inch
female with capillary
tube for RGE)



Quick electrical connection
in 4 different directions

Installation flexibility:
direct or panel mounting



XGE / RGE Fan Speed Controllers

Type	Mode ¹⁾	Pressure Connection [in]	Adjusting Range [Bar]	P-Band [Bar]	Pre-Setting [Bar]	Rated Motor Rating [A]	No. of Phase / Voltage [V AC]	Box Qty.	Part No.
XGE-2C	C	1/4 female flare	8 – 18	4.5	8	0.2 – 3	1 / 200 – 240	50	061H314400
XGE-4C		1/4 female flare	10 – 25	6	19	0.2 – 3	1 / 200 – 240	50	061H314000
XGE-4CB		1/4 male flare	10 – 25	6	19	0.2 – 3	1 / 200 – 240	50	061H314200
XGE-6C		1/4 female flare	22 – 39	7	28	0.2 – 3	1 / 200 – 240	50	061H316000
XGE-6CB		1/4 male flare	22 – 39	7	28	0.2 – 3	1 / 200 – 240	50	061H316200
XGE-4M	M	1/4 female flare	10 – 25	6	19	0.2 – 3	1 / 200 – 240	50	061H324000
XGE-4MB		1/4 male flare	10 – 25	6	19	0.2 – 3	1 / 200 – 240	50	061H324200
XGE-6M		1/4 female flare	22 – 39	7	28	0.2 – 3	1 / 200 – 240	50	061H326000
RGE-Z1N4-7DS	C or M	1/4 female flare	8 – 28	4	19	0.2 – 4	1 / 200 – 240	20	061H300500
RGE-Z1N6-7DS		1/4 female flare	16 – 39	8	32	0.2 – 4	1 / 200 – 240	20	061H302100
RGE-Z1P4-7DS		1/4 female flare	8 – 28	4	19	0.2 – 6	1 / 200 – 240	16	061H300800
RGE-Z1P6-7DS		1/4 female flare	16 – 39	8	32	0.2 – 6	1 / 200 – 240	16	061H302200
RGE-Z1Q4-7DS		1/4 female flare	8 – 28	4	19	0.2 – 8	1 / 200 – 240	16	061H300900
RGE-Z1Q6-7DS		1/4 female flare	16 – 39	8	32	0.2 – 8	1 / 200 – 240	16	061H302300
RGE-Z3R4-7DS		1/4 female flare	8 – 28	4	16	0.2 – 5	3 / 200 – 240	6	061H300300
RGE-X3R4-7DS		1/4 female flare	8 – 28	4	16	0.2 – 5	3 / 380 – 415	6	061H300600
RGE-X3R6-7DS		1/4 female flare	16 – 39	8	32	0.2 – 5	3 / 380 – 415	6	061H302800
RGE-Z3T4-7DS		1/4 female flare	8 – 28	4	16	0.2 – 7	3 / 200 – 240	6	061H305000

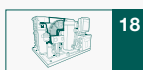
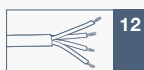
1) C = Cut-off M = Min. speed

XGE Fan Speed Controllers for EC Fan Motors

Type	Pressure Connection [in]	Adjusting range [bar]	P-band [bar]	Pre-setting [bar]	Rated motor rating [A]	No. of phase / voltage [V DC]	Box qty	Part No.
XGE-2S-E	1/4 female flare	8 – 18	4.5	8	.001	0 – 10	50	061H324500
XGE-4S-E	1/4 female flare	10 – 25	6	19	.001	0 – 10	50	061H324600
XGE-6S-E	1/4 female flare	22 – 39	7	28	.001	0 – 10	50	061H324700

Accessories

Type	Description	Dimensions	Box qty	Part No.
XGE-AE01	Fixing bracket accessory for panel mount	H: 38 mm, W: 42 mm, D: 45 mm	50	061H310200





REFRIGERATION LUBRICANT



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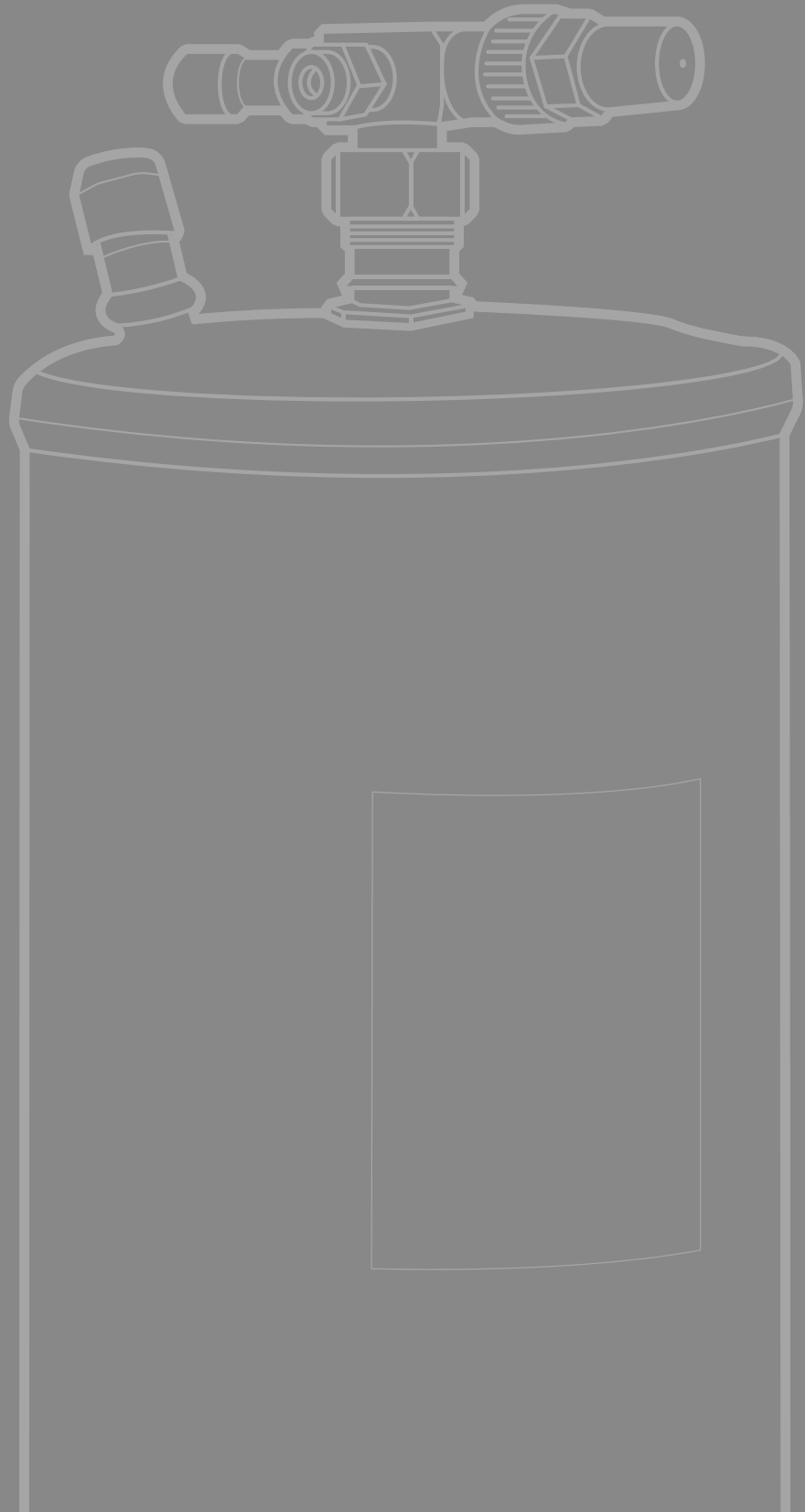
Mobil Arctic[®] 22CC

Supreme performance Synthetic Refrigeration Oil

7052-5

SECTION ELEVEN

Oil Management



Range Overview



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Oil Separators



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Suction Line Accumulators



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Oil Regulators



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Oil Strainers & Driers

SCM
FRIGO

FRIGA-BOHN

Our parent company, Beijer Ref, own production facilities throughout the world manufacturing a wide range of packs, chillers, pumping stations and outdoor packaged solutions. In partnership with Friga-Bohn Industrial Evaporators and Condensers we have the solution for all Heavy Commercial applications.

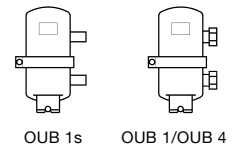
Contact your local branch with your project and our specialist Heavy Commercial technical team will design a commercially acceptable solution.



SPEAK TO THE SPECIALISTS...
when it comes to your next Heavy Commercial Refrigeration project!

OUB Oil Separator

OUB oil separators are for use in all refrigeration plants where the compressor lubricating oil must be returned direct to the compressor oil sump under all operation conditions. In this way lubricating oil from the compressor is prevented from circulating with the refrigerant in the refrigeration system itself.



Type	Connection			Rated plant capacity [kW]					Part no. for OUB + unions (straightway)
	[in]	[mm]	Version	R22	R134a	R404A	R507	R407C	
OUB 1	3/8	10	Flare	3.1	2.5	3.5	3.5	4.4	040B001000 + 2 × 040B013200
	3/8	–	Solder	3.1	2.5	3.5	3.5	4.4	040B001000 + 2 × 040B014000
	1/2	12	Flare	3.1	2.5	3.5	3.5	4.4	040B001000 + 2 × 040B013400
	1/2	–	Solder	3.1	2.5	3.5	3.5	4.4	040B001000 + 2 × 040B014200
	5/8	16	Flare	3.1	2.5	3.5	3.5	4.4	040B001000 + 2 × 040B013600
	5/8	16	Solder	3.1	2.5	3.5	3.5	4.4	040B001000 + 2 × 040B014400
Without connection unions									040B001000
OUB 1s 1)	–	10	Solder	3.1	2.5	3.5	3.5	4.4	040B002300
OUB 1s 2)	–	10	Solder	3.1	2.5	3.5	3.5	4.4	040B002900
OUB 4	5/8	16	Flare	11.6	9.6	12.8	12.8	16.0	040B004000 + 2 × 040B025600
	5/8	16	Solder	11.6	9.6	12.8	12.8	16.0	040B004000 + 2 × 040B026600
	3/4	–	Solder	11.6	9.6	12.8	12.8	16.0	040B004000 + 2 × 040B026800
	7/8	–	Solder	11.6	9.6	12.8	12.8	16.0	040B004000 + 2 × 040B027000
	–	22	Solder	11.6	9.6	12.8	12.8	16.0	040B004000 + 2 × 040B026400
	11/8	–	Solder	11.6	9.6	12.8	12.8	16.0	040B004000 + 2 × 040B027400
Without connection unions									040B004000

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



Henry Helical Oil Separators



The function of a Helical Oil Separator is to efficiently remove oil from the discharge gas and return it to the compressor, either directly or indirectly. This helps maintain the compressor crankcase oil level and raises the efficiency of the system by preventing excessive oil circulation. A higher level of efficiency is to be expected compared to a conventional type oil separator.

Applications

- Helical oil separators can be used in a wide variety of applications
- Common applications include multi-compressor racks and remote condensing units
- Helical oil separators are intended for Low Pressure Oil Management Systems. These products are designed for use with scroll and reciprocating type compressors. They are not recommended for screw or rotary vane compressors.

The standard product range is designed for use with HCFC, HFC, R290 & A2L gases and their associated oils, compatible with the vessel materials. The SN range is additionally suitable for use with Ammonia. The SH high pressure range is intended for use with R410A, sub-critical CO₂ and A2L gases compatible with the vessel materials.

Model	Connection Size (")	Mounting details	Weight (kg)	Pre-charge qty. (L)	Part No.
S-5180	1/4	3/8	1.3	0.11	179000
S-5181	3/8	3/8	1.4	0.11	179019
S-5182	1/2	M10	3.6	0.6	179027
S-5185	5/8	M10	4.1	0.6	179035
S-5187	7/8	M10	4.6	0.6	179043
S-5188	1.1/8	M10	5.1	0.6	179051
S-5190	1.3/8	M10	8.8	1.45	179078
S-5192	1.5/8	M10	9.2	1.45	179086
S-5194	2.1/8	M10	10	1.45	179118
S-5288	1.1/8	2 x Ø14mm holes	7.4	0.71	179123
S-5412	2.1/8	3 x Ø14mm slots	20	0.71	179116

Henry Spares

Model	Description	Part No.
S-9111	Heater Band 4" 25w 220v AC	171468
S-9112	Heater Band 6" 50w 220v AC	171476

ESK OS Oil Separators



It is usual for some of the compressor's oil to be removed and transported to other parts of the system by refrigerant flow. Depending on the operating conditions, a lack of lubricant in the compressor crankcase will occur with serious consequences: Lowly oil pressure, cylinder / piston damage, bearing damage and motor damage.

This carry-over of oil into evaporator will adversely affect heat transfer resulting in loss of efficiency and longer running times. ESK oil separators should be specified whenever the following applications are considered:

- Evaporating temp. below -10 °C
- Blast freezers
- Capacity control
- Two stage plants
- Parallel systems
- Cascade plant
- Flooded systems
- Booster

The oil separator effectively removes oil from discharge gas in the strainer elements returns the oil through a high precision float valve to the crankcase or oil control system. The usual separation ratio of approximately 97 % to 99 % of ESK oil separators depends substantially on the operation conditions, the reduction of the gas velocity and the flow path inside the vessel.

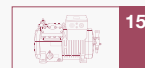
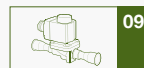
Applications: ESK Oil separators are suitable for use with HFC- and HCFC-refrigerants. (R134a, R404A, R507, R407A, R407C, R22 etc.).

Model	Connection Size (")	Weight (kg)	Volume (L)	Part No.
OS-1/2"	1/2	2.2	2.3	7320
OS-16	5/8	2.1	2.3	7321
OS-22	7/8	3.4	3.5	7322
OS-28	1.1/8	3.3	3.5	7323
OS-28H	1.1/8	6.2	7.5	7326
OS-35	1.3/8	3.4	3.5	7324

**HB-55/195 for suction Accumulators and Oil separators

ESK Spares

Description	Part No.
Float Assy for OS-22F...OS-104FY	7394
Check Valve	7358
HB-55/195 Heater Band (190mm to 270mm) 230 V – 50/60 Hz – 1Ph	7365



Suction Line Accumulator

Henry Accumulator



The primary function of a suction line accumulator is to prevent a sudden surge of liquid refrigerant, or oil, from returning down the suction line and into a compressor. The suction line accumulator is a temporary reservoir for liquid refrigerant and oil.

The accumulator is designed to meter both the liquid refrigerant and oil back to the compressor at a controlled rate. This prevents compressor damage. By metering the liquid refrigerant and oil back to the compressor, the accumulator also helps maintain system efficiency and proper crankcase oil levels. Heat Exchanger (HE) models are also available.

Applications: Suction line accumulators are installed in air conditioning and refrigeration systems where a sudden return of liquid down the suction line is possible. The product range is designed for use with HCFC, HFC and CO₂ refrigerants, along with their associated oils. S-70 series models up to and including S-7061 units are also suitable for use with A2L refrigerants.

Model	Connection Size (")	Weight (kg)	HE Coil Conn Size (")	Mounting details	Part No.
S-7044	1/2	2.7	N/A	M10 stud & nut	171301
S-7045	5/8	2.8	N/A	M10 stud & nut	171328
S-7046	3/4	2.8	N/A	M10 stud & nut	171336
S-7057	7/8	4.5	N/A	M10 stud & nut	171344
S-7061	1.1/8	7.8	N/A	M10 stud & nut	171352
S-7061HE	1.1/8	8.5	5/8 ODS	M10 stud & nut	171492
S-7063	1.3/8	12.4	N/A	M10 stud & nut	171360
S-7065	1.5/8	12.2	N/A	M10 stud & nut	171379
S-7721HE	2.1/8	27	7/8 ODS	3 Ø14mm x 22mm slots	179254
S-7731-CE	3.1/8	47	N/A	3 Ø14mm x 22mm slots	S-7731-CE
S-7732-CE	3.1/8	47	N/A	3 Ø14mm x 22mm slots	S-7732-CE

ESK Accumulator



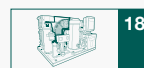
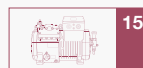
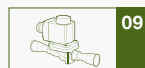
ESK suction line accumulators incorporate the injection principle which has been tried and tested for many years. Even if the accumulator is full of liquid refrigerant, it is not possible for liquid to enter the compressor suction. In particular in compact plant with short suction lines, too low a suction superheat (below 7 K) will result in a loss of compressor oil pressure and a subsequent decrease in system capacity through displacement of oil by liquid refrigerant. ESK suction line accumulators protect the compressor against liquid hammer and its subsequent damage. The use of a suction line accumulator is strongly recommended under the following conditions:

- Parallel connected compressors
- Container cooling
- Transport refrigeration
- Flooded evaporators
- Two-stage plant
- Reverse cycle operation
- Use of hot-gas defrost
- Superheat less 7 K
- Heat pump systems

The accumulators are also released for an application with R410A.

Model	Connection Size (")	Weight (kg)	Volume (L)	Mounting details	Part No.
FA-16-2	5/8	2.6	2	M10	7380
FA-22-2	7/8	2.6	2	M10	7381
FA-28-2	1.1/8	2.7	2	M10	7382
FA-35	1.3/8	5.6	7.5	M10	7383
FA-42	1.5/8	6.1	7.5	M10	7384
FA-54-7	2.1/8	6.3	7.5	M10	7385
FA-80	3.1/8	16.7	18	-	7386

Related Items:



Henry Mechanical Oil Regulators



The function of a Mechanical Oil Level Regulator is to control the oil level in the compressor crankcase. This protects the compressor from damage. There are two main types of Mechanical oil level regulators - fixed level and adjustable level.

Applications

- Mechanical oil level regulators are used in Low Pressure Oil Management Systems. They are designed for use with reciprocating compressors. They are not recommended for scroll compressors.
- All regulators are suitable for HCFC and HFC refrigerants, along with their associated oils.

Henry Shut-Off Valves



The function of Oil Regulator Shut-off valves is to provide a means for equipment isolation. Horizontal and vertical models are available.

Applications

- These valves are positioned on the oil inlet and equalisation pipe lines of Henry Technologies Oil Level Regulators. This allows each oil level regulator to be isolated in the event that servicing is required on the compressor, oil level regulator, strainer, etc.
- The valves are suitable for HCFC and HFC refrigerants, along with their associated oils.

Main features

- Two mounting options – horizontal and vertical.
- 360° positioning via swivel connection.

Model	Equalisation	Sight glass oil level	Regulator type	MWP (barg)	Weight (kg)	Connection Size (")	Part No.	Model	Fixed	Swivel	Type	Weight (kg)	CE Cat	Part No.
S-9510	No	1/2	Fixed	31	2.2	3-Bolt 1.7/8" B.C. & 4-Bolt 50mm B.C.	177423	S-9106EH	1/4 SAE Flare	1/4 SAE Female Flare	Horizontal	0.15	SEP	177543
S-9510E	Yes	1/2	Fixed	31	2.2		177431	S-9106E	1/4 SAE Flare	1/4 SAE Female Flare	Vertical	0.14	SEP	177539
S-9530	No	1/4 to 5/8	Adjustable	31	2.3	3-Bolt 1.7/8" B.C. & 4-Bolt 50mm B.C.	174051	S-9106H	3/8 SAE Flare	3/8 SAE Female Flare	Horizontal	0.16	SEP	177541
S-9530E	Yes	1/4 to 5/8	Adjustable	31	2.3		174044	S-9106V	3/8 SAE Flare	3/8 SAE Female Flare	Vertical	0.17	SEP	S-9106V

Henry IntelOil Controllers



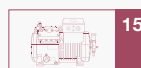
**Adapter kits sold separately.

The function of the IntelOil Controller is to monitor and maintain the oil level in the compressor crankcase using proven high resolution float sensor technology. This protects the compressor from damage.

Applications

- The IntelOil Controller is suitable for low and high pressure oil management systems. It is designed for use with both scroll & reciprocating compressors.
- The oil controller is approved for HCFC, HFC, A2L, CO2, R290 and R1270 refrigerants and their associated oils.

Model	Supply Voltage	IP Rating	Max Ambient temperature (°C)	Allowable operating pressure (barg)	Weight (kg)	Inlet Connection Size (")	Part No.
HOC1-24-3	24V AC with 3m power & relay cables	65	50	60	0.94	1/4	17410
HOC1-230-3	230V AC with 3m power & relay cables						179431



ESK Oil Regulators



Oil level regulators are available in a mechanical or electronic version. The standard versions of regulators are manufactured with a 3-/4-bolt flange and for compact installations with a thread-fitting. For the installation on various compressor sight glass designs, ESK is offering a wide range of adapters and couplings.

Applications: ESK oil level regulators are suitable for use with HFC-, HCFC refrigerants (including R410A) and with R744 (CO₂).

- Mechanical oil level regulators
- Mechanical oil level regulators from ESK are reliable and tough components. Precision float valves controls the oil level into compressor crankcase.
- The adjustable version is for use, when parallel connected compressors possibly work with different suction pressures (two stage systems, Boosters and satellite operation).

Model	Volume (l)	Number of Sight Glasses	Max Allowable Operating Pressure (bar)	Compressor Connection	Part No.
OR-0-BC	1	2	4.2	3/4	7360
ORE2-0-BC	0.5	2	6.5	3/4	7361

Emerson Traxoil Oil Regulators



The Emerson TraxOil oil management is a self-contained and reliable electronically controlled system with an integrated solenoid valve, which feeds missing oil directly into the compressor sump.

The sight glass function remains fully available, status and level information is indicated by LED's. The integrated alarm function with compressor shutdown completes the overall proven solution for compressor protection.

Model	Adapter	Max Working Pressure (bar)	IP Rating	Oil Connection	Part No.
OM3-CBB	Screw - 1.1/8"-18 UNEF	46	IP65	7/16"-20 UNF Male, with strainer and O-ring	219770
OM3-ccA	Screw - 3/4"-14 NPTF	46	IP65		219772

**Oil management kits including Adapter

Emerson Traxoil Oil Adaptors

Model	Connection	Part No.
OMO-ccE	Rotalock Adapter 1.1/4 - 12 UNF	805043



ⓘ DID YOU KNOW...

The oldest working domestic refrigerator in the UK dates from 1947. Manufactured by English Electric it is still in full working order!
 ...It does, however, sound like a "traction engine" when working.



Henry SH Oil Strainers



The function of an oil strainer is to remove system debris from the refrigerant oil. Their purpose is to protect compressors and oil level regulators from damage.

Applications: The Henry Technologies SH-9105 series oil strainer can be used in both Low and High Pressure Oil Management Systems. The SH-9105 series is suitable for HCFC, HFC, CO₂ and A2L refrigerants and their associated oils. Although the strainer is compatible with HFC/POE refrigerant/oil combinations, Henry Technologies recommends the use of an oil filter or oil filter drier. This is due to the scavenging nature of POE oil.

Greater system protection will be achieved using a filter or filter drier element than with a mesh strainer. Typically, a strainer is fitted immediately upstream of a mechanical oil level regulator in order to protect the float needle valve from debris. This in turn protects the compressor from damage.

Model	Connections (inch)		Dimensions (mm)			Part No.
	Inlet	Outlet	Length	Height	Weight (kg)	
SH-9105	3/8 SAE Flare	3/8 SAE Flare	156	66	0.37	171514
SH-9105X	3/8 ODS	3/8 ODS	145	66	0.32	171516

Henry Oil Filter Drier

The S-4005 oil filter drier has a filtration surface area of 325 sq inches in addition to 8 cubic inches of XH9 desiccant to produce a highly efficient unit within a compact shell.

Model	Connection Size (Inch)	Part No.
S-4005	3/8 Flare	174045

ESK F Oil Strainers



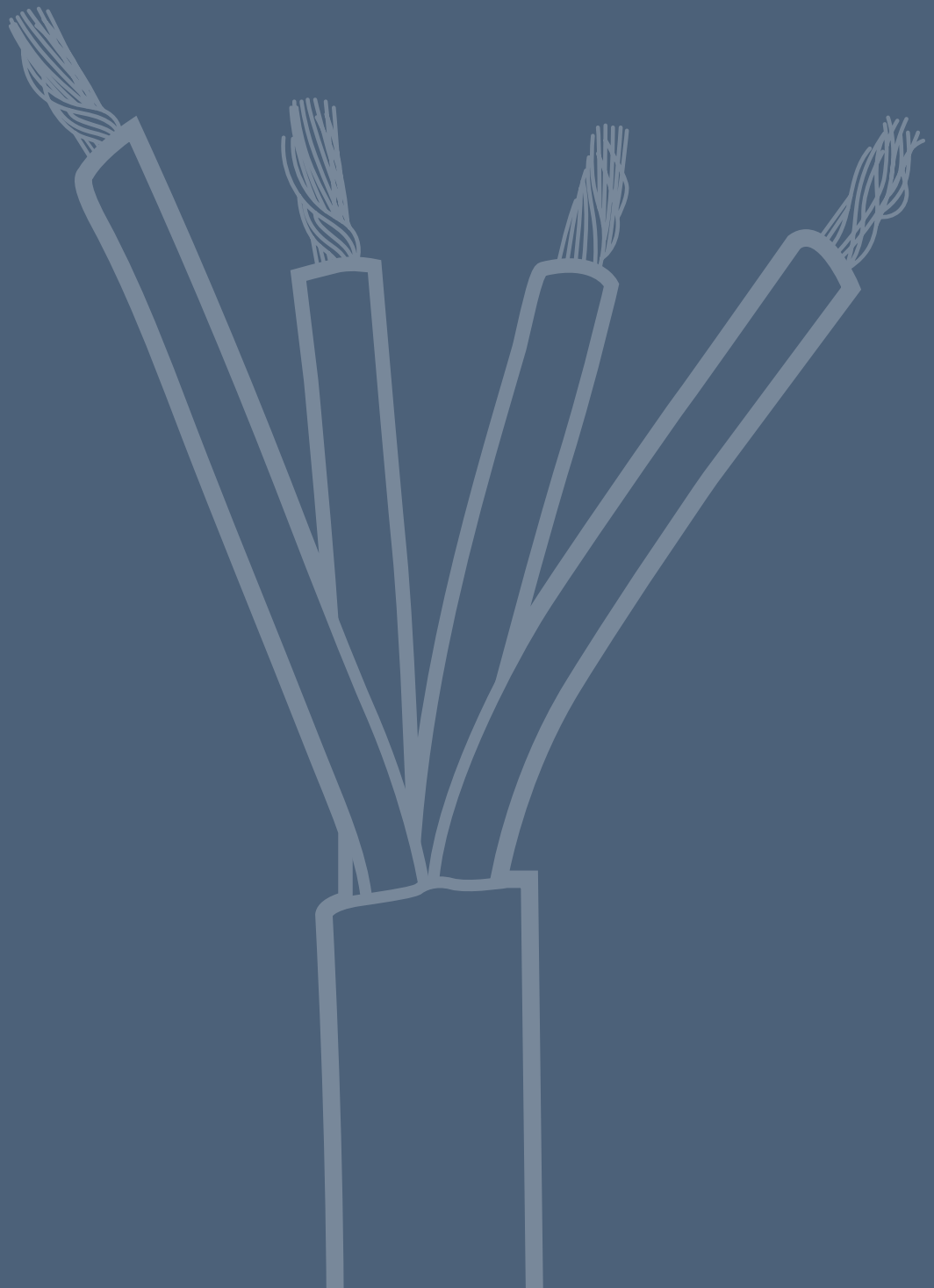
ESK strainers can be applied anywhere in the refrigeration plant. ESK strainers comprise of fine grade mesh. Complete made of steel, these strainers are applicable for all refrigerants including R744 (CO₂) and all refrigeration oils. A proven application is the installation of strainers immediately upstream of oil level regulators and electronic expansion valves. Particles larger than 50 µm are strain.

Model	Connections (inch)			Dimensions (mm)			Part No.
	Inlet	Outlet	Volume (L)	Length	Height	Weight (kg)	
F-6B	1/4	1/4	0.1	73	76	0.5	7359
F-10B	3/8	3/8	0.1	81	76	0.5	7357
F-12B	1/2	1/2	0.1	87	76	0.5	7378
F-16B	3/4	3/4	0.1	93	76	0.5	7379



SECTION TWELVE

Electrical Components



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Cable Terminations & Other



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Cable Ties

Heater Tape

Braided Self-Limiting Heater Tape



Manufactured using tinned copper braid and outer thermoplastic anticorrosion sheath. FSG self-regulating cables, thermoplastic insulation.

- Can be cut to length on site
- Will not self-destruct by overheating
- Power supply: 230 V
- Available as 10, 15, 25 or 30 W/m at + 10°C

Type	Watts/m	Part No.
1m - 110V	15	6893
1m - 230V	15	6889
30m - 230V	15	6890

Non-Braided Self-Limiting Heater Tape



Self-regulating cables, thermoplastic insulation.

Type	Watts/m	Part No.
1m - 110V	15	6905
1m - 230V	15	6897
1m - 230V	25	6922
30m - 230V	15	6902
30m - 230V	25	6933

Self-Limiting Cut-to-Length Heater Tape



Type	Watts/m	Part No.
FSG-10-2 (per meter)	10	154830

Drain Line Heater Tape



CSC2 heater cables are designed to be laid inside pipes used to draining water from thawing refrigeration equipment installed in cold rooms. They operate only during thawing cycles. To ensure that these heating elements enjoy a long service life, we recommend using a control device.

Note: The most commonly used power rating is 50 W/m. However, for plastic pipes, we strongly recommend using the 40W/m range.

- Heating cable fully sealed
- Double insulation
- Extremely flexible
- Voltage 230 V as standard
- Power cable: length 1 m
- All tapes 40w/mtr

Type	Part No.
1m - 230V	6897-1
2m - 230V	6897-2
3m - 230V	6897-3
4m - 230V	6897-4
5m - 230V	6897-5
6m - 230V	6897-6

FTSO Parallel Heating Cable



The 'cut to length' cable has been primarily designed for refrigeration applications. The parallel power connection results in a series of constant wattage heating zones. In case of damage the undamaged zones remain working. The unheated part of the beginning of the circuit can be connected directly to a junction box.

Type	Watts/m	Part No.
FTSO-25	25	155039
FTSO-40	40	155047
FTSO-50	50	155055

KDL Drain Line Heaters



Isopad IT-KDL heating cables are specifically designed for internal and external heating of refrigeration drainlines and freezer doors. KDLs are constructed from silicone rubber, making them water resistant, and are supplied factory terminated in standard lengths. IT-KDL-SRs are specially produced in a small round form, making them very flexible and ideal for small bore drainlines. Power supply 230Vac, 50Hz.

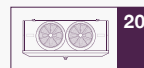
	Maximum Operating Temperature	Minimum Bend Radius	Minimum Spacing
KDL-SL	220C	20mm	10mm
KDL-SR	200C	5mm	10mm

Type	Length	Part No.
KDL/SR 1	1m 40W	153109
KDL/SL 1	1m 40W	152935
KDL/SR 2	2m 80W	153117
KDL/SL 2	2m 80W	152943
KDL/SR 3	3m 120W	153125
KDL/SL 3	3m 120W	152951
KDL/SR 4	4m 160W	153133
KDL/SL 4	4m 160W	152978
KDL/SR 5	5m 200W	153141
KDL/SL 5	5m 200W	152986
KDL/SR 6	6m 240W	153168
KDL/SL 6	6m 240W	152994

Accessories



Description	Part No.
Heater Tape Termination Kit	6935



What cable do I need and how do I choose?



SY Cable

The galvanised steel wire braid makes this cable ultra-strong and is stronger than CY and YY cable. It also offers reliable mechanical protection.



CY Cable

Is used in environments where interference-free transmission is needed. CY Cables are multi-core, tinned copper wire braided cable with a PET (polyethylene terephthalate) separator which will protect it from electromagnetic interference.
LSOH = Low Smoke Zero Halogen cable rating



YY Cable

This cable works well with light mechanical stress and is suited to most environments. It is a very versatile cable and can be used outside when protected and also works well in dry and moist conditions. **LSOH = Low Smoke Zero Halogen cable rating**

Industrial Flexible Cable

SY PVC Steel Braided Multicore Cable

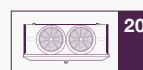
No. Cores	CSA (mm ²)	Colour	Reel Size (m)	Part No.
2	0.75	Clear	50	110440
2	0.75	Clear	100	110450
2	1.5	Clear	100	110451
3	1.5	Clear	100	110452
3	2.5	Clear	50	110444
3	2.5	Clear	100	110456
3	4	Clear	100	110460
4	1.5	Clear	15	110420
4	1.5	Clear	25	110426
4	1.5	Clear	50	110442
4	1.5	Clear	100	110453
4	2.5	Clear	50	110445
4	2.5	Clear	100	110457
4	4	Clear	100	110461
5	1.5	Clear	20	110425
5	1.5	Clear	25	110427
5	1.5	Clear	50	110443
5	1.5	Clear	100	110454
5	2.5	Clear	25	110428
5	2.5	Clear	100	110458
7	1.5	Clear	100	110455
7	2.5	Clear	100	110459

CY LSOH Screened Multicore Cable

No. Cores	CSA (mm ²)	Colour	Reel Size (m)	Part No.
2	0.75	Grey	25	110300
2	0.75	Grey	100	110320
2	1	Grey	100	110325
2	1.5	Grey	100	110340
2	1.5	Grey	100	110341
3	0.75	Grey	100	110321
4	0.75	Grey	100	110322
4	1.5	Grey	15	190810
4	1.5	Grey	50	110310
5	0.75	Grey	100	110323
7	0.75	Grey	100	110324

YY LSOH Multicore

No. Cores	CSA (mm ²)	Colour	Reel Size (m)	Part No.
2	0.75	Grey	100	110520
2	1	Grey	100	110525
2	1.5	Grey	100	110526
3	0.75	Grey	100	110521
3	1.5	Grey	50	110503
3	1.5	Grey	100	110527
3	2.5	Grey	100	110529
4	1.5	Grey	50	110504
4	1.5	Grey	100	110528
7	0.75	Grey	100	110524



Other Cable

Fire Performance



FR

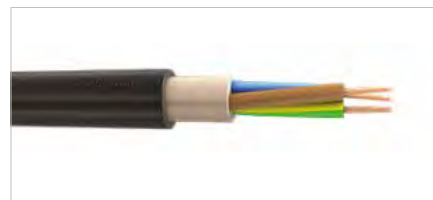
No. Cores	CSA (mm ²)	Colour	Reel Size	Part No.
2	2.5	Black	100	110601
4	1.5	Black	100	110600

PVC / Harmonised Flexible Cable



No. Cores	CSA (mm ²)	Colour	Reel Size	Part No.
2	0.75	White	50	110380
2	0.75	Black	50	190827
2	0.75	White	100	110400
2	0.75	Black	100	110390
2	1	Black	100	110392
2	1	White	100	110402
2	1.5	White	50	110382
3	0.75	Black	50	110370
3	0.75	White	100	110401
3	0.75	Black	100	110391
3	1	White	100	110403
3	1.5	Black	1	110351
3	1.5	White	50	110372
3	1.5	White	100	110406
3	1.5	Black	100	110393
4	1	White	100	110404
4	1.5	Black	50	110373
4	1.5	Black	100	110394
4	1.5	White	100	110407

Fixed Wiring Energy Cable



No. Cores	CSA (mm ²)	Colour	Reel Size	Part No.
3	1.5	Black	100	110550
3	2.5	Black	100	110553
3	4	Black	100	110555
4	1.5	Black	25	110540
4	1.5	Black	100	110551
4	1.5	Black	200	110560
4	2.5	Black	100	110554

Armoured Cable - Control Flex



LIY

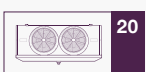
No. Cores	CSA (mm ²)	Colour	Reel Size	Part No.
2	1.5	Grey	100	110326

Isolators

Aspen Xtra Isolators



Description	IP Rating	Dimensions	Weight (kg)	Part No.
4 pole 20A (Small)	66	150mm H x 105mm W x 113mm D	0.56	AX6001
4 pole 25A (Small)		150mm H x 105mm W x 113mm D	0.56	AX6005/2
4 pole 32A (Small)		150mm H x 105mm W x 113mm D	0.56	AX6002
4 pole 40A (Large)		180mm H x 120mm W x 113mm D	0.71	AX6003



Contactors



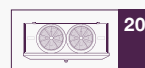
Danfoss CI

CI-TI™ contactors and motor starters provide trouble-free switching and maximum protection for costly motors and other electrical equipment. The components are compact, easy to install and extremely reliable.

They are designed to meet demanding requirements, based on comprehensive application experience.

Main Circuit

Type	Coil voltage @ 50 Hz	Main Contacts	AC-1 load Ith, open	AC-1 load Ithe, enclosure	AC-3 load Ie	AC-3 power @ 220-240 V	AC-3 power @ 380-690 V	Part No.
CI 5-9	110V	3	20 A	16 A	8.5 A	3 kW	4 kW	037H35042300
CI 5-9	24V	3	20 A	16 A	8.5 A	3 kW	4 kW	037H35043300
CI 5-5	240V	3	20 A	16 A	4.9 A	1.5 kW	2.2 kW	037H35033300
CI 5-9	24V	3	20 A	16 A	8.5 A	3 kW	4 kW	037H35041300
CI 5-9	230V	3	20 A	16 A	8.5 A	3 kW	4 kW	037H35043200
CI 5-12	230V	3	20 A	16 A	11.5 A	3 kW	5.5 kW	037H35073200
CI 6	220-240V	3	20 A	16 A	6 A	1.5 kW	2.2 kW	037H00153100
CI 6	220-240V	4	20 A	16 A	6 A	1.5 kW	2.2 kW	037H00183100
CI 6	24V	3	20 A	16 A	6 A	1.5 kW	2.2 kW	037H00151300
CI 9	220-240V	3	25 A	16 A	6 A	2.2 kW	4 kW	037H00213100
CI 9	220-240V	4	25 A	16 A	9 A	2.2 kW	4 kW	037H00223100
CI 9	24V	3	25 A	16 A	9 A	2.2 kW	4 kW	037H00211600
CI 9	415V	3	25 A	16 A	9 A	2.2 kW	4 kW	037H00213800
CI 9	24V	3	25 A	16 A	9 A	2.2 kW	4 kW	037H80716600
CI 12	12-24V	3	25 A	20 A	12 A	3 kW	5.5 kW	037H00311300
CI 12	220-240V	3	25 A	20 A	12 A	3 kW	5.5 kW	037H00313100
CI 12	220-240V	4	25 A	20 A	12 A	3 kW	5.5 kW	037H00323100
CI 12	24V	4	25 A	20 A	12 A	3 kW	5.5 kW	037H00321300
CI 12	220-230V	3	25 A	20 A	12 A	3 kW	5.5 kW	037H00313200
CI 12	220-230V	4	25 A	20 A	12 A	3 kW	5.5 kW	037H00323200
CI 12	380-400V	3	25 A	20 A	12 A	3 kW	5.5 kW	037H00313700
CI 15	220-240V	4	25 A	20 A	16 A	4 kW	7.5 kW	037H00503100
CI 15	220-240V	3	25 A	20 A	16 A	4 kW	7.5 kW	037H00493100
CI 15	25V	3	25 A	20 A	16 A	4 kW	7.5 kW	037H80736600
CI 16	220-240V	3	40 A	25 A	16 A	4 kW	7.5 kW	037H00413100
CI 16	24V	3	40 A	25 A	16 A	4 kW	7.5 kW	037H00411300
CI 16	110V	3	40 A	25 A	16 A	4 kW	7.5 kW	037H00412300
CI 16	24V	3	40 A	25 A	16 A	4 kW	7.5 kW	037H00411600
CI 16	220-230V	3	40 A	25 A	16 A	4 kW	7.5 kW	037H00413200
CI 16	380-400V	3	40 A	25 A	16 A	4 kW	7.5 kW	037H00413700
CI 20	220-240V	3	40 A	25 A	20 A	5.5 kW	10 kW	037H00453100
CI 20	110V	3	40 A	25 A	20 A	5.5 kW	10 kW	037H00452300
CI 20	24V	3	40 A	25 A	20 A	5.5 kW	10 kW	037H00451300
CI 25	220-240V	3	40 A	25 A	25 A	5.5 kW	11 kW	037H00513100
CI 25	24V	3	40 A	25 A	25 A	5.5 kW	11 kW	037H00511600
CI 25	220-230V	3	40 A	25 A	25 A	5.5 kW	11 kW	037H00513200
CI 25	110V	3	40 A	25 A	25 A	5.5 kW	11 kW	037H00512300
CI 25	25V	3	40 A	25 A	25 A	5.5 kW	11 kW	037H80766600
CI 30	220-240V	3	40 A	30 A	32 A	8.5 kW	15 kW	037H00553100
CI 30	24V	3	40 A	30 A	32 A	8.5 kW	15 kW	037H00551300
CI 30	24V	3	40 A	30 A	32 A	8.5 kW	15 kW	037H00551600
CI 32	220-230V	3	63 A	63 A	32 A	8.5 kW	15 kW	037H00613100
CI 32	240V	3	63 A	63 A	32 A	8.5 kW	15 kW	037H00613300
CI 45	24V	3	80 A	80 A	45 A	11 kW	23 kW	037H00711300
CI 45	220-230V	3	80 A	80 A	45 A	11 kW	22 kW	037H00713100





Danfoss CB Auxiliaries

CI-TI™ contactors and motor starters provide trouble-free switching and maximum protection for costly motors and other electrical equipment. The components are compact, easy to install and extremely reliable. They are designed to meet demanding requirements, based on comprehensive application experience.

Description	Used for product	Part No.
CB-EM AUX Contact Early make	CI 6-50	037H011300
CB-I AUX Contact Start impulse	CI 6-50	037H011700
CB-LB AUX Contact Late break	CI 6-50	037H011400
CBN 02 AUX Contact 2 NC	CI 5	037H351300
CB-S AUX Contact Start	CI 6-50	037H011000
CB-NC AUX Contact Break	CI 6-50	037H011200
CB-NO AUX Contact Make	CI 6-50	037H011100

Overloads

Danfoss TI Overloads



Thermal overload relays TI 16C, TI 25C and TI 30C are used with contactors CI 6 – CI 30 to give protection of squirrel-cage motors of 0.09 kW to 15 kW. The relays have single-phase protection, i.e. accelerated release if phase drop-out occurs. This is particularly important for motors with delta-connected windings. Other features of TI 16C / 25C / 30C:

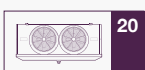
- Stop/reset button
- Manual/automatic reset
- Test button
- Double scale for direct start or Y/D start
- Galvanically isolated signal contact

Type	Range		Max. Fuse ⁽¹⁾				HRC ⁽²⁾	Part No.
	Motor-starter	Y/D-starter	Type 1	Type 2	Type 1	Type 2	II	
	A	A	A	A	A	A	A	
TI 16C	0.4 - 0.62	-	25	2	32	4	1	047H020300
	0.6 - 0.92	-	25	w4	32	6	3	047H020400
	1.2 - 1.9	-	25	6	32	10	6	047H020600
	1.8 - 2.8	3.2 - 4.8	25	6	32	10	15	047H020700
	2.7 - 4.2	4.7 - 7.3	25	16	32	20	15	047H020800
	4.0 - 6.2	6.9 - 10.7	35	20	40	25	15	047H020900
	6.0 - 9.2	10 - 16	50	20	50	25	35	047H021000
	8.0 - 12	13 - 20.8	63	25	63	32	35	047H021100
TI 25C	11 - 16	19 - 27	80	25	80	32	50	047H021200
	15 - 20	26 - 35	80	35 ⁽³⁾	80	40	60	047H021300
TI 30C	19 - 25	33 - 43	80	63	80	63	60	047H021400
	24 - 32	41 - 55	80	63	80	63	60	047H021500

1) To IEC 947-4 coordination types 1 and 2: Coordination type 1: Any type of damage to the motor starter is permissible. If the motor starter is in an enclosure, no external damage to the enclosure is permissible. After a short-circuit the thermal overload relay shall be partially or wholly replaced. Coordination type 2: No damage to the motor starter is permissible, but slight contact burning and welding is permissible. 2) In accordance with HRC form II, TI 16C, TI 25C and TI 30C are suitable for operation in Canada and the USA. 3) 50 A in Norway.

Other Overloads

Description	Part No.
Supco RO42 Relay/Overload 1/4HP-1/3HP	1426



Electrical Components

Cable Stuffing Glands



Description	Pack Qty.	Part No.
L Stuffing Gland White 20mm	10	CGLAND20WH
S Stuffing Gland Black 20mm	10	CGLAND20BL
Dome Top Gland (White) 20mm	1	CGLMN20

Connector Blocks



Description	Pack Qty.	Part No.
Strip Connector 15A	1	15AMPS
Strip Connector 30A	1	30AMPS
Strip Connector 5A	1	5AMPS
Strip Connector 15A	10	170026
Strip Connector 5A	10	170025

Spurs & Fuses



Description	Pack Qty.	Part No.
13A Plastic Fused Spur C/W Neon Light 25mm	1	PBFSU13-25
13A Plastic Fused Spur C/W Neon Light 35mm	1	PBFSU13-35
Metal Clad Fused Spur C/W Neon Light	1	PBMCFSU13
Ceramic Cartridge Fuse 13A	10	110231
IP65 Junction Box	-	454-955
Fuse Kit	-	420-252

Cable Terminations & Other



Description	Pack Qty.	Part No.
Blue Female Push On Terminal	100	63BFP
Blue Female Push On Terminal	100	63BFPT
Red Female Push On Terminal	100	63RFPT
Blue Fork Terminal	100	43BF
Blue Ring Terminal	100	53BER
Red Splice	100	15BSL

Others



Description	Part No.
Heat Shrink - 6mm x 1.2m	157-3795

Electrical Tape



Description	Part No.
Black PVC Electrical Tape 19mm x 20m	6892
Electrical Tape 19Mm Brown	AL3049
Aluminium Foil Tape 50mm x 46m	UUT18
X60FT Economy Electrical Tape	ET63460

Cable Ties



Description	Part No.
Cable Tie, Black - 100mm - 100pk	5140
Cable Tie, Black - 200mm - 100pk	5141
Cable Tie, Releasable - 250mm - 100pk	290904
Cable Tie, Black - 300mm - 100pk	5142

Description	Part No.
Cable Tie, Black - 300mm - 100pk	CT300-7.8B
Cable Tie, White - 300mm - 100pk	CT300-4.8N
Cable Tie, Black - 370mm - 100pk	CT370-7.6B
Cable Tie, Black H/Duty - 380mm - 100pk	DEM1024
Cable Tie, Black - 540mm - 100pk	CT540-8.0B
Knock In Cable Tie, Black - 8mm - 100pk	CTFB9
Knock In Cable Tie Mounts - 100pk	290725
Screw-in Cable Tie, Black - 100pk	CTS9B
Scew In Cable Tie Mounts -100pk	290727

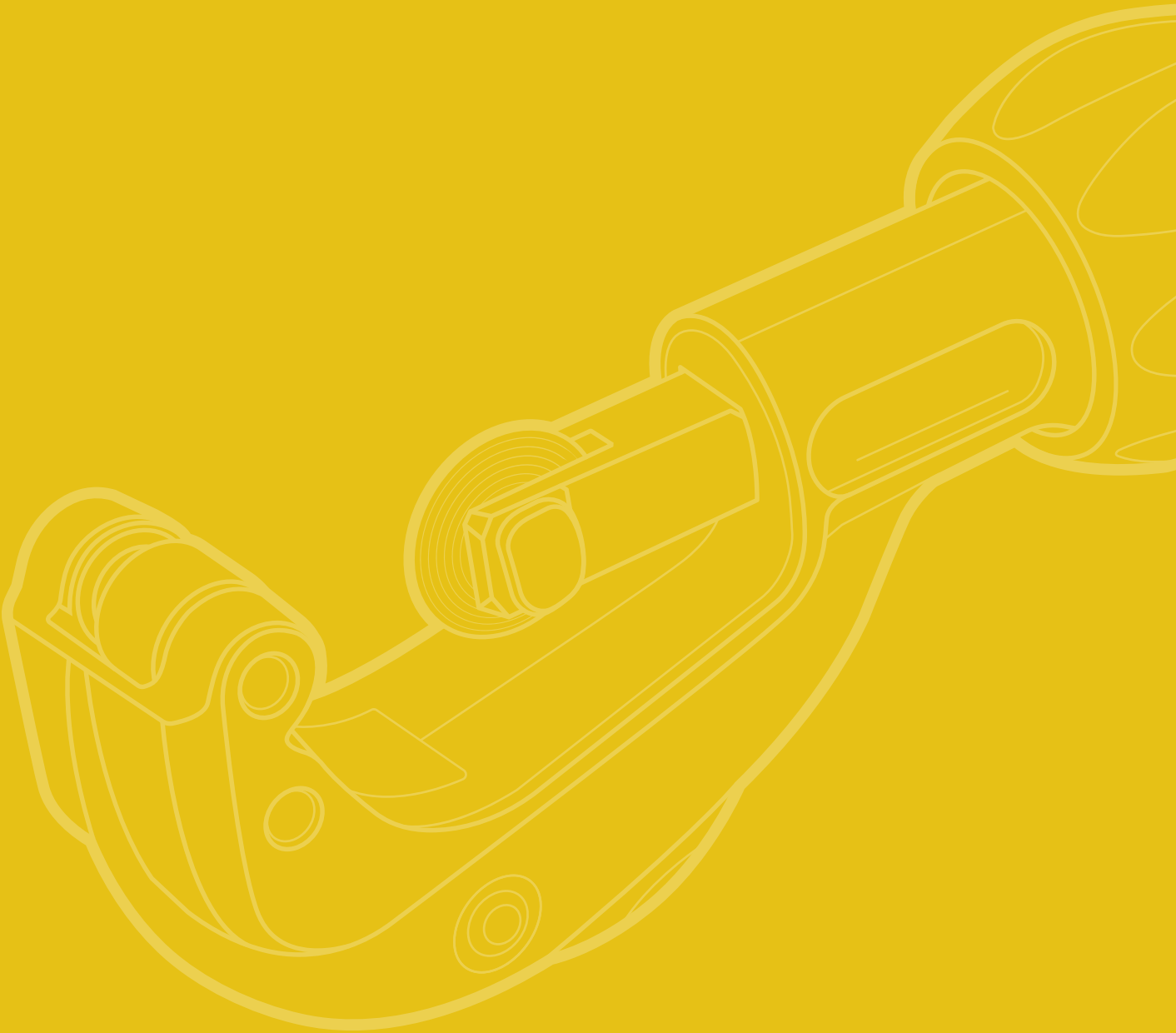
Cable Tie Accessories



Description	Part No.
Adhesive Base	SAM28B-2
Fixing Band - Black	ARB12/BL

SECTION THIRTEEN

Tools



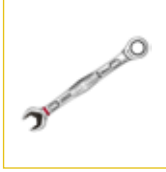
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Batteries & Powerbanks**



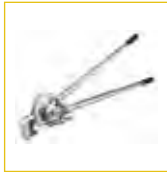
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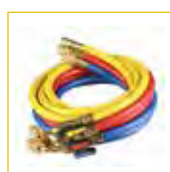
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TOOL BAGS THAT WIN!

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JAVAC
MEASURED PERFORMANCE

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YELLOW JACKET

YJACK™ Wireless Temperature Strap

Yellow Jacket YJACK™ Page 336

Screwdrivers

Wera Screwdriver types: PZ Pozidrive PH Phillips SL Slotted TX Torx HX Hex

Draper 60 VDE Screwdriver Pozi



Blade Length	60mm
Blade Tip	No.0
Part No.	601333

Draper 80 VDE Screwdriver Pozi



Blade Length	80mm
Blade Tip	No.1
Part No.	601334

Draper 100 VDE Screwdriver Pozi



Blade Length	100mm
Blade Tip	No.2
Part No.	601335

Draper 75 VDE Screwdriver Flathead



Blade Length	75mm
Blade Tip	2.5mm
Part No.	601329

Draper 100 VDE Screwdriver Flathead



Blade Length	100mm
Blade Tip	3mm
Part No.	601330

Draper 125 VDE Screwdriver Flathead



Blade Length	125mm
Blade Tip	5.5mm
Part No.	601331

Draper 150 VDE Screwdriver Flathead



Blade Length	150mm
Blade Tip	6.5mm
Part No.	601332

Draper VDE Screwdriver Set



Type	PZ
Set Size	4pc
Part No.	601336

Draper VDE S.G Screwdriver Set



Type	PZ
Set Size	7pc
Part No.	601340

Wera Long (300mm) Screwdriver Set



Type	1 x PH/PZ/SL
Set Size	3pc
Part No.	601188

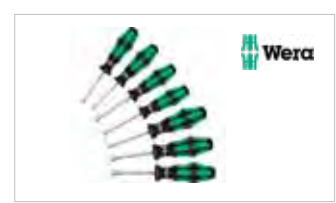
Wera Long (300mm) Screwdriver Set



Type	2 x PH 1 x PZ 1 x SL
Set Size	4pc
Part No.	601189

Wera Hollow Nutdriver Set

(Ideal for Drop Rod Adjustment)



Type	M5-M13
Set Size	7pc
Part No.	601133

Wera All in One Ratchet Screwdriver Set



Type	2 x PH, 2 x PZ, 2 x SL
Set Size	6pc
Part No.	601167

Kompakt All in One Ratchet Screwdriver



Type	2 x PH, 2 x PX, 2 x TX
Set Size	7pc
Part No.	601142

Wera Kraftform All in One Kompact Ratchet Set



Type	2 x PH, 2 x PZ, 2 x SL
Set Size	8pc
Part No.	601141

Wera Ratchet Screwdriver Set



Type	3 x PH, 3 x PZ, 5 x TX, 1 x SL & 4 x Hex
Set Size	17pc
Part No.	601143

Screwdrivers

Wera 17pc Stainless Steel Screwdriver Set



Type	Assorted
Set Size	17pc
Part No.	601156

Wera 17pc Screwdriver Set



Type	3 x PH, 3 x PZ, 5 x TX, 1 x SL & 4 x Hex
Set Size	17pc
Part No.	601154

Wera 33pc Screwdriver & Bit Set



Type	Assorted
Set Size	33pc
Part No.	601155

Wera 52pc Kompakt Screwdriving Kit



Type	Assorted
Set Size	52pc
Part No.	601151

Wera Kraftform Kompakt SH1 Plumbkit



Type	Assorted
Set Size	25pc
Part No.	601182

Wera Kompakt W1 Maintenance Set



Type	Assorted
Set Size	35pc
Part No.	601181

Wera Bit-Check Ratchet Zyklop Mini Set



Type	Mini Ratchet, 3 x PH, 3 x PZ, 3 x TX, 2 x Hex
Set Size	10pc
Part No.	601166

Wera 601 VDE Interchangeable Blade



Part No.	601192
----------	--------

Wera VDE Screwdriver Set



Type	2 x PZ VDE, 4 x SL VDE & 1 x SL
Set Size	7pc
Part No.	601107

Wera VDE Slimline Screwdriver Set



Type	3 x SL, 2 x PH, 2 x PZ
Set Size	7pc
Part No.	601184

Wera Interchangeable 7pc VDE Screwdriver Set



Type	3 x PZ, 3 x SL
Set Size	7pc
Part No.	601100

Wera Interchangeable 17pc VDE Screwdriver Set



Type	2 x PH VDE, 4 x PZ VDE, 4 x TX VDE, 5 x SL VDE
Set Size	17pc
Part No.	601153

Wera Chiseldriver Screwdriver Set



Type	SL / PZ
Set Size	6pc
Part No.	601128

Wera 12pc Micro Screwdriver Set



Type	2 x PH, 2 x TX, 3 x HX, 5 x SL
Set Size	12pc
Part No.	601168

Wera Standard Screwdriver Set



Type	2 x PH, 2 x PZ, 2 x SL
Set Size	6pc
Part No.	601169

Wera Laser Tipped Stainless Steel Set



Type	2 x PZ, 4 x SL
Set Size	6pc
Part No.	601139

**Wera Bit Check 12pc
Metal Extra Tough**



Type	Bit Holder, 4 x PZ, 4 x TX, 3 x HX
Set Size	12pc
Part No.	601147

**Wera Bit Check 30pc
Metal Extra Tough**



Type	Bit Holder, 8 x PH, 9 x PZ, 6 x TX, 3 x SL, 3 x Hex
Set Size	30pc
Part No.	601149

**Wera Bit Check 30pc
Impact Driver Rated**



Type	Bit Holder, 6 x PH, 7 x PZ, 12 x TX, 4 x Hex
Set Size	30pc
Part No.	601152

**Wera 851/4 PH2/50
Reduced Tip**



Part No.	601194
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The ideal 'bit' for working on MHI and Japanese manufactured equipment!

**Wera 39pc Ratchet, Bit
Socket, Screwdriver Set**



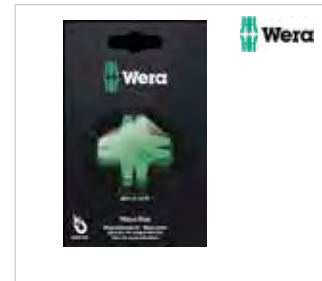
Type	Holders, 5.5-13mm Skts, 6 x PH, 5 x PZ, 11 x TX, 5 x HX
Set Size	39pc
Part No.	601145

**Wera Bitsafe 43 Piece
Universal 1 Set**



Type	Bit Holder, 4 x PH, 12 x PZ, 26 x TX
Set Size	43pc
Part No.	601150

**Wera Star
Magnetiser/Demagnetiser**



Part No.	601162
----------	--------



Wrenches & Spanners

**Draper Soft Grip 150mm
Adjustable Wrench**



Part No.	601308
----------	--------

**Draper Soft Grip 200mm
Adjustable Wrench**



Part No.	601309
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**Draper Soft Grip 250mm
Adjustable Wrench**



Part No.	601310
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**Draper Soft Grip 300mm
Adjustable Wrench**



Part No.	601311
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**Straight Ratchet
Wrench**



Size	3/8" - 1/4"mm
Part No.	600837

**Offset Ratchet
Wrench**



Size	3/16" - 3/8"
Part No.	600838

**Joker Combi 10mm
Ratchet Spanner**



Size	10mm
Part No.	601158

Wrenches & Spanners

Joker Combi 13mm Ratchet Spanner



Size 13mm

Part No. 601159

Joker Combi 16mm Ratchet Spanner



Size 16mm

Part No. 601160

Joker Open-End Spanner



Size 10 x 13mm

Part No. 601101

Joker Ratchet 4pc Spanner Set



Type M10,13,17,19

Part No. 601161

Joker Ratchet 6pc Spanner Set



Type M10,13,17,19 & M10/13, M17/19

Part No. 601130

Joker Ratchet 11pc Spanner Set



Type M8,10,11,12,13,14,15,16,17,18,19

Part No. 601129

Crimping

4 Way Crimping Tool



Length 215mm

Part No. 601305

Ratchet Crimping Tool



Length 220mm

Part No. 601318

Multi Grip Crimping Pliers



Length 230mm

Part No. 601209

Riveters



Hand Riveter Kit for Aluminium Rivets

Aluminium head and body. Suitable for aluminium rivets. Supplied with four nozzles to accept 2.4, 3.2, 4.0 and 4.8mm rivets. Steel handle clip acts as nozzle change wrench.

Length 215mm

Part No. 601314

Knipex Combo VDE Pliers



Length	200mm
Part No.	601204

Knipex Electrical VDE Pliers



Length	200mm
Part No.	601206

Knipex Electrical VDE Pliers (T)



Length	200mm
Part No.	601229

Knipex SmartGrip® Grey Atramentized



Length	250mm
Part No.	601218

Knipex Multi Slip Joint Spanner



Length	250mm
Part No.	601219

Draper VDE Waterpump Pliers



Length	250mm
Part No.	601324

Knipex CoBolt® ES Grey-Atramentized



Length	250mm
Part No.	601220

Knipex Siphon & Connector Pliers



Length	250mm
Part No.	601221

Knipex Siphon & Connector Pliers (Soft Jaws)



Length	250mm
Part No.	601222

Knipex Pliers 180mm Wrenches



Length	180mm
Part No.	601212

Knipex Pliers 250mm Wrenches



Length	250mm
Part No.	601213

Knipex Pliers 300mm Wrenches



Length	300mm
Part No.	601214

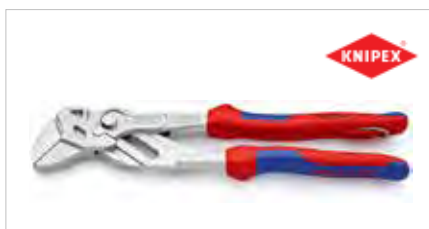
Pliers

Knipex Pliers 180mm Wrenches (T)



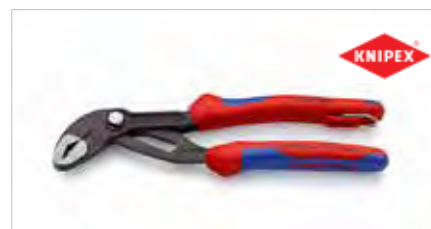
Length	180mm
Part No.	601232

Knipex Pliers 250mm Wrenches (T)



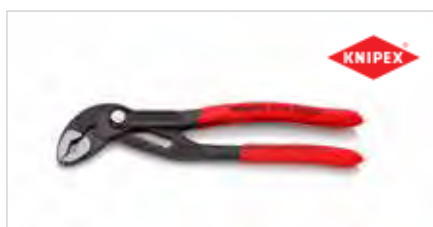
Length	250mm
Part No.	601236

Knipex Cobra® Grey Atramentized (T)



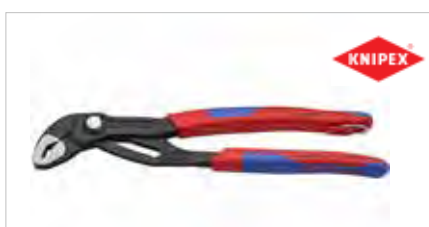
Length	180mm
Part No.	601234

Knipex Cobra® 180mm Grey Atramentized



Length	180mm
Part No.	601215

Knipex Cobra® 180mm Grey Atramentized (T)



Length	180mm
Part No.	601237

Knipex Cobra® 250mm Grey Atramentized



Length	250mm
Part No.	601216

Knipex Cobra® 300mm Grey Atramentized



Length	250mm
Part No.	601217

Knipex Side Cutting VDE Plier



Length	200mm
Part No.	601205

Knipex Side Cutting Plier (T)



Length	200mm
Part No.	601228

Draper VDE Long Nose Pliers



Length	200mm
Part No.	601322

Draper VDE Combination Pliers



Length	200mm
Part No.	601321

Expert Quality, drop forged from chrome vanadium steel correctly hardened and tempered with additionally induction hardened cutting edges. Each plier has been tested to 10,000V for safe 1000V AC or 1500V DC live line working. Lacquered finish for corrosion protection with heavy duty, fully insulated, soft grip handles with slip guards.

Tethered Lanyards

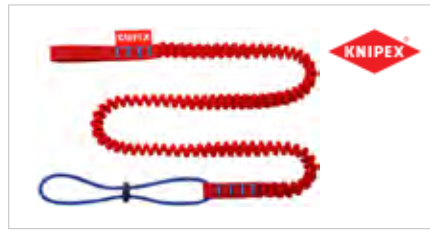
Suitable for all Knipex products marked (T)

**Knipex TT
Wrist Strap**



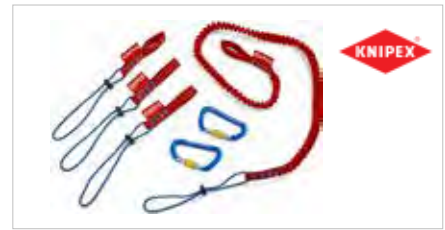
Part No. 601224

**Knipex TT
Hook-On Lanyard**



Part No. 601223

**Knipex TT
Hook-On Lanyard Set**



Part No. 601226

Socket Sets

**Wera 1/4" Multi Ratchet
Socket Set**



Size 1/4"

Set Size 28pc

Part No. 601102

**Wera 3/8" Multi Ratchet
Socket Set**



Size 3/8"

Set Size 29pc

Part No. 601104

**Wera 1/2" Multi
Ratchet & Socket Set**



Size 1/2"

Set Size 28pc

Part No. 601105

**Mini 2 Shallow
Socket Set**



Size 1/4"

Set Size 27pc

Part No. 601180

**Wera 1/4" Slim
Ratchet & Socket Set**



28-piece set; in a surface-preserving, compact and extremely robust textile box; low volume and weight for simplified mobility
1 Zyklop Metal Ratchet with switch lever and 1/4" drive, 9 Zyklop sockets, 1 Zyklop extension (long) with free-turning sleeve, 1 wobble extension, 1 adaptor with quick-release chuck and 15 bits.

Size 1/4"

Set Size 28pc

Part No. 601103

Socket Sets

Draper 1/4" Metric Socket Set

- 12 Sockets: 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13mm
- 72 tooth reversible ratchet with soft grip handle and quick release button
- extension bar 100mm
- 1/4" sq dr to 1/4" hex bit adaptor
- 2 x cross slot bits No.1, 2
- 2 x hex bits 5, 6
- 6 x Draper TX-STAR® bits T10, T15, T20, T25, T30, T40



Size	1/4"
Set Size	25pc
Part No.	601319

Draper 3/8" Metric Socket Set

- 18 Sockets: 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24mm
- 11 deep sockets size 8, 9, 10, 11, 12, 13, 14, 16, 17, 19, 22mm
- 3 spark plug sockets size 10, 12, 14mm



Size	3/8"
Set Size	37pc
Part No.	601341

Wera 1/4" Kompakt Zyklop Speed Set

26-piece, in a pouch for belt attachment:

- 1 Zyklop ratchet with 1/4" drive
- 7 Zyklop sockets (metric)
- 1 Zyklop extension (long) with free-turning sleeve
- 1 adaptor
- 16 bits in a length of 50 mm



Size	1/4"
Set Size	26pc
Part No.	601191

Complete range of KNIPEX Tethered Tools

Pliers with drop protection



KNIPEX Tethered Tools*

Flexible drop protection system for 45 models of KNIPEX pliers

Now also for VDE-tested pliers

T

- ▶ Falling tools can be prevented using KNIPEX Tethered Tools*
- ▶ Tool can be flexibly safeguarded and is therefore ready to hand at all times
- ▶ Versatile applications: can be used in building construction, wind turbines, roofing, road building, the events industry, excavation work, well construction, by industrial climbers and many other uses
- ▶ 16 models of insulated pliers and 29 models of pliers with multi-component grips available with fall protection (others on request)
- ▶ Also suitable for our wide range of VDE-tested screwdrivers



Cutting Tools

Knipex X-Cut® Chrome Plated 160mm VDE Cutter



Max Material Thickness	
1	4.8mm
2	3.8mm
3	2.7mm
4	2.2mm
Part No.	601202

Knipex X-Cut® Chrome Plated 160 mm (T)



Max Material Thickness	
1	4.8mm
2	3.8mm
3	2.7mm
4	2.2mm
Part No.	601231

Knipex Diagonal Chrome Plated 160mm VDE Cutter



Max Material Thickness	
1	4mm
2	3mm
3	2.5mm
Part No.	601201

Knipex Diagonal Cutter Chrome Plated 160mm (T)



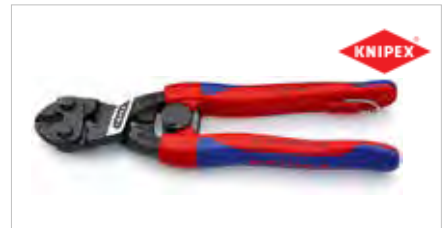
Max Material Thickness	
1	4mm
2	3mm
3	2mm
Part No.	601227

Knipex CoBolt® Black Atramentized 200mm



Max Material Thickness	
1	6mm
2	5.2mm
3	4mm
4	3.6mm
Part No.	601211

Knipex CoBolt® Black Atramentized 200mm (T)



Max Material Thickness	
1	6mm
2	5.2mm
3	4mm
4	3.6mm
Part No.	601230

Material Examples	Type of Wire	Tensile Strength	N/mm ²	kp/mm ²
1.	Copper, Plastics	Soft	220	22
2.	Nail, Wire Pin	Medium-Hard	750	75
3.	Wire Rope Strand, Steel Wire	Hard	1800	180
4.	Spring Steel Wire	Piano Wire	2300	230

Draper VDE Diagonal Side Cutters 180mm VDE Cutter



Part No.	601323
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Knipex Diagonal Cutter for Plastics 160mm



Part No.	601203
----------	--------

Draper Plastic / Vinyl Pipe Cutter



Part No.	601313
----------	--------

Cutting Tools

Knipex 210mm Pipe Cutter (Ideal for Drain Pipe)



Cutting Diameter (Composites) 12-25mm

Cutting Diameter (Protective Tube) 18-35mm

Part No. 601210

Rothenberger Junior Hacksaw



Part No. 168025

Rothenberger Junior Hacksaw Blades (10pc)



Part No. 168070

Rothenberger Hacksaw with Bi-Metal Blade 12"



Part No. HACKSAWBB

Draper 250mm-300mm Hacksaw Frame



Part No. 601327

Draper Retractable Trimming Knife



Part No. 601300

Torches

PR57 Hi-Lumen Rechargeable Torch



IP Rating: IPX4

Lumen Output: 1000lm

Beam Effective Distance: 180m

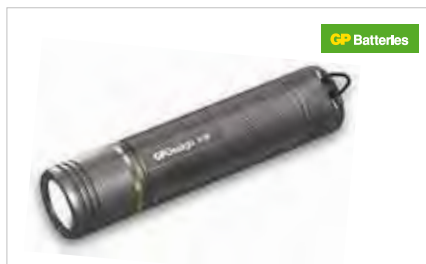
Dimensions (L x D): 166 x 35mm

Weight 143g

Batteries Rechargeable via USB

Part No. 601355

P36 Task Torch with 3 Ultra Alkaline



IP Rating: IPX4

Lumen Output: 300lm

Beam Effective Distance: 120m

Dimensions (L x D): 116.5 x 27mm

Weight 79g

Batteries NiMH or Alkaline (3 x AAA)

Part No. 601352

P55 Multi-Purpose Pro Torch



IP Rating: IPX4

Lumen Output: 400lm

Beam Effective Distance: 135m

Dimensions (L x D): 129.7 x 39.5mm

Weight 149g

Batteries NiMH or Alkaline (4 x AAA)

Part No. 601353

Torches



GP Batteries

PP16 Penlight Torch

A 140-lumen bulb lights up to 55 meters away and has a runtime of up to 9 hours. Comes with IPX4 water resistance and 2-meter impact resistance.

IP Rating:	IPX4
Lumen Output:	140lm
Beam Effective Distance:	55m
Dimensions (L x D):	141.5 x 16.2mm
Weight	46g
Batteries	NiMH or Alkaline (2 x AAA)
Part No.	601354

Draper LED Pen Aluminium Torch



DRAPER Tools

Lumen Output:	20lm
Batteries	NiMH or Alkaline (3 x AAA)
Part No.	601339

Re-chargeable Batteries & Powerbanks

USB Rapid Charger U421 with 4 ReCyko+ Batteries

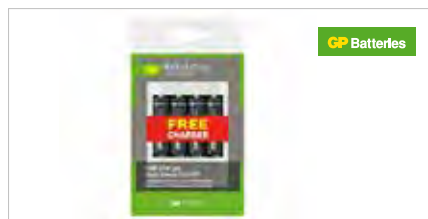


GP Batteries



Battery Size	GP NiMH AA
NiMH Battery (Capacity)	2000mAh
Charging Time (mins)	40
Part No.	601368

USB Charger U411 with 4 ReCyko+ Batteries



GP Batteries

Battery Size	GP NiMH AA
NiMH Battery (Capacity)	2000mAh
Charging Time (hrs)	40 - 160
Part No.	601367

PowerBank Mobile Charger 1C02A 2600mA



GP Batteries

Output	1A
NiMH Battery (Capacity)	2600 mAh (1 hours usage)
Weight	65g
Charging Time (hrs)	4.5
Part No.	601350

PowerBank Mobile Charger 1C05A 5200mA



GP Batteries

Output	1A
NiMH Battery (Capacity)	5200 mAh (2 hours usage)
Weight	123g
Charging Time (hrs)	7.5
Part No.	601351



GP Batteries

PowerBank Universal Charger PB19

In this technical age we find our homes, offices and workplaces filled with a variety of electronic devices, all of which require different sizes of batteries.

The PB19 universal battery charger is ideal for home or office use, providing power to all battery sizes. It has fast recharge times, and with an automatic timer it is safe for overnight charging.

Battery Size (Universal)	AA/AAA/C/D/9V
Part No.	601366

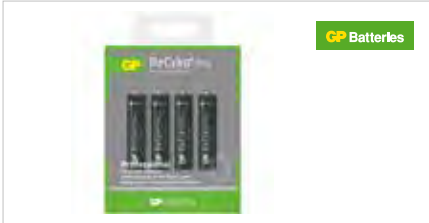
Re-Chargable Batteries

GP Batteries ReCyko+

Join the recharging revolution. By using GP ReCyko rechargeable products, you'll put a lot less stress on the environment and your wallet. **Join us today.**

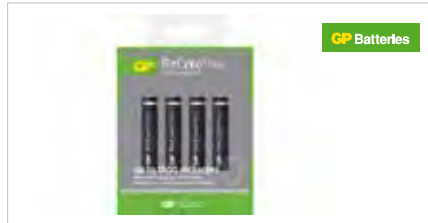


GP ReCyko+ Pro AAA 4 Batteries



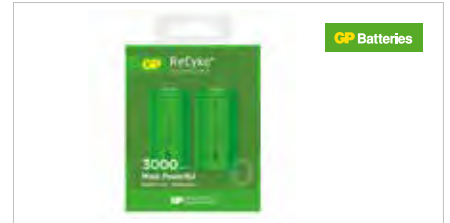
Nominal Voltage	1.2V
Capacity	800mAh
Part No.	601364

GP ReCyko+ Pro AA 4 Batteries



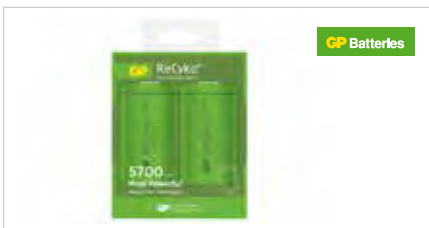
Nominal Voltage	1.2V
Capacity	2000mAh
Part No.	601361

GP ReCyko+ 3000 C 2 Batteries



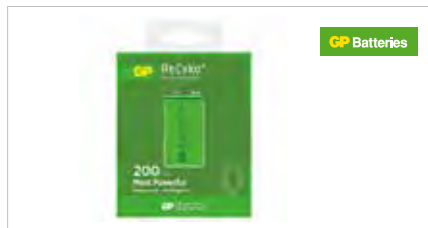
Nominal Voltage	1.2V
Capacity	3000mAh
Part No.	601362

GP ReCyko+ 5700 D 2 Batteries



Nominal Voltage	1.2V
Capacity	5700mAh
Part No.	601363

GP ReCyko+ 200 9V 1 Battery



Nominal Voltage	8.4V
Capacity	2000mAh
Part No.	601420

Disposable Batteries

GP Ultra Alkaline 9V 4 Batteries



Nominal Voltage	1.5V
Part No.	601360

GP Ultra Alkaline D 4 Batteries



Nominal Voltage	1.5V
Part No.	601356

ReCyko+
Most Powerful
Rechargeable Batteries



A RELIABLE,
ECO-FRIENDLY
ALTERNATIVE TO
SINGLE-USE
BATTERIES

Instant PowerBank Function
Greener Choice
Lithium-Free
Battery Charger function

Join The Recharging Revolution!

Disposable Batteries

GP Ultra Alkaline AA 12 Batteries



GP Batteries

Nominal Voltage	1.5V
Part No.	601358

GP Ultra Alkaline AAA 12 Batteries



GP Batteries

Nominal Voltage	1.5V
Part No.	601359

GP Ultra Alkaline C 4 Batteries



GP Batteries

Nominal Voltage	1.5V
Part No.	601357

ⓘ DID YOU KNOW...

In the UK 620 million batteries are put in landfill every year!

Using re-chargeable ReCyko+ batteries help reduce this and save you money.



Levels & Measuring

Draper Professional Measuring Tape



DRAPER
Tools

Length	8m / 26ft
Width	25mm
Part No.	601338

Draper 300mm Spirit Level



DRAPER
Tools

Length	300mm
Accuracy	0.5mm per 1m
Part No.	601303

Draper 900mm Spirit Level



DRAPER
Tools

Length	900mm
Accuracy	0.5mm per 1m
Part No.	601304

L-Keys

Wera Stainless Steel Hex Key Set



Wera

Type	1.5 - 10mm
Set Size	9pc
Part No.	601131

Draper Hexagon Key Set (Metric)



DRAPER
Tools

Set Size	10pc
Includes	2.0, 2.5, 3.0, 4.0, 5.0, 5.5, 6.0, 7.0, 8.0 and 10.0mm
Part No.	601316

Draper Hexagon Key Set (Imperial)



DRAPER
Tools

Set Size	10pc
Includes	1/16, 5/64, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4, 5/16 and 3/8"
Part No.	601317

L Keys

Wera L-Key 9pc Set Metric



Type	1.5-10mm
Set Size	9pc
Part No.	601164

Wera Torx-Key 9pc Set



Type	TX8-TX40
Set Size	9pc
Part No.	601165

Wire Strippers

Knipex Auto Insulation Stripper 180mm



Suitable for	Single, multiple & fine stranded cables 0.2-6 mm ²
Part No.	601207

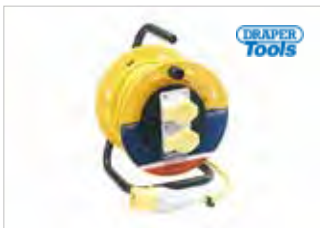
Knipex ErgoStrip® 3 way Insulation Stripping Tool



Suitable for	Common round, coax, data, twisted pair
Part No.	601208

Transformers & Leads

Draper 110v Industrial Cable Reel



Cable Length	25m
No. Sockets	2
Maximum Load	16A
Part No.	601337

Draper 240v Extension Lead



Cable Length	25m
No. Sockets	4
Maximum Load	13A
Part No.	601312

Draper 110v Site Transformer 3.3KVA/16A



Input / Output Voltage	230V / 110V
Outout amperage	16A
No. of 16A sockets	2
Part No.	601315

Cabinet Keys

Knipex TwinKey® Shut Off Systems



Part No.	601200
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Other General Tools



Rectorseal Mighty Bracket Installation Support Tool

- Allows single person installation
- Integrated spirit level
- Supports weight upto 45kg
- Simple clip on support
- Does not damage walls
- Use on all brands of mini-splits

Part No.	601712
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Pro Adjustable Ladder 3.7m with 6 Hinges



Part No.	LADDER2
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Other General Tools



Refco LFT-230 Portable Lift

This unique installation lifter allows you to accomplish almost all overhead mountings on your own. The mast also features a unique guided wires system to enhance the overall height and safety.

The Zinc coated steel construction improves the overall stability and robustness without compromising the overall weight of the lifter. The lifting of the load with the continuously variable speed can be done easily with the electric remote control.

The lifter is delivered in a practical carrying bag with a quick and easy set up. The telescoping tripod legs are infinitely adjustable and work perfectly on uneven sloping terrain. Ideal for mounting of indoor and outdoor systems.



Voltage	230V
Max. Lifting Height	3m
Weight Lifter	20kg
Weight Platform	5kg
Load Capacity	120kg
Platform	775mm x 460mm
Lifter Stowage	280mm x 1100mm
Part No.	LFT-230

Draper Ladder Car Roof Clamps



Part No. 601307

Draper Ratchet Tie Straps 3.5m x 25mm



Part No. 601325

Van Guard Maxi Silver Pipe Carrier 3m



Part No. 601441

General Consumables & Workwear

Arco Ansell Medium Touch'n'Tuff Gloves



Size Medium

Pack Size 100

Part No. 621057

Arco Ansell Large Touch'n'Tuff Gloves



Size Large

Pack Size 100

Part No. 621058

Mechainix Large Gloves



Size Large

Pack Size 1 Pair

Part No. 10058

Latex Gloves X-Large



Size Extra Large

Pack Size 100

Part No. 160601



Tool Bags



All VETO Tool bags feature the following;

- Heavy duty fastenings and zips
- Hinged ergonomic handles
- Maximised tool storage capacity. Waterproof base (3 mm polypropylene)
- Weatherproof body fabric (1800 PVC impregnated denier fabric)
- Gun metal / marine grade rivets
- 5 year zero downtime warranty*

Veto Tech-Pac LT Tool Bag



Maximised Tool Storage Capacity:

- Vertical Tool Pockets: 27 interior and exterior tool pockets of various sizes
- 2 Storage Bays- 4 Storage Platforms
- Front bay for tool storage
- Back bay for laptop, tablet, folders and business Accessories (will accommodate most 15" laptops)
- D-Rings: 2 large and 4 small
- Outside Mounted Stainless Steel Tape Clip Holder Cable and Accessory Pockets

Width	8.5"
Length	14"
Height	19.5" with handle folded down
Weight	Empty: 7.4 lbs
Part No.	7903

Veto Pro Pac Tool Bag



Maximised Tool Storage Capacity:

- One Large Storage Bay With "Pull-Out" Thermofomed Insert Box Offering Padding and Protection For Meters
- 7 Outside Vertical Tool Pockets
- 1 Large Front Velcro Flap Lead Pocket
- 3 Webbed Attachment Points On Backside
- Backside Padded Tablet Pocket

Width	6"
Length	14"
Height	15"
Weight	Empty: 4.5 lbs
Part No.	60132

Veto OT LC Tool Bag



Maximised Tool Storage Capacity:

- Vertical Tool Pockets: 44 interior and exterior tool pockets of various sizes
- 2 Storage Bays- Hand Tools on one side; Meter and Drill Storage on the other side
- 2 Neoprene Pockets on Meter Side
- D-Rings: 2- 2" and 5- 1"
- Outside Mounted Stainless Steel Tape Clip Holder
- Quick Access Pocket for Drill Bit & Small Items
- YKK® Zippers

Width	8"
Length	10"
Height	14" (12" Internal)
Weight	Empty: 5.8 lbs
Part No.	60315

Veto Tech-MCT Tool Bag



Maximised Tool Storage Capacity:

- Vertical Tiered Tool Pockets: 36
- Flat Zippered Pockets: 4
- D-Rings: 2 large and 4 small
- Stainless Steel Tape Clip: Yes

Width	9.5"
Length	13.5"
Height	12" with handle folded down
Weight	Empty: 7.8 lbs
Part No.	60136

Veto Tech-Pac Tool Bag



Maximised Tool Storage Capacity:

- Vertical Tool Pockets: 46 interior and exterior tool pockets of various sizes
- 2 Storage Bays- 4 Storage Platforms
- Manifold Gauge and Hose Storage Pocket
- D-Rings: 4 large and 5 small
- Outside Mounted Stainless Steel Tape Clip Holder Cable and Accessory Pockets
- Pocket for a tablet or laptop is 7" X 10"; fits small laptop or most tablets

Width	13"
Length	18.75"
Height	9"
Weight	Empty: 10 lbs
Part No.	60134

Veto TP-XL Tool Bag



Maximised Tool Storage Capacity:

- 23 Internal Pockets
- 7 External Pockets (Tablet pocket to fit iPad)
- Backside Tablet Pocket
- Magnetic Screw Catcher
- "Hang-Up Hook"
- Quick Clip Metal Tape Holder
- Meter Pocket
- Bit Extension Pockets

Width	6.5"
Length	10"
Height	13"
Weight	Empty: 3.2 lbs
Part No.	60133

Tube Cutting

Javac Edge JAVA 1010



Description	Part No.
Javac Edge Tube Cutter 1/8" to 7/8"	1100001

Javac JTC-30



Description	Part No.
Javac JTC-30 Tube Cutter 1/8" - 1.3/8"	JTC-30

Javac JTC-16



Description	Part No.
Javac JTC-16 Tube Cutter 1/8" - 5/8"	JTC-16

TC-1050 Mini IMP



Description	Part No.
Imperial TC1050 Tube Cutter 1/8" to 5/8"	6001

174F Tube Cutter



Description	Part No.
Imperial TC-50 Tube Cutter 3/8" to 1.1/8"	6002

TC1000 Tube Cutter



Description	Part No.
Imperial TC100 Tube Cutter 1/8" to 1.1/8"	6005

312FC Tube Cutter



Description	Part No.
Imperial 312-FC Tube Cutter 1/4" to 1-5/8"	6006

206FB Tube Cutter



Description	Part No.
Imperial 206FB Tube Cutter 3/8" to 2.5/8"	6003

406FA Tube Cutter



Description	Part No.
Imperial 406FA Tube Cutter 2" to 4.1/8"	6007



Imperial Accessories

Description	Part No.
Imperial S74761 Cutter Wheel for 206FB/P	6089
Imperial S74762 Cutter Wheel Screw	6097
Imperial S74833 Cutter Wheel for 406FA	6130
Imperial S75015 Cutter Wheel	6090
Imperial Cutter Wheel for 227FA/TC1050	6088

Capillary Tube Cutter



Description	Part No.
For cutting capillary tubes without collapsing or narrowing the tube	@450CTP-1

Reamers & Deburrers

Reamers



Description	Model No.	Part No.
ITE pen reamer c/w 3 blades stored within the handle	PTR-1	600852
ITE pen reamer, metal body c/w pocket clip	PTR-2	163879
IMP 208F Reamer Inner/Outer 3/16"-1-1/2"	S080066	6048

REFCO Deburrer



Description	Part No.
Deburrer Pencil Type	7813

Tube Straightening



Javac Tube Straightening Tool



- Accurately straightens coils of copper tube.
- Straighten what you need – less material wastage.
- Straighter bore pipe results in accelerated flow of refrigerants for better performance.
- Rollers spiral along the tube to straighten and strengthen the tube.
- Create radius tube bends using the central hole.



Size	Part No.
1/4"	600963
3/8"	600964
1/2"	600965
5/8"	600966

Benders

368-FH Triple Head



Description	Part No.
IMP 368FH Hand Tube Bender 1/4" to 3/8"	6059

364-FHA Lever Type



Description	Part No.
364-FHA Lever Type Tube Benders 5/8"	6255
364-FHA Lever Type Tube Benders 1/2"	6254

270-F Gear Type



Description	Part No.
IMP 270F14 Gear Type Bender 7/8"	6055
IMP 270F18 Gear Type Bender 1.1/8"	6056

Benders

HB-85 Hydraulic Bender Kit



Description	Part No.
Hydraulic Tube Bender Portable 1/4" to 7/8"	6076

Ratchet Hand Tube Bender Kit



Description	Part No.
Yellow Jacket Ratchet Hand Bender 1/4" to 7/8"	60331

6-Piece Bending Spring Set



Description	Part No.
Yellow Jacket 60351 Spring Bender 1/4" to 5/8"	60351

102 Spring Benders



Description	Tube OD	Length (inch)	Part No.
102F04 Spring Bender	1/4"	10	6389
102F06 Spring Bender	3/8"	10	6390
102F08 Spring Bender	1/2"	12	6391
102F10 Spring Bender	5/8"	12	6392
102F12 Spring Bender	3/4"	12	6393

ⓘ DID YOU KNOW...

Copper is man's oldest metal.

Based on the discovery of a copper pendant that dates back to 8700 B.C. more than 10,000 years ago!



JAVAC EDGE

For time saving,
hassle-free tools that
make a difference to your
working day – think JAVAC.



JAVAC is the UK's No.1 HVAC/R tool specialist and part of the ASPEN PUMPS GROUP



Flaring & Swaging

195-FC 45° Flaring Tool



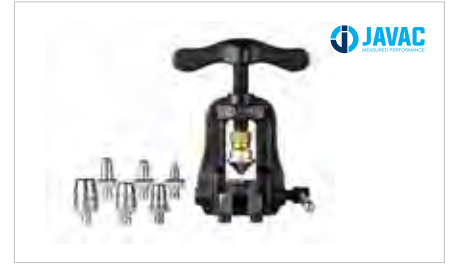
Description	Part No.
195-FC 45° Flaring Tool 3/8" to 5/8"	6011

275-FS 45° Flare/Swag Kit



Description	Part No.
275-FS 45° Flaring / Swaging Kit 1/8" to 3/4"	6028

2-in-1 Flare/Swag Tool



Description	Part No.
Javac 2-in-1 Flaring / Swaging Tool 1/4" to 3/4"	JAV-1023

Flaring & Swaging Kit



Description	Part No.
Javac Flaring & Swaging Kit 1/8" to 3/4"	600835

Eccentric Flaring Kit



Description	Part No.
Javac Eccentric Flaring Kit 1/4" to 3/4"	600961

Eccentric Cone Flaring Kit



Description	Part No.
Javac Eccentric Cone Flaring Tool 3/16" to 3/4"	JAV-1024

Deluxe Flaring Tool



Description	Part No.
Deluxe Flaring Tool 1/8" to 3/4"	60278

93-S Swaging Punches



Description	Part No.
Swaging Punches 93-S-04 1/4"	6039
Swaging Punches 93-S-06 3/8"	6041
Swaging Punches 93-S-05 5/16"	6040
Swaging Punches 93-S-08 1/2"	6042
Swaging Punches 93-S-10 5/8"	6043

193-S PunchType Swaging



Description	Part No.
193-S PunchType Swaging Kit 1/4" to 5/8"	6034



Spin Flaring & Swaging Kits

The Spin Swaging and Flaring kits make fast and consistent swages for connecting pipe to each another, or forms flares on the end of a pipe.

Description	Part No.
Spin 100 Starter Flaring Kit 1/4 - 5/8	976283
Spin 300 Complete Flaring Kit 1/4 - 3/4	976284
Spin 500 Basic Swaging Kit 1/4 - 5/8	976282
Spin 100 Standard Swaging Kit 1/4 - 3/4	976285
Spin 300 Complete Swaging Kit 1/4 - 7/8	976286

Other ACR Tools

Complete Fin Tool Kit



Description	Part No.
Diversitech Fin Tool Kit Complete Fin Kit with 6 Heads	1412

Gallo Gun



Description	Part No.
Diversitech Gallo Gun Drain Line Cleaner Blow out condensate drain lines instantly	4523

Swoosh CO₂ Cartridges



Description	Part No.
Diversitech Gallo Gun Cartridges CO ₂ Cartridges (Pack of 6)	4524

Fin Tool Spares



Description	Part No.
Diversitech Fin Tool Handle	1413
Diversitech Fin Tool Head 11 Fins Per Inch	1417
Diversitech Fin Tool Head 4 & 8 Fins Per Inch	1414
Diversitech Fin Tool Head 5 & 10 Fins Per Inch	1416
Diversitech Fin Tool Head 6 & 12 Fins Per Inch	1418
Diversitech Fin Tool Head 7 & 14 Fins Per Inch	1419
Diversitech Fin Tool Head 9 Fins Per Inch	1415

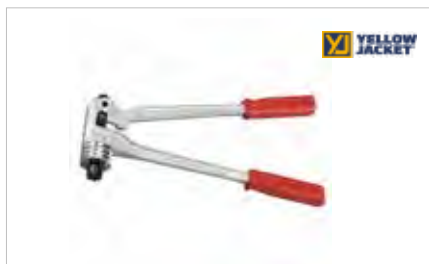
Tube Expanders

1000B Tube Expander Set



Description	Part No.
Javac 1000B Tube Expander Set 3/8" to 1.1/8"	7812

Complete Expander Kit



Description	Part No.
Yellow Jacket Tube Expander Kit 3/8" to 1 1/8"	60407

RA-EXP Hydraulic Expander



Description	Part No.
Robinair Hydraulic Tube Expander 1/4" to 1.1/8"	600960

Replacement Expander Heads



*Expander heads are universal and can fit other Expander Sets, including ITE etc...

Description	Part No.
Javac Expander Head 1/4" - JAV-1000-14	JAV-1081
Javac Expander Head 3/8" - JAV-1000-38	600971
Javac Expander Head 1/2" - JAV-1000-12	600972
Javac Expander Head 5/8" - JAV-1000-58	600973
Javac Expander Head 3/4" - JAV-1000-34	600974
Javac Expander Head 7/8" - JAV-1000-78	600975
Javac Expander Head 1.1/8" - JAV-1000-118	600976
Javac Expander Head 1.3/8" - JAV-1000-138	600977
Javac Expander Head 1.5/8" - JAV-1000-158	600978

Measuring Devices Thermostats

Dual Differential Thermometer EM60 (inc 2 x K Thermocouples)



Type	Digital
Thermocouple Range	K: -200°C to 1200°C J:- -200°C to 1300°C
Temperature Range	-200°C to +1,300°C
Resolution	0.1°F (0.1°C)
Best Accuracy	K-Thermocouple $\pm 0.2\%$ of Reading $\pm 1^\circ\text{C}$ ($\pm 0.1\%$ of Reading $\pm 0.7^\circ\text{C}$)
Measures	Thermocouple 1, Thermocouple 2 or Thermocouples 1 & 2
Power	1.5 V AAA x 3 (included)
Dimension	121 x 60 x 30 mm
Weight	180 g
Part No.	7783

IR88 Infrared Thermometer



Type	Infrared
Units	C or F
Accuracy	+/- 2°C
Range	-30°C - 550°C
Power	9v Battery
Dimensions	148mm x 105mm x 42mm
Part No.	600629

KM340 Industrial Thermometer (Type K)



Type	Digital
Temp Range	-50°C to +1300°C
Part No.	KM340

Solar Power Pocket Thermometer SP-120



Type	Digital
Screen	47.5mm x 15.8mm LCD Display
Temp Range	-50°C to +70°C
Resolution	0.1°C
Accuracy	+/-1.5°C
Battery	AAA (1,5 V)
Sensor Length	3m (120")
Part No.	6835

Elitech Digital Thermometer WT-2



Type	Digital
Screen	10 mm high LCD
Range	-50 to +300oC
Resolution	0.1oC
Accuracy	+/-2oC over 0 + 60oC, +/-5oC rest of range
Battery	1.5V 'AAA' battery
Units	°C, °F
Probe Size	100mm x 3.5mm dia stainless-steel
Part No.	160724

Liquid Expansion Thermometer (4" Dial)



Type	Dial
Diameter	100 mm
Sensor	Liquid expansion
Bulb	7.5 mm Ø free bulb
Mount Style	Surface or flush with reversible flange
Case Material	Resin, black
Bezel material	Resin, black
Window	Glass
Capillary	3.5 mm Ø PVC coated
Capillary Lengths	1.5, 4.5 and 7.5 m
Scale	°C, black figures on white dial
Range	-40°C to +40°C
Part No.	6823

Hand-Held Pocket Digital Thermometer DT-1630



Type	Digital
Accuracy	$\pm 1.0^\circ\text{C}$ from -20oC to +60oC, +/-5oC rest of range
Units	°C, °F
Temp Range	$\pm 50^\circ\text{C}$ to +300°C
Probe	Stainless Steel with soft cable 100cm long
Battery	AAA (1,5 V)
Dimension	59mm x 107mm x 20mm
Part No.	6688

Digital Thermometer With Probe



Type	Digital
Units	°C, °F
Temperature range	$\pm 50 \sim 200^\circ\text{C}$
Power	x1 AAA (included)
Probe Size	230 mm
Dimensions	118 mm
Part No.	600836

Measuring Devices Probes & Meters

AK27M General Purpose Air/Liquid Probe



Sensor Type	Type K Thermocouple
Connector Type	2-Pin Sub-Miniature
Temp Range	-100°C to +250°C
Response Time	0.4 seconds
Stem Length	100mm
Stem Diameter	6mm
Lead Length	1.0m
Lead Material	PVE (Curly)
Compliance	Tolerances relate to BS EN60584-2 (1993) Class 1
Part No.	KA145

SK29M Pipe Probe With Velcro Strap



Sensor Type	Type K Thermocouple
Connector Type	2-Pin Sub-Miniature
Temp Range	-50°C to +100°C
Response Time	10 seconds
Strap Length	500mm
Lead Length	2.5mm
Lead Material	PVC
Compliance	Tolerances relate to BS EN60584-2 (1993) Class 1
Part No.	SK29M

AK28M Flexible Wire Air Probe



Sensor Type	Type K Thermocouple
Connector Type	Sub-Miniature
Temp Range	-100°C to +250°C
Response Time	0.5 seconds
Lead Length	1.0m
Lead Material	PTFE
Compliance	Tolerances relate to BS EN60584-2 (1993) Class A
Part No.	KP145

SK35M Pipe Clamp Probe



Sensor Type	Type K Thermocouple
Connector Type	2-Pin Sub-Miniature
Temp Range	-58°C to +100°C
Accuracy (-40°C to 100°C)	±1.5°C
Response Time	5 seconds
Lead Length	1.0m
Lead Material	PVC (Curly)
Compliance	Tolerances relate to BS EN60584-2 (1993) Class 1
Part No.	SK35M

SK21M Surface Probe



Sensor Type	Type K Thermocouple
Connector Type	2-Pin Sub-Miniature
Temp Range	-50°C to +250°C
Response Time	0.2 seconds
Stem Length	100mm
Stem Diameter	7.5mm
Lead Length	1.0m
Lead Material	PVC (Curly)
Compliance	Tolerances relate to BS EN60584-2 (1993) Class 1
Part No.	KS1PROBE

Thermo - Anemometer



Model number	EM20
Weight	180 g (6.3 oz)
Temp Range	14°F to 122°F
Resolution	0.1°F (0.1°C)
Best Accuracy	±1.8°F (±1.0°C)
Power	1.5 V AAA x 3 (included)
Dimension	157 x 60 x 30 mm
Velocity range	80 fpm to 4000 fpm, 0.4m/s to 2- m/s
Velocity Res	1 fpm (0.1 m/s)
Part No.	EM20

AC Digital Clamp Meter



DC voltage	1000V ± (1%+2)
AC voltage	750V ± (1.2%+5)
DC current	20A / 200A / 1000A
Resistance	200 / 2K ± (1%+3)
Temp Range	-40 ~ 750°C ± (1%+3)
Part No.	600660

Temperature & Humidity Meter



Temp Range	-10°C to 50°C
Temp Resolution	0.1°C
Temp Accuracy	± 1.0°C
Humidity	0% to +100% RH
Humidity Resolution	0.1% RH 0.1% RH
Humidity Accuracy	3% RH (5 to 95% RH)
Units	°F / °C / %RH
Power	1.5 V AAA x 3 (included)
Dimensions	121x60x30 mm
Weight	180 g
Part No.	7807

Oil Pumps

Max-Flow Stirrup Pump Deluxe Oil Pump

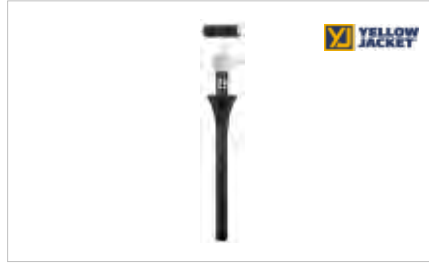
The Yellow Jacket Max-Flow™ Deluxe Oil Pump is designed and manufactured to allow technicians to pump oil into the system while the unit is operating. There is no need to shut down the system for charging. Max-Flow Oil Pumps can also be used as transfer oil pumps.



Description	Part No.
YJ Max-Flow Deluxe Oil Pump	77930

Max-Flow In-Can Pump Combination Oil Pump

The Yellow Jacket 77940 Max-Flow™ oil pump is designed and manufactured to allow technicians to pump oil into the system while the unit is operating. There is no need to shut down the system for charging.



Description	Part No.
YJ Max-Flow Combination Oil Pump	77940

MC Compact High Pressure Oil Pump

The MC Compact oil pump has been specially designed to enable the addition of refrigerant oil to high pressure systems, such as those operating on CO2. The pump is hand operated and comes c/w base plate and pressure hose.



Description	Part No.
CO2 Hydraulic Oil Pump Please note: Rental Product Only	Q04868

Pressing Tools



168045 Kit Content:

- Compact TT Press Tool
- Jaws; 1/4" to 1.1/8"
- De-burring tool
- Rovlies
- 2 x 18V 4.0Ah Li-Ion Batteries

168046 Kit Content:

- Compact TT Press Tool
- Jaws; 1/4" to 1.1/8"
- De-burring tool
- Rovlies
- 2 x 18V 4.0Ah Li-Ion Batteries
- >B< MaxiPro Fittings Pack



Romax Compact TT

Fast: Thanks to turbo pressure a press takes only 3 seconds, with the tool taking 30 minutes to charge.

Strong: Presses copper fittings up to Ø 1.1/8" with constant force technology.

Small & Lightweight: 34cm in length and weighs just 2.5 kg

Flexible: 270° Press Head Rotation.

Safe: Emergency Stop Function.

Informative: Low Battery Indicator.

Ergonomic: Twin-Turbo Design that is perfectly balanced - the centre of gravity is where the user holds the tool.

Description	Part No.
Romax Compact TT cw/Maxipro Fittings	168046
Romax Compact TT	168045



The Romax Compact TT tool is designed to work with the Conex >B< MaxiPro Press Fit fittings.

The tool can also be used on plumbing fittings when fitted with the correct heads



Ancillaries

Kwick Couplers

IMP 16C Straight Kwick Coupler



Type	16C - Straight
Connection	1/4" Male x 1/4" Female
Refrigerant	Not R410A
Part No.	1428

IMP 26C Straight Kwick Coupler R410A



Type	26C - Straight
Connection	5/16" Male x 5/16" Female
Refrigerant	R410A only
Part No.	1454

Refco Elbow Kwick Coupler R410A



Type	Elbow
Connection	1/4" x 5/16"
Refrigerant	R410A only
Part No.	1314S

IMP 17C Elbow Kwick Coupler



Type	17C - Elbow
Connection	1/4" Male x 1/4" Female
Refrigerant	Not R410A
Part No.	1429

IMP 27C Elbow Kwick Coupler R410A



Type	27C - Elbow
Connection	5/16" Male x 5/16" Female
Refrigerant	R410A only
Part No.	1465

Refco Straight Kwick Coupler R410A



Type	Straight
Connection	1/4" x 5/16"
Refrigerant	R410A only
Part No.	1313S

Automotive Couplers

Javac Auto Coupler R1234YF Low Side



Type	R1234YF LP
Connection	1/4" Female SAE
Refrigerant	R1234YF
Part No.	600968

Javac Auto Coupler R1234YF High Side



Type	R1234YF HP
Connection	1/4" Female SAE
Refrigerant	R1234YF
Part No.	600970

Javac Auto Coupler R134a Low Side

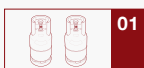


Type	Low Side
Connection	1/4" Male SAE
Refrigerant	R134a
Part No.	6274

Javac Auto Coupler R134a High Side



Type	High Side
Connection	1/4" Male SAE
Refrigerant	R134a
Part No.	6275



Recovery Units



Javac XTR-PRO-DV Spark Proof / Dual Voltage

- Suitable for R32, R1234YF plus all standard refrigerants
- Spark proof design: 5m hard wired cable
- Dual voltage: switch easily to 115 V* or 230 V
- Integrated circuit breaker protection
- X-Connect technology protects against incorrect voltage

Push/Pull (kg/hr)	300
Vapour (kg/hr)	15
Liquid (kg/hr)	90
Power supply	115v or 230v - 50Hz
Weight	12
Dimensions (mm)	420mm x 390mm x 420mm
Part No.	7803

110V Lead for XTR-PRO-DV

Part No.	7804
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Javac RDA Caresaver Hydrocarbon



Power supply	240V - 50Hz
Recovery Capacity kg/hr	32kg/hr
Weight	21kg
Dimensions (mm)	470mm x 235mm x 335mm
Part No.	9075

Javac XTR-Ultra Recovery Unit



Push/Pull (kg/hr)	420
Vapour (kg/hr)	19
Liquid (kg/hr)	120
Power supply	240V - 50Hz
Weight	8.4kg
Dimensions (mm)	320mm x 220mm x 260mm
Part No.	600726

Javac XTR-Altima Recovery Unit Spark Proof



Push/Pull (kg/hr)	660
Vapour (kg/hr)	30
Liquid (kg/hr)	216
Power supply	240V - 50Hz
Weight	16kg
Dimensions (mm)	420mm x 290mm x 420mm
Part No.	9083

Yellow Jacket Recover XLT-110V



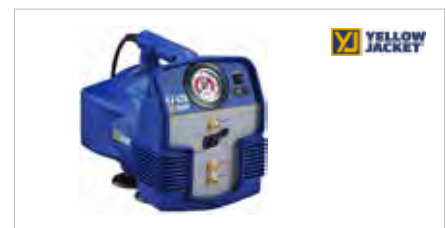
Push/Pull (kg/hr)	244.8*
Vapour (kg/hr)	6*
Liquid (kg/hr)	36*
Power supply	110V - 50Hz
Weight	14.78
Dimensions (mm)	490mm x 315mm x 317mm
Part No.	95765

Yellow Jacket Recover XLT2-AP



Push/Pull (kg/hr)	244.8*
Vapour (kg/hr)	6*
Liquid (kg/hr)	36*
Power supply	230V - 50Hz
Weight	14.78
Dimensions (mm)	490mm x 315mm x 317mm
Part No.	95764

Yellow Jacket LTE™ Recovery System



Push/Pull (kg/hr)	4.95*
Vapour (kg/hr)	0.16*
Liquid (kg/hr)	4.20*
Power supply	230V - 50Hz
Weight	10.9
Dimensions (mm)	229mm x 292mm x 343mm
Part No.	95733

*UL ARI 740-95 Vacuum Level 15 inHg - R134a recovery rating

*UL ARI 740-98 Vacuum Level 15 inHg - R134a recovery rating

*UL ARI 740-98 Vacuum Level 15 inHg - R410A recovery rating

Vacuum Pumps

Javac Dual Voltage cc-31 Vacuum Pump



Free Air Displacement	1.4 CFM
Intake	1/4" SAE 3/8" SAE
Weight	9.8kg
Dimensions (mm)	330mm x 135mm x 255mm
Part No.	7786

Javac cc-231AMM Ammonia Dual Voltage Vacuum Pump



Free Air Displacement	9 CFM
Intake	1/4" SAE 3/8" SAE
Weight	15.5kg
Dimensions (mm)	380mm x 160mm x 285mm
Part No.	600144

Javac Dual Voltage cc-231 Vacuum Pump



Free Air Displacement	9 CFM
Intake	1/4" SAE 3/8" SAE
Weight	15.5kg
Dimensions (mm)	380mm x 160mm x 285mm
Part No.	600732

Javac Dual Voltage cc-141 Vacuum Pump



Free Air Displacement	5.3 CFM
Intake	1/4" SAE 3/8" SAE
Weight	12kg
Dimensions (mm)	350mm x 135mm x 255mm
Part No.	600733



Javac Bulldog A2L Vacuum Pump 240V

- Spark Proof design
- 5 m hard wired cable
- Dual voltage – 115V or 230V.
- Two stage oil sealed vacuum pump.
- Isolation solenoid valve.
- Dual oil mist filters to prevent oil mist

Free Air Displacement	5.5 CFM
Motor Size	2880 rpm
Intake	1/4", 5/16", 3/8" SAE
Weight	12.5kg
Dimensions (mm)	338mm x 212mm x 238mm
Part No.	VBD1622

Yellow Jacket YJ11 R32 Vacuum Pump 230V



Free Air Displacement	4
Intake	1/4" and 3/8" SAE
Weight	11.5kg
Dimensions (mm)	330mm x 127mm x 279mm
Part No.	93265

Yellow Jacket Superevac 6CFM Vacuum Pump



Free Air Displacement	6
Intake	1/4" & 3/8" Male Flare
Weight	14.2kg
Dimensions (mm)	406mm x 152mm x 292mm
Part No.	93567

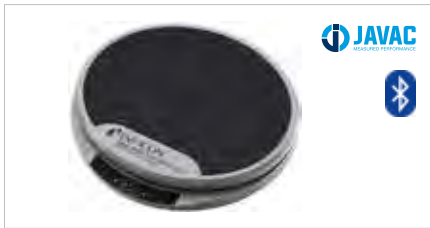
Yellow Jacket Superevac 8CFM Vacuum Pump



Free Air Displacement	8
Intake	1/4" & 3/8" Male Flare
Weight	14.8kg
Dimensions (mm)	445mm x 152mm x 292mm
Part No.	93587

Charging Scales

Javac Wey-Tek Wireless Scale



Capacity	115kg
Power	2 x AA batteries
Battery Life	~80 hours
Wireless Range	30ft
Dimensions (mm)	32cm x 28cm
Part No.	7798

Javac Procharge Weighing Scales



Capacity	100kg
Power	9V battery
Battery Life	~30 hours
Dimensions (mm)	25cm x 25cm
Part No.	600967

Yellow Jacket Platform Weighing Scales



Capacity	100kg
Power	5 x AAA batteries
Battery Life	40 hours
Dimensions (mm)	27cm x 27cm
Part No.	68862

Control the Award Winning Javac Wey-Tek-HD Wireless Refrigerant Charging Scale with the Wey-Tek-HD Mobile App.



Winner of the ACR Ancillary Product of the Year, the Wey-Tek-HD is the world's first Bluetooth enabled refrigeration scale offering a large capacity maximum of weight of 115kg suitable for use with A2L refrigerants like R32. The next-generation Wey-Tek-HD Wireless sets new standards for versatility, durability, and accuracy.

Available via Google Play & Apple Store now.

Leak Detection

Yellow Jacket Accuprobe II Leak Detector



Compatibility	HFC, HCFC and CFC
Weight	425g
Power	4 AA alkaline batteries, 4.5 hours life
Battery Life	4.5 hours
Part No.	69354



Javac Gas-Mate Leak Detector

Compatibility	R32, R134YF/ZE, R600A
Weight	700g
Power	2 D-size alkaline batteries
Battery Life	6.5 hours
Part No.	717-202-G1

Javac TEK-Mate Leak Detector



Compatibility	R22, R410A, CFCs, HCFCs, HFCs
Weight	700g
Power	2 D-size, 16 hours
Battery Life	16 hours
Part No.	6847

Javac D-TEK Select Leak Detector



Compatibility	R22, R410a, R404a, R134a, CFCs, HCFCs & HFCs
Weight	540g
Power	12 V alkaline batteries
Battery Life	6.5 hours
Part No.	6321

Javac D-TEK Select CO₂ Leak Detector



Compatibility	R744
Weight	540g
Power	12V & AC adapter. Rechargeable.
Battery Life	6.5 hours
Part No.	600135

Accessories

Javac Sensor (TEK-Mate 705-202 G21)



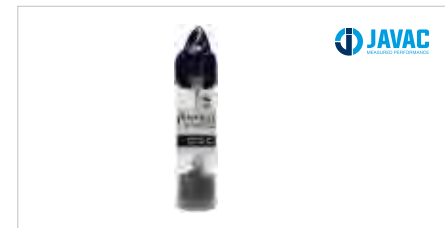
Part No.	6319
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Javac Filter Kit 25pk (Tek-Mate Detect)



Part No.	600136
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Javac Infra Red Cell (D-TEK Select)



Part No.	976111
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Did you know, there is a legal requirement for systems to be leak checked every 2 years?
See page 340 for more information and details of our fixed leak detection systems from Bacharach

Leak Detection

Spectroline Optimax Pro Leak Detect Kit



Part No. 7407

Spectroline LT-300 Leak Tracker



Part No. 976857

Spectroline Optimax Jr EZ-Ject Kit



Part No. 976244

Spectroline EZ Flare Hose



Part No. 179718

Spectroline EZ-Ject Univ Dye Cartridge



Part No. 976116

Spectroline L-11575 Heat-Seal STIK



Part No. 2411575

Spectroline - Cool Seal

Overview: Seals micro leaks in condensers, evaporators, o-rings and hoses. Can add years to older, out-of-warranty AC&R systems that leak small amounts of refrigerant.

- Works with all popular refrigerants and oils.
- Remains safely in system to help protect against future leaks.



Cool Seal Cartridge 1x15ml



Part No. 600739

Cool Seal Leak Sealer Kit



Part No. 600746

Cool Seal Stick Capsule



Part No. 600738

DiversiTech Superseal



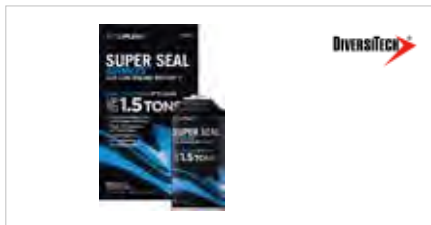
Super Seal™ is a system additive that will find and seal leaks in refrigeration systems and also has an eliminator to dry any moisture in the system preventing acid/waxing, dissolves blockages and frees TEV's.

Super Seal is a light, low viscosity particle free liquid that is directly placed into the system as a mist – as it travels with the refrigerant and oil throughout the system, the sealant exits the leak point and react with moisture in the air – this forms a low tensile crystalline structure that creates a permanent seal.

Features:

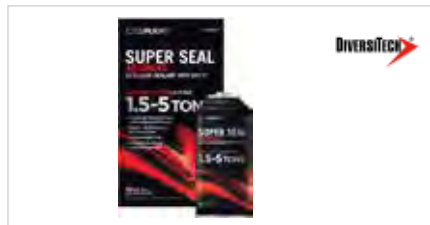
- Compatible with all oils and refrigerants
- Self-contained – no tools required
- Uses pressure to draw the product into the system
- Fast acting
- Cost effective – saves time and money
- Ongoing protection against future leaks

Small Systems up to 1.5 tons (5kW)



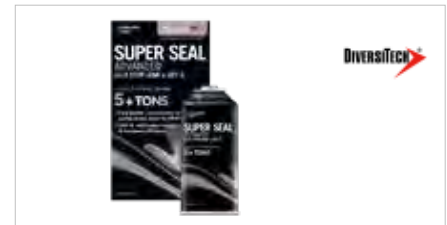
Type	1
Capacity	1 oz / 30ml
Part No.	166524

Medium Systems 1.5 to 5 tons (5kW - 17kW)



Type	2
Capacity	2 oz / 59ml
Part No.	166522

Large Systems from 5+ tons (17 kW+)



Type	3
Capacity	3 oz / 89ml
Part No.	166526

Test Instrumentation

The **Martindale LOK** devices have been designed to fit a wide range of MCBs, RCBOs, fuse carriers and main switches and are compatible with Martindale PAD11 and PAD21 Series padlocks and TAG sets. The LOK series are available with different openings and include pushpin and grub screw designs in a range of different sizes to match most breaker configurations and applications even access is restricted.

LOK2 MCB Yellow Isolation Lock



Size	44mm x 14mm
Info	8mm opening, 7mm deep
Part No.	601423

LOK7 Slimline MCB Black Isolation Lock



Size	31mm x 8mm
Info	6mm opening, 6mm deep
Part No.	601424

LOK15 Pushpin MCB Isolation Lock



Size	40mm x 18mm
Info	15mm Spacing
Part No.	601422



Test Instrumentation

LOKKIT1 Comprehensive Lock Out Kit



Part No. 601426

LOKKITPRO Ultimate Lock Out Kit



Part No. 601427

CABLOK1BL Adjustable Cable Lockout



Part No. 601421

TAG4 Lock Out Kit Replacement Tags



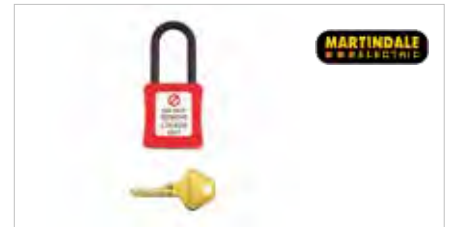
Part No. 601430

25mm Steel Safety Hasp for Lokkits



Part No. 601425

PAD10R Red Padlock for Lock Off Kit



Part No. 601428

PD440 Proving Unit 440V AC



Part No. 601429

VT3 Non Contact Voltage & Magnetic Field Indicator



Part No. 600550

VI-13800 Voltage Indicator



Part No. 601431



Mm39 Standard Digital Multimeter – Auto Ranging

The VT2 is a non-contact voltage tester for accurately detecting the presence of AC voltages between 200V and 1000V. When voltages are detected, the VT2 will automatically illuminate its tip by use of a bright red LED, giving quick and clear audible and visual indication.

Part No. 600547

IR88 Infrared Thermometer



Type	Infrared
Units	C or F
Accuracy	+/- 2°C
Range	-30°C - 550°C
Power	9v Battery
Dimensions	148mm x 105mm x 42mm
Part No.	600629

Brazing Equipment

Brazing Rods & Flux Powder

- Silver Brazing rod made to BSEN17672 (CuP104)
- Standard packaging 1kg hangable plastic sleeves



Description	Silver Content (%)	Units	Weight (kg)	Part No.
Lawton 2mm x 500mm Brazing Alloy	0.2	-	1	680205
Lawton 3mm x 500mm Silver Solder Rod	5	-	1	680210
Lawton 3mm x 500mm Silver Solder Rod	2	5	-	680215
Lawton 1.5mm x 500mm Silver Sold Rod	15	5	-	680220
Lawton 2.5mm x 500mm Silver Solder Rod	6	-	1	680225
Lawton 1.5mm x 500mm Silver Sold Rod	40	5	-	680235
Lawton 1.5mm x 500mm Silver Sold Rod	30	5	-	680250



Description	Silver Content (%)	Units	Part No.
Lawton 2 x 500mm Silver Sold Flux	56	5	680240
Lawton 1.5 x 500mm Silver Sold Flux	30	5	680245
Lawton 1.5 x 500mm Silver Sold Flux	40	5	680230



Description	Part No.
Lawton Brazing Flux Powder 250g	680255

Oxyturbo Turbo Set

The Turbo Set 1000 is a sturdy brazing kit, using disposable cylinders of high performance fuel gas, "maxigas", which, when used in conjunction with the oxygen, will attain temperatures of up to 3000oC. It is highly portable (the whole unit weighs just 5kg) and is contained in a high quality metal rack – allowing safe storage of the Turbo Set's gas cylinders. The Turboset is a compact and highly effective brazing kit. It is ideal for plumbing, air conditioning and refrigeration system repairs.

Description	Part No.
Oxyturbo - Turbo Set 1000 Brazing Kit	6450
Oxyturbo - Welding Head for TS1000	S050006
Oxyturbo - Turbo Set Maxy Gas Cylinder	6732
Oxyturbo - Turbo Set Oxygen Cylinder	6731



Other Brazing Equipment

Uniweld Nitrogen Purging Kit with Regulator

A complete kit designed to clear condensate drain lines without having to access the drain pan also can be used for purging air from lines whilst brazing.

Kit includes:

- RHP500 nitrogen regulator (13-33 bar) with bsp fittings and bar/psi gauges
- Sludge sucker
- Blow gun
- 2ft service hose (max allowable working pressure 55bar)
- 6" needle tip
- 1/4" rubber plug
- 2/4 " rubber plug and a yellow 6ft hose



Part No. 6790

Why not look at **>B<MaxiPro Press Fittings** to join copper tube without heat?

Related Items:



Brazing Equipment

Jovac Heat Shield Blocking Compound



A reusable putty designed to protect sensitive parts from heat damage during brazing, soldering and welding. No more need or messy wet rags! Apply, remove and reuse - up to 40 times! Handy Colour changing putty shows you when you need to replace the pot.

Part No.	600128
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Rothenberg Brazing Hot Bag



Zippered Hot Bag Torch/Gas holdall

Includes:

- 1 x Mapp Gas Cylinder
- 1 x Super-Fire 2 Brazing Torch
- 1 x Soldering mat
- 1 x LED Pen Torch

Part No.	167400
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Rothenberg Heat Deflector Guard



Part No.	6768
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Heavy Duty Heat Mat cw. Stands (up to 1600°C)



Part No.	16500
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Other Brazing Cylinders

Description	Part No.
Map-Pro Disp Cylinder 14.1 Oz	MAPPRO
Rothenberger Maxigas Cartridge	MAXIGAS
Rothenberger 110 Bar Oxygen Cylinder	ZZZ278



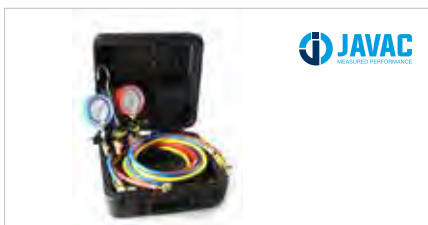
Brazing Chemicals

Description	Part No.
AEL - PyroCool Flame Retardant Gel 250ml	976271
AEL - PyroCool Flame Retardant Gel 1L	976239

Manifolds

Standard Refrigerant

Jovac 2-Valve Multi Gas Manifold



Manifold R410a 2 Valve 5/16" SAE supplied with 3 x 72" hoses in hard carry case

Part No.	6438
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Jovac BM2-3-DS-SUPER 2-Valve Manifold kit



Manifold R22, R404A, R407C, R134a Supplied with 3 x 36" hoses in hard carry case

Part No.	7782
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Yellow Jacket Series 41 2-Valve Manifold



Manifold R134a, R404a, 407c.

Part No.	41332
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Standard Refrigerant

Yellow Jacket Titan 2-Valve Manifold



Titan 2 Valve R134a R404a R407c Manifold

Part No.	49856
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Yellow Jacket Titan 4-Valve Manifold

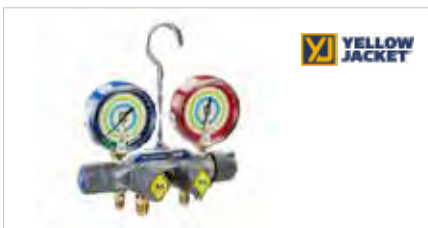


The Titan Test and Charging Manifold is the first forged aluminium manifold in the industry. The special aluminium alloy construction of the manifold body makes it lightweight for handling ease with the durability and reliability required for repeated, rugged use.

Yellow Jacket Titan 4 Valve Manifold R448A, R449A & R452A

Part No.	49901
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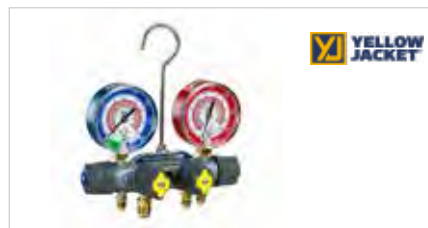
Yellow Jacket Titan 4-Valve Manifold



R407F/R134a/R404. 1/4" SAE with 3 x 72" hoses in hard carry case

Part No.	49931
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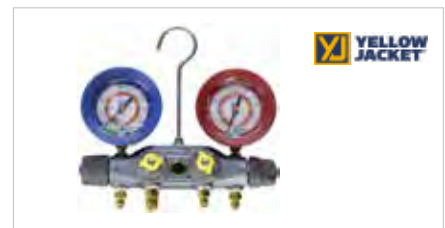
Yellow Jacket Titan 4-Valve Manifold



Yellow Jacket Titan 4 Valve Manifold R134a R404A, R407C

Part No.	49956
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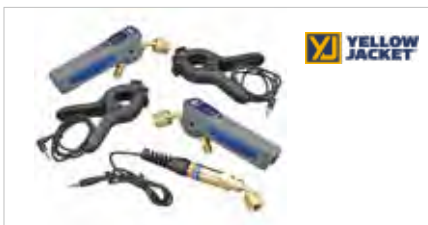
Yellow Jacket Brute II Manifold



Yellow Jacket Titan 4 Valve Manifold R134a, R404A & R407C

Part No.	46190
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Yellow Jacket Mantooth Manifold Dual



Wireless Digital Dual Pressure P/T Gauge Set with Two Temperature Probe Clamps

Part No.	67002
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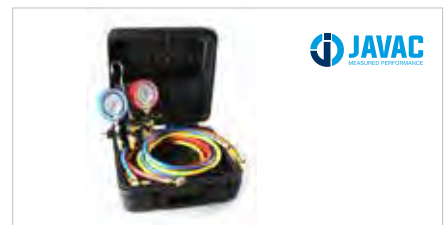
Javac 4-Valve Multi Gas (Manifold Only)



Manifold R410a 4 Valve 5/16" SAE supplied with 3 x 72" hoses in hard carry case

Part No.	600818
----------	--------

Javac Set Multi Gas Set With Sight Glass, 3x72" Hoses & Case



R22 R404A R407C R134a. 1/4" SAE with 3 x 72" hoses in hard carry case

Part No.	6437
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Manifolds

R32 & R410a Only

Javac 2-Valve Manifold with Sight Glass Only R32/R410A



Part No. 600815

Refco BM2-3-DS Manifold R32/R410A



Part No. 7800

Yellow Jacket Titan 2-Valve Manifold R32/R410A



Part No. 49866

Yellow Jacket S41 Manifold 2-Valve R32/R410A



Part No. 41652

Yellow Jacket Titan 4-Valve Manifold R32/R410A



Part No. 49966

Javac 4-Valve Manifold Only R32/R410A



Part No. 6439

Javac 2-Valve Manifold Set with Sight Glass, 3x72" Hoses & Case



Part No. 6438



Yellow Jacket Brute II 4-Valve Manifold R32/R410A

BRUTE II™ 4-Valve Test and Charging Manifold provides the flow that's proven faster than any conventional manifold. The aluminum alloy body is forged for strength and reliability with 3/8" bores through the body to speed the job.

Part No. 46160

Digital Manifolds

Yellow Jacket P51-870 Touch-Screen Manifold Set

The YELLOW JACKET® P51-870 TITAN™ Digital Manifold Series provides ultimate system measurements with ease. This 4-valve manifold provides fast and accurate measurements for refrigeration and a/c systems.

Measurements are displayed on a backlit digital display and can be transmitted via Bluetooth® to a Smartphone for even further analysis. Local display of system pressures and temperatures, superheat and subcool provide instant analysis. When connected to your Smartphone, target superheat and subcool are easily attained, along with all the other capabilities of the Mantooth™ app.



Part No. 40870



**YOUR PHONE HAS IT.
YOUR TABLET HAS IT.
NOW YOUR MANIFOLD HAS IT, TOO.**

TOUCH-SCREEN TECHNOLOGY COMES TO HVAC/R SYSTEM MEASUREMENT.

THE P51-870 TITAN™ DIGITAL MANIFOLD

- ☑ 4.3" full-color touch-screen display
- ☑ Connects to smartphone via Bluetooth® and the ManTooth™ app
- ☑ On-board data logging
- ☑ Vacuum sensor, hoses and carrying backpack included

 **YELLOW JACKET®**

www.yellowjacket.com



Introducing YJACK™ Series

The YJACK™ Series is a network of devices that form a new platform offering a total HVAC/R diagnostics solution. Multiple devices can measure system & environmental parameters, when coupled with the P51 digital manifold, the user has the necessary information for complete system diagnostics.

Each device utilizes Low Energy Bluetooth® technology to interconnect with each other & any Smart Device, Android and iOS. All YJACK™ series devices can also communicate directly with the P51-870 TITAN Series Digital Manifold, simultaneously. The YJACK View™ APP provides easy to use access to all info measured by the YJACK™ Series of devices.

YJACK PATH™ Range Extender

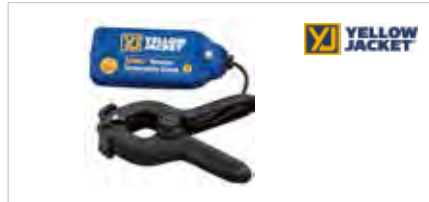


Extend your working area & connect up to 8 Devices for complete system analysis.

- Connects to six YJack devices & two P51-870 TITAN devices at one time
- Additional 400 ft line-of-sight signal range
- Amplifies signal strength through difficult to penetrate barriers

Part No.	67060
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YJACK™ Temperature Clamp



Stop worrying about tangled wires with limited range.

- Wireless measurements for surface temperature of pipes up to 1.25" diameter
- Flexible cable connection for easy access in small and difficult to reach areas
- Rotating mounting magnet for optimal Bluetooth® transmitter placement

Part No.	141084
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YJACK™ Temperature Strap



Easily measure temperature for pipes up to 6" diameter.

- Wireless measurements for surface temperature of pipes up to 6" diameter
- Elastic strap creates secure connection and prevents loosening under vibration
- Easy to use quick-release latch for rapid connection and disconnection from system

Part No.	67062
----------	-------

YJACK DEW™ Psychrometer



Measure temperature, humidity, wet bulb, dew point and more in air or ducts

- Wireless measurement of psychrometric parameters with ease
- Measures percent relative humidity, dry bulb temp wet bulb temp & Dew point temp

Part No.	67063
----------	-------

YJACK VIEW™ App

The YELLOW JACKET® YJACK VIEW™ app provides seamless integration with YJACK™ and P51-870 TITAN® devices offering a complete HVAC/R system diagnostic solution. Just pair your YJACK™ and P51-870 TITAN® devices with your Smartphone for complete system analysis.

Easily receive and analyze live data from all powered on nearby YJACK™ and P51-870 TITAN™ devices including system pressure, temperature, vacuum, and psychometrics. Includes a variety of session types useful for diagnosing any HVAC/R system.

Manifolds

CO₂ Manifolds

Javac Transcritical CO₂ Manifold



Part No. 976114

Javac Sub-Critical 2-Valve CO₂ Manifold



Part No. 600208

📄 DID YOU KNOW...

Yellow Jacket have been making tools for the Refrigeration & Air Conditioning industry for **over 70 years.**

Now, that's a lot of manifolds!



Hydrocarbon Manifolds

Refco Hydrocarbon R290 / R600 Manifold cw Sight Glass



Part No. 6030

Adaptors & Accessories

Javac Adapter 5/16" x 1/4" for R410A Gauge Line



Part No. 6037

Yellow Jacket Padded Manifold Case



Part No. FT290

Nitrogen Manifolds

Gas-Arc Mobile Nitrogen Test Assembly



Part No. RAN22003

Javac PVR N₂ / Vacuum Manifold Case & Hoses



Part No. 600735

Yellow Jacket Titan 4-Valve Pressure Test Manifold 800psi



Part No. 49972

Hoses

PTFE Braided Hose

Description	Part No.
PFTE S/S Braided Hose 12"	600845
PFTE S/S Braided Hose 24"	600826
PFTE S/S Braided Hose 30"	600828
PFTE S/S Braided Hose 36"	600829
PFTE S/S Braided Hose 48"	600846
PFTE S/S Braided Hose 60"	600847



Standard Refrigerant

Description	Length (In)	Part No.
Hose Set - R/B/Y 1/4" SAE	36"	600200
Hose Set - R/B/Y 1/4" SAE	72"	600202
Hose Set - With Ball Valves	72"	600820
Hose Set - With Ball Valves	72"	6317
Hose Single - Yellow 3/8"	72"	14572
Hose Set - 3 x 1/4" Anti Blow-Back	72"	22986
Hose Set - 3 x 1/4" With Ball Valves	72"	29986
Hose Set - R/B/Y 1/4" SAE	72"	21986
Hose Single - Yellow 3/8"	72"	18172
Hose Set - 3 x 1/4"	36"	21983
Charging/Vac Hose - HD 1/4" - 3/8"	72"	6106
Charging/Vac Hose - HD 3/8" - 3/8"	72"	15672
High Temperature Pressure Control - 1/4"	24"	78724
High Temperature Pressure Control - 1/4"	30"	78730
Charging Hoses, Safe Seal, 1/4"	72"	JAV-1071
Charging Hoses, Safe Seal 1/4" x 5/16"	72"	JAV-1072

R410A / R32 Only

Refco ccL-60 1/2" Hose Set



Length	60"
Part No.	6026

Refco ccL-60 5/6" Hose Set



Length	60"
Part No.	600803

Yellow Jacket Hoses Set 1/4 x 5/16"



Length	72"
Part No.	21486

Yellow Jacket Hoses & Ball Valve 1/4" x 5/16"



Length	72"
Part No.	29486

Yellow Jacket Hoses & Ball Valve 5/16"



Length	60"
Part No.	29485

Hydrocarbon Hose Javac R290 w/ Ball Valve



Length	72"
Part No.	744751

CO₂ Charging Hoses Javac CO₂ Charging Hose



Description	Part No.
CO2 Charging Hose Gauge Line 200 Bar - 2m	6322
CO2 Charging Hose Kit 1/4" Flare x 1/2" NPT 500 Bar - 2m	21922

Hoses

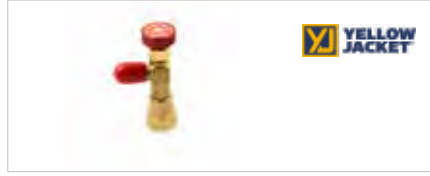
Accessories

Javac Ball Valve 5/16 SAE R410a



Part No. 600856

Yellow Jacket R410 5/16 4-in-1 Ball Valve



Part No. 18985

Javac Ball Valves (Set of 3) 1/4 SAE



Part No. 14030

IMP Hose Seal Gasket 3/8



Part No. 6108

IMP Charging Hose Seal Gasket 1/4" x 1pcs



Part No. 6093

ITE-HDG-05/410 Gasket 5/16



Part No. 600451

Gauges

Low Pressure Gauges

Refrigerant Capatilty	Part No.
Star Compound / Discharge Gauge - Glycerine R134a / R404A	6747
Star Compound / Suction Gauge - Glycerine R134a / R404A	6746
Javac LP Multi Gas	600821
Javac HP Multi Gas	600822
Yellow Jacket Red HP Gauge 80mm - R134a / R404A / R407C	49131
Yellow Jacket Red HP Gauge 80mm - R32 / R410A	49159

Refrigerant Capatilty	Part No.
Yellow Jacket Red HP Gauge 80mm - R134A / R404A / R407F	49181
Yellow Jacket Red Pressure Gauge 80mm - Pressure Only	49157
Yellow Jacket Blue Compound Gauge 80mm - R134a / R404A / R407F	49182
Yellow Jacket Blue Compound 80mm - R32 / R410A	49160
Yellow Jacket Blue Compound 80mm - RR134a / R404A / R407C	49132
Yellow Jacket Red Blue Compound Gauge 80mm - Pressure Only	49158

Torr Gauges

Type	Diameter	Connection	Part No.
Mechanical	100mm	1/4"	6834

Nitrogen Gauges

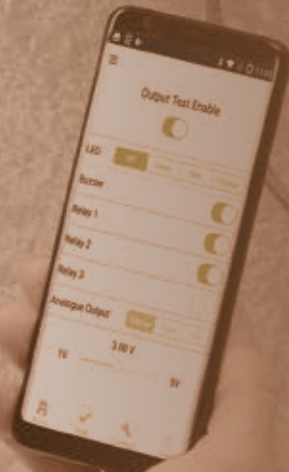
Description	Part No.
Tech-Master 2 Gauge Regulator 0-50 bar	600666
Pressure Gauge 0-400 bar 1/4" BSP	600741
Pressure Gauge 0-70 bar 1/4" BSP	600742

Vacuum Gauges

Type	Connection	Part No.
Supco VG64 Digital Vacuum Gauge	1/4"	6546
Yellow Jacket 69020 Omni Digital Vacuum Gauge	1/4"	69020
Yellow Jacket 69086 Hand Held Digital Vacuum Gauge	1/4"	69086
Star A443F Capsule Dial Torr Gauge	3/8"	160718
Yellow Jacket 69044 80mm Mechanical Tor Gauge	1/8"	69044

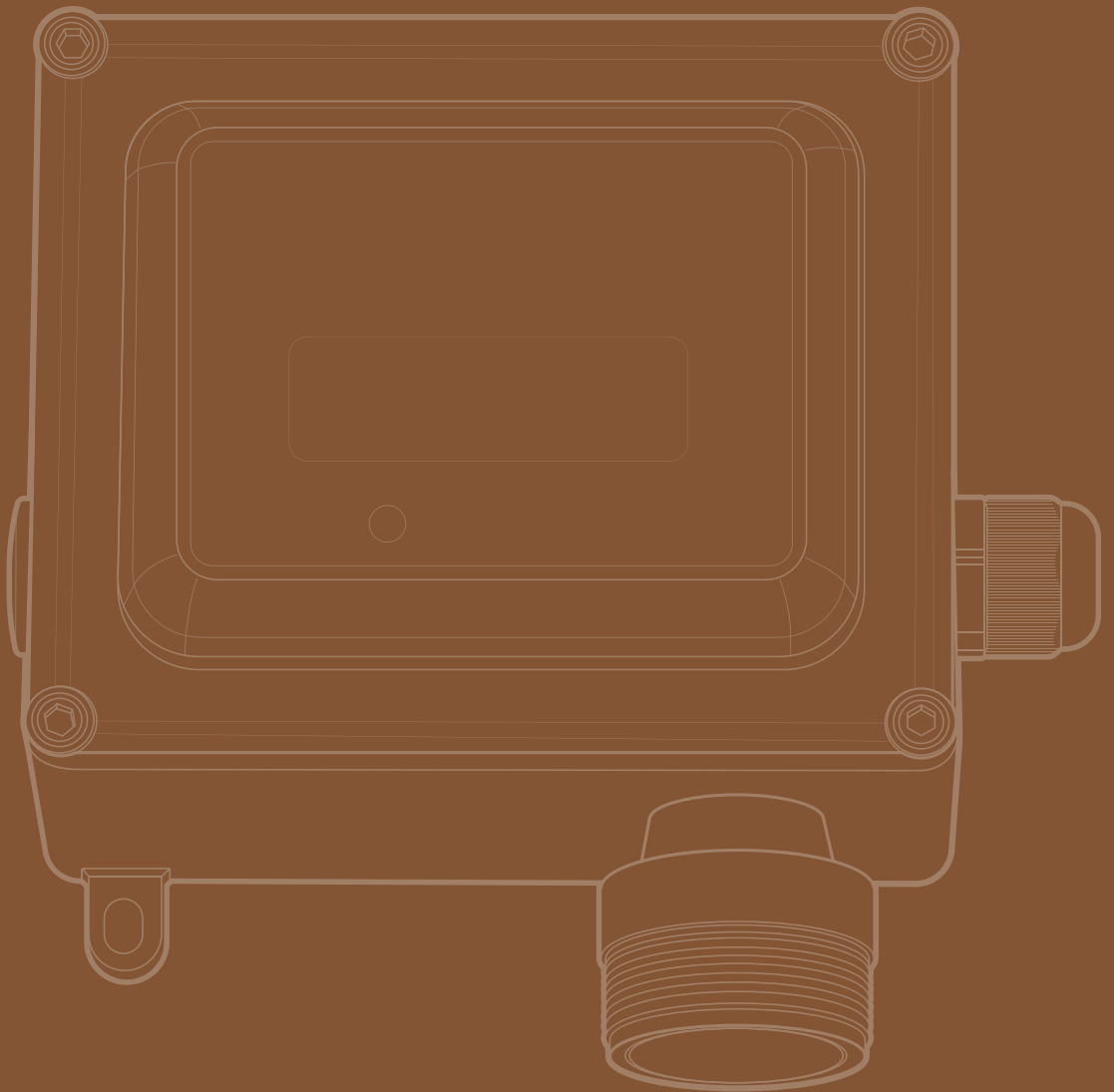
Accessories

Description	Part No.
Red & Blue Rubber Gauge Boots (80mm)	49190



SECTION FOURTEEN

Leak Detection Systems (Fixed)



MGS-450 Gas Detector

Bacharach offers innovative solutions designed for extreme temperature refrigeration environments, for early leak detection with minimum detectable levels from 1 ppm and a range of instruments for use in compliance and safety applications.

Applications

- Machinery Rooms
- Walk in Freezers
- Cold rooms
- Industrial Cold Storage
- Chiller Rooms



14 Leak Detection Systems

Three Relays

Fully configurable, correspond to alarm thresholds (High / Low) and fault status

Modbus RTU Interface

Analog, BMS / BAS connectivity

Multiple Cable Gland Entries

Flush Mounted Sensors



Integrated Audio-Visual Alarms

Integrated audio & visual alarms comply with safety regulations, no additional hardware

Optional IP41 or IP66-Rated Protection

IP41 and IP66 rated ABS enclosures available

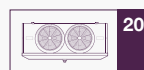
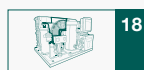
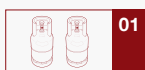
Low Temperature Performance

Maintains performance in temperatures as cold as -40°C

Easy to Wire

From the 1st January 2015, operators of equipment that contain fluorinated greenhouse gases in quantities of 5 tonnes of CO₂ equivalent or more shall ensure that the equipment is checked for leaks. This applies to operators of stationary refrigeration equipment, stationary air conditioning equipment, stationary heat pumps, stationary fire protection equipment, refrigeration units of refrigerated trucks and trailers.

Tonnes CO ₂ Equivalent Charge Weight (kg)	Example R404A Charge (kg)	Example R448A Charge (kg)	Frequency of Inspection	Frequency if Leak Detection Equipment is Fitted	Leak Detection Equipment Mandatory
≥5 and ≤50	≥1.28 and ≤12.8	≥3.56 and ≤35.6	Every 12 months	Every 24 months	No
≥50 and ≤500	≥12.8 and ≤128	≥35.6 and ≤356	Every 6 months	Every 12 months	No
≥500	≥128	≥356	N/A	Every 6 months	Yes
Hermetic systems ≤10	≤2.55	≤7.12	None	None	No



MGS-450 Gas Detector



- Integrated audio & visual alarms comply with safety regulations - no additional hardware
- Maintains performance in temperatures as cold as -40° F (-40° C)
- IP41 and IP66 rated ABS enclosures available
- Three relays, fully configurable, correspond to alarm thresholds (High / Low) and fault status
- Modbus RTU interface, analog, BMS / BAS connectivity

MGS-460 Gas Detector



- Integrated audio & visual alarms comply with safety regulations - no additional hardware
- Maintains performance in temperatures as cold as -40° F (-40° C)
- Remote sensor for monitoring for leaks in inaccessible areas
- Three relays, fully configurable, correspond to alarm thresholds (High / Low) and fault status
- Modbus RTU interface, analog, BMS / BAS connectivity

MGS-450 IP41 Enclosure

Refrigerant	IP Rating	PPM	Part No.
C02	IP41	0 - 20,000	6302-1092
R404a	IP41	0 - 1,000	6302-1103
R448a	IP41	0 - 1,000	6302-1156
R449a	IP41	0 - 1,000	6302-1169
R422d	IP41	0 - 1,000	6302-1166
R1234yf	IP41	0 - 1,000	6302-1161
NH3	IP41	0 - 1,000	6302-1028

Other detection ranges are available upon request.

MGS-460 IP66 IP41 Enclosure

Refrigerant	IP Rating	PPM	Part No.
C02	IP66	0 - 20,000	6302-4092
R404a	IP66	0 - 1,000	6302-4103
R448a	IP66	0 - 1,000	6302-4156
R449a	IP66	0 - 1,000	6302-4169
R422d	IP66	0 - 1,000	6302-4166
R1234yf	IP66	0 - 1,000	6302-4161
NH3	IP66	0 - 1,000	6302-4028

Other detection ranges are available upon request.

MGS-450 IP66 Enclosure

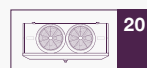
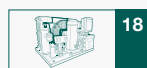
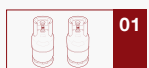
Refrigerant	IP Rating	PPM	Part No.
C02	IP66	0 - 20,000	6302-2092
R404a	IP66	0 - 1,000	6302-2103
R448a	IP66	0 - 1,000	6302-2156
R449a	IP66	0 - 1,000	6302-2169
R422d	IP66	0 - 1,000	6302-2166
R1234yf	IP66	0 - 1,000	6302-2161
NH3	IP66	0 - 1,000	6302-2028

MGS-408 Controller



Capable of powering up-to 8 gas detectors, displays real time data (status / gas measurement) from connected instruments. Retains alarm & status history of connected gas detectors, Modbus RTU interface, analog, BMS / BAS connectivity

Description	Part No.
MGS-408 Controller	6702-8000



MVR-300™ VRF Refrigerant Gas Detector

The MVR-300™ VRF Refrigerant Gas Detector is specifically designed to provide continuous monitoring for refrigerants associated with high-efficiency, high volume refrigerant cooling and heating systems, such as VRF / VRV (Variable Refrigerant Flow/Variable Refrigerant Volume) systems.

Applications: Hotels, Hospitals & Office Buildings



Audio-Visual Alarms: Through relays or Modbus communication and the faceplate tri-colored LED, the MVR-300 continually communicates system, sensor and alarm status. A unique unit identifier can be tied to the HVAC control system identifying zone/location. Each unit's alarms and relays can be configured remotely through Modbus directly with magnetic wand activated switches.

Easy To Install: This flush mounting sensor fits standard electrical boxes globally. Configured through easily accessible switches or programmable Modbus communication interface.

Easy Calibration: All gas detectors require periodic field testing and calibration. The MVR-300 offers an easy field calibration design and an exclusive plug-in field replaceable pre-calibrated sensor option.

MVR-300 Gas Detectors

Refrigerant	Low Alarm	High Alarm	Range	Part Number
R410A	2,000ppm	4,000ppm	10,000ppm	6302-0003
R407C	2,000ppm	4,000ppm	10,000ppm	6302-0013
R404A	2,000ppm	4,000ppm	10,000ppm	6302-0023
R32	2,000ppm	4,000ppm	10,000ppm	6302-0043

*Other detection ranges are available upon request.

MVR-SC Refrigerant Leak Monitor Controller

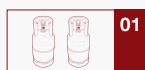
The MVR-SC Refrigerant Leak Monitor provides centralized monitoring and alarming for multi-occupant applications utilizing the MVR-300™ VRF Refrigerant Leak Detector. The MVR-SC continuously monitors all connected gas detectors for alarm and fault conditions, and will provide alerts via the integrated colour touchscreen display, integrated buzzer, and on-board relay outputs.



- Centralized Controller for Refrigerant Leak Detection
- Centralized monitoring for multi-occupant applications utilizing the MVR-300™ VRF Refrigerant Gas Detector
- At-a-glance visualization of whole system alarm, fault, or connectivity status
- Continuously monitors up to 100 connected devices for alarm and fault conditions, ensuring and warning in case of any disconnect
- Rolling event log of 100 most recent events (alarms, faults, connectivity, etc.) saved to SD card
- 1 Alarm Relay; 1 Fault Relay; automatic system action to be taken for fault or alarm condition via built-in relays
- Self diagnostics & simple field calibration for easy maintenance
- Commissioning via dynamic device pairing and remote Modbus auto-assign save

System Controller

Description	Part No.
System Controller for MVR-300	MVR-SC





Quietly Ready

The MVR-300 is always awake even as your occupants are sleeping, ready to respond with a configurable “silent” alarm and Modbus communication. Capable of communicating in the background, this leak detector can alert the facility manager or Building Management System (BMS) to identify the specific room and take immediate action.



Communication

Through relays or Modbus communication and the faceplate tri-colored LED, the MVR-300 continually communicates system, sensor and alarm status. A unique unit identifier can be tied to the HVAC control system identifying zone/location. Each unit’s alarms and relays can be configured remotely through Modbus directly with magnetic wand activated switches.



System Controller

Centralized monitoring for multi-occupant applications utilizing the MVR-300 VRF Refrigerant Gas Detector. At-a-glance visualization of whole system alarm, fault, or connectivity status. Continuously monitors up to 100 connected devices for alarm and fault conditions, ensuring and warning in case of any disconnect. Self diagnostics and simple field calibration for easy maintenance.



Low Profile Natural Design

MVR-300 design includes a low profile faceplate with programmable magnetic switches for a clean, tamper proof, button free look, blending easily into any décor with a natural color.



Alarm Management

High and low alarm set points are factory preset. Corresponding high and low relay states are programmable, as well as, silent alarm, reset and delay.



Industry Leading

EN 378 and local codes such BREEAM have continually evolved to address the safe and environmentally conscious use of refrigerants. The use of the MVR-300 in occupied, conditioned spaces can detect a refrigerant leak well before the RCL (Refrigerant Concentration Limit) with alarm set-points as low as 500 ppm to enhance safety.



Comfortable

Modern refrigerant systems are designed to be efficient and leak free, but improper installations, inadvertent damage, or mechanical wear can result in leaks over time. The MVR-300 refrigerant detector helps keep the occupants comfortable in the conditioned spaces by providing early warning of refrigerant leaks over the service life of the HVAC system.

Additional Services

MGS-400 App

The Bacharach MGS-400 App allows users to configure, maintain and interface with compatible MGS-400 gas detectors. Once a Bluetooth connection has been established, the app replaces the need for specialty training / tools and makes compliance with safety standards (ASHRAE 15, EN 378) easy and effective.



Available on the App Store and Google Play

Features

- Configuration (Rename device, define alarm thresholds, adjust Modbus settings, configure relay behavior and manage analog output settings.)
- Calibration (View sensor type, serial number and “Calibration Due” timer and initiate zero / span calibrations with customizable field calibration certificate.)
- Maintenance (Test LED / buzzer function, relays and analog output level)
- Intuitive Interface (View current gas measurement and acknowledge alarm / fault status.)

Related Items:



Tecumseh
Waiting for a Better Tomorrow



CAJ2428Z2

1800 BTU
with CALPASC Comp R404A 1PHBT CSR



21.2 x 28.4 cm

Tecumseh

Original Equipment Product
Performance and
Reliability



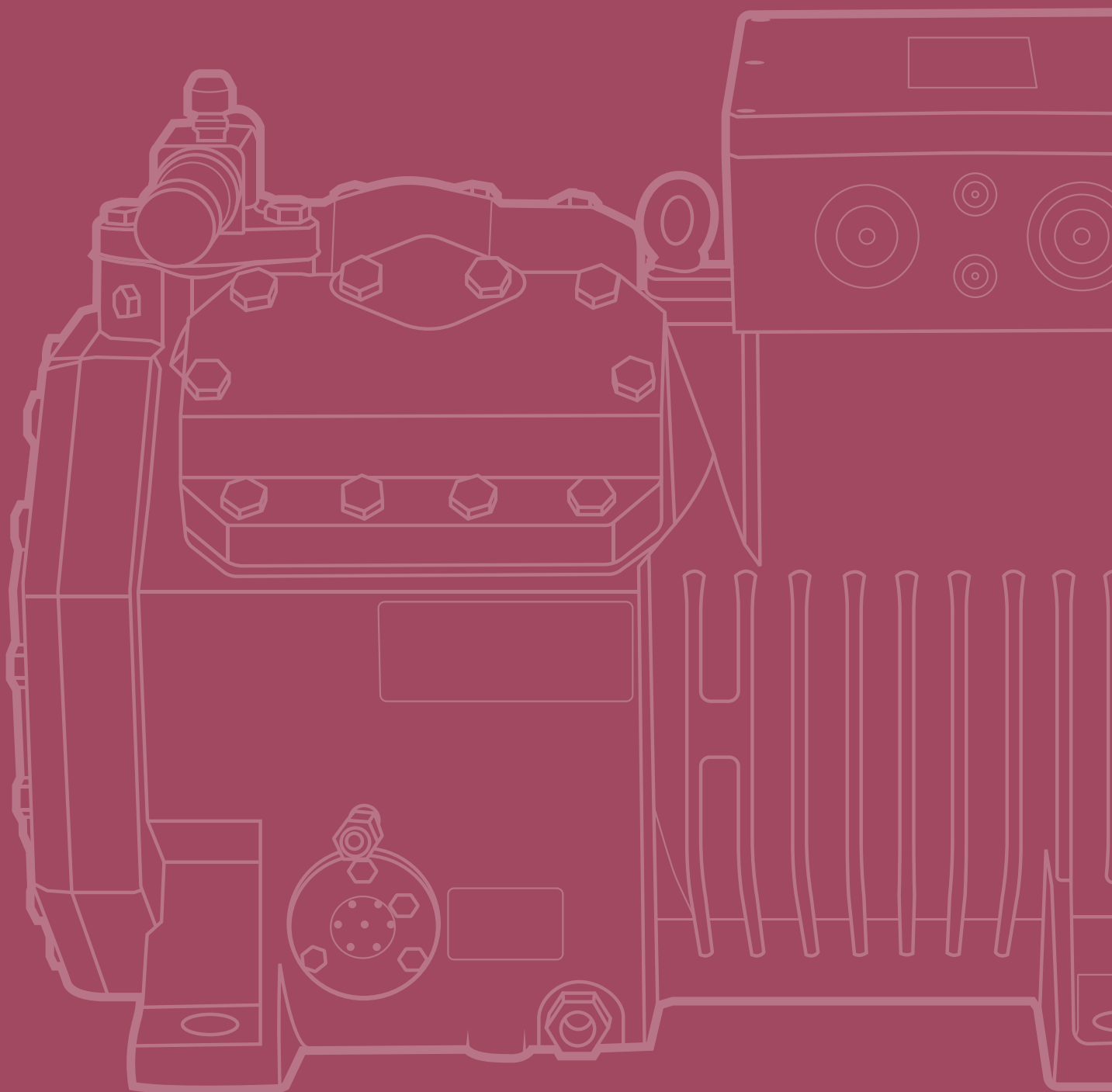
CAJ2432Z2

1800 BTU
Tecumseh 21.1" Deep R404A 1PHV CSR



SECTION FIFTEEN

Compressors



VRF?

GO

HEAVY



**MITSUBISHI
HEAVY INDUSTRIES**

AIR CONDITIONING
& WATER HEATING

Go HEAVY today!

For more information on the MHI
VRF range, contact your local branch.



PAGE 348

embraco

Embraco Compressors

Embraco hermetic compressors have been in manufacture since 1971 and produces over 40 million compressors a year. The compressor range is suitable for the domestic and commercial market with sizes varying from 1/8hp to 1.1/2hp.



PAGE 356

Tecumseh

Tecumseh Compressors

Innovations, efficiency and durability are key to Tecumseh. With a range of hermetic can rotary compressors from 1/8hp through to 3.1/2hp Tecumseh offers a wide breadth of hermetic compressors suitable for domestic through to heavier commercial applications.



PAGE 364

Danfoss

Danfoss Compressors

Danfoss manufacture small and light commercial compressors and offer the widest range of variants available, ensuring you can find a suitable compressor for your application. Available in sizes starting from 1/10hp through to 1.3/4hp.



PAGE 370

cubigel
compressors

Cubigel Compressors

Manufactured by Huayi in Spain, Cubigel specialises in hermetic compressors from 1/6hp through to 1/2hp. These compressors are popular amongst OEM manufacturers.



PAGE 376

Maneurop
Reciprocating Compressors

Maneurop Compressors

Now manufactured by Danfoss these hermetic compressors cover the larger end of the commercial market, handling a wide range of refrigerants and can be used in parallel making them ideal for pack systems. Stocked sizes range from 1.1/2hp through to 13.1/3hp.



PAGE 380

Copeland
Scroll Compressors

Copeland Compressors

Copeland Scroll compressors have been developed for various applications using the latest refrigerants. Scroll compressors are ideal where packaged systems are required using multi-compressor technology for built in redundancy and capacity control. Scroll compressors are now the most used compression technology due to its undeniable superiority.

This section provides information on our most popular models and is not exhaustive.

If the compressor you are looking for is not listed please contact us for more information

embraco

Embraco Reciprocating Compressors

Embraco has been making compressors for domestic and commercial refrigeration systems since 1971 & now produces over 40 million compressors a year produced by 9,000 workers in factories stretching from Brazil (headquarters) to China. Supplying compressors to more than 80 countries it holds over 1,700 patents to ensure it leads the world in compressor efficiencies and development. The company employs over 600 engineers/

technicians and has development partnerships in place with 120 university partners which keeps the company abreast of the latest innovations. The business constantly searches for high efficiency solutions & it leads in this area.

The compressors range is specifically developed for the domestic and commercial market covering a range of 1/8hp to 1.1/2hp.

Embraco Compressor Models

Embraco offer a comprehensive range of dependable hermetic compressors built in order to provide durability, high performance and low sound levels to OEM market applications such as water coolers, under-counter refrigeration, bottle coolers, commercial freezers and refrigerators, walk-in coolers, ice makers, vending machines, ice-cream dispensers, display cases and medical equipment.



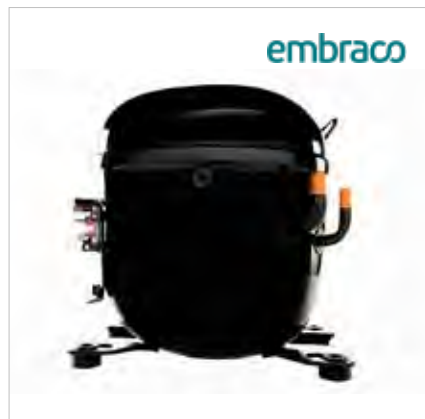
EMT / EM2 Models



NE / NEK / NEU Models



NJ Models



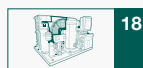
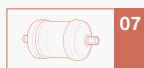
NT Models

Identification Labels & Approvals



- 1 Compressor Model
- 2 Supply Voltage
- 3 Bill of Material Code
- 4 Serial Number
- 5 Agency Approval Marks
- 6 Date Code or Production Date
- 7 Oil Type & Quantity
- 8 Refrigerant Type
- 9 Current Consumption (Rated Load Amperage, When Applicable)
- 10 Locked Rotor Amperage (When applicable)

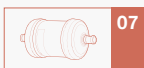
Related Items:



Embraco Product Overview

Compressor Model Number	Part No.	Application	Refrigerant	Nominal Hp	Displacement cc/cm3	Power Supply	LRA	Cooling Type	Expansion Device
R134a									
NEK1116Z	208915	LBP	R134a	1/5	7.4 cm3	220-240V 50Hz 1	14 A	Fan	C/V
NEK2116Z	208916	LBP	R134a	1/5	7.4 cm3	220-240V 50Hz 1	10 A	Fan	C/V
NEK1118Z	209262	LBP	R134a	1/4	8.4 cm3	220-240V 50Hz 1	16 A	Fan	C/V
NE2121Z	208918	LBP	R134a	1/4	9.27 cm3	220-240V 50Hz 1	12.6 A	Fan	C/V
NE2130Z	208920	LBP	R134a	1/3	12.12 cm3	220-240V 50Hz 1	17 A	Fan	C/V
NEK2140Z	208922	LBP	R134a	1/2	16.8 cm3	220-240V 50Hz 1	17 A	Fan	C/V
EMT45HDR	209012	MBP	R134a	1/8	3.97 cm3	220-240V 50Hz 1	5.4 A	Fan	C/V
EMT50HDP	207359	MBP	R134a	1/6	4.5 cm3	220-240V 50Hz 1	9.1 A	Fan	C
EMT6144Z	209014	MBP	R134a	1/5	5.2 cm3	220-240V 50Hz 1	8.5 A	Fan	C/V
EMT6160Z	207508	MBP	R134a	1/4	6.76 cm3	220-240V 50Hz 1	9.8 A	Fan	C/V
NEK6160Z	NEK6160Z	MBP	R134a	1/4	7.28 cm3	220-240V 50Hz 1	11.5 A	Fan	C/V
EMT6170Z	209016	MBP	R134a	1/4	7.69 cm3	220-240V 50Hz 1	10.4 A	Fan	C/V
NEK6170Z	208894	MBP	R134a	1/4	8.4 cm3	220-240V 50Hz 1	12.4 A	Fan	C/V
NEK6187Z	208896	MBP	R134a	1/3	10 cm3	220-240V 50Hz 1	16.1 A	Fan	C/V
NEK6210Z	208898	MBP	R134a	1/3	12.12 cm3	220-240V 50Hz 1	19.5 A	Fan	C/V
NEK6212Z	208900	MBP	R134a	1/2	14.3 cm3	220-240V 50Hz 1	19.5 A	Fan	C/V
NEK6214Z	207516	MBP	R134a	1/2	16.8 cm3	220-240V 50Hz 1	25.5 A	Fan	C/V
NT6215Z	208906	MBP	R134a	1/2	17.4 cm3	220-240V 50Hz / 230V 60Hz 1	20.7 A	Fan	C/V
NT6217Z	208908	MBP	R134a	3/4	20.4 cm3	220-240V 50Hz 1	25 A	Fan	C/V
NT6220Z	208910	MBP	R134a	3/4	22.4 cm3	220-240V 50Hz / 230V 60Hz 1	29.5 A	Fan	C/V
NJ6220Z	207705	MBP	R134a	3/4	26.1 cm3	220-240V 50Hz 1	35 A	Fan	C/V
NJ6220Z	207706	MBP	R134a	3/4	26.1 cm3	220-240V 50Hz 1	35 A	Fan	C/V
NJ6220ZX	208902	MBP	R134a	3/4	26.1 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	10 A	Fan	C/V
NJ6226Z	207713	MBP	R134a	1	34.4 cm3	220-240V 50Hz 1	31 A	Fan	C/V
NJ6226ZX	208904	MBP	R134a	1	34.4 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	13 A	Fan	C/V
R290									
EMT2117U	208853	LBP	R290	1/5	4.5 cm3	220-240V 50Hz 1	7.7 A	Fan	C/V
EMT2121U	208978	LBP	R290	1/4	5.57 cm3	220-240V 50Hz 1	7.7 A	Fan	C/V
EMT2125U	208980	LBP	R290	1/3	5.96 cm3	220-240V 50Hz 1	9.8 A	Fan	C/V
NEK2134U	208984	LBP	R290	1/2	10 cm3	220-240V 50Hz 1	13.1 A	Fan	C/V
NEK2150U	208857	LBP	R290	1/2	13.54 cm3	220-240V 50Hz 1	19.5 A	Fan	C/V
NT2160U	208986	LBP	R290	3/4	17.4 cm3	220-240V 50Hz 1	A	Fan	C/V
NT2170U	208988	LBP	R290	3/4	20.4 cm3	220-240V 50Hz 1	25 A	Fan	C/V
NT2180U	208876	LBP	R290	1	22.4 cm3	220-240V 50Hz 1	35 A	Fan	C/V
NT2210U	208990	LBP	R290	1.1/4	27.8 cm3	220-240V 50Hz 1	33 A	Fan	C/V
EMT6144U	208872	MBP	R290	1/5	4.5 cm3	220-240V 50Hz 1	7.7 A	Fan	C/V
EMT6152U	208966	MBP	R290	1/4	5.2 cm3	220-240V 50Hz 1	8.5 A	Fan	C/V
EMT6165U	208968	MBP	R290	1/4	5.96 cm3	220-240V 50Hz 1	10.4 A	Fan	C/V
NEK6181U	208882	MBP	R290	1/3	7.28 cm3	220-240V 50Hz 1	12 A	Fan	C/V
NEK6210U	208970	MBP	R290	1/3	8.78 cm3	220-240V 50Hz 1	16.1 A	Fan	C/V
NEK6213U	208874	MBP	R290	1/2	12.12 cm3	220-240V 50Hz 1	A	Fan	C/V
NEK6217U	209285	MBP	R290	3/4	14.3 cm3	220-240V 50Hz 1	24 A	Fan	C/V
NT6217U	208972	MBP	R290	3/4	16.8 cm3	220-240V 50Hz 1	A	Fan	C/V
NT6220U	208974	MBP	R290	3/4	17.4 cm3	220-240V 50Hz 1	30 A	Fan	C/V
NT6222U	208976	MBP	R290	1	20.4 cm3	220-240V 50Hz 1	30 A	Fan	C/V
NT6224U	D823963	MBP	R290	1	22.4 cm3	220-240V 50Hz 1	26 A	Fan	C/V

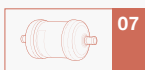
Expansion Device: C = Capillary, TEV = Expansion Device, C/TEV = Capillary or Expansion Device



Oil Type	Connection Type	Oil Charge cc	Discharge Size	Suction Size	Weight (Kg)	Height (mm)	Nominal capacity watts evap -5c	Nominal capacity watts evap -25c
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.8	200	-	172
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.4	187	-	169
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.7	200	-	195
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.9	200	-	217
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	200	-	268
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	-	372
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.7	166	229	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.7	166	303	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	367	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	469	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.4	187	448	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	522	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.4	187	527	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11	200	600	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	637	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	830	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	945	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	998	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	1173	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17.2	220	1280	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	20.5	265	1419	-
POE 22	all copper tubes	750 cm3	8mm	9,6mm	20.5	265	1419	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	19.6	265	1673	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	19.8	253	1892	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	20.2	265	2398	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	-	184
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	-	238
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	-	265
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11	200	-	395
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	-	515
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	18	220	-	626
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	18	220	-	740
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	18.2	234	-	835
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	18.5	234	-	1041
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	413	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	500	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	571	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.4	187	637	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11	200	776	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.4	187	1132	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	1233	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	1210	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	1472	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	1695	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17.2	220	1920	-

Connection Types: CT = All Copper Tube, RCT = Rotolock Suction Valve, Rest Copper Tubes, R = Rotolock/Valve Only Cooling Type, F = Fan, SC = Suction Cooled, ST = Static Cooling

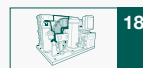
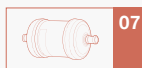
Related Items:



Embraco Product Overview

Compressor Model Number	Part No.	Application	Refrigerant	Nominal Hp	Displacement cc/cm3	Power Supply	LRA	Cooling Type	Expansion Device
R404A									
EMT2117GK	208946	LBP	R404A	1/4	4.5 cm3	220-240V 50Hz 1	7.7 A	Fan	C/V
EMT2121GK	208948	LBP	R404A	1/3	5.2 cm3	220-240V 50Hz 1	8.5 A	Fan	C/V
EMT2125GK	208950	LBP	R404A	1/3	5.96 cm3	220-240V 50Hz 1	9.8 A	Fan	C/V
NEK2134GK	208952	LBP	R404A	1/2	8.78 cm3	220-240V 50Hz 1	16.1 A	Fan	C/V
NEK2150GK	208954	LBP	R404A	3/4	12.12 cm3	220-240V 50Hz 1	19.5 A	Fan	C/V
NEK2168GK	208956	LBP	R404A	3/4	14.3 cm3	220-240V 50Hz 1	24 A	Fan	C/V
NT2168GK	208958	LBP	R404A	3/4	14.5 cm3	220-240V 50Hz / 230V 60Hz 1	25 A	Fan	C/V
NEK2172GK	NEK2172GK	LBP	R404A	3/4	16.8 cm3	220V 50Hz 1	26 A	Fan	C/V
NT2178GK	NT2178GK	LBP	R404A	3/4	17.4 cm3	220-240V 50Hz 1	25 A	Fan	C/V
NEU2178GK	97787	LBP	R404A	1	16.8 cm3	220-240V 50Hz 1	21 A	Fan	C/V
NT2180GK	208962	LBP	R404A	1	20.4 cm3	220-240V 50Hz 1	35 A	Fan	C/V
NT2192GK	208964	LBP	R404A	1	22.4 cm3	220-240V 50Hz 1	35 A	Fan	C/V
NJ2192GK	205870	LBP	R404A	1.1/4	26.1 cm3	220-240V 50Hz 1	26 A	Fan	C/V
NJ2192GK	207268	LBP	R404A	1.1/4	26.1 cm3	220-240V 50Hz 1	26 A	Fan	C/V
NJ2192GS	NJ2192GS-S	LBP	R404A	1.1/4	26.1 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	15 A	Fan	C/V
NT2212GK	207264	LBP	R404A	1.1/2	27.8 cm3	220-240V 50Hz 1	33 A	Fan	C/V
NJ2212GK	NJ2212GK	LBP	R404A	1.1/2	34.4 cm3	220-240V 50Hz 1	36 A	Fan	C/V
NJ2212GS	NJ2212GS	LBP	R404A	1.1/2	34.4 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	13 A	Fan	C/V
EMT6144GK	208924	MBP	R404A	1/4	3.97 cm3	220-240V 50Hz 1	7.7 A	Fan	C/V
EMT6152GK	208926	MBP	R404A	1/4	4.5 cm3	220-240V 50Hz 1	8.5 A	Fan	C/V
EMT6165GK	208928	MBP	R404A	1/3	5.2 cm3	220-240V 50Hz 1	10.4 A	Fan	C/V
NEK6181GK	208930	MBP	R404A	1/3	7.28 cm3	220-240V 50Hz 1	12 A	Fan	C/V
NEU6210GK	208895	MBP	R404A	1/3	7.28 cm3	220-240V 50Hz 1	16 A	Fan	C/V
NEK6210GK	208932	MBP	R404A	1/2	8.78 cm3	220-240V 50Hz 1	16.1 A	Fan	C/V
NEK6213GK	208934	MBP	R404A	1/2	12.12 cm3	220-240V 50Hz 1	19.3 A	Fan	C/V
NT6217GK	NT6217GK	MBP	R404A	3/4	12.55 cm3	220-240V 50Hz / 230V 60Hz 1	25 A	Fan	C/V
NEK6217GK	208936	MBP	R404A	3/4	14.3 cm3	220-240V 50Hz 1	21.5 A	Fan	C/V
NT6220GK	208940	MBP	R404A	3/4	14.5 cm3	220-240V 50Hz / 230V 60Hz 1	29.5 A	Fan	C/V
NT6222GK	208942	MBP	R404A	3/4	17.4 cm3	220-240V 50Hz 1	37 A	Fan	C/V
NT6224GK	208944	MBP	R404A	1	20.4 cm3	220-240V 50Hz 1	29 A	Fan	C/V
NT6226GK	208880	MBP	R404A	1	22.4 cm3	220-240V 50Hz 1	38 A	Fan	C/V
NJ9226GK	NJ9226GK-S	HBP	R404A	1	21.7 cm3	230V 50Hz 1	27.5 A	Fan	C/V
NJ9226GK	208820	HBP	R404A	1	21.7 cm3	230V 50Hz 1	27.5 A	Fan	C/V
NJ9226GS	208938	HBP	R404A	1	21.7 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	10 A	Fan	C/V
NJ9232GK	NJ9232GK	HBP	R404A	1.1/2	26.1 cm3	220-240V 50Hz 1	43 A	Fan	C/V
NJ9232GK	208830	HBP	R404A	1.1/2	26.1 cm3	220-240V 50Hz 1	43 A	Fan	C/V
NJ9232GS	208840	HBP	R404A	1.1/2	26.1 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	13 A	Fan	C/V
NJ9238GK	NJ9238GK	HBP	R404A	1.1/2	32.7 cm3	230V 50Hz 1	43 A	Fan	C/V
NJ9238GK	208845	HBP	R404A	1.1/2	32.7 cm3	230V 50Hz 1	43 A	Fan	C/V
NJ9238GS	208752	HBP	R404A	1.1/2	32.7 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	22 A	Fan	C/V
NJ9238GS	208850	HBP	R404A	1.1/2	32.7 cm3	380-420V 50Hz/ 440-480V 60 Hz 3 ph	22 A	Fan	C/V
R600									
EMX55CLC	208851	LBP	R600	1/6	9.05 cm3	220-240V 50Hz 1	A	Fan	C
EMX70CLC	209006	LBP	R600	1/5	11.15 cm3	220-240V 50Hz 1	A	Fan	C
EMT6144Y	208996	MBP	R600	1/5	9.05 cm3	220-240V 50Hz 1	A	Fan	C/V
NEK6170Y	209002	MBP	R600	1/4	14.3 cm3	220-240V 50Hz 1	A	Fan	C/V

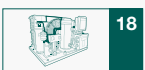
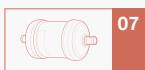
Expansion Device: C = Capillary, TEV = Expansion Device, C/TEV = Capillary or Expansion Device



Oil Type	Connection Type	Oil Charge cc	Discharge Size	Suction Size	Weight (Kg)	Height (mm)	Nominal capacity watts evap -5c	Nominal capacity watts evap -25c
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	-	210
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	-	258
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	-	301
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11	200	-	394
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	-	522
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	-	587
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	-	549
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.8	206	-	711
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	-	659
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	-	753
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17.4	234	-	778
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17.5	234	-	865
POE 22	all copper tubes	750 cm3	8mm	9,6mm	20.7	265	-	827
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	20.7	265	-	827
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	19.7	265	-	968
POE 22	all copper tubes	650 cm3	6,45mm	9,6mm	18.3	250	-	1125
POE 22	all copper tubes	750 cm3	8mm	12,8mm	20.7	265	-	1109
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	20.4	277	-	1228
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	458	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	511	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	586	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.4	187	730	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10	206	791	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11	200	877	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	1171	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	1198	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	11.6	206	1411	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	1342	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17	220	1631	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17.2	220	1933	-
POE 22	all copper tubes	450 cm3	6,45mm	9,6mm	17.5	234	2143	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	20.7	265	2176	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	20.7	265	2176	-
POE 22	all copper tubes	750 cm3	8mm	9,6mm	19	265	2086	-
POE 22	all copper tubes	750 cm3	8mm	12,8mm	21.6	277	2669	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	21.6	277	2669	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	20.4	277	2476	-
POE 22	all copper tubes	750 cm3	8mm	12,8mm	22.1	277	2970	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	22.1	277	3133	-
POE 22	all copper tubes	750 cm3	8mm	12,8mm	21.7	277	3091	-
POE 22	suction steel rotolock connector, rest copper tubes	750 cm3	8mm	thread 1" -14UNS-2A	21.7	277	3365	-
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.4	166	-	136
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.7	166	-	164
POE 22	all copper tubes	180 cm3	4,9mm	6,1mm	7.8	166	350	-
POE 22	all copper tubes	350 cm3	6,1mm	8,2mm	10.6	187	512	-

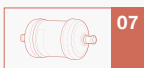
Connection Types: CT = All Copper Tube, RCT = Rotolock Suction Valve, Rest Copper Tubes, R = Rotolock/Valve Only Cooling Type, F = Fan, SC = Suction Cooled, ST = Static Cooling

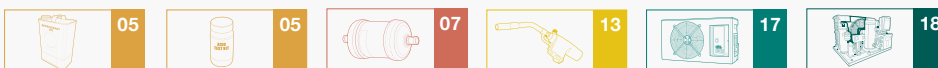
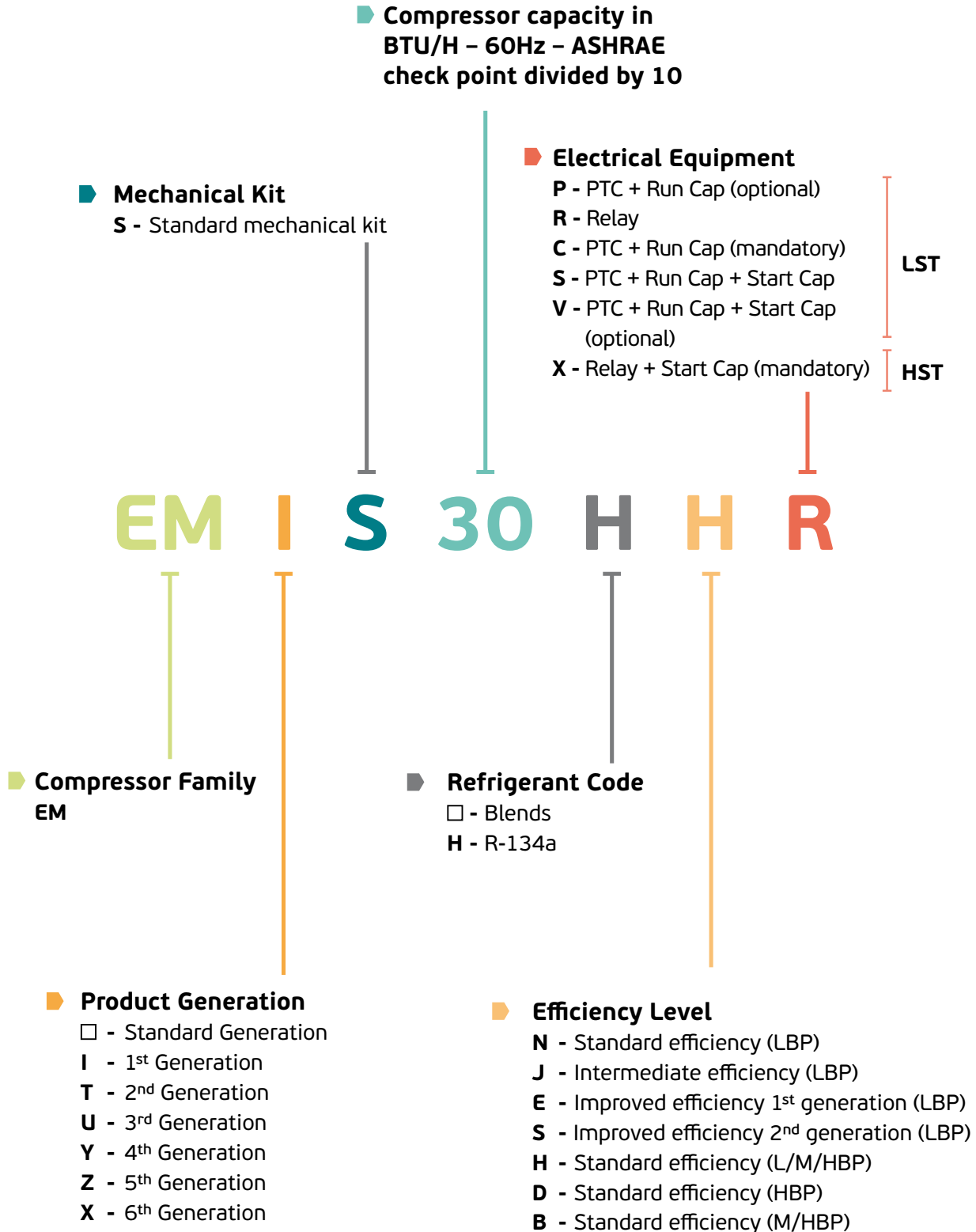
Related Items:



Embraco Spares

Compressor Model No.	Voltage	Motor	Overload Protector	Starting Device	Start Capacitor	Run Capacitor
EMT45CDP	220-240V 50hz	RSIR	2288035	1260011	-	-
EMT45HDR	220-240V 50hz	CSIR	2319103	2334137	2252352	-
NE2134Z	220-240V 50hz	CSIR	2319089	2334111	2252346	-
NEK2134GK	220-240V 50hz	CSIR	2319073	2334105	2252346	-
NEK2134U	220-240V 50hz	CSIR	2319073	2334123	2252346	-
NEK2150GK	220-240V 50hz	CSIR	2319064	2334112	2252345	-
NEK2150U	220-240V 50hz	CSIR	2319064	2334105	2252352	-
NEK2168GK	220-240V 50hz	CSIR	2319086	2334101	2252348	-
NEK2168GK	220-240V 50hz	CSR	2321002	1253023	2252269	2253316
NEK6210GK	220-240V 50hz	CSIR	2319095	2334105	2252346	-
NEK6210U	220-240V 50hz	CSIR	2319135	2334105	2252346	-
NEK6210Z	220-240V 50hz	CSIR	2319095	2334105	2252346	-
NEK6213GK	220-240V 50hz	CSIR	2319080	2334119	2252346	-
NEK6213U	220-240V 50hz	CSIR	2319080	2334119	2252346	-
NEU2140GK	220-240V 50hz	CSIR	2319153	2334127	2252352	-
NEU2140U	220-240V 50hz	CSIR	2319095	2334127	2252352	-
NEU6212Z	220-240V 50hz	CSIR	2319135	2334112	2252346	-
NEU6212Z	220-240V 50hz	CSR	2321147	1253051	2252261	2253324
NJ2192GJ	220-240V 50hz	CSR	-	1253010	2252269	2253310
NJ2192GK	220-240V 50hz	CSR	-	1253008	2252269	2253312
NJ2212GJ	220-240V 50hz	CSR	-	1253026	2252269	2253312
NJ2212GK	220-240V 50hz	CSR	-	1253010	2252269	2253312
NT2170U	220-240V 50hz	CSR	2321002	1253019	2252261	2253318
NT2170U	220-240V 50hz	CSIR	2319080	2334148	2252365	-
NT2178GK	220-240V 50hz	CSR	2321110	1253012	2252269	2253310
NT2178GK	220-240V 50hz	CSIR	2319098	2334101	2252364	-
NT2178GK	220-240v 50hz / 230V 60hz	CSR	2321153	1253022	2252269	2253310
NT2180GK	220-240V 50hz	CSR	2321113	1253023	2252274	2253311
NT2180GK	220-240V 50hz	CSIR	2319105	2334134	2252370	-
NT2180U	220-240V 50hz	CSR	2321164	1253027	2252268	2253310
NT2180U	220-240V 50hz	CSIR	2319096	2334134	2252375	-
NT2192GK	220-240V 50hz	CSR	2321162	1253022	2252329	2253310
NT2192GK	220-240V 50hz	CSIR	2319072	2278041	2252326	-
NT2192ULT	220-240V 50hz	CSR	-	1253003	2252269	2253318
NT6220GK	220-240v 50hz / 230V 60hz	CSR	2321091	1253015	2252269	2253311
NT6220GK	220-240v 50hz / 230V 60hz	CSIR	2319118	2334101	2252364	-
NT6220U	220-240V 50hz	CSR	2321134	1253015	2252268	2253310
NT6220U	220-240V 50hz	CSIR	2319134	2334138	2252366	-
NT6220Z	220-240v 50hz / 230V 60hz	CSIR	2319106	2334101	2252364	-
NT6222GK	220-240V 50hz	CSR	2321123	1253022	2252269	2253310
NT6222GK	220-240V 50hz	CSIR	2319105	2334104	2252370	-
NT6222GK	220-240v 50hz / 230V 60hz	CSR	2321084	1253022	2252329	2253311
NT6222GK	220-240v 50hz / 230V 60hz	CSIR	2319100	2334104	2252369	-
NT6222U	220-240V 50hz	CSR	2321134	1253015	2252268	2253310
NT6222U	220-240V 50hz	CSIR	2319134	2334138	2252366	-
NT6222U	220-240V 50hz	CSIR	2319134	2334138	2252366	-







Tecumseh

Tecumseh Reciprocating Compressors

Tecumseh Products Company is renowned for bringing an extra dimension of product innovation, customer reliance, and product quality to the air conditioning and refrigeration industry. As a result of their innovative spirit and product performance, people rely on their products every day.

Tecumseh developed the first “hermetic” compressor for consumer refrigerators in 1937. As the name Tecumseh became synonymous with commercial refrigeration and central home air conditioning, they expanded their product line to include automotive air conditioning compressors in 1953. Their reputation for innovation was further enhanced in 1959 when they developed the first high-speed hermetically-sealed compressor for commercial applications.

Today, Tecumseh engineer a full-line of hermetically-sealed compressors for residential and specialty air conditioning, home refrigerators and freezers, and commercial refrigeration. But their expertise doesn't stop there; they also offer a complete line of indoor and outdoor condensing units, evaporator coils, heat pumps, complete refrigeration systems & authorized spare parts.

Tecumseh Compressor Models

Innovative, durable and highly efficient products are at the heart of Tecumseh. Their products touch the lives of millions every day, driving them as a leading global manufacturer of hermetic compressors and condensing units for residential, commercial refrigeration and air conditioning applications. Discover the advantages of Tecumseh's broad range of energy efficient and reliable reciprocating compressors for household refrigerators and freezers, air-conditioning and commercial refrigeration applications including foodservice to walk-in coolers.



AE Models



AG / TAG Models



AJ / CAJ / TAJ Models



THB / THG Models



FH / TFH Models



HGA Models



RK Models

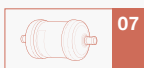
Identification Label, Approvals & Nomenclature



- 1 Bill of Material Number
- 2 Model Number
- 3 Appropriate Refrigerant
- 4 Serial Number
- 5 Maximum Allowance Pressure
- 6 Minimum & Maximum Temperature
- 7 Test Pressure (1,1 x PS)
- 8 Test Date
- 9 Approvals

C	AJ	4	4	92	Y	FZ
Stator Definition	Compressor Family (First 2 Digits)	Application	Digital No.	Cooling Capacity	Refrigerant	Voltage

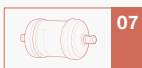
Related Items:



Tecumseh Product Overview

Compressor Model Number	Part No.	Application	Refrigerant	Nominal Hp	Displacement cc/cm3	Power Supply	LRA	Cooling Type
R134a								
THG1335YS	THG1335YKS	LBP	R-134a	1/10	3.58	220-240V ~ 50Hz	#N/A	Static
THG1340Y	THG1340YKS	LBP	R-134a	1/8	4.23	220-240V ~ 50Hz	#N/A	Static
THG1352Y	THG1352YKS	LBP	R-134a	1/6	5.6	220-240V ~ 50Hz	#N/A	Static
THG1365YS	THG1365YS	LBP	R-134a	1/5	5.9	220-240V ~ 50Hz	10.5	Static
AE1390Y	AE1390Y	LBP	R-134a	1/5	8.02	220-240V ~ 50Hz	15	Fan
AE2410Y	AE2410Y2	LBP	R-134a	1/4	9.39	220-240V ~ 50Hz	9	Fan
AE2415Y	AE2415Y	LBP	R-134a	1/3	12.48	220-240V ~ 50Hz	15	Fan
THB4415Y	THB4415YFZ	HBP	R-134a	1/8	4	220-240V ~ 50Hz	7	Static
THB4419Y	THB4419YFZ	HBP	R-134a	1/6	5	220-240V ~ 50Hz	8.5	Static
AE4425Y	AE4425Y	HBP	R-134a	1/5	6.69	220-240V ~ 50Hz	9.4	Fan
AE4430Y	AE4430Y	HBP	R-134a	1/4	8.02	220-240V ~ 50Hz	12.5	Fan
AE4440Y	AE4440Y	HBP	R-134a	1/3	10.33	220-240V ~ 50Hz	13.2	Fan
AE4450Y	AE4450Y	HBP	R-134a	1/2	13.24	220-240V ~ 50Hz	17	Fan
AE4456Y	AE4456Y	HBP	R-134a	1/2	14.51	220-240V ~ 50Hz	17	Fan
AE4460Y	AE4460Y	HBP	R-134a	1/2	15.09	220-240V ~ 50Hz	20.7	Fan
CAJ4452Y	CAJ4452Y2	HBP	R-134a	1/2	15.2	220-240V ~ 50Hz	19.4	Fan
CAJ4461Y	CAJ4461Y2	HBP	R-134a	1/2	18.3	220-240V ~ 50Hz	19.4	Fan
CAJ4461Y	CAJ4461Y2T	HBP	R-134a	1/2	18.3	220-240V ~ 50Hz	19.4	Fan
CAJ4476Y	CAJ4476Y2	HBP	R-134a	3/4	21.75	220-240V ~ 50Hz	22.4	Fan
CAJ4492Y	CAJ4492Y2	HBP	R-134a	3/4	25.95	220-240V ~ 50Hz	28	Fan
CAJ4492Y	CAJ4492Y2T	HBP	R-134a	3/4	25.95	220-240V ~ 50Hz	28	Fan
CAJ4511Y	CAJ4511Y2	HBP	R-134a	1	32.7	220-240V ~ 50Hz	29.5	Fan
CAJ4511Y	CAJ4511Y2T	HBP	R-134a	1	32.7	220-240V ~ 50Hz	29.5	Fan
FH4518Y	FH4518Y	HBP	R-134a	1 1/2	53.2	220-240V ~ 50Hz	46	Fan
FH4525Y	FH4525Y	HBP	R-134a	2	74.25	220-240V ~ 50Hz	55	Fan
TAJ4461Y	TAJ4461Y2	HBP	R-134a	1/2	18.3	400V 3~ 50Hz	9.8	Fan
TAJ4492Y	TAJ4492Y2	HBP	R-134a	3/4	25.95	400V 3~ 50Hz	12.8	Fan
TAJ4511Y	TAJ4511Y2	HBP	R-134a	1	32.7	400V 3~ 50Hz	17.3	Fan
TAJ4511Y	TAJ4511Y2T	HBP	R-134a	1	32.7	400V 3~ 50Hz	17.3	Fan
TFH4518Y	TFH4518Y	HBP	R-134a	1 1/2	53.2	400V 3~ 50Hz	25	Fan
TFH4525Y	TFH4525Y	HBP	R-134a	2	74.25	400V 3~ 50Hz	25	Fan
TAG4528Y	TAG4528Y	HBP	R-134a	2	90.2	400V 3~ 50Hz	42.5	Fan
TAG4534Y	CX2668	HBP	R-134a	3	100.7	400V 3~ 50Hz	42.5	Fan
TAG4537Y	TAG4537Y	HBP	R-134a	3	112.5	400V 3~ 50Hz	42.5	Fan
TAG4543Y	TAG4543Y	HBP	R-134a	3 1/2	124.4	400V 3~ 50Hz	42.5	Fan
R404A								
AE2415Z	AE2415Z	LBP	R-404A	1/3	7.33	220-240V ~ 50Hz	13.7	Fan
AE2420Z	AE2420Z	LBP	R-404A	1/2	9.35	220-240V ~ 50Hz	16.4	Fan
AE2425	AE2425Z	LBP	R-404A	1/2	12.01	220-240V ~ 50Hz	18.4	Fan
CAJ2428Z	CAJ2428Z2	LBP	R-404A	3/4	15.2	220-240V ~ 50Hz	22	Fan
CAJ2428Z	CAJ2428Z2T	LBP	R-404A	3/4	15.2	220-240V ~ 50Hz	22	Fan
CAJ2432Z	CAJ2432Z2	LBP	R-404A	3/4	18.3	220-240V ~ 50Hz	20.8	Fan
CAJ2432Z	CAJ2432Z2T	LBP	R-404A	3/4	18.3	220-240V ~ 50Hz	20.8	Fan
TAJ2446Z	TAJ2446Z2	LBP	R-404A	1 1/4	26.15	400V 3~ 50Hz	13.2	Fan
TAJ2464Z	TAJ2464Z2	LBP	R-404A	1 1/2	34.45	400V 3~ 50Hz	16.3	Fan
CAJ2446Z	CAJ2446Z2	LBP	R-404A	1 1/4	26.15	220-240V ~ 50Hz	29.5	Fan
CAJ2446Z	CAJ2446Z2T	LBP	R-404A	1 1/4	26.15	220-240V ~ 50Hz	29.5	Fan
CAJ2464Z	CAJ2464Z2	LBP	R-404A	1 1/2	34.45	220-240V ~ 50Hz	40	Fan
CAJ2464Z	CAJ2464Z2T	LBP	R-404A	1 1/2	34.45	220-240V ~ 50Hz	40	Fan
TFH2480Z	CX2689	LBP	R-404A	2	53.2	400V 3~ 50Hz	25	Fan
FH2480Z	FH2480Z	LBP	R-404A	2	53.2	220-240V ~ 50Hz	68	Fan
FH2511Z	FH2511Z	LBP	R-404A	3	74.25	220-240V ~ 50Hz	83	Fan
TFH2511Z	TFH2511Z	LBP	R-404A	3	74.25	400V 3~ 50Hz	32	Fan
TAG2516Z	TAG2516Z	LBP	R-404A	4	112.5	400V 3~ 50Hz	42.5	Fan
TAG2522Z	TAG2522Z	LBP	R-404A	5 1/2	135	400V 3~ 50Hz	63	Fan
CAJ9480Z	CAJ9480Z2	MHBP	R-404A	1	15.2	220-240V ~ 50Hz	24.1	Fan

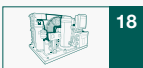
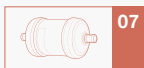
Expansion Device: C = Capillary, TEV = Expansion Device, C/TEV = Capillary or Expansion Device



Expansion Device	Oil Type	Connection Type	Oil Charge cc	Discharge Size	Suction Size	Weight (Kg)	Height (mm)	Nominal capacity watts evap -5c
Capillary	POE	Tube Connections	240	4.76 (3/16")	6.35 (1/4")	7.4	177	-
Capillary	POE	Tube Connections	240	4.76 (3/16")	6.35 (1/4")	7.5	178	-
Capillary	POE	Tube Connections	240	4.76 (3/16")	6.35 (1/4")	7.5	178	-
Capillary	POE	Tube Connections	240	4.76 (3/16")	6.35 (1/4")	7.7	178	-
Capillary Tube	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	9.7	200	-
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	9.9	200	-
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	11.6	210	-
Capillary Tube or Expansion Valve	POE	Tube Connections	250	4.76 (3/16")	6.35 (1/4")	7.7	169	243
Capillary Tube or Expansion Valve	POE	Tube Connections	250	4.76 (3/16")	6.35 (1/4")	7.8	172	284
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	9.2	199	397
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	9.7	199	510
Capillary Tube or Expansion Valve	POE	Tube Connections	280	6.35 (1/4")	7.9 (5/16")	9.8	199	666
Capillary Tube or Expansion Valve	POE	Tube Connections	280	6.35 (1/4")	9.5 (3/8")	11.7	210	881
Capillary Tube or Expansion Valve	POE	Tube Connections	280	6.35 (1/4")	9.5 (3/8")	11.5	210	962
Capillary Tube or Expansion Valve	POE	Tube Connections	380	6.35 (1/4")	9.5 (3/8")	12.2	210	1001
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	6.35 (1/4")	12.7 (1/2")	18.5	268	835
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	6.35 (1/4")	12.7 (1/2")	18.8	268	1021
Capillary Tube or Expansion Valve	POE	Tube Connections	475	6.35 (1/4")	12.7 (1/2")	18.6	268	1021
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	6.35 (1/4")	12.7 (1/2")	18.8	280	1215
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	12.7 (1/2")	20.2	280	1517
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	20	280	1517
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	15.9 (5/8")	21	280	1999
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	15.9 (5/8")	21	280	1999
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	32.7	330	2799
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	34.4	354	4155
Capillary Tube or Expansion Valve	POE	Tube Connections	475	6.35 (1/4")	12.7 (1/2")	17.3	268	1067
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	12.7 (1/2")	19.2	280	1533
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	15.9 (5/8")	19.7	280	1980
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	15.9 (5/8")	19.4	280	1980
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	30.7	330	2818
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	31.0	354	4000
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	22.2 (7/8")	43.0	368	3971
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	22.2 (7/8")	43.7	368	5027
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	22.2 (7/8")	43.3	368	5737
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	22.2 (7/8")	43.8	368	6003
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	10.9	210	-
Capillary Tube or Expansion Valve	POE	Tube Connections	380	6.35 (1/4")	9.5 (3/8")	11.5	210	-
Capillary Tube or Expansion Valve	POE	Tube Connections	380	6.35 (1/4")	9.5 (3/8")	11.7	210	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	6.35 (1/4")	12.7 (1/2")	19.6	268	-
Capillary Tube or Expansion Valve	POE	Tube Connections	475	6.35 (1/4")	12.7 (1/2")	19.3	268	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	12.7 (1/2")	19.8	268	-
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	19.8	268	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	12.7 (1/2")	21.3	280	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	9.5 (3/8")	15.9 (5/8")	21.4	280	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	12.7 (1/2")	21.7	280	-
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	21.5	280	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	9.5 (3/8")	15.9 (5/8")	22.1	280	-
Capillary Tube or Expansion Valve	POE	Tube Connections	475	9.5 (3/8")	15.9 (5/8")	21.8	280	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	12.7 (1/2")	15.9 (5/8")	32.5	354	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	37.2	354	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	37.2	370	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	32.8	370	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	22.2 (7/8")	43.0	368	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	28.6 (1"1/8)	46.4	393	-
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	12.7 (1/2")	20	268	1529

Connection Types: CT = All Copper Tube, RCT = Rotolock Suction Valve, Rest Copper Tubes, R = Rotolock/Valve Only Cooling Type, F = Fan, SC = Suction Cooled, ST = Static Cooling

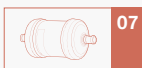
Related Items:



Tecumseh Product Overview

Compressor Model Number	Part No.	Application	Refrigerant	Nominal Hp	Displacement cc/cm ³	Power Supply	LRA	Cooling Type
CAJ9480Z	CAJ9480Z2T	MHBP	R-404A	1	15.2	220-240V ~ 50Hz	24.1	Fan
CAJ9510Z	CAJ9510Z2	MHBP	R-404A	1 1/4	18.3	220-240V ~ 50Hz	29.5	Fan
CAJ9510Z	CAJ9510Z2T	MHBP	R-404A	1 1/4	18.3	220-240V ~ 50Hz	29.5	Fan
CAJ9513Z	CAJ9513Z2	MHBP	R-404A	1 3/4	24.2	220-240V ~ 50Hz	33.1	Fan
CAJ9513Z	CAJ9513Z2T	MHBP	R-404A	1 3/4	24.2	220-240V ~ 50Hz	33.5	Fan
TAJ9510Z	TAJ9510Z2	MHBP	R-404A	1 1/4	18.3	400V 3~ 50Hz	14.5	Fan
TAJ9513Z	TAJ9513Z2	MHBP	R-404A	1 3/4	24.2	400V 3~ 50Hz	14.5	Fan
AE4425Z	AE4425Z	HBP	R-404A	1/5	4.24	220-240V ~ 50Hz	10.6	Fan
AE4430Z	AE4430Z	HBP	R-404A	1/4	5.16	220-240V ~ 50Hz	11.4	Fan
AE4440Z	AE4440Z	HBP	R-404A	1/3	6.69	220-240V ~ 50Hz	15.5	Fan
AE4450Z	AE4450Z	HBP	R-404A	3/7	8.85	220-240V ~ 50Hz	18	Fan
AE4460Z	AE4460Z	HBP	R-404A	1/2	10.33	220-240V ~ 50Hz	19.4	Fan
AE4470Z	AE4470Z	HBP	R-404A	1/2	12.01	220-240V ~ 50Hz	19.3	Fan
HGA4512Z	HGA4512Z	HBP	R-404A	1	16.12	220-240V ~ 50Hz	18.6	Fan
CAJ4517Z	CAJ4517Z2	HBP	R-404A	1 1/2	25.95	220-240V ~ 50Hz	38.5	Fan
CAJ4517Z	CAJ4517Z2T	HBP	R-404A	1 1/2	25.95	220-240V ~ 50Hz	38.5	Fan
CAJ4519Z	CAJ4519Z2	HBP	R-404A	1 1/2	34.45	220-240V ~ 50Hz	45	Fan
CAJ4519Z	CAJ4519Z2T	HBP	R-404A	1 1/2	34.45	220-240V ~ 50Hz	45	Fan
TAJ4517Z	TAJ4517Z2	HBP	R-404A	1 1/2	25.95	400V 3~ 50Hz	18	Fan
TAJ4519Z	TAJ4519Z2	HBP	R-404A	1 1/2	34.45	400V 3~ 50Hz	23	Fan
TFH4531Z	CX2770	HBP	R-404A	2 1/2	56.65	400V 3~ 50Hz	32	Fan
FH4522Z	FH4522Z	HBP	R-404A	2	39.95	220-240V ~ 50Hz	46.5	Fan
FH4524Z	FH4524Z	HBP	R-404A	2	43.5	220-240V ~ 50Hz	49	Fan
FH4531Z	FH4531Z	HBP	R-404A	2 1/2	56.65	220-240V ~ 50Hz	66	Fan
FH4540Z	FH4540Z	HBP	R-404A	3 1/2	74.25	220-240V ~ 50Hz	89	Fan
TFH4522Z	TFH4522Z	HBP	R-404A	2	39.95	400V 3~ 50Hz	25	Fan
TFH4524Z	TFH4524Z	HBP	R-404A	2	43.5	400V 3~ 50Hz	25	Fan
TFH4540Z	TFH4540Z	HBP	R-404A	3 1/2	74.25	400V 3~ 50Hz	46	Fan
TAG4546Z	TAG4546Z	HBP	R-404A	4	90.2	400V 3~ 50Hz	42.5	Fan
TAG4553Z	TAG4553Z	HBP	R-404A	4 1/2	100.7	400V 3~ 50Hz	45	Fan
TAG4561Z	TAG4561Z	HBP	R-404A	5	112.5	400V 3~ 50Hz	51.5	Fan
TAG4568Z	TAG4568Z	HBP	R-404A	5 1/2	124.4	400V 3~ 50Hz	58	Fan
TAG4573Z	TAG4573Z	HBP	R-404A	6	135	400V 3~ 50Hz	61	Fan
R407C								
RK5512W	RK5512W	AC	R-407C	1	16.3	220-240V ~ 50Hz	23	Fan
RK5513W	RK5513W	AC	R-407C	1	18.1	220-240V ~ 50Hz	24	Fan
RK5515W	RK5515W	AC	R-407C	1 1/4	21.4	220-240V ~ 50Hz	28	Fan
RK5518W	RK5518W	AC	R-407C	1 1/2	24.4	220-240V ~ 50Hz	32	Fan
RK5490C	RK5490C	AC	R-407C	3/4	12.9	220-240V ~ 50Hz	19	Fan
AJ5510C	AJ5510C2	AC	R-407C	1	18.6	220-240V ~ 50Hz	23.5	Fan
AJ5512C	AJ5512C2	AC	R-407C	1	21.75	220-240V ~ 50Hz	27.8	Fan
AJ5513C	AJ5513C2	AC	R-407C	1	24.2	220-240V ~ 50Hz	32	Fan
AJ5515C	AJ5515C2	AC	R-407C	1 1/4	25.95	220-240V ~ 50Hz	36	Fan
AJ5518C	AJ5518C2	AC	R-407C	1 1/2	32.7	220-240V ~ 50Hz	49.7	Fan
AJ5519C	AJ5519C2	AC	R-407C	1 1/2	34.45	220-240V ~ 50Hz	49.7	Fan
TAJ5515C	TAJ5515C2	AC	R-407C	1 1/4	25.95	400V 3~ 50Hz	18	Fan
TAJ5519C	TAJ5519C2	AC	R-407C	1 1/2	34.45	400V 3~ 50Hz	22.5	Fan
FH5522C	FH5522C	AC	R-407C	1 3/4	39.95	220-240V ~ 50Hz	40.6	Fan
FH5524C	FH5524C	AC	R-407C	2	43.5	220-240V ~ 50Hz	54	Fan
FH5527C	FH5527C	AC	R-407C	2	49.1	220-240V ~ 50Hz	64	Fan
FH5531C	FH5531C	AC	R-407C	2 1/2	56.65	220-240V ~ 50Hz	74	Fan
FH5540C	FH5540C	AC	R-407C	3 1/2	74.25	220-240V ~ 50Hz	93	Fan
TFH5522C	TFH5522C	AC	R-407C	1 3/4	39.95	400V 3~ 50Hz	25	Fan
TFH5527C	TFH5527C	AC	R-407C	2	49.1	400V 3~ 50Hz	25	Fan
TFH5531C	TFH5531C	AC	R-407C	2 1/2	56.65	400V 3~ 50Hz	30.5	Fan
TFH5540C	TFH5540C	AC	R-407C	3 1/2	74.25	400V 3~ 50Hz	39	Fan

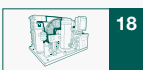
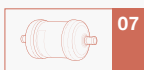
Expansion Device: C = Capillary, TEV = Expansion Device, C/TEV = Capillary or Expansion Device



Expansion Device	Oil Type	Connection Type	Oil Charge cc	Discharge Size	Suction Size	Weight (Kg)	Height (mm)	Nominal capacity watts evap -5c
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	19.7	268	1529
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	15.9 (5/8")	21.5	280	1912
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	15.9 (5/8")	21.5	280	1912
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	15.9 (5/8")	21.4	280	2441
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	15.9 (5/8")	21.1	280	2441
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	15.9 (5/8")	19.5	280	1915
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	7.9 (5/16")	15.9 (5/8")	20.5	280	2347
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	9.9	200	434
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	10.2	200	533
Capillary Tube or Expansion Valve	POE	Tube Connections	280	6.35 (1/4")	9.5 (3/8")	10.5	210	720
Capillary Tube or Expansion Valve	POE	Tube Connections	280	4.76 (3/16")	6.35 (1/4")	10.8	210	944
Capillary Tube or Expansion Valve	POE	Tube Connections	280	6.35 (1/4")	9.5 (3/8")	11.6	210	1131
Capillary Tube or Expansion Valve	POE	Tube Connections	380	6.35 (1/4")	9.5 (3/8")	12.2	210	1333
Capillary Tube or Expansion Valve	POE	Tube Connections	1330	7.9 (5/16")	12.7 (1/2")	13.3	282	1991
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	9.5 (3/8")	15.9 (5/8")	22.1	280	2720
Capillary Tube or Expansion Valve	POE	Tube Connections	475	9.5 (3/8")	15.9 (5/8")	21.9	280	2720
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	9.5 (3/8")	15.9 (5/8")	22.2	280	3562
Capillary Tube or Expansion Valve	POE	Tube Connections	475	9.5 (3/8")	15.9 (5/8")	21.8	280	3562
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	9.5 (3/8")	15.9 (5/8")	19.9	280	2735
Capillary Tube or Expansion Valve	POE	Threaded Connections	475	9.5 (3/8")	15.9 (5/8")	21	280	3492
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	12.7 (1/2")	22.2 (7/8")	31.6	370	5320
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	32.5	354	3627
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	34.6	354	4127
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	22.2 (7/8")	36.4	370	5457
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	22.2 (7/8")	36.8	370	6731
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	30.5	354	3603
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	15.9 (5/8")	30.3	354	4146
Capillary Tube or Expansion Valve	POE	Threaded Connections	1330	12.7 (1/2")	22.2 (7/8")	32.7	370	6861
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	22.2 (7/8")	43.1	368	7591
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	22.2 (7/8")	45.4	381	8594
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	28.6 (1"1/8)	45.6	381	9681
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	28.6 (1"1/8)	47	393	11407
Capillary Tube or Expansion Valve	POE	Threaded Connections	1760	15.9 (5/8")	28.6 (1"1/8)	48.5	393	12267
Capillary Tube								
Capillary Tube	PVE	Tube Connections	414	7.9 (5/16")	12.7 (1/2")	12.6	290	1857
Capillary Tube	PVE	Tube Connections	414	7.9 (5/16")	12.7 (1/2")	12.1	312	2069
Capillary Tube	PVE	Tube Connections	414	7.9 (5/16")	15.9 (5/8")	11.7	312	2521
Capillary Tube	PVE	Tube Connections	414	7.9 (5/16")	15.9 (5/8")	14.0	312	2893
Capillary Tube	PVE	Tube Connections	414	7.9 (5/16")	12.7 (1/2")	11.8	280	1383
Capillary Tube	POE	Tube Connections	475	6.35 (1/4")	9.5 (3/8")	17.8	258	1073
Capillary Tube	POE	Tube Connections	475	6.35 (1/4")	9.5 (3/8")	18.2	252	1633
Capillary Tube	POE	Tube Connections	475	6.35 (1/4")	9.5 (3/8")	19.8	271	1879
Capillary Tube	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	19.9	271	2254
Capillary Tube	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	20.6	282	3010
Capillary Tube	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	20.5	282	3111
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	19.6	271	2254
Capillary Tube or Expansion Valve	POE	Tube Connections	475	7.9 (5/16")	12.7 (1/2")	19.6	282	3111
Capillary Tube	POE	Tube Connections	1330	9.5 (3/8")	15.9 (5/8")	30.4	330	3069
Capillary Tube	POE	Tube Connections	1330	9.5 (3/8")	15.9 (5/8")	30.7	330	3253
Capillary Tube	POE	Tube Connections	1330	9.5 (3/8")	15.9 (5/8")	30.2	330	3771
Capillary Tube	POE	Tube Connections	1330	9.5 (3/8")	19 (3/4")	32.5	354	4420
Capillary Tube	POE	Tube Connections	1330	9.5 (3/8")	19 (3/4")	34.7	370	5858
Capillary Tube or Expansion Valve	POE	Tube Connections	1330	9.5 (3/8")	15.9 (5/8")	29.6	330	3069
Capillary Tube or Expansion Valve	POE	Tube Connections	1330	9.5 (3/8")	15.9 (5/8")	29.8	330	3771
Capillary Tube or Expansion Valve	POE	Tube Connections	1330	9.5 (3/8")	19 (3/4")	31.5	354	4420
Capillary Tube or Expansion Valve	POE	Tube Connections	1330	9.5 (3/8")	19 (3/4")	30.2	370	5858

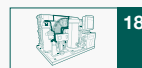
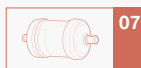
Connection Types: CT = All Copper Tube, RCT = Rotolock Suction Valve, Rest Copper Tubes, R = Rotolock/Valve Only Cooling Type, F = Fan, SC = Suction Cooled, ST = Static Cooling

Related Items:



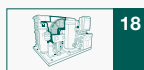
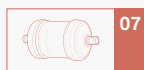
Tecumseh Spares

Compressor Model No.	Electrical Box	Electrical Box (Assembled)	Electrical Kit	Overload Protector	Relay	Run Capacitor	Start Capacitor
AE1390Y-FZ1A	-	-	-	8530349	8526012	-	-
AE2410Y-FZ1A	-	-	-	8570101	8565422	-	8580306
AE2415Y-FZ1B	-	-	-	8570103	8565421	-	8580309
AE2415Z-FZ	8681003	-	-	-	-	-	-
AE2425Z-FZ	8681003	-	-	8572294	8565412	-	8580330
AE4425Y-FZ	8681003	-	-	-	-	-	8580318
AE4425Z-FZ	8681003	-	-	-	-	-	8580318
AE4430Y-FZ1A	8681003	-	8655321 or 8655340	8570636	8662658	-	8680156
AE4430Z-FZ	8681003	-	-	-	-	-	8580319
AE4440Y-FZ1A	8681003	-	8655322	8570602	8662662	-	8680209
AE4440Z-FZ	8681003	-	-	-	-	-	-
AE4450Y-FZ1C	8681003	-	8655327	8570624	8662664	-	8680209
AE4450Z-FZ	8681003	-	-	-	-	-	-
AE4456Y-FZ1C	8681003	-	8655326	8570720 or 8570721	8662676	-	8680157
AE4460Y-FZ	8681003	-	-	8572301	8565445	-	8580324
AE4460Z-FZ	8681003	-	-	-	-	-	8580319
AE4470Z-FZ	8681003	-	-	8571538	8565103	-	8580327
AJ5510C	-	-	-	8571503	-	8545102	-
AJ5512C	-	-	-	8571513	-	8545102	-
AJ5513C	-	-	-	8571320 or 8571511	-	8545103	-
AJ5515C	-	-	-	8571319 or 8571514	8565400	8545104	8541160
AJ5518C	-	-	-	8571458	-	8545105	-
AJ5519C	-	-	-	8571456 or 8571653	-	8545105	-
CAJ2428Z	-	8657371	-	8571306 or 8571524	8565106	-	-
CAJ2428Z	-	8657371	-	8571306 or 8571524	8565106	-	-
CAJ2432Z	-	8657272	-	8571316 or 8571500	8565445	-	-
CAJ2432Z	-	8657272	-	8571316 or 8571500	8565445	-	-
CAJ2446Z	-	8657266	-	8571305 or 8571515	8565443	-	-
CAJ2446Z	-	8657266	-	8571305 or 8571515	8565443	-	-
CAJ2464Z	-	8657267	-	8571519	8565103	-	-
CAJ2464Z	-	8657267	-	8571519	8565103	-	-
CAJ4452Y	-	8657358	8655419	8571307 or 8571504	8565443	-	8541161
CAJ4461Y	-	8657359	8655422	8571315 or 8571508	8565443	-	8541161
CAJ2428Z	-	8657371	-	8571306 opr 8571524	8565106	-	-
CAJ4476Y	-	8657397	8655420	8571300 or 8571506	-	8565407	8541161
CAJ4492Y	-	8657345	8655418	8571305 or 8571515	8565400	-	8541161
CAJ4492Y	-	8657345	8655418	8571305 or 8571515	8565400	-	8541161
CAJ4511Y	-	8657263	-	8571317 or 8571502	8565103	-	-
CAJ4511Y	-	8657263	-	8571317 or 8571502	8565103	-	-
CAJ4517Z	-	8657264	-	8571327 or 8571521	8565411	-	8541163
CAJ4517Z	-	8657264	-	8571327 or 8571521	8565411	-	8541163
CAJ4519Z	-	8657265	-	8571452	8565400	-	-
CAJ4519Z	-	8657265	-	8571452	8565400	-	-
CAJ9480Z	-	8657277 or 8657323	-	8571314 or 8571520	8565407	-	8541168
CAJ9480Z	-	8657277 or 8657323	-	8571314 or 8571520	8565407	-	8541168
CAJ9510Z	-	8657276	-	8571505	8565443	-	8541163
CAJ9510Z	-	8657276	-	8571505	8565443	-	8541163
CAJ9513Z	-	8657274	-	8571322 or 8571507	8565414	-	-
CAJ9513Z	-	8657274	-	8571322 or 8571507	8565414	-	-
TAG4534Y	8681202	-	-	-	-	-	-
TFH2480Z	8681299	-	-	-	-	-	-
TFH4531Z	8681299	-	-	-	-	-	-



Compressor Model No.	Electrical Box	Electrical Box (Assembled)	Electrical Kit	Overload Protecto	Relay	Run Capacitor	Start Capacitor
FH2480Z	8681299	8657109	8655230	-	8565412	-	-
FH2511Z	8681299	8657108	8655231	-	8565407	-	-
FH4518Y	8681299	8657100 or 8657122	8655233	-	8565400	-	-
FH4522Z	8681299	8657119 or 8657125	8655234	-	8565407	-	-
FH4524Z	8681299	8657117	8655235	-	8565407	-	8541163
FH4524Z	8681299	8657103	8655236	-	8565102	-	8541163
FH4531Z	8681299	8657120 or 8657124	8655151	-	8565103	-	-
FH4540Z	8681299	-	8655232	-	8565103	-	-
FH5522C	8681299	-	-	-	-	8545107	-
FH5524C	8681299	-	-	-	-	8545107	-
FH5527C	8681299	-	-	-	-	8545107	-
FH5531C	8681299	-	-	-	-	8545107	-
FH5540C	8681299	-	8655061	-	8565400	8545108	8541163
HGA4512Z	8681200	-	8655314	8571300 or 8571506	8565401	-	-
RK5490C	-	8681200	8655251	8571342 or 8571538	-	8545105	-
RK5512W	8681200	-	-	8570317 or 8571341	-	8545102	-
RK5515W	-	-	-	-	-	-	-
RK5518W	-	-	-	-	-	-	-
TAG2516Z	8681202	-	-	-	-	-	-
TAG2522Z	8681202	-	-	-	-	-	-
TAG4528Y	8681202	-	-	-	-	-	-
TAG4537Y	8681202	-	-	-	-	-	-
TAG4543Y	8681202	-	-	-	-	-	-
TAG4546Z	8681202	-	-	-	-	-	-
TAG4553Z	8681202	-	-	-	-	-	-
TAG4561Z	8681202	-	-	-	-	-	-
TAG4568Z	8681202	-	-	-	-	-	-
TAG4573Z	8681202	-	-	-	-	-	-
TAJ2446Z	-	-	-	-	-	-	-
TAJ2464Z	-	-	-	-	-	-	-
TAJ4461Y	-	-	-	-	-	-	-
TAJ4492Y	-	-	-	-	-	-	-
TAJ4511Y	-	-	-	-	-	-	-
TAJ4511Y	-	-	-	-	-	-	-
TAJ4517Z	-	-	-	-	-	-	-
TAJ4519Z	-	-	-	-	-	-	-
TAJ5515C	-	-	-	-	-	-	-
TAJ5519C	-	-	-	-	-	-	-
TAJ9510Z	-	-	-	-	-	-	-
TAJ9513Z	-	-	-	-	-	-	-
TFH2511Z	8681299	-	-	-	-	-	-
TFH4518Y	8681299	-	-	-	-	-	-
TFH4522Z	8681299	-	-	-	-	-	-
TFH4524Z	8681299	-	-	-	-	-	-
TFH4525Y	8681299	-	-	-	-	-	-
TFH4540Z	8681299	-	-	-	-	-	-
TFH5522C	8681299	-	-	-	-	-	-
TFH5527C	8681299	-	-	-	-	-	-
TFH5531C	8681299	-	-	-	-	-	-
TFH5540C	8681299	-	-	-	-	-	-
THB4415YFZ	-	-	-	-	-	-	-
THB4419YFZ	-	-	-	-	-	-	-
THG1335YKS	-	-	-	8530354	8526017	-	-
THG1340YKS	-	-	-	8530348	8526017	-	-
THG1352YKS	-	-	-	8530356	8526017	-	-
THG1365YNS	-	-	-	-	-	-	-

Related Items:





Danfoss Light Commercial Compressors

(DL, FR, GS, NL, SC, TL)

Danfoss offers the broadest range of light commercial refrigeration compressors to the market and we have included all the most popular variants within this guide. Danfoss small and light commercial reciprocating compressors are suitable for low, medium and high temperatures using the following refrigerants:

P: R134a. N: R600a, R134a, R290, R404A/R507A.

T: R134a, R290, R404A/R507A

S: R134a, R290, R404A/R507A

F: R134a, R404A/R507A

G: R134a, R404A/R507A

Each part number is for a compressor kit which include all electrical and mounting Accessories required for an installation or replacement.

Danfoss offers the broadest range of light commercial refrigeration compressors in the market, so if the compressor you require is not listed, please contact your local brand (page 3) who will be happy to provide price and availability.

Danfoss Compressor Models

Danfoss Commercial Compressors operates globally as a leading provider of compressors, condensing units and solutions for the refrigeration, air conditioning and heat pump industry. Our offer includes scroll, centrifugal and reciprocating compressors, condensing units and inverter solutions, engineered with the most innovative technologies available throughout the global market.



FR R134a



FR R404A



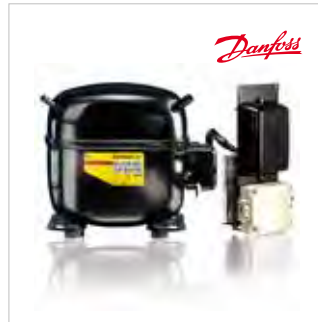
GS R404A



NL R134a



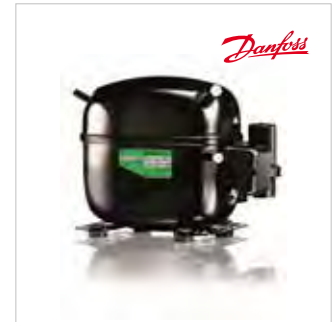
SC R134a



SC R290 CSR



SC R290



SC R404A 115V



TL R134a



TL R290



TL R404A



SC Twin R404A



SC R404A CSR

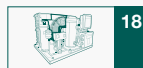
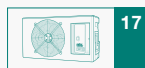
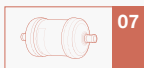
DID YOU KNOW...



Danfoss

Danfoss was formed in 1933 in Denmark by Mads Clausen and remains a family owned business today.

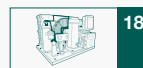
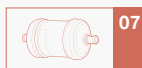
Related Items:



Danfoss Compressor Models

Compressor Model Number	Part No.	Application	Refrigerant	Nominal Hp	Displacement cc/cm ³	Power Supply	LRA	Cooling Type
R134a								
NL7FK	195B009100	LBP	R134a	1/4	7.27cm ³	230/50/1	5.9 A	Static
NL7FX	195B017600	LBP	R134a	1/4	7.27cm ³	230/50/1	5.9 A	Static
NL9FK	195B009200	LBP	R134a	1/4	8.35cm ³	230/50/1	6.6 A	Static
NL9FX	195B017800	LBP	R134a	1/4	8.35cm ³	230/50/1	7.9 A	Static
NL11FK	195B009300	LBP	R134a	1/4	11.15cm ³	230/50/1	9.2 A	Fan
TL5FK	195B000900	LBP	R134a	1/4	5.08cm ³	230/50/1	4.3 A	Static
TL5FX	195B024100	LBP	R134a	1/4	5.08cm ³	230/50/1	5.1 A	Static
TLS5FK	195B022100	LBP	R134a	1/4	5.08cm ³	230/50/1	4.8 A	Static
TLS6FX	195B023500	LBP	R134a	1/4	5.70cm ³	230/50/1	5.8 A	Static
TLS6TL	195B001200	LBP	R134a	1/4	5.70cm ³	230/50/1	4.8 A	Static
TLS7FK	195B022400	LBP	R134a	1/4	6.49cm ³	230/50/1	5.4 A	Static
TL3FK	195B000500	M/LBP	R134a	1/10	3.13cm ³	230/50/1	2.8 A	Static
NL8.4MF	195B037100	MBP	R134a	1/4	8.35cm ³	230/50-60/1	10.8 A	Fan
TL3GX	195B000600	H/L/MBP	R134a	1/10	3.13cm ³	230/50-60/1	4.8 A	Static
TL4GX	195B000800	H/L/MBP	R134a	1/10	3.86cm ³	230/50-60/1	5.1 A	Static
TL5GK	195B022200	H/L/MBP	R134a	1/4	5.08cm ³	230/50-60/1	5.4 A	Static
TL5GX	195B001100	H/L/MBP	R134a	1/4	5.08cm ³	230/50-60/1	5.7 A	Static
FR7.5GK	195B019200	H/L/MBP	R134a	1/4	6.93cm ³	230/50-60/1	8.1 A	Fan
FR7.5GX	195B002400	H/L/MBP	R134a	1/4	6.93cm ³	230/50-60/1	8.1 A	Fan
FR8.5GK	195B019300	H/L/MBP	R134a	1/4	7.95cm ³	230/50-60/1	8.4 A	Fan
FR8.5GX	195B002600	H/L/MBP	R134a	1/4	7.95cm ³	230/50-60/1	9.0 A	Fan
FR10GK	195B019400	H/L/MBP	R134a	1/4	9.05cm ³	230/50-60/1	10.5 A	Fan
FR10GX	195B002700	H/L/MBP	R134a	1/4	9.05cm ³	230/50-60/1	10.9 A	Fan
FR11GK	195B019500	H/L/MBP	R134a	1/4	11.15cm ³	230/50/1	10.5 A	Fan
FR11GX	195B002800	H/L/MBP	R134a	1/4	11.15cm ³	230/50/1	10.9 A	Fan
SC12GX	195B005000	H/L/MBP	R134a	1/2	12.87cm ³	230/50-60/1	12.5 A	Fan
SC15GX	195B005300	H/L/MBP	R134a	1/2	15.28cm ³	230/50-60/1	16.2 A	Fan
SC18GX	195B005900	H/L/MBP	R134a	1/2	17.69cm ³	230/50-60/1	20.4 A	Fan
SC21G 22	195B063600	H/L/MBP	R134a	3/4	20.95cm ³	230/50-60/1	22.1 A	Fan
R404 / R407C / R507								
TL4CLX	195B002100	LBP	R404A/R507	1/4	3.86cm ³	230/50/1	5.7 A	Fan
FR6CLX	195B003100	LBP	R404A/R507	1/4	6.23cm ³	230/50/1	9.0 A	Fan
FR8.5CLX	195B003800	LBP	R404A/R507	1/2	7.95cm ³	230/50/1	10.9 A	Fan
SC10CLX	195B007400	LBP	R404A/R507	1/2	10.29cm ³	230/50/1	12.5 A	Fan
SC12CLX	195B007600	LBP	R404A/R507	1/2	12.87cm ³	230/50/1	16.2 A	Fan
SC15CL	195B008800	LBP	R404A/R507	3/4	15.28cm ³	230/50/1	20.4 A	Fan
SC18CL	195B006600	LBP	R404A/R507	3/4	17.69cm ³	230/50/1	20.4 A	Fan
SC21CL	195B064000	LBP	R404A/R507	1.3/4	20.95cm ³	230/50/1	23.6 A	Fan
SC15/15CLX	195B010900	LBP	R404A/R507	1.1/4	30.56cm ³	230/50/1	40.8 A	Fan
SC10CLX	195B014700	M/LBP	R404A/R507	1/2	10.29cm ³	115/60/1	39.7 A	Fan
SC10MLX	195B034500	MBP	R404A/R507	1/2	10.29cm ³	230/50-60/1	19.5 A	Fan
SC12MLX	195B032300	MBP	R404A/R507	3/4	12.87cm ³	230/50-60/1	23.6 A	Fan
SC15MLX	195B035800	MBP	R404A/R507	3/4	15.28cm ³	230/50-60/1	32.2 A	Fan
SC18MLX	195B065200	MBP	R404A/R507	1	17.69cm ³	230/50/1	23.6 A	Fan
GS34MLX	195B043800	MBP	R404A/R507	1.3/4	33.80cm ³	230/50/1	46.0 A	Fan
FR6DLX	195B003200	H/MBP	R404A/R507	1/4	6.23cm ³	230/50/1	10.9 A	Fan
SC10DLX	195B007500	H/MBP	R404A/R407C/R507	1/2	10.29cm ³	230/50/1	16.2 A	Fan
SC12DLX	195B007700	H/MBP	R404A/R407C/R507	3/4	12.87cm ³	230/50/1	20.4 A	Fan
SC15DLX	195B064100	H/MBP	R404A/R407C/R507	3/4	15.28cm ³	230/50/1	22.1 A	Fan
R290								
SC21CNX	195B045900	LBP	R290	3/4	20.95cm ³	230/50/1	25.4 A	Fan
TL5CNX	195B045000	M/LBP	R290	1/4	5.08cm ³	230/50/1	5.7 A	Fan
SC15CNX	195B064500	M/LBP	R290	1/2	15.28cm ³	230/50/1	16.2 A	Fan

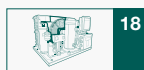
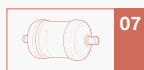
Expansion Device: C = Capillary, TEV = Expansion Device, C/TEV = Capillary or Expansion Device



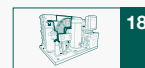
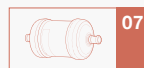
Expansion Device	Oil Type	Connection Type	Oil Charge cc	Discharge Size (mm)	Suction Size (mm)	Weight (Kg)	Height (mm)	Nominal capacity watts evap -5C	Nominal capacity watts evap -25C
C	POE	stub/tube	320cm3	5	6.2	10.28	190	-	176
C/V	POE	stub/tube	320cm3	5	6.2	10.26	190	-	176
C	POE	stub/tube	320cm3	6.2	8.2	10.90	197	-	200
C/V	POE	stub/tube	320cm3	6.2	8.2	11.04	197	-	200
C	POE	stub/tube	320cm3	6.2	8.2	11.43	203	-	257
C	POE	stub/tube	180cm3	5	6.2	8.05	173	-	111
C/V	POE	stub/tube	180cm3	5	6.2	8.18	173	-	111
C	POE	stub/tube	180cm3	5	6.2	8.09	173	-	126
C/V	POE	stub/tube	180cm3	5	6.2	8.10	173	-	139
C	POE	stub/tube	180cm3	5	6.2	8.00	173	-	139
C	POE	stub/tube	180cm3	5	6.2	8.07	173	-	160
C	POE	stub/tube	180cm3	5	6.2	7.10	163	175	58
C	POE	stub/tube	320cm3	6.2	8.2	10.84	197	530	-
C/V	POE	stub/tube	280cm3	5	6.2	7.39	163	179	60
C/V	POE	stub/tube	280cm3	5	6.2	8.24	173	228	88
C	POE	stub/tube	280cm3	5	6.2	8.16	173	281	102
C/V	POE	stub/tube	280cm3	5	6.2	8.19	173	281	102
C	POE	stub/tube	450cm3	6.2	8.2	11.21	196	407	137
C/V	POE	stub/tube	450cm3	6.2	8.2	11.24	196	407	137
C	POE	stub/tube	450cm3	6.2	8.2	11.07	196	485	171
C/V	POE	stub/tube	450cm3	6.2	8.2	11.25	196	485	171
C	POE	stub/tube	450cm3	6.2	8.2	11.21	196	518	182
C/V	POE	stub/tube	450cm3	6.2	8.2	11.34	196	518	182
C	POE	stub/tube	450cm3	6.2	8.2	11.13	196	-	226
C/V	POE	stub/tube	450cm3	6.2	8.2	11.30	196	-	226
C/V	POE	stub/tube	550cm3	6.2	8.2	13.32	209	780	252
C/V	POE	stub/tube	550cm3	6.2	10.2	13.69	209	918	280
C/V	POE	stub/tube	600cm3	6.2	10.2	14.30	219	1074	358
C/V	POE	stub/tube	600cm3	6.2	10.2	14.93	219	1308	453
C/V	POE	stub/tube	280cm3	5	6.2	8.19	173	389	157
C/V	POE	stub/tube	450cm3	6.2	8.2	11.28	196	640	268
C/V	POE	stub/tube	450cm3	6.2	8.2	11.15	196	-	321
C/V	POE	stub/tube	550cm3	6.2	8.2	13.35	209	1081	397
C/V	POE	stub/tube	550cm3	6.2	8.2	13.79	209	1429	540
C/V	POE	stub/tube	550cm3	6.2	10.2	14.40	219	1613	678
C/V	POE	stub/tube	600cm3	6.2	10.2	15.10	219	1920	789
C/V	POE	stub/tube	600cm3	6.2	10.2	15.00	219	-	897
C/V	POE	stub/tube	1,220cm3	6.2	12	30.56	259	3226	1357
C/V	POE	stub/tube	550cm3	6.5	8.2	13.75	209	1178	421
C/V	POE	stub/tube	600cm3	6.5	8.2	13.81	209	1079	-
C/V	POE	stub/tube	600cm3	6.5	8.2	14.79	219	1305	-
C/V	POE	stub/tube	600cm3	6.5	10.2	15.42	219	1742	-
C/V	POE	stub/tube	600cm3	6.2	10.2	14.70	219	2100	-
C/V	POE	stub/tube	900cm3	9.7	16.1	24.55	279	4103	-
C/V	POE	stub/tube	450cm3	6.2	8.2	11.33	196	637	-
C/V	POE	stub/tube	600cm3	6.2	8.2	13.77	209	1071	-
C/V	POE	stub/tube	600cm3	6.2	10.2	14.41	219	1416	-
C/V	POE	stub/tube	600cm3	6.2	10.2	14.42	219	1652	-
C/V	POE	stub/tube	600cm3	6.2	10.2	14.59	219	-	890
C/V	POE	stub/tube	280cm3	5	6.2	8.21	173	448	197
C/V	POE	stub/tube	600cm3	6.2	10.2	14.36	209	1429	591

Connection Types: CT = All Copper Tube, RCT = Rotolock Suction Valve, Rest Copper Tubes, R = Rotolock/Valve Only Cooling Type, F = Fan, SC = Suction Cooled, ST = Static Cooling

Related Items:



Compressor Model No.	PTC Starting Device	Relay assembly	Starting Relay	Starting Device	Starting Capacitor
TL3GX	-	117U6009	-	-	117U5014
TL4GX	-	117U6004	-	-	117U5014
TL5GK	103N0011	-	-	-	-
TL5GX	-	-	117U6000	-	117U5014
FR7.5GK	103N0011	-	-	-	-
FR7.5GX	-	117U6001	-	-	117U5015
FR8.5GK	103N0011	-	-	-	-
FR8.5GX	-	117U6015	-	-	117U5015
FR10GK	103N0011	-	-	-	-
FR10GX	-	-	117U6010	-	117U5015
FR11GK	103N0011	-	-	-	-
FR11GX	-	-	117U6010	-	117U5015
SC12GX	-	-	117U6003	-	117U5017
SC15GX	-	-	117U6005	-	117U5017
SC18GX	-	-	117U6019	-	117U5017
NL8.4MF	-	117U6016	-	-	117U5015
TL3FK	103N0011	-	-	-	-
NL7FK	103N0011	-	-	-	-
NL7FX	-	-	117U6000	-	117U5015
NL9FK	103N0011	-	-	-	-
NL9FX	-	117U6001	-	-	117U5015
NL11FK	103N0011	-	-	-	-
TL5FK	103N0011	-	-	-	-
TL5FX	-	117U6004	-	-	117U5014
TLS6FX	-	117U6004	-	-	117U5014
TLS6TL	103N0011	-	-	-	-
TLS7FK	103N0011	-	-	-	-
SC10DLX	n/a	-	117U6005	-	117U5017
SC12DLX	-	-	117U6019	-	117U5017
SC15DLX	-	-	-	-	-
FR6DLX	-	-	117U6010	-	117U5015
SC10MLX	-	-	117U6011	-	117U5017
SC12MLX	-	-	117U6011	-	117U5017
GS34MLX	-	-	-	117-7056	-
SC10CLX	-	-	117U6020	-	117U5023
TL4CLX	-	-	117U6000	-	117U5014
FR6CLX	-	117U6015	-	-	117U5015
FR8.5CLX	-	-	117U6010	-	117U5015
SC10CLX	-	-	117U6003	-	117U5017
SC12CLX	-	-	117U6005	-	117U5017
SC15CL	-	-	117U6019	-	117U5017
SC15/15CLX	-	-	117U6019	-	117U5017
TL5CNX	-	117U7000	-	-	117U5014
SC21CNX	-	-	117U7013	-	117U5012



Key to Alternative Current-Compressor Type Designation

1 Compressor design	2 Protector location					3 Optimization level					4 Compressor size		5 Application range	6 Refrigerant	7 Code letter for starting characteristics	8 Generation
	Internal		External			Standard > High					Capacity at rating point	Displacement				
	PTC LST	Relay HST	PTC	Relay	Variable speed											
P	L	T	F	LV	Blank	E ^{a)}	Always semi-direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	20	C = LBP	R22	Blank > universal (principal rule)	Blank > first generation	
											30					CL = LBP
T	L	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	2.5, 3, 4	CM = LBP	R22	Blank > universal (principal rule)	Blank > first generation	
4.5, 4.8, 5											DN = LBP	R290				
D	L	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	5.7, 6, 6.5	D = HBP	R22	Blank > universal (principal rule)	Blank > first generation	
7, 7.5, 8											DL = HBP	R404A/R507 (R407C)				
N	L	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	4, 4.8	F = LBP/(MBP)	R134a	Blank > universal (principal rule)	Blank > first generation	
5.7, 6.5											FT = LBP tropical	R134a				
F	R	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	9.4, 10	G = LBP/MBP/HBP	R134a	Blank > universal (principal rule)	Blank > first generation	
											5.2, 5.5	GH = Heat pumps	R134a			
S	C	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	5.7, 6, 6.1	GHH = Heat pumps optimized	R134a	Blank > universal (principal rule)	Blank > first generation	
											7, 7.3, 8.0	K = LBP/(MBP)	R600a			
G	S	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	8.4, 8.8	KT = LBP/(MBP) tropical	R600a	Blank > universal (principal rule)	Blank > first generation	
											9, 10, 11	MF = MBP	R134a			
G	S	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	6	ML = MBP	R404A/R507	Blank > universal (principal rule)	Blank > first generation	
											7.5	MN = MBP	R290			
G	S	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	10	S = LBP/HBP (service)	R426A	Blank > universal (principal rule)	Blank > first generation	
											11	ST = LBP tropical (service)	R426A			
G	S	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	12		R401A/R401B	Blank > universal (principal rule)	Blank > first generation	
											15		R409A/R409B			
G	S	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	18		R426A	Blank > universal (principal rule)	Blank > first generation	
											21		R401A/R401B			
G	S	T	F	LV	Blank	E ^{b)}	Semi-direct or direct intake	Y ^{a,b)}	X ^{a)}	U ^{a)}	26		R409A/R409B	Blank > universal (principal rule)	Blank > first generation	
											34		R409A/R409B			

Blank = Standard
E = Energy-optimized
S = Semi-direct intake
Y = High energy-optimized
X = High energy-optimized
U = High energy-optimized

a) = Run capacitor compulsory
b) = Run capacitor optional

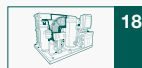
Danfoss A/S • Nordborgvej 81 • 6430 Nordborg • Denmark
 Tel: +45 7488 2222 • www.compressors.danfoss.com

1/2

DEHC.EI.050.A3.02, 05-2011

Key to Direct Current-Compressor Type Designation

1 Compressor design	2 Protector location					3 Optimization level					4 Compressor size		5 Application range	6 Refrigerant	7 Code letter for starting characteristics	8 Generation
	Internal		External			Standard > High					Capacity at rating point	Displacement				
	PTC LST	Relay HST	PTC	Relay	Variable speed											
BD P/T-Housing					Blank						35	CN = LBP	R290	Blank > universal (principal rule)	Blank > first generation	
											50					CL = LBP
BD Micro					Blank						1.4	F = LBP/(MBP)	R134a	Blank > universal (principal rule)	Blank > first generation	
												GH = HBP	R134a			
BD Micro					Blank							K = LBP/(MBP)	R600a	Blank > universal (principal rule)	Blank > first generation	





Cubigel Reciprocating Compressors

Huayi Compressor Barcelona specializes in designing, manufacturing and selling hermetic compressors and condensing units for the light commercial refrigeration market. Operating under Cubigel Compressors® and located in Barcelona, the company exports more than 90% of its production and employs more than 400 people. The company focuses on product innovation

strategy with a strong R&D team, enhanced know-how and more than 50 years of experience in providing a broad range of solutions to the commercial refrigeration industry. Cubigel Compressors® offers a wide range of compressors covering from 2.4cc up to 34cc working with most refrigerant gases, voltages and for any type of application.

Cubigel Compressor Models

Cubigel Compressors

Huayi Compressor Barcelona offers the most complete range of compressors and Condensing Units for every commercial refrigeration application. Their company focuses on a product innovation strategy based on a strong R&D team with enhanced know-how and expertise along with an efficient production platform to provide a broad range of solutions to the refrigeration industry.

Huayi Compressor Barcelona's production includes models with displacement (or swept volume, maximum volume of the cylinder) between 2.2 cm³ and 34 cm³, in most refrigerant gases, main voltages and for any type of commercial refrigeration application.



L Models



P Models

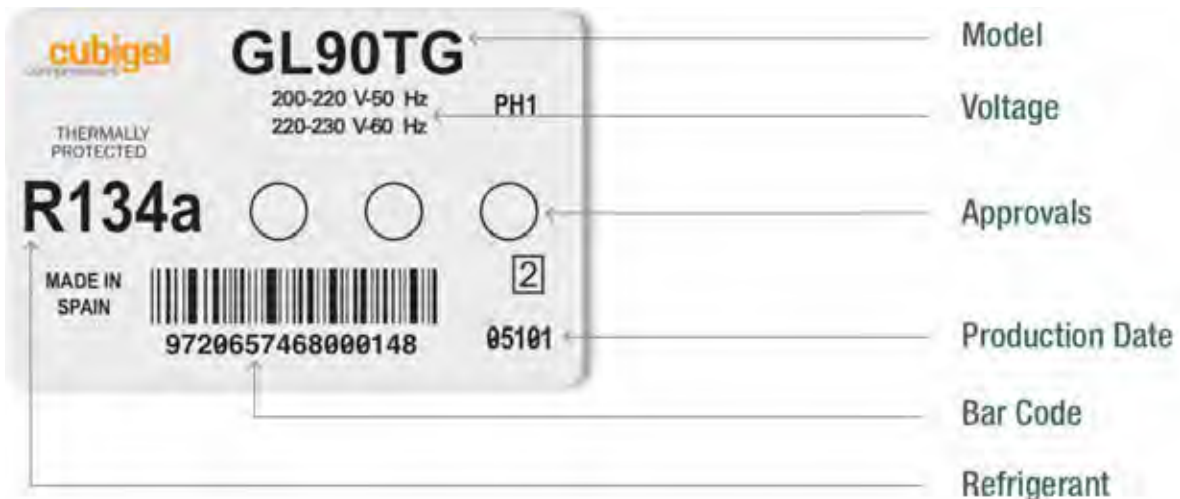


S Models

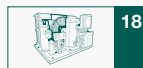
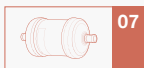


X Models

Identification Labels & Approvals



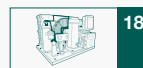
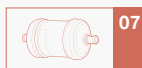
Related Items:



Cubigel Compressor Models

Compressor Model Number	Part No.	Application	Refrigerant	Nominal HP	Displacement cc/cm ³	Power Supply	LRA	Cooling Type
R134a								
GL60AA	GL60AA	LBP	R134a	1/6	5.98	220-240V 50Hz ~1	9	S
GL80AA	GL80AA	LBP	R134a	1/5	8.1	220-240V 50Hz ~1	11.5	S
GL90AA	GL90AA	LBP	R134a	1/4	9.09	220-240V 50Hz ~1	12.8	S
GL45TB	GL45TB	HMBP	R134a	1/6	4.56	220-240V 50Hz ~1	6.50	F
GL60TB	GL60TB	HMBP	R134a	1/5	5.68	220-240V 50Hz ~1	8.3	F
GL80TB	GL80TB	HMBP	R134a	1/5	7.57	220-240V 50Hz ~1	9.8	F
GL90TB	GL90TB	HMBP	R134a	1/4	8.85	220-240V 50Hz ~1	12	F
GX18TB	GX18TB	HMBP	R134a	1/2	18.4	220-240V 50Hz ~1	24	F
GX21TB	GX21TB	HMBP	R134a	5/8	20.72	220-240V 50Hz ~1	26	F
GX23TB	GX23TB	HMBP	R134a	5/8	23.2	220-240V 50Hz ~1	26	F
GS26TB-T	GS26TB	HMBP	R134a	3/4	25.93	220-240V 50Hz ~1	32	F
GS34TB-T	GS34TB	HMBP	R134a	1	34.42	220-240V 50Hz ~1	37	F
GP14TB	GP14TB	HBP	R134a	3/8	14.17	220-240V 50Hz ~1	18	F
GP16TB	GP16TB	HBP	R134a	3/8	16.15	220-240V 50Hz ~1	20	F
R404A								
ML90FB	ML90FB	LBP	R404A	1/3	8.85	220-240V 50Hz ~1	13	F
MP14FB	MP14FB	LBP	R404A	1/2	14.17	220-240V 50Hz ~1	17.5	F
MS26FB-T	MS26FB	LBP	R404A	3/4	25.93	220-240V 50Hz ~1	31.5	F
MX23FBa	MX23FB	LBP	R404A	7/8	23.2	220-240V 50Hz ~1	30	F
MS34FB-T	MS34FB	LBP	R404A	1	34.42	220-240V 50Hz ~1	39	F
ML45TB	ML45TB	HMBP	R404A	1/5	4.56	220-240V 50Hz ~1	9.7	F
ML60TB	ML60TB	HMBP	R404A	1/4	5.68	220-240V 50Hz ~1	10.6	F
ML80TB	ML80TB	HMBP	R404A	3/8	7.57	220-240V 50Hz ~1	12.8	F
ML90TB	ML90TB	HMBP	R404A	3/8	8.85	220-240V 50Hz ~1	16	F
MX18TBa	MX18TBA	HMBP	R404A	7/8	18.4	220-240V 50Hz ~1	34.5	F
MX21TBa	MX21TB	HMBP	R404A	1	20.72	220-240V 50Hz ~1	37	F
MS26TB-T	MS26TB	HMBP	R404A	1.375	25.93	220-240V 50Hz ~1	38	F
MPT14RA	MPT14RA	HBP	R404A	1/2	14.32	220-240V 50Hz ~1	21	F
MS34TB-T	MS34TB	HBP	R404A	1.625	34.42	220-240V 50Hz ~1	41	F

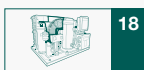
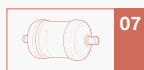
Expansion Device: C = Capillary, TEV = Expansion Device, C/TEV = Capillary or Expansion Device



Expansion Device	Oil Type	Connection Type	Oil Charge cc	Discharge Size (mm)	Suction Size (mm)	Weight (Kg)	Height (mm)	Nominal capacity watts evap -5C	Nominal capacity watts evap -25C
C	ISO VG 32 ESTER	Tubed	205 cm ³	4.9	6.5	8.45	181.5	-	147
C	ISO VG 32 ESTER	Tubed	290 cm ³	4.9	6.5	8.98	192.1	-	196
C	ISO VG 32 ESTER	Tubed	345 cm ³	4.9	6.5	9.39	192.1	-	219
C-V	ISO VG 32 ESTER	Tubed	260 cm ³	4.9	6.5	8.04	181.5	296	-
C-V	ISO VG 32 ESTER	Tubed	260 cm ³	4.9	6.5	8.65	181.5	368	-
C-V	ISO VG 32 ESTER	Tubed	295 cm ³	4.9	6.5	9.19	192.1	474	-
C-V	ISO VG 32 ESTER	Tubed	295 cm ³	4.9	6.5	9.66	192.1	564	-
C-V	ISO VG 32 ESTER	Tubed	500 cm ³	6.5	8.1	15.44	224	1181	-
C-V	ISO VG 32 ESTER	Tubed	500 cm ³	6.5	9.7	16.13	230	1322	-
C-V	ISO VG 32 ESTER	Tubed	500 cm ³	6.5	9.7	16.33	230	1322	-
C-V	ISO VG 32 ESTER	Tubed	887 cm ³	8	9.7	22.7	271	1764	-
C-V	ISO VG 32 ESTER	Tubed	887 cm ³	8	9.7	21.37	282	2503	-
C-V	ISO VG 32 ESTER	Tubed	400 cm ³	6.5	8.1	11.29	217	855	-
C-V	ISO VG 32 ESTER	Tubed	400 cm ³	6.5	8.1	11.93	217	1021	-
C-V	ISO VG 32 ESTER	Tubed	345 cm ³	4.9	6.5	9.59	192.1	-	447
C-V	ISO VG 32 ESTER	Tubed	400 cm ³	6.5	8.1	12.07	217	-	661
C-V	ISO VG 32 ESTER	Tubed	887 cm ³	8	9.7	21.63	282	-	1325
C-V	ISO VG 32 ESTER	Tubed	650 cm ³	6.5	9.7	21.63	230	-	1111
C-V	ISO VG 32 ESTER	Tubed	887 cm ³	8	9.7	22.13	282	-	1729
C-V	ISO VG 32 ESTER	Tubed	295 cm ³	4.9	6.5	9.1	192.1	521	-
C-V	ISO VG 32 ESTER	Tubed	295 cm ³	4.9	6.5	9.29	192.1	629	-
C-V	ISO VG 32 ESTER	Tubed	395 cm ³	4.9	6.5	9.68	204.5	871	-
C-V	ISO VG 32 ESTER	Tubed	395 cm ³	4.9	6.5	12.31	204.5	1025	-
C-V	ISO VG 32 ESTER	Tubed	500 cm ³	8	9.7	16.33	230	2075	-
C-V	ISO VG 32 ESTER	Tubed	500 cm ³	6.5	9.7	16.52	230	2331	-
C-V	ISO VG 32 ESTER	Tubed	887 cm ³	8	9.7	22.12	282	3105	-
C-V	ISO VG 32 ESTER	Tubed	400 cm ³	6.5	8.1	12.25	217	1663	-
C-V	ISO VG 32 ESTER	Tubed	887 cm ³	8	9.7	22.21	282	4135	-

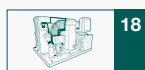
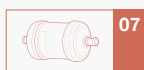
Connection Types: CT = All Copper Tube, RCT = Rotolock Suction Valve, Rest Copper Tubes, R = Rotolock/Valve Only Cooling Type, F = Fan, SC = Suction Cooled, ST = Static Cooling

Related Items:



Cubigel Spares

Compressor Model No.	Overload Protector	Relay	Starting Capacitor	Run Capacitor	Electrical Assembly
GL45TB	102167	405168	102660	-	FTE-2147B.2
GL60AAa	102289	102243	-	-	FTE-2106.3
GL60TB	102321	405170	102660	-	FTE-2147B.2
GL60TB	102321	405170	102660	-	FTE-2147B.2
GL80AAa	101911	102240	-	-	FTE-2106.3
GL80TB	102320	405172	102661	-	FTE-2147B.2
GL90AAa	102293	102243	-	-	FTE-2106.3
GL90TB	102314	405175	102661	-	FTE-2147B.2
GP14TB	102190	405177	102661	-	FTE-2147B.2
GP16TB	102190	405178	102665	-	FTE-2147B.2
GS26TB	101460	101105	100509	-	FTE-2244.2
GS34TB	101354	100393	100690	102083	FTE-2245.2
GX18TB	102197	405180	102664	-	FTE-2147B.2
GX21TB	102196	405181	102665	-	FTE-2147B.2
GX23TB	102209	405181	102665	-	FTE-2147B.2
ML45TB	102186	405172	102660	-	FTE-2147B.2
ML60TB	102207	405173	102660	-	FTE-2147B.2
ML80TB	102185	405175	102661	-	FTE-2147B.2
ML90FB	102175	405176	102661	-	FTE-2147B.2
ML90TB	102190	405177	102661	-	FTE-2147B.2
MP14FB	102190	405178	102665	-	FTE-2147B.2
MS26FB	100438	100394	100690	102083	FTE-2245.2
MS26TB	101097	100391	100690	102084	FTE-2245.2
MS34FB	101097	100394	100690	102084	FTE-2245.2
MS34FB	101097	100394	100690	102084	FTE-2245.2
MS34TB	101434	100391	100690	102085	FTE-2245.2
MX21TB	102198	100391	100680	102084	FTE-2152B.3
MX23FB	102196	100394	100680	102083	FTE-2152B.3



model

G L Y 6 0 R A a

G L Y 6 0 R A a

Indicates refrigerant.

G = R134a **N** = R290
M = R404A/R507 **H** = R600a

Indicates compressor range (overall design).

D = 2.4 - 4.0cm³ **L** = 4.0 - 10.7cm³ **X** = 16.0 - 23.0cm³
U = 5.5 - 10.6cm³ **P** = 12.0 - 18.0cm³ **S** = 18.0 - 34.0cm³

Indicates energy efficiency level. Not appearing in case of Standard efficiency.

M = Medium
Y = High Efficiency - Run Capacitor Optional RSIR/RSCR or CSIR/CSR
T = Top Efficiency - Run Capacitor RSCR or CSR

Indicates approximate compressor displacement under the following rule:

D / U / L ranges 10 times the approx. displacement in cm³/rev (GL90TB -> approx 9 cm³/rev)
P / X / S ranges The approx. displacement in cm³/rev (MX21TG -> approx 21 cm³/rev)

Indicates the starting torque, application type and compressor cooling:

A = LBP - LST - S	G = LBP - LST - S (RSCR only)	T = HMBP - HST - FAN
B = LBP - LST - OC	L = LBP - HST - Fan (Current Relay)	(CSR versions with Potential Relay)
C = LBP - LST - FAN	M = HMBP - LST/HST - S/FAN	U = AC - LST/HST - FAN
D = LBP - HST - S	N = MBP - LST/HST - S/FAN	Y = VHBP - HST - Fan
E = LBP - HST - OC	P = HMBP - LST - FAN	
F = LBP - HST - FAN	R = HMBP - HST - FAN	
	(CSR versions with Current Relay)	

Indicates the rated voltage:

A = 220-240V 50Hz	G = 200-220V 50Hz/220-230V 60Hz	T = 200-220V 50Hz
B = 220-240V 50Hz (old ranges)	J = 100V 50/60Hz	U = 208-230V 60Hz
C = 100V 50/60Hz (old ranges)	M = 115-127V 60Hz	3 = 3 phase 400-440V 50/60Hz
D = 115V 60Hz	L/N = 200-220V 50Hz or 200-240V 50Hz	
E = 115V 60Hz (old ranges)	220-230V 60Hz (50°C)	
F = 208-230V 60Hz (old ranges)	R = 115-127V 60Hz (old ranges)	

Indicates a variant of the model that only affects the configuration of electrical components. Its meaning may vary from model to model. It does not appear on the compressor label but it is used for ordering, invoicing and HCB internal processes.

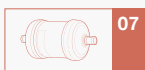
Examples:

1. In high-efficiency compressors ("Y" series, i.e.: GPY12LA or MLY80RD), the letters "a" or "b" may indicate the type of electrical connection corresponding to the electrical accessories supplied with the compressor.

a = no use of running capacitor
b = use of running capacitor

2. In HMBP models of D range, R134a refrigerant (i.e.: GD30MB or GD40MB) it indicates the electrical accessories corresponding to the following situations:

a = static cooling and without starting capacitor
b = fan cooling and without starting capacitor
c = static cooling and with starting capacitor
d = fan cooling and with starting capacitor



Maneurop[®]

Reciprocating Compressors

Danfoss Maneurop Reciprocating Compressors

Reciprocating compressors for refrigeration applications in medium and high temperatures with refrigerants R407A, R407C, R407F, R134a and R404A/R507A. Danfoss reciprocating compressors are suitable for parallel mounting (racks).

MTZ: medium and high evaporating temperature (R407A, R407C, R407F, R134a, R404A/R507A).

NTZ: low evaporating temperature extended envelope (R452A, R404A/R507A).

Maneurop Compressor Models

Danfoss MANEUROP MT and MTZ hermetic reciprocating compressors are specially designed for use at medium and high evaporating temperatures. All compressor components are of the highest quality and made with precision, which allows for long life.

Compressor design allows 100% cooling of compressor motor with cold suction refrigerant vapour, so no additional compressor cooling is required. Also, it has compressor

insulation with sound-proof lining which significantly lowers noise levels without any danger of compressor overheating.

Exceptional features of internal motor protection, highly efficient design of round valve and powerful motor torque allow for reliable operation of compressor even in the most difficult operating conditions.



MTZ 4 Cylinder

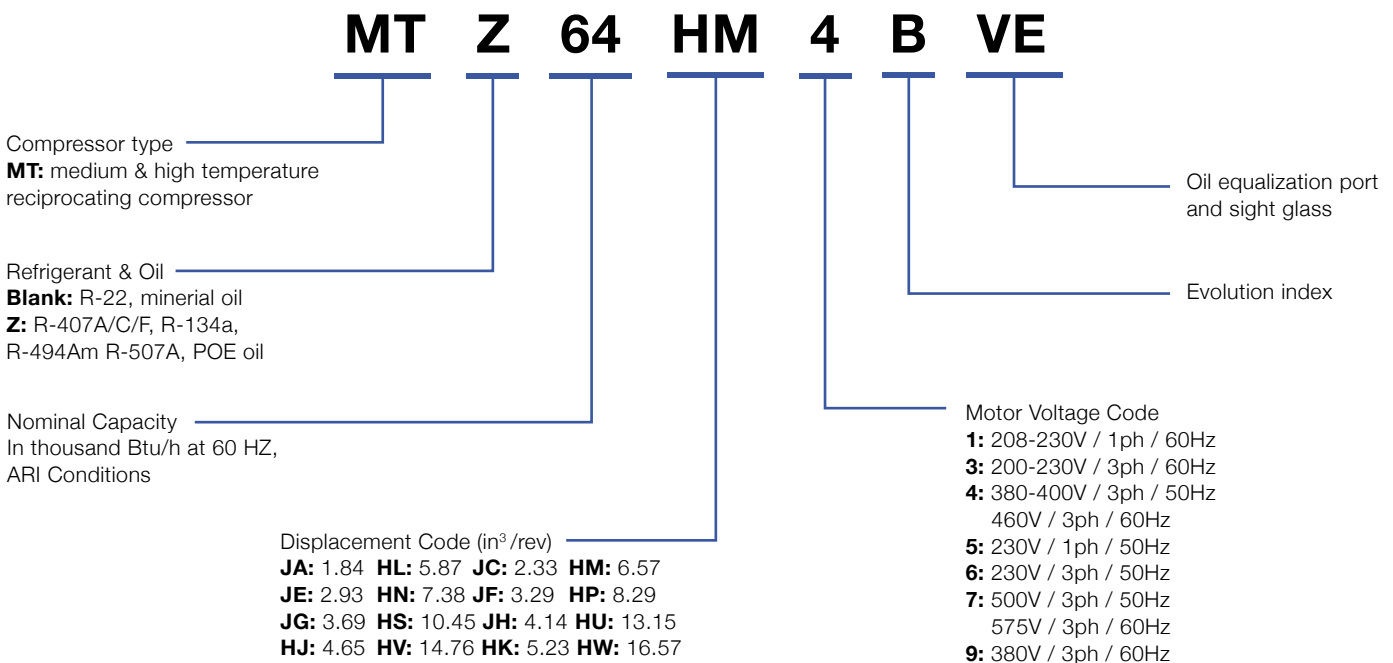


MTZ 2 Cylinder

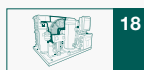
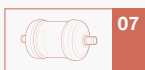


MTZ 1CYL

Nomenclature



Related Items:



Maneurop Technical Data

Compressor Model Number	Part No.	Application	Nominal Hp	Displacement cc/cm3	Power Supply	LRA	Cooling Type	Expansion Device	Oil Type
MTZ18-5VI	400150	H/MBP/AC	1.1/2	30.23cm3	230/50/1	40 A	Suction	V	175PZ
MTZ18-4VI	400151	H/MBP/AC	1.1/2	30.23cm3	440/50-60/3	20 A	Suction	V	175PZ
MTZ22-5VI	400152	H/MBP/AC	1.7/8	38.12cm3	230/50/1	41 A	Suction	V	175PZ
MTZ22-4VI	400153	H/MBP/AC	1.7/8	38.12cm3	440/50-60/3	20 A	Suction	V	175PZ
MTZ28-5VI	400154	H/MBP/AC	2.1/3	48.06cm3	230/50/1	51 A	Suction	V	175PZ
MTZ28-4VI	400155	H/MBP/AC	2.1/3	48.06cm3	440/50-60/3	29 A	Suction	V	175PZ
MTZ32-5VI	400156	H/MBP/AC	2.2/3	53.86cm3	230/50/1	70 A	Suction	V	175PZ
MTZ32-4VI	400157	H/MBP/AC	2.2/3	53.86cm3	440/50-60/3	25 A	Suction	V	175PZ
MTZ36-5VI	400158	H/MBP/AC	3	60.47cm3	230/50/1	60 A	Suction	V	175PZ
MTZ36-4VI	400159	H/MBP/AC	3	60.47cm3	440/50-60/3	38 A	Suction	V	175PZ
MTZ40-4VI	400160	H/MBP/AC	3.1/3	67.89cm3	440/50-60/3	38 A	Suction	V	175PZ
MTZ44-4VI	400161	H/MBP/AC	3.2/3	76.22cm3	440/50-60/3	47 A	Suction	V	175PZ
MTZ50-4VI	400162	H/MBP/AC	4.1/8	85.64cm3	440/50-60/3	47 A	Suction	V	175PZ
MTZ56-4VI	400163	H/MBP/AC	4.2/3	96.13cm3	440/50-60/3	64 A	Suction	V	175PZ
MTZ64-4VI	400164	H/MBP/AC	5.1/3	107.71cm3	440/50-60/3	64 A	Suction	V	175PZ
MTZ72-4VI	400165	H/MBP/AC	6	120.94cm3	440/50-60/3	80 A	Suction	V	175PZ
MTZ80-4VI	400166	H/MBP/AC	6.2/3	135.78cm3	440/50-60/3	80 A	Suction	V	175PZ
MTZ100-4VI	400167	H/MBP/AC	8.1/3	171.26cm3	440/50-60/3	90 A	Suction	V	175PZ
MTZ125-4VI	400168	H/MBP/AC	10	215.44cm3	440/50-60/3	105 A	Suction	V	175PZ
MTZ144-4VI	400169	H/MBP/AC	12	241.87cm3	440/50-60/3	130 A	Suction	V	175PZ
MTZ160-4VI	400170	H/MBP/AC	13.1/3	271.55cm3	440/50-60/3	130 A	Suction	V	175PZ

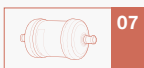
Expansion Device:
 C = Capillary
 TEV = Expansion Device
 C/TEV = Capillary or Expansion Device

Connection Types:
 CT = All Copper Tubes
 RCT = Rotolock Suction Valve, Rest Copper Tubes
 R = Rotolock/Valve Only

Cooling Type
 F = Fan
 SC = Suction Cooled
 ST = Static Cooling

Spares

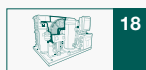
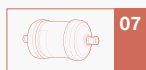
Compressor Model No.	PSC Starting Kit	CSR Starting Kit	CSR Starting Kit (Prewired box)	Electronic SOFT Start Kit
MTZ18-5VI	7701026	7701022	7701028	-
MTZ18-4VI	-	-	-	7705006
MTZ22-5VI	7701026	7701022	7701028	-
MTZ22-4VI	-	-	-	7705006
MTZ28-5VI	7701026	7701022	7701028	-
MTZ28-4VI	-	-	-	7705006
MTZ32-5VI	7701024	7701023	7701029	-
MTZ32-4VI	-	-	-	7705006
MTZ36-5VI	7701024	7701023	7701029	-
MTZ36-4VI	-	-	-	7705006
MTZ40-4VI	-	-	-	7705006



Oil Charge cc	Connection Type	Discharge Size (mm)	Suction Size (mm)	Weight (Kg)	Height (mm)	Refrigerant	Nominal capacity watts evap Capacity -5C
950 cm3	valve/rotolock	1 in	1 in	22.00	333	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	2723
950 cm3	valve/rotolock	1 in	1 in	22.00	333	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	2723
950 cm3	valve/rotolock	1 in	1 in	23.00	333	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	3695
950 cm3	valve/rotolock	1 in	1 in	23.00	333	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	3695
950 cm3	valve/rotolock	1 in	1 in	23.00	333	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	4561
950 cm3	valve/rotolock	1 in	1 in	23.00	333	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	4561
950 cm3	valve/rotolock	1 in	1 1/4 in	25.00	356	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	5236
950 cm3	valve/rotolock	1 in	1 1/4 in	25.00	356	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	5236
950 cm3	valve/rotolock	1 in	1 1/4 in	26.00	356	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	6083
950 cm3	valve/rotolock	1 in	1 1/4 in	26.00	356	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	6083
950 cm3	valve/rotolock	1 in	1 1/4 in	24.30	356	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	6992
1800 cm3	valve/rotolock	1 1/4 in	1 3/4 in	36.00	413	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	7313
1800 cm3	valve/rotolock	1 1/4 in	1 3/4 in	33.30	413	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	8337
1800 cm3	valve/rotolock	1 1/4 in	1 3/4 in	38.00	413	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	9266
1800 cm3	valve/rotolock	1 1/4 in	1 3/4 in	39.00	413	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	10620
1800 cm3	valve/rotolock	1 1/4 in	1 3/4 in	42.00	413	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	12230
1800 cm3	valve/rotolock	1 1/4 in	1 3/4 in	42.00	413	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	14250
3900 cm3	valve/rotolock	1 1/4 in	1 3/4 in	63.00	519	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	16460
3900 cm3	valve/rotolock	1 1/4 in	1 3/4 in	67.00	519	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	22150
3900 cm3	valve/rotolock	1 1/4 in	1 3/4 in	69.00	540	R134a / R404A / R407A / R407C / R407F / R507A / R448A / R449A / R452A / R513A	24860
3900 cm3	valve/rotolock	1 1/4 in	1 3/4 in	71.00	540	R134a/R404A/R407A/R407C/R407F/R507A/R448A/R449A/R452A/R513A	28500

Compressor Model No. Electronic SOFT Start Kit

MTZ44-4VI	7705006
MTZ50-4VI	7705006
MTZ56-4VI	7705006
MTZ64-4VI	7705006
MTZ72-4VI	7705006
MTZ80-4VI	7705006
MTZ100-4VI	7705007
MTZ125-4VI	7705007
MTZ144-4VI	7705007
MTZ160-4VI	7705007





ZR Copeland Scroll Compressors

Copeland Scroll compressor were developed for comfort and process/precision cooling applications using R513A, R407C and R134a.

Applied in the air conditioning and comfort industry for water chillers, rooftops and close control unit applications, scroll compressors are now the most used compression technology replacing reciprocating and screw compressors due to its undeniable superiority.

Several, fully Copeland™ qualified, multiple compressor assemblies (tandem and trio) are available to allow the

use of Copeland Scroll compressors in large capacity systems (ex. up to 500kW air cooled chillers) to deliver optimal comfort, low operating cost with higher seasonal efficiency (SEER).

To support the new market needs of customers, Emerson offers scroll compressors for R513A, a low-pressure refrigerant with a low GWP of 631. These ranges are able to reach 5K Superheat which allows better system performance optimization and cost.

Copeland Compressor Models

The range of products goes from the ZR18 (1.5hp) to the ZR380 (30hp) for R407C and R134a and from ZR24KRE (2hp) to ZR190KRE (15hp) for R513A, R407C and R134a.

Features and Benefits

- Copeland Scroll axial and radial compliance for superior reliability and efficiency
- Wide scroll line-up for R407C, R134 and R513A
- Low TEWI (Total Equivalent Warming Impact)
- Low sound and vibration level
- Low oil circulation rate
- Copeland qualified tandem and trio configurations for superior seasonal efficiency (SEER)



ZRD Range



ZB Range



ZF Range

Compressor Label

Copeland Scroll™

MODEL ZF00KVE – TFD – 000

SERIAL 000000000

CUSTOMER 000 00000 0000

OIL		V	PH	Hz	LR	LR	LR	LR	LR	LR	LR	LR	LR	LR	LR	LR	LR	LR	LR
QZ	L	208-230	1	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
40	1.18																		
3MA-PDE		MADE IN USA & IMPORTED PARTS		90500-011		UB9638		E/T		M		THERMALLY PROTECTED							

⚠ WARNING

Service should be performed by trained personnel only. Failure to follow these safety warnings could result in serious injury or death.

ELECTRICAL SHOCK HAZARD

Turn off power before servicing. Discharge all capacitors. Use this equipment in a grounded system only. System contents are under pressure. Do not use torch. Replace terminal cover, if applicable, before applying power. Use only manufacturer authorized refrigerants, lubricants and electrical components.

⚠ AVERTISSEMENT

Service doit être effectué par du personnel qualifié. Le non respect de ces consignes de sécurité peut entraîner des blessures graves ou la mort.

RISQUE DE CHOC ÉLECTRIQUE

Coupez l'alimentation électrique avant d'intervenir. Déchargez tous les condensateurs. Utilisez cet appareil dans un système de mise à la terre. Le contenu du système sont sous pression. Ne pas utiliser le chalumeau. Remplacez le couvercle du terminal, le cas échéant, avant la mise sous tension. Utilisez des fluides frigorigènes seul fabricant autorisé, des lubrifiants et des composants électriques.

⚠ ADVERTENCIA

Únicamente personal capacitado deberá efectuar el servicio del equipo. El no seguir estas advertencias de seguridad podrá ser causa de lesiones graves o la muerte.

PELIGRO DE DESCARGA ELÉCTRICA

Desconecte la corriente eléctrica antes de dar servicio. Descargue todos los capacitores. Este equipo debe usarse únicamente en un sistema conectado a tierra. Contenido del sistema bajo presión. Antes de dar corriente, vuelva a colocar la cubierta del terminal, si O lubricantes y componentes eléctricos autorizados por el fabricante.

Model Number Breakdown

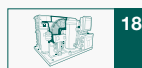
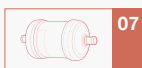
Details modulation, range, capacity, electric codes and more.

Serial & Customer Number

Unique to each compressor for registration and tracking purposes

Compressor Specs

Lists multiple specs such as oil, volts, phase, hertz, operating pressure, etc.





ZF / ZFD Scroll Compressor Range

The ZF and ZF KVE ranges have been optimized in their design to meet frozen food application requirements. Thanks to their scroll compliance mechanism, these compressors feature particularly high tolerance to liquid slugging. They have the advantage of light weight and compactness, making them ideal for the usage in condensing units, compact refrigeration systems or special process units. The ZF models operate with liquid injection in order to control discharge temperature and increase the operating envelope. The ZF*KVE models are optimized for vapour injection with the use of a sub-cooler. This boosts system cooling capacity by up to 40% and efficiency by up to 25% making this range the most efficient on the market for low temperature applications. Whether it is liquid or vapour, injection is performed during the compression process to maintain good volumetric efficiency. Other important features include low condensing capabilities, large operating envelope and fast pull down for high adaptability. Where necessary, vapour injection is supplemented by additional liquid injection to provide the full low temperature capability.

Compressor Model No.	Part No.	Nominal HP	Displacement (m3/h)	Power Supply	Maximum Operating Current (A)	Locked Rotor Current (A)	Oil Quantity (L)	Oil Type	Connection Type	Discharge (in)	Suction (in)	Net Weight (kg)	Size L/W H (mm)	Sound Pressure @1 m (dBA)
ZF09K4E -TFD	610162	3	8.03	440V 50 60Hz ~3	6	40	1.5	POE	Rotalock	1	1.1/4	27	243/244/391	62
ZF11K4E -TFD	610163	3.5	9.94	440V 50 60Hz ~3	7.1	46	1.5	POE	Rotalock	1	1.1/4	28	243/244/405	63
ZF13K4E -TFD	610164	4	11.8	440V 50 60Hz ~3	8	51.5	1.9	POE	Rotalock	1	1.1/4	38	246/251/442	65
ZF15K4E -TFD	610165	5	14.4	440V 50 60Hz ~3	10	64	1.9	POE	Rotalock	1	1.1/4	39	246/251/442	65
ZF18K4E -TFD	610166	6	17.1	440V 50 60Hz ~3	12.5	74	1.9	POE	Rotalock	1	1.1/4	41	246/251/442	67
ZF18KVE -TFD	610178	6	17.1	440V 50 60Hz ~3	13.8	74	1.89	POE	Rotalock	1	1.1/4	43.1	300/299/481	67
ZF18K4E -TFD	611075	6	17.1	440V 50 60Hz ~3	12.5	74	1.9	POE	Rotalock	1	1.1/4	41	246/251/442	67
ZFD18KVE -TFD	610546	6	17.1	440V 50 60Hz ~3	13.8	74	1.89	POE	Rotalock	1	1.1/4	43.1	300/299/481	67



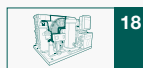
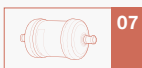
ZB Scroll Compressor Range

The second generation of refrigeration scroll ZB is designed for medium applications requiring the best all year round energy efficiencies. Copeland Scroll™ compressors have 3 times less moving parts than reciprocating compressors and feature a scroll Compliance mechanism which makes them particularly robust and reliable under severe conditions including liquid slugging. They have the advantage of light weight and compactness, making them ideal for the usage in condensing units, compact refrigeration systems or special process units. The Summit scroll Series, approximately 12-25kW capacity at standard MT conditions, is designed to provide seasonal efficiencies 15% higher than traditional semi hermetic compressors. These compressors are extremely quiet. All models can be fitted with an external sound shell for an additional 10dBA sound reduction, which makes them the best choice for refrigeration applications in urban and domestic areas. Other important features include low condensing capabilities, large operating envelope and fast pull down for high adaptability.

Compressor Model No.	Part No.	Nominal HP	Displacement (m3/h)	Power Supply	Maximum Operating Current (A)	Locked Rotor Current (A)	Oil Quantity (L)	Oil Type	Connection Type	Discharge (in)	Suction (in)	Net Weight (kg)	Size L/W H (mm)	Sound Pressure @1 m (dBA)
ZB15KCE-TFD	610140	2	5.92	440V 50 60Hz ~3	4.9	26	0.74	POE	Rotalock	1	1.1/4	25.4	241/241/382	55
ZB19KCE-PFJ	610141	2.5	6.83	230V 50Hz ~1	6.5	32	1.12	POE	Rotalock	1	1.1/4	27.2	242/242/369	55
ZB19KCE-TFD	610142	2.5	6.83	440V 50 60Hz ~3	6.5	32	1.12	POE	Rotalock	1	1.1/4	27.2	242/242/369	55
ZB21KCE-PFJ	610144	3	8.61	230V 50Hz ~1	7.4	40	1.24	POE	Rotalock	1	1.1/4	29	243/242/391	58
ZB21KCE-TFD	610145	3	8.61	440V 50 60Hz ~3	7.4	40	1.24	POE	Rotalock	1	1.1/4	29	243/242/391	58
ZB26KCE-PFJ	610147	3.5	9.95	230V 50Hz ~1	8.85	46	1.5	POE	Rotalock	1	1.1/4	28	243/244/405	60
ZB26KCE-TFD	610148	3.5	9.95	440V 50 60Hz ~3	8.85	46	1.5	POE	Rotalock	1	1.1/4	28	243/244/405	60
ZB30KCE-TFD	610150	4	11.7	440V 50 60Hz ~3	10.3	49.3	1.12	POE	Rotalock	1	1.1/4	35.4	242/242/438	59
ZB38KCE-TFD	610152	5	14.4	440V 50 60Hz ~3	12.8	65.5	1.9	POE	Rotalock	1	1.1/4	37.4	242/242/438	61
ZB45KCE-TFD	610155	6	17.1	440V 50 60Hz ~3	13.1	74	1.9	POE	Rotalock	1	1.1/4	39.5	242/242/438	61

*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

** Connections may vary, please confirm with branch before ordering





ZRD Scroll Compressor Range

The ZFD range is dedicated to low temperature refrigeration applications. Vapour injection ensures high efficiency. Based on the unique Copeland Compliant Scroll™ design, the Digital modulation operates on a simple mechanism. Capacity control is achieved by separating the scroll sets axially over a small period of time. It is a simple mechanical solution allowing precise temperature control and maintains system efficiency. Digital Scroll technology is a simple modulation solution that can easily and quickly be implemented into any existing system design as no other components are required. Digital Scroll technology provides continuous, stepless modulation from 10% to 100% with no operating envelope restriction. As a result, system pressures and temperatures are tightly controlled. These compressors provide optimum performance for condensing units, refrigeration packs, process and agricultural units. All models can be fitted with an external sound shell for an additional 10dBA sound reduction, which makes them best choice for refrigeration applications in urban and domestic areas.

Compressor Model No.	Part No.	Nominal HP	Displacement (m3/h)	Power Supply	Maximum Operating Current (A)	Locked Rotor Current (A)	Oil Quantity (L)	Oil Type	Connection Type	Discharge (in)	Suction (in)	Net Weight (kg)	Size L/W H (mm)	Sound Pressure @1 m (dBA)
ZR61KCE -TFD	610130	5	14.3	440V 50 60Hz ~3	11	65.5	1.66	POE	Brazed	1/2	7/8	43	241/247/438	60
ZR72KCE -TFD	610131	6	17.1	440V 50 60Hz ~3	13	74	1.77	POE	Rotalock	1	1.1/4	39	242/242/438	61
ZR81KCE -TFD	610132	6.8	18.7	440V 50 60Hz ~3	15	101	1.77	POE	Rotalock	1.1/4	1.1/4	39	242/242/443	61
ZR94KCE -TFD	-	8	22.1	440V 50 60Hz ~3	15.9	95	2.65	POE	Brazed	7/8	1.1/8	57	264/285/476	63
ZR108KCE -TFD	-	9	25	440V 50 60Hz ~3	17.7	111	3.3	POE	Brazed	7/8	1.3/8	60	281/285/533	63
ZR125KCE -TFD	610538	10	29.1	440V 50 60Hz ~3	20	118	3.3	POE	Brazed	7/8	1.3/8	61	264/285/533	63
ZR144KCE -TFD	-	12	33.2	440V 50 60Hz ~3	22	118	3.25	POE	Brazed	7/8	1.3/8	61	281/285/533	64
ZR160KCE -TFD	-	13	36.4	440V 50 60Hz ~3	28	140	3.37	POE	Brazed	7/8	1.3/8	65	281/285/552	67
ZR190KCE -TFD	-	15	43.3	440V 50 60Hz ~3	35	174	3.4	POE	Brazed	7/8	1.3/8	66	281/285/552	69
ZR250KCE -TFD	-	20	56.6	440V 50 60Hz ~3	42	225	4.7	POE	Rotalock	1.3/4	2.1/4	139	427/376/726	72
ZR310KCE -TFD	-	25	71.4	440V 50 60Hz ~3	52	272	6.8	POE	Rotalock	1.3/4	2.1/4	160	447/390/724	74
ZR380KCE -TFD	-	30	87.5	440V 50 60Hz ~3	63	310	6.3	POE	Brazed	1.3/8	1.5/8	177	447/427/724	77

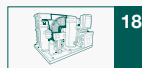
Compressor Model No.	Part No.	Nominal HP	Displacement (m3/h)	Power Supply	Maximum Operating Current (A)	Locked Rotor Current (A)	Oil Quantity (L)	Oil Type	Connection Type	Discharge (in)	Suction (in)	Net Weight (kg)	Size L/W H (mm)	Sound Pressure @1 m (dBA)
ZR22K3E -PFJ	610121	2	5.3	230V 50Hz ~1	4.2	24	1	POE	Brazed	1/2	3/4	22	242/242/363	54
ZR28K3E -PFJ	610123	2.5	6.8	230V 50Hz ~1	14.8	61	1	POE	Brazed	1/2	3/4	25	242/242/363	54
ZR28K3E -TFD	610124	2.5	6.8	440V 50 60Hz ~3	5.1	32	1	POE	Brazed	1/2	3/4	25	242/242/363	54
ZR34K3E -PFJ	610125	2.8	8	230V 50Hz ~1	17.3	76	1.24	POE	Brazed	1/2	3/4	26	242/242/386	57
ZR40K3E -PFJ	610127	3.5	9.4	230V 50Hz ~1	23.1	100	1.1	POE	Brazed	1/2	3/4	27	242/242/400	57
ZR40K3E -TFD	610128	3.5	9.4	440V 50 60Hz ~3	7	46	1.1	POE	Brazed	1/2	3/4	27	242/242/400	57
ZR48K3E -TFD	610129	4	11.4	440V 50 60Hz ~3	10	50	1.36	POE	Brazed	1/2	7/8	31	242/242/417	57

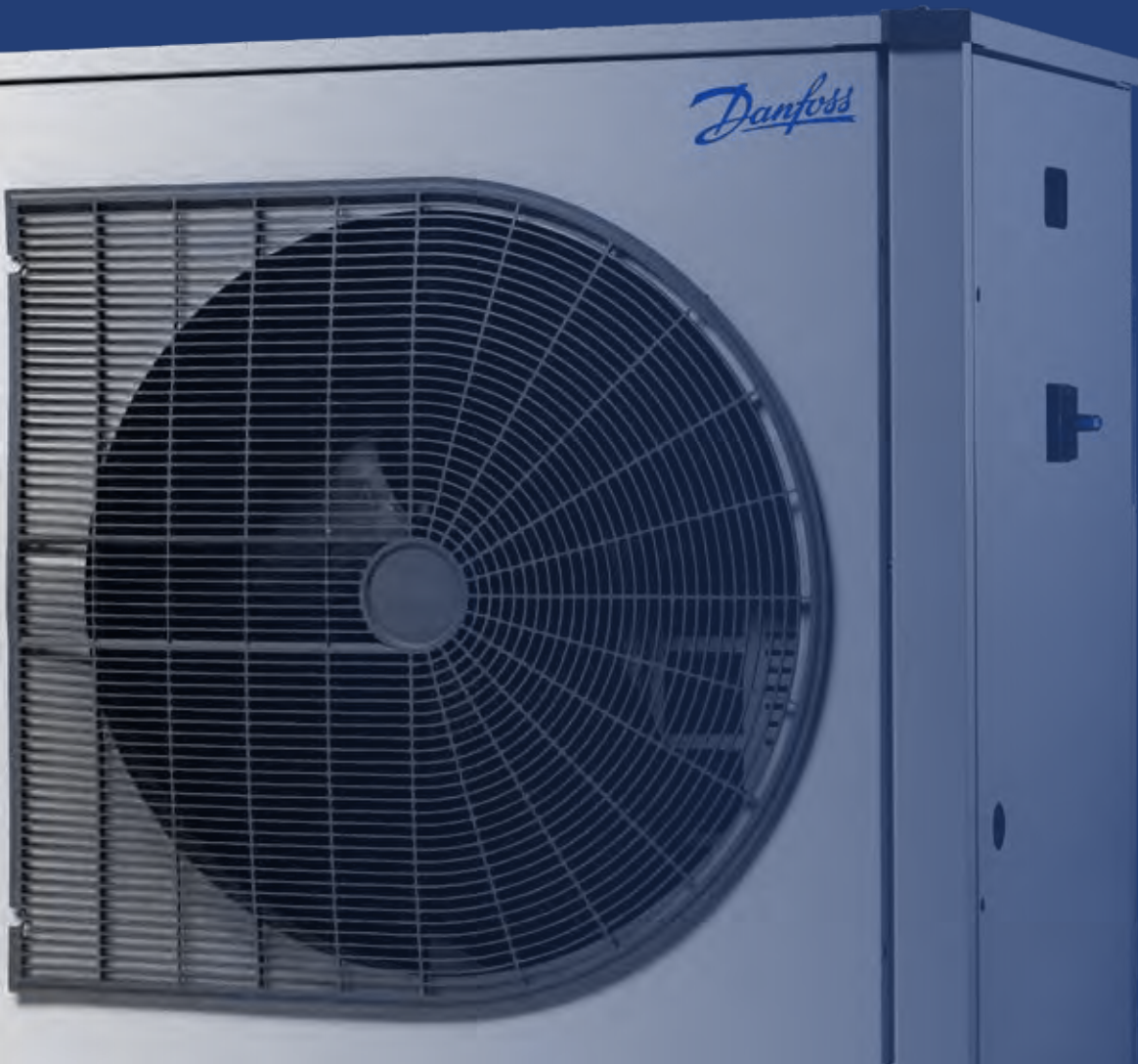
Compressor Model No.	Part No.	Nominal HP	Displacement (m3/h)	Power Supply	Maximum Operating Current (A)	Locked Rotor Current (A)	Oil Quantity (L)	Oil Type	Connection Type	Discharge (in)	Suction (in)	Net Weight (kg)	Size L/W H (mm)	Sound Pressure @1 m (dBA)
ZR18K5E -PFJ	610120	1.5	4.4	230V 50Hz ~1	10	35	0.74	POE	Brazed	1/2	3/4	20	242/242/383	54

Compressor Model No.	Part No.	Nominal HP	Displacement (m3/h)	Power Supply	Maximum Operating Current (A)	Locked Rotor Current (A)	Oil Quantity (L)	Oil Type	Connection Type	Discharge (in)	Suction (in)	Net Weight (kg)	Size L/W H (mm)	Sound Pressure @1 m (dBA)
ZR12M3E -TWD	610535	10	28.8	440V 50 60Hz ~3	22	127	4.1	POE	Rotalock	1.1/4	1.3/4	91	319/357/525	67
ZR16M3E -TWD	610536	13	35.5	440V 50 60Hz ~3	27	167	4.1	POE	Rotalock	1.1/4	1.3/4	95	319/357/532	69
ZR19M3E -TWD	610532	15	42.8	440V 50 60Hz ~3	32	198	4.1	POE	Rotalock	1.3/4	2.1/4	107	321/349/579	69

*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

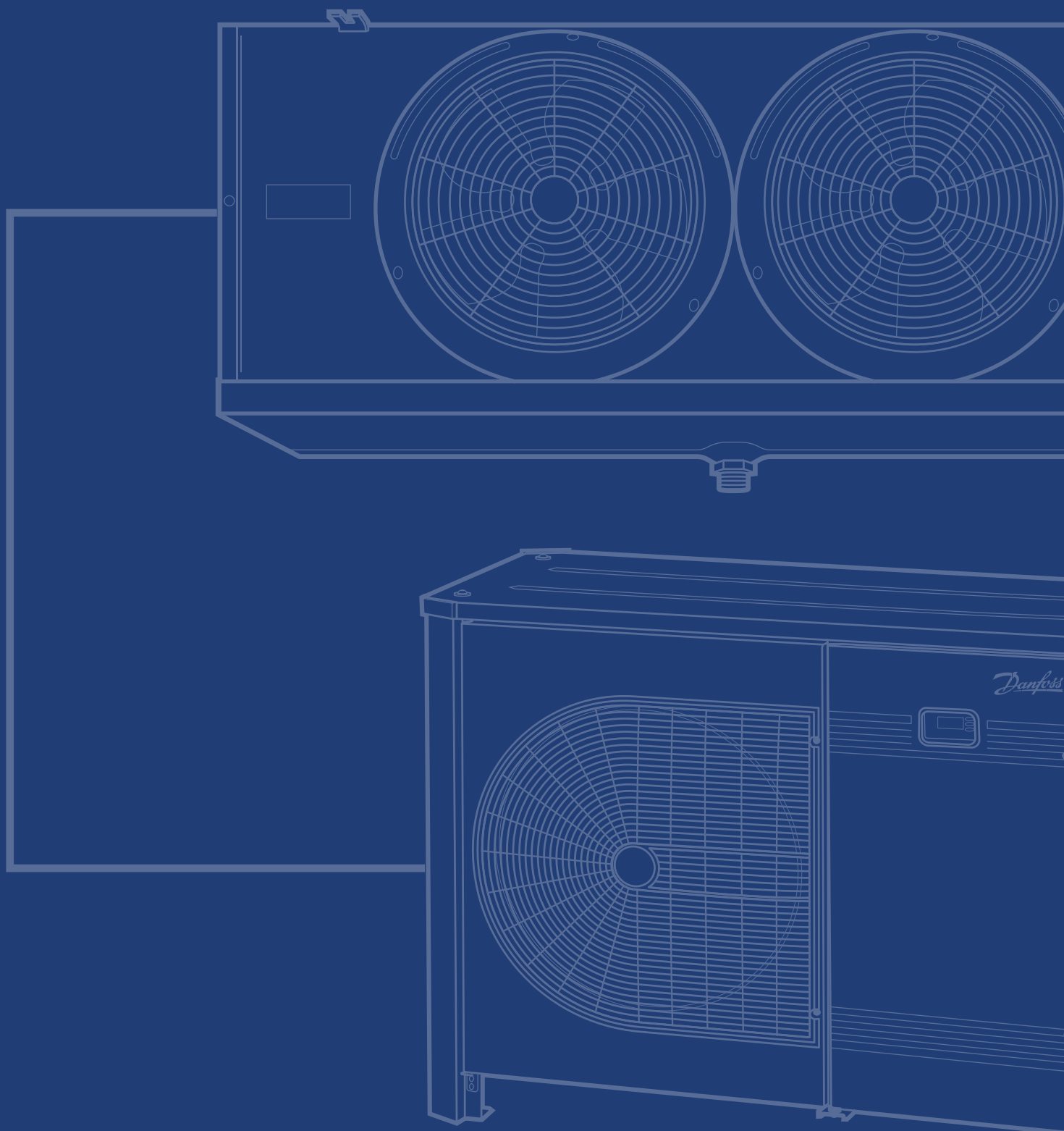
** Connections may vary, please confirm with branch before ordering





SECTION SIXTEEN

Fridgesplits



Overview

Fridgesplits are a range of competitive refrigeration systems, designed to take the guess work out of cold room and freezer room selections. Each fridgesplit uses the market leading Danfoss Optyma Slim condensing unit which has been perfectly matched to an ECO evaporator.

The fridgesplit comes with a 3 year warranty that is unique to our trade and it's offered with a range of installation & controller kits that offer high quality Danfoss components at fantastic prices.

Specification



Quick & Safe Installation & Service

Enjoy fast and easy installation with the mains switch, service valves, and quick connections. In addition, the easy-to-clean Microchannel condenser saves you time and effort on servicing.



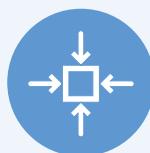
High SERN

All models in the range are highly efficient and well above EcoDesign 2018 thresholds, contributing to a reduction in energy costs.



Suitable for Residential Areas

Optyma operates up to 7 dB(A) lower than other packaged units of the same capacity and the fan-speed controller further reduces the sound level by up to 4 dB(A) for low load / ambient conditions.



Optimised Footprint for Floor & Wall Mounting

Thanks to its slim design and low weight, it is easy to transport and handle during installation - particularly for wall mounting. Minimal footprint means to increase the number of potential locations.



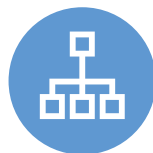
Micro Channel Heat Exchanger

Economically designed to reduce the refrigerant charge needed. Corrosion resistant, suitable for use in coastal areas, providing extensive service. Slimmer than traditional condensers, the units are easier to clean and weigh less.



Low GWP Refrigerant

All systems are designed to use the best low GWP refrigerant available. For MT applications R449A is required and for LT systems R452A.



Installation & Controller Kits

Each system has installation kits designed specifically to offer high quality components at very competitive rates.



Quality Components

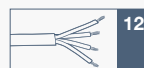
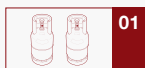
The units use Danfoss components which are renowned for their quality and performance. This increases reliability which in turn manages down future running costs.



3-Year Extended Warranty

All Fridgesplit systems come with a standard warranty period of 3 years!

Register today at www.fridgesplits.co.uk



Accessible Fan

Accessible fan and condenser for easy maintenance.

Filter Drier & Sight Glass

Filter drier and sight glass protect the unit from moisture, acids and solid particles. Flare connections simplify maintenance.

Schrader Valve

Thanks to the Schrader valve the unit is compatible with various fan control devices.

Receiver With Shut-Off Valve

Receiver with shut-off valve makes servicing easier.

Micro Channel Heat Exchanger

Micro-channel heat exchanger is light and easy to clean.

Corrosion Resistant

Resistance to corrosion of the heat exchanger and housing prolongs the lifetime of the unit.

Quick Connections

Quick connections accelerate installation: just mount, braze & plug.

Accessible Service Ports

Accessible service ports on service valves (suction and liquid).

Dual Pressure Control

Dual KP17WB pressure control for enhanced safety.

Crankcase Heater

Crankcase heater protects the compressor when operating under cold weather conditions.



The Optyma™ Slim matches with the following evaporators:



ECO EVS Compact Cooler



ECO GME Wedge Cooler



ECO GCE Box Cooler

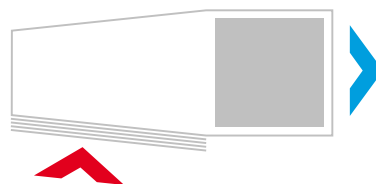


These high quality evaporators have casings made from magnesium aluminium alloy which provides a high class appearance combined with durability and ease of cleaning. The coil design uses 'aeraulic' principles to maximise

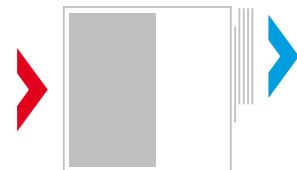
the transfer of heat using pressurised air. This results in a compact design for the refrigerating capacity. Heaters and fan motors are connected to an IP54 terminal box that is easily accessible.

Air Flow Configuration

Wedge / Compact Cooler



Box Cooler

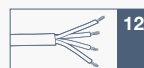
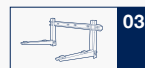


General Chiller - Quick Selection Guide

Room Volume	Power Supply	Fridgesplit	Part No.	Chiller Load (kW)	System Capacity (kW)	Pipe Sizes (in)		Install Kit Number	Control Kit Number
						Suction	Liquid		
5m ³	1ph	FS100M1C	FS10000	1	1	1/2	1/4	1	1
10m ³	1ph	FS145M1C	FS10001	1.4	1.45	1/2	1/4	1	1
15m ³	1ph	FS150M1C	FS10002	1.6	1.5	1/2	3/8	2	1
20m ³	1ph	FS250M1W	FS10003	2	2.5	5/8	3/8	2	1
25m ³	1ph	FS250M1W	FS10003	2.3	2.5	5/8	3/8	2	1
30m ³	1ph	FS270M1B	FS10005	2.6	2.7	5/8	3/8	2	2
30m ³	3ph	FS270M3B	FS10006	2.6	2.7	5/8	3/8	3	2
35m ³	1ph	FS270M1B	FS10005	2.8	2.7	5/8	3/8	3	2
35m ³	3ph	FS270M3B	FS10006	2.8	2.7	3/4	3/8	3	2
40m ³	1ph	FS340M1B	FS10009	3.1	3.4	3/4	3/8	3	2
40m ³	3ph	FS340M3B	FS10010	3.1	3.4	3/4	3/8	3	2
45m ³	1ph	FS340M1B	FS10009	3.3	3.4	3/4	3/8	3	2
45m ³	3ph	FS340M3B	FS10010	3.3	3.4	3/4	3/8	3	2
50m ³	1ph	FS400M1B	FS10013	3.6	4.1	3/4	3/8	4	2
50m ³	3ph	FS400M3B	FS10014	3.6	4.1	3/4	3/8	4	2
55m ³	1ph	FS400M1B	FS10013	3.9	4.1	3/4	3/8	4	2
55m ³	3ph	FS400M3B	FS10014	3.9	4.1	3/4	3/8	4	2
60m ³	1ph	FS400M1B	FS10013	4.1	4.1	3/4	3/8	4	2
60m ³	3ph	FS400M3B	FS10014	4.1	4.1	3/4	3/8	4	2
65m ³	1ph	FS400M1B	FS10013	4.3	4.1	3/4	3/8	4	2
65m ³	3ph	FS400M3B	FS10014	4.3	4.1	7/8	3/8	4	2
70m ³	1ph	FS535M1B	FS10015	4.5	5.35	7/8	3/8	4	2
70m ³	3ph	FS535M3B	FS10016	4.5	5.35	7/8	3/8	4	2
75m ³	1ph	FS535M1B	FS10015	4.8	5.35	7/8	3/8	4	2
75m ³	3ph	FS535M3B	FS10016	4.8	5.35	7/8	3/8	4	2
80m ³	1ph	FS535M1B	FS10015	5	5.35	7/8	3/8	4	2
80m ³	3ph	FS535M3B	FS10016	5	5.35	7/8	3/8	4	2
85m ³	1ph	FS535M1B	FS10015	5.2	5.35	7/8	3/8	4	2
85m ³	3ph	FS535M3B	FS10016	5.2	5.35	7/8	3/8	4	2

General Chiller Room - Estimated coldroom load based on: Ambient Temperature 32°C / Room Temperature +1°C / TD 5 to 7°K / Infiltration Usage: Normal / Insulation: 75mm Polyurethane to walls and ceiling / Floor: 200mm Concrete cast dense / Product: General purpose 50kg per m³ entering +7°C / Lighting: 10w/m² 8hrs a day / Pipe run to a maximum of 15m inc 3m rise

The quick selection table is intended as a guide only. You should satisfy yourself that the equipment offered is suitable for your application. Larger rooms may benefit from two separate systems.



General Freezer - Quick Selection Guide

Room Volume	Power Supply	Fridgesplit	Part No.	Freezer Load (kW)	System Capacity (kW)	Pipe Sizes (in)		Install Kit Number	Control Kit Number
						Suction	Liquid		
5m ³	1ph	FS100L1C	FS10500	1	1	5/8	3/8	5	1
10m ³	1ph	FS150L1C	FS10501	1.4	1.55	5/8	3/8	5	1
10m ³	3ph	FS150L3C	FS10502	1.4	1.55	5/8	3/8	5	1
15m ³	1ph	FS210L1C	FS10503	1.9	2	3/4	3/8	6	1
15m ³	3ph	FS210L3C	FS10504	1.9	2	3/4	3/8	6	1
20m ³	1ph	FS220L1B	FS10505	2.2	2.2	3/4	3/8	6	2
20m ³	3ph	FS220L3B	FS10506	2.2	2.2	3/4	3/8	6	2
25m ³	1ph	FS255L1B	FS10507	2.6	2.55	3/4	3/8	7	2
25m ³	3ph	FS255L3B	FS10508	2.6	2.55	3/4	3/8	7	2
30m ³	1ph	FS255L1B	FS10507	2.8	2.55	3/4	3/8	7	2
30m ³	3ph	FS255L3B	FS10508	2.8	2.55	3/4	3/8	7	2
35m ³	3ph	FS340L3B	FS10509	3.1	3.4	7/8	1/2	7	2
40m ³	3ph	FS340L3B	FS10509	3.4	3.4	7/8	1/2	7	2
45m ³	3ph	FS340L3B	FS10509	3.7	3.4	7/8	1/2	7	2
50m ³	3ph	FS470L3B	FS10511	4	4.1	1.1/8	1/2	8	2
55m ³	3ph	FS470L3B	FS10511	4.3	4.1	1.1/8	1/2	8	2
60m ³	3ph	FS500L3B	FS10512	4.5	5	1.1/8	1/2	9	2
65m ³	3ph	FS500L3B	FS10512	4.7	5	1.1/8	1/2	9	2
70m ³	3ph	FS500L3B	FS10512	4.9	5	1.1/8	1/2	9	2
75m ³	3ph	FS500L3B	FS10512	5.2	5	1.1/8	1/2	9	2
80m ³	3ph	FS500L3B	FS10512	5.4	5	1.1/8	1/2	9	2

General Freezer Room - Estimated freezer-room load based on: Ambient Temperature 32°C / Room Temperature -20°C / TD 5 to 7°K
 Infiltration Usage: Normal / Insulation: 100mm Polyurethane to walls and ceiling / Floor: 100mm Polyurethane
 Product: General purpose 65kg per m³ entering -14°C / Lighting: 10w/m² 8hrs a day / Pipe run to a maximum of 15m inc 3m rise

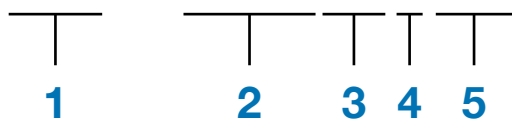
The quick selection table is intended as a guide only. You should satisfy yourself that the equipment offered is suitable for your application. Larger rooms may benefit from two separate systems.

Related Items:



Nomenclature

FS - 250M1W



1	FS = Fridgesplits
2	### = 3 Digits represent duty in Kw / 100 ie: 250 = 2.5Kw
3	M = Medium back pressure L = Low back pressure
4	1 = Single Phase 3 = Three Phase supply
5	Evaporator Design. C = compact W = wedge B = box

Optional Kits

Fridgesplits can be matched to an installation kit and a controller kit, both perfectly sized to suit each individual system.

Controller Kit



Optyma™ Controller



Surface-Mounted Isolator



Fan Speed Controller

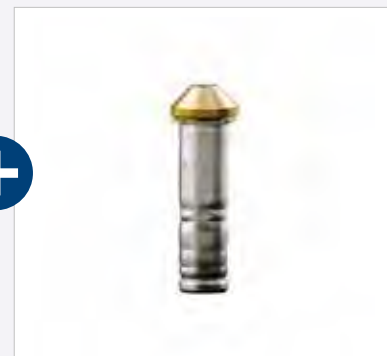
Installer Kit



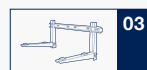
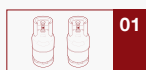
Thermostatic Expansion Valve



Solenoid Valve

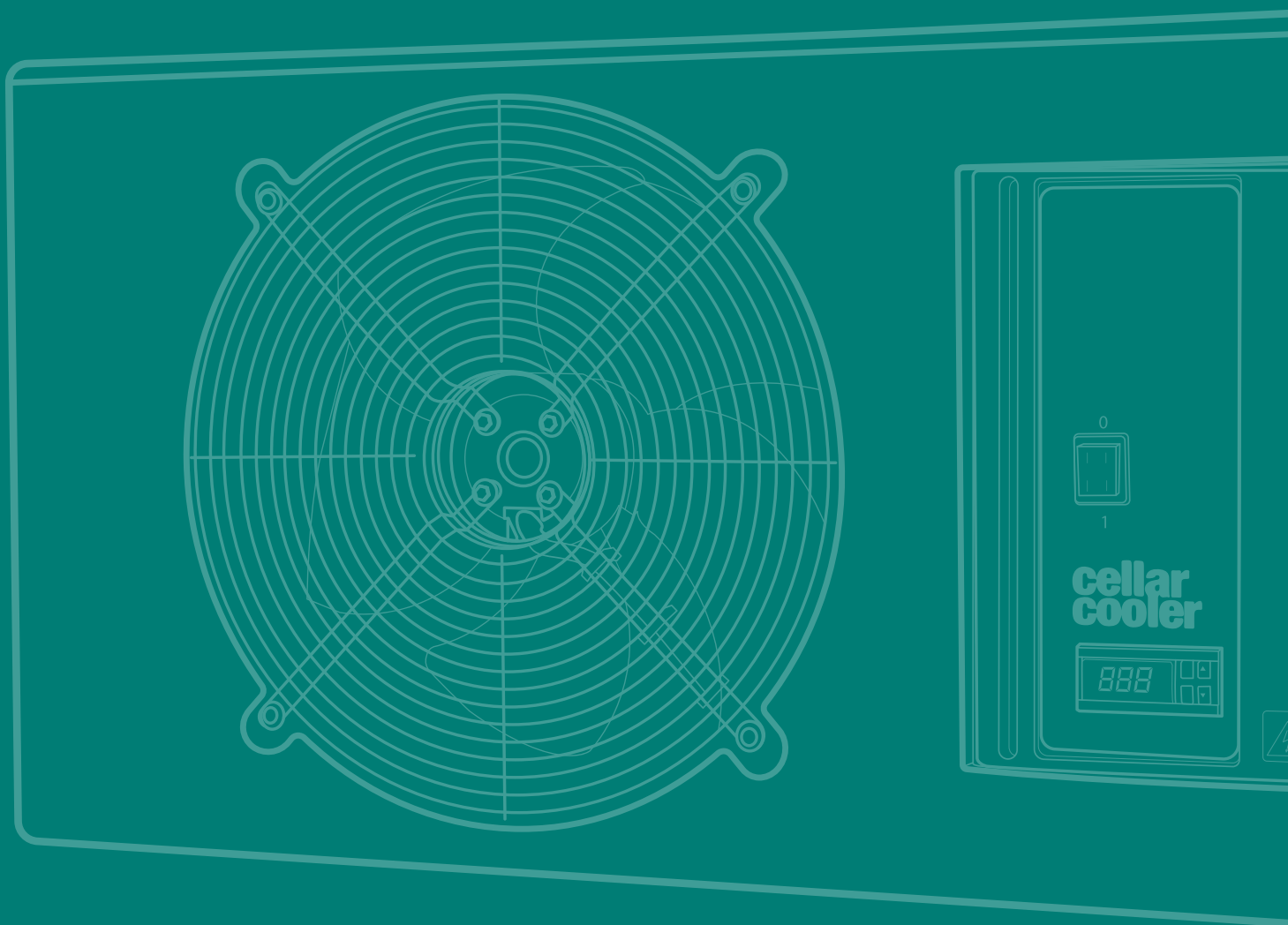


Danfoss Orifice



SECTION SEVENTEEN

Cellar Cooling



Marstair R410A 17 Series

“High specification, still competitive”



MARSTAIR
REFRIGERATION AND SPECIALIST AIR CONDITIONING

Antibacterial Protection

The CX(E)A units are contemporary in design. Revolutionary one piece molded body, impregnated with an anti-bacterial additive, ideal for cellar cooling and food preparation areas.

5mm Tube

The 17 series has smaller 5mm tube sizes in both the evaporator and condensing coils providing reduced refrigerant requirements without compromising the system duty.

Components

Standard components include:

- Waterproof power switch
- HP & LP switch
- 3 Minute Delay Timer
- Random Start Feature
- ABS drain tray incorporating standard 22mm OD fitting drain stub
- Low Ambient Start

R410A

Condensing units come pre-charged on R410A for up to 7.5m pipe run.

25m Pipe Run

Maximum 25m pipe run.

Front Panel Access

Front panel access to electrics for easy installation / maintenance.



*Image used for illustrative purposes only.

Specification



Antibacterial Protection

Revolutionary one piece molded body, impregnated with an anti-bacterial additive. Ideal for cellar cooling and food preparation areas.



5mm Tube

The 17 series has smaller 5mm tube sizes in both the evaporator and condensing coils providing reduced refrigerant requirements without compromising the system duty.



Easy Mounting

Complete with mounting brackets that are suitable for both wall and ceiling mounting.



Pre Charged Units

Condensing units come pre-charged providing enough refrigerant for up to a 7.5m pipe run out of the box. With refrigerant added, the system will operate with a pipe run of up to 25m



Description	Model No.	Part No.
Marstair CXEA30 R410A Indoor Unit Electronic Defrost	CX(E)A30	975115
Marstair CXEA50 R410A Indoor Unit Electronic Defrost	CX(E)A50	975116
Marstair CXEA70 R410A Indoor Unit Electronic Defrost	CX(E)A70	975117
Marstair CXA30 R410A Indoor Unit Mechanical Defrost	CXA30	975110
Marstair CXA50 R410A Indoor Unit Mechanical Defrost	CXA50	975111
Marstair CXA70 R410A Indoor Unit Mechanical Defrost	CXA70	975112
Marstair CKA35 R410A Outdoor Unit 1PH	CKA35	975100
Marstair CKA50 R410A Outdoor Unit 1PH	CKA50	975101
Marstair CKA70 R410A Outdoor Unit 1PH	CKA70	975102

Quick Selection

Application

BELOW GROUND - ABOVE GROUND

8°C Below Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
25	CX(E)A 30 CKA35	1.79	1.69	1.15	1/2"	1/4"
44	CX(E)A 50 CKA35	3.06	2.36	1.15	1/2"	1/4"
62	CX(E)A 50 CKA50	3.44	2.4	1.51	1/2"	1/4"
88	CX(E)A 70 CKA70	4.54	3.17	2.16	5/8"	3/8"

8°C Above Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
20	CX(E)A 30 CKA35	1.79	1.69	1.15	1/2"	1/4"
27	CX(E)A 50 CKA35	3.06	2.36	1.15	1/2"	1/4"
38	CX(E)A 50 CKA50	3.44	2.4	1.51	1/2"	1/4"
54	CX(E)A 70 CKA70	4.54	3.17	2.16	5/8"	3/8"

12.7°C Below Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
36	CX(E)A 30 CKA35	2.28	1.98	1.17	1/2"	1/4"
63	CX(E)A 50 CKA35	3.25	2.48	1.19	1/2"	1/4"
89	CX(E)A 50 CKA50	4.25	2.9	1.62	1/2"	1/4"
125	CX(E)A 70 CKA70	5.6	3.83	2.31	5/8"	3/8"

12.7°C Above Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
26	CX(E)A 30 CKA35	2.28	1.98	1.17	1/2"	1/4"
38	CX(E)A 50 CKA35	3.25	2.48	1.19	1/2"	1/4"
54	CX(E)A 50 CKA50	4.25	2.9	1.62	1/2"	1/4"
78	CX(E)A 70 CKA70	5.6	3.83	2.31	5/8"	3/8"

Technical Data

CX(E)A Indoor Unit

Model No.	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Noise Level*
CX(E)A 30	467	845	320	18	39
CX(E)A 50	467	845	320	20	40
CX(E)A 70	467	845	320	23	40

Please note: Unpacked Dimensions *dB(A) (@ 10m Distance)

CKA Outdoor Unit

Model No.	Suction (Pipe Size)	Liquid (Pipe Size)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Noise Level*
CKA 35	1/2"	1/4"	552	760	256	34	40
CKA 50	1/2"	1/4"	552	760	256	42	44
CKA 70	5/8"	3/8"	600	860	307	56	44

Please note: Unpacked Dimensions *dB(A) (@ 10m Distance)

Related Items:



Marstair R407C 17 Series

“Supporting the licensed trade more efficiently that ever”



MARSTAIR
REFRIGERATION AND SPECIALIST AIR CONDITIONING

Antibacterial Protection

The CX(E)A units are contemporary in design. Revolutionary one piece molded body, impregnated with an anti-bacterial additive, ideal for cellar cooling and food preparation areas.

5mm Tube

The 17 series has smaller 5mm tube sizes in both the evaporator and condensing coils providing reduced refrigerant requirements without compromising the system duty.

Components

Standard components include:

- Waterproof power switch
- HP & LP switch
- 3 Minute Delay Timer
- Random Start Feature
- ABS drain tray incorporating standard 22mm OD fitting drain stub
- Low Ambient Start

R407C

Condensing units come pre-charged on R407C for up to 7.5m pipe run.

Up to 80m Pipe Run

Up to 50m and 80m pipe run.

Front Panel Access

Front panel access to electrics for easy installation / maintenance.



*Image used for illustrative purposes only.



Ducted Outdoor

Fully compatible with the optional DCU+ ducted outdoor unit

Specification



Antibacterial Protection

Revolutionary one piece molded body, impregnated with an anti-bacterial additive. Ideal for cellar cooling and food preparation areas.



5mm Tube

The 17 series has smaller 5mm tube sizes in both the evaporator and condensing coils providing reduced refrigerant requirements without compromising the system duty.



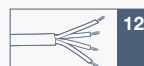
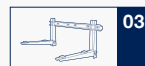
Easy Mounting

Complete with mounting brackets that are suitable for both wall and ceiling mounting.



80 Metre Pipe Run

The 17 series beer cellar systems can be mounted up to 80metres apart.



Description	Model No.	Part No.
Marstair CXE30 R407C I/U Electronic Defrost	CXE30	975140
Marstair CXE40 R407C I/U Electronic Defrost	CXE40	975141
Marstair CXE50 R407C I/U Electronic Defrost	CXE50	975142
Marstair CXE70 R407C I/U Electronic Defrost	CXE70	975143
Marstair CX30 R407C I/U Mechanical Defrost	CX30	975130
Marstair CX40 R407C I/U Mechanical Defrost	CX40	975131
Marstair CX50 R407C I/U Mechanical Defrost	CX50	975132
Marstair CX70 R407C I/U Mechanical Defrost	CX70	975133
Marstair CKC20 R407C O/D 1PH	CKC20	975120
Marstair CKC30 R407C O/D 1PH	CKC30	975121
Marstair CKC50 R407C O/D 1PH	CKC50	975123
Marstair CKC60 R407C O/D 1PH	CKC60	975124
Marstair CKC80 R407C O/D 1PH	CKC80	975125
Marstair DCU+20 Ducted R407C O/D 1PH	DCU+20	509388
Marstair DCU+30 Ducted R407C O/D 1PH	DCU+30	509396
Marstair DCU+40 Ducted R407C O/D 1PH	DCU+40	509418
Marstair DCU+50 Ducted R407C O/D 1PH	DCU+50	509426
Marstair DCU+60 Ducted R407C O/D 1PH	DCU+60	509434
Marstair DCU+80 Ducted R407C O/D 1PH	DCU+80	54224033

Quick Selection

Application

BELOW GROUND - ABOVE GROUND

8°C Below Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
36	CX(E) 30 CKC20	2.27	1.7	1.2	1/2"	3/8"
45	CX(E) 40 CKC30	2.67	1.82	1.5	1/2"	3/8"
69	CX(E) 50 CKC50	3.73	2.46	1.8	1/2"	3/8"
111	CX(E) 70 CKC80	5.51	3.47	2.3	5/8"	1/2"

8°C Above Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
22	CX(E) 30 CKC20	2.27	1.7	1.2	1/2"	3/8"
27	CX(E) 40 CKC30	2.67	1.82	1.5	1/2"	3/8"
42	CX(E) 50 CKC50	3.73	2.46	1.8	1/2"	3/8"
70	CX(E) 70 CKC80	5.51	3.47	2.3	5/8"	1/2"

12.7°C Below Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
52	CX(E) 30 CKC20	2.8	2.1	1.3	1/2"	3/8"
64	CX(E) 40 CKC30	3.3	2.24	1.6	1/2"	3/8"
98	CX(E) 50 CKC50	4.6	3.02	1.8	1/2"	3/8"
158	CX(E) 70 CKC80	6.8	4.3	2.3	5/8"	1/2"

12.7°C Above Ground

Room Volume	System	Duty	System Duty	Input	System Connections	
					Suction	Liquid
31	CX(E) 30 CKC20	2.8	2.1	1.3	1/2"	3/8"
39	CX(E) 40 CKC30	3.3	2.24	1.6	1/2"	3/8"
60	CX(E) 50 CKC50	4.6	3.02	1.8	1/2"	3/8"
100	CX(E) 70 CKC80	6.8	4.3	2.3	5/8"	1/2"

Related Items:



CX(E) Indoor Unit

Model No.	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Noise Level
CX(E) 30	467	845	320	18	39
CX(E) 40	467	845	320	20	39
CX(E) 50	467	845	320	20	40.5
CX(E) 70	467	845	320	23	39.9

Please note: Unpacked Dimensions *dB(A) (@ 10m Distance)



CKC/DCU+ Outdoor Unit

Model No.	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Noise Level
CKC 20	620	900	310	46	39.2
CKC 30	620	900	310	48	39.3
CKC 50	720	1000	310	64	38.9
CKC 60	720	1000	310	65	39.3
CKC 80	720	1000	310	66	38.7
DCU+ 20	495	1004	490	70	-
DCU+ 30	495	1004	490	70	-
DCU+ 40	495	1004	490	72	-
DCU+ 50	560	1174	490	81	-
DCU+ 60	560	1174	490	81	-
DCU+ 80	560	1174	490	84	-

Please note: Unpacked Dimensions *dB(A) (@ 10m Distance)



Nothing **COOLER** than a **5 year warranty**, Built in Britain, Built to last

- Built using only A-grade components
- Industry leading manufacturing & testing
- Easy to install, service & maintain

Upgrade to
Marstair today
for **total peace**
of mind

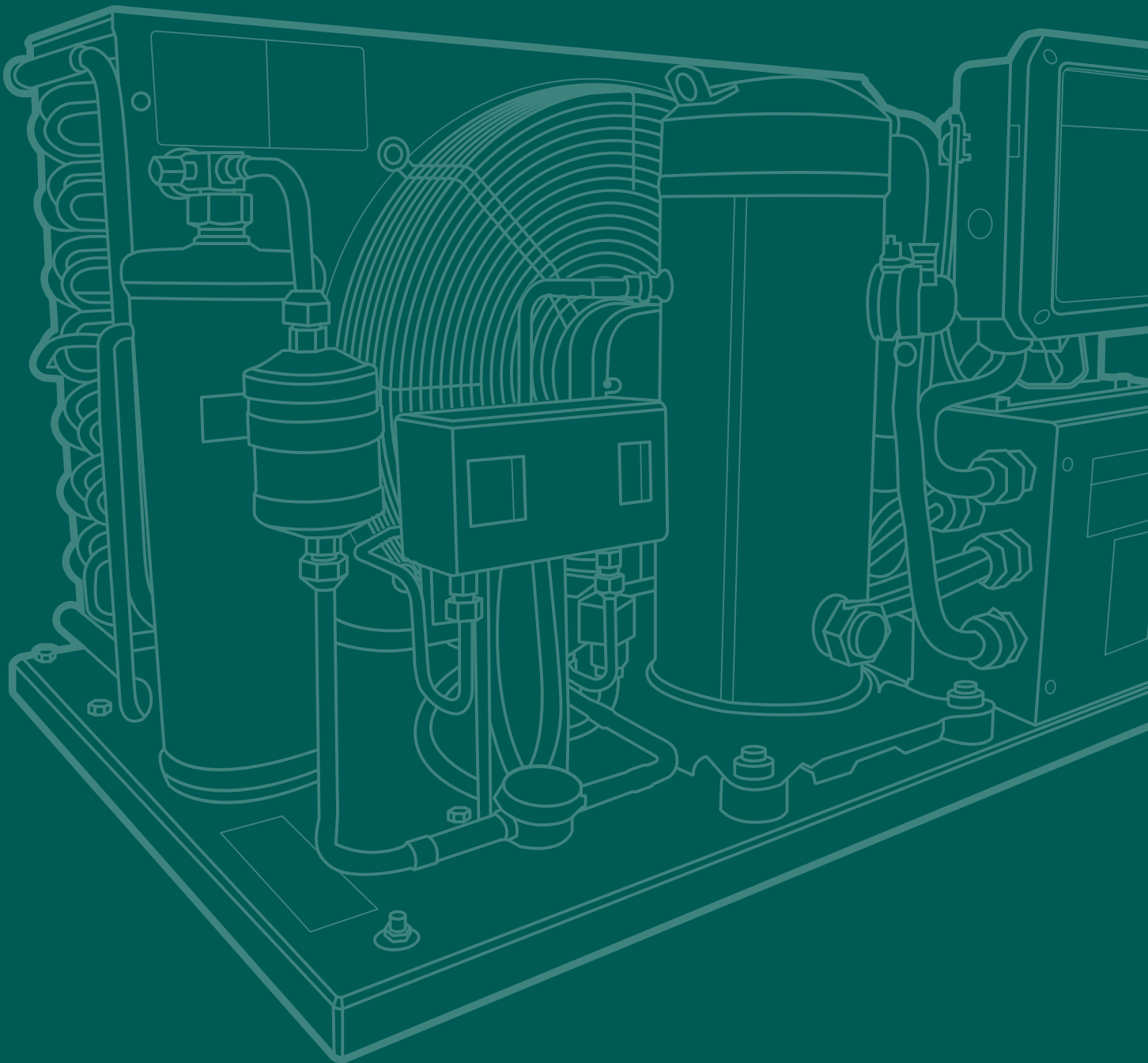


* Warranty covers all Marstair products, parts only for 5 years (Excluding Marine & Offshore)



SECTION EIGHTEEN

Standard Condensing Units





PAGE 401

Embraco Standard Condensing Units

The Embraco range of hermetic condensing units is stocked in sizes from 1/4hp through to 1.1/2hp and available to order upto 3hp. The range is competitive in the small commercial area offering excellent value for money. The units also cover most main refrigerants.



PAGE 410

Tecumseh Standard Condensing Units

Tecumseh Condensing Units offer a wide range of commercial units spanning from 1/2hp through to 5.5hp covering all the current refrigerants.



PAGE 418

Bitzer Standard Condensing Units

Bitzer condensing units use their range of highly efficiency & robust ECOLINE semi-hermetic compressors. Starting at 1/2hp moving up to 35hp, the range offers an excellent solution for larger projects.



PAGE 420

SCM Ref CUBO Light Condensing Units

Using the Bitzer ECOLINE Semi-hermetic compressor, the SCM Ref CUBO Light range of semi-hermetic condensing units that can be customised to your specification. Using microchannel condensers for reduced refrigerant charges this range of units is custom built to your specifications. A range of housings are also available.

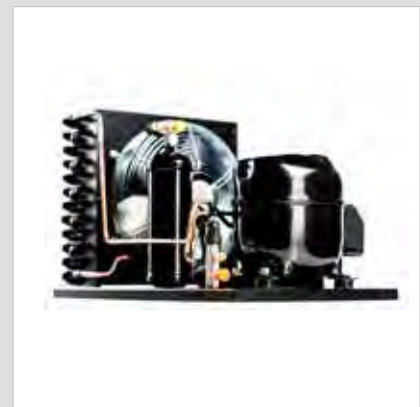
embraco

Embraco Standard Condensing Units

Embraco, the technology and market leader in hermetic refrigeration systems reinforces its talent for innovation and creates a new business unit. Partnership is the key word that translates innovative and exclusive solutions.

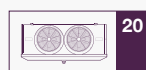
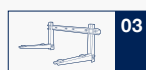
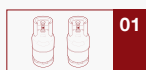
A global structure of Engineering, Manufacturing and Laboratories ensures a quick response to customer requirements offers a complete line of refrigeration

products including: Condensing Units, Sealed Refrigeration Units, Heat Exchangers and other components, all developed from specific customer needs and designed for a wide range of applications.



Embraco Product Range

Model No.	Description	Part No.
UEMT2117GK	Embraco UEMT2117GK C/U 220-240v 1ph	Call for information
UEMT2121GK	Embraco UEMT2121GK C/U 220-240v 1ph	Call for information
UEMT2125GK	Embraco UEMT2125GK C/U 220-240v 1ph	Call for information
UEMT2130GK	Embraco UEMT2130GK C/U 220-240v 1ph	Call for information
UEMT6144GK	Embraco UEMT6144GK C/U 220-240v 1ph	Call for information
UEMT6144Z	Embraco UEMT6144Z C/U 220-240v 1ph	208162
UEMT6160Z	Embraco UEMT6160Z C/U 220-240v 1ph	Call for information
UEMT6165GK	Embraco UEMT6165GK C/U 220-240v 1ph	Call for information
UEMT6170Z	Embraco UEMT6170Z C/U 220-240v 1ph	208166
UNE2130Z	Embraco UNE2130Z C/U 220-240v 1ph	Call for information
UNEK2125GK	Embraco UNEK2125GK C/U 220-240v 1ph	Call for information
UNEK2134GK	Embraco UNEK2134GK C/U 220-240v 1ph	Call for information
UNEK2150GK	Embraco UNEK2150GK C/U 220-240v 1ph	Call for information
UNEK2168GK	Embraco UNEK2168GK C/U 220-240v 1ph	Call for information
UNEK6144GK	Embraco UNEK6144GK C/U 220-240v 1ph	Call for information
UNEK6160Z	Embraco UNEK6160Z C/U 220-240v 1ph	Call for information
UNEK6165GK	Embraco UNEK6165GK C/U 220-240v 1ph	Call for information
UNEK6170Z	Embraco UNEK6170Z C/U 220-240v 1ph	Call for information
UNEK6181GK	Embraco UNEK6181GK C/U 220-240v 1ph	Call for information
UNEK6187Z	Embraco UNEK6187Z C/U 220-240v 1ph	208168
UNEK6210GK	Embraco UNEK6210GK C/U 220-240v 1ph	Call for information
UNEK6210Z	Embraco UNEK6210Z C/U 220-240v 1ph	Call for information
UNEK6212Z	Embraco UNEK6212Z C/U 220-240v 1ph	208172
UNEK6213GK	Embraco UNEK6213GK C/U 220-240v 1ph	Call for information
UNEK6214Z	Embraco UNEK6214Z C/U 220-240v 1ph	208174
UNEK6217GK	Embraco UNEK6217GK C/U 220-240v 1ph	208198
UNJ2192GK	Embraco UNJ2192GK C/U 220-240v 1ph	208051
UNJ2212GK	Embraco UNJ2212GK C/U 220-240v 1ph	208086
UNJ2212GS	Embraco UNJ2212GS C/U 380-420v 3ph	Call for information
UNJ6220Z	Embraco UNJ6220Z C/U 220-240v 1ph	207861
UNJ6220ZX	Embraco UNJ6220ZX C/U 380-420v 3ph	Call for information
UNJ6226Z	Embraco UNJ6226Z C/U 220-240v 1ph	207888
UNJ6226ZX	Embraco UNJ6226ZX C/U 380-420v 3ph	Call for information
UNJ9226GK	Embraco UNJ9226GK C/U 230v	208140
UNJ9226GS	Embraco UNJ9226GS C/U 380-420v 3ph	Call for information
UNJ9232GK	Embraco UNJ9232GK C/U 220-240v 1ph	208145
UNJ9232GS	Embraco UNJ9232GS C/U 380-420v 3ph	Call for information
UNJ9238GK	Embraco UNJ9238GK C/U 230v	208155
UNJ9238GS	Embraco UNJ9238GS C/U 380-420v 3ph	208160
UNT2168GK	Embraco UNT2168GK C/U 200-240v 1ph	208222
UNT2178GK	Embraco UNT2178GK C/U 220-240v 1ph	208224
UNT2180GK	Embraco UNT2180GK C/U 220-240v 1ph	208226
UNT2192GK	Embraco UNT2192GK C/U 220-240v 1ph	Call for information
UNT2192GKV	Embraco UNT2192GKV C/U 220-240v 1ph	208228
UNT2210GK	Embraco UNT2210GK C/U 220-240v 1ph	Call for information
UNT2212GK	Embraco UNT2212GK C/U 220-240v 1ph	208218
UNT6215Z	Embraco UNT6215Z C/U 200-240v 1ph	208180
UNT6217GK	Embraco UNT6217GK C/U 220-240v 1ph	Call for information
UNT6217Z	Embraco UNT6217Z C/U 220-240v 1ph	208182
UNT6220GK	Embraco UNT6220GK C/U 200-240v 1ph	Call for information
UNT6220GKV	Embraco UNT6220GKV C/U 200-240v 1ph	Call for information
UNT6220Z	Embraco UNT6220Z C/U 200-240v 1ph	Call for information
UNT6222GK	Embraco UNT6222GK C/U 220-240v 1ph	208206
UNT6226GK	Embraco UNT6226GK C/U 220-240v 1ph	208209
UNT6226GK	Embraco UNT6226GK C/U 220-240v 1ph	208208



R513A Duty: kW Evap Temperature: C

Model	-35	-30	-25	-20	-15	-10	-5	0	5	10
UNEK6187Z	-	-	-	-	0.45	0.55	0.66	0.78	0.92	1.08
UNEK6212Z	-	-	-	-	0.58	0.70	0.84	0.99	1.16	1.35
UNEK6214Z	-	-	-	-	0.67	0.80	0.96	1.12	1.31	1.50
UNT6215Z	-	-	-	-	0.71	0.88	1.06	1.25	1.44	1.66
UNT6217Z	-	-	-	-	0.82	1.00	1.21	1.45	1.72	2.03
UNJ6220Z	-	-	-	-	1.05	1.30	1.59	1.90	2.23	2.58
UNJ6226Z	-	-	-	-	1.29	1.60	1.92	2.25	2.58	2.92

If No Duty Shown = Outside Operating Envelope EN13215, 32deg ambient

R452A Duty: kW Evap Temperature: C

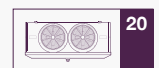
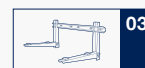
Model	-35	-30	-25	-20	-15	-10	-5	0	5	10
UEMT6144GK	-	-	-	0.26	0.32	0.38	0.45	0.53	0.62	0.71
UNEK6144GK	-	-	-	0.31	0.36	0.44	0.52	0.62	0.73	0.84
UEMT6165GK	-	-	-	0.34	0.40	0.49	0.59	0.70	0.80	0.89
UNEK6165GK	-	-	-	0.42	0.49	0.57	0.67	0.78	0.91	1.06
UNEK6181GK	-	-	-	0.44	0.54	0.66	0.79	0.93	1.10	1.28
UNEK6210GK	-	-	-	0.49	0.61	0.73	0.87	1.02	1.19	1.37
UNT6217GK	-	-	-	0.67	0.84	1.03	1.25	1.49	1.73	1.98
UNEK6213GK	-	-	-	0.67	0.83	0.99	1.16	1.34	1.54	1.74
UNT6220GK	-	-	-	0.80	1.01	1.24	1.47	1.72	1.98	2.25
UNT6220GKV	-	-	-	0.80	1.01	1.24	1.47	1.72	1.98	2.25
UNEK6217GK	-	-	-	0.81	1.01	1.21	1.43	1.67	1.93	2.22
UNT6222GK	-	-	-	0.95	1.18	1.43	1.71	2.00	2.31	2.63
UNJ9226GK	-	-	-	1.07	1.37	1.68	2.00	2.34	2.69	3.05
UNJ9226GS	-	-	-	1.08	1.37	1.68	2.00	2.32	2.64	2.94
UNT6226GK	-	-	-	1.24	1.52	1.85	2.20	2.58	2.96	3.35
UNT6226GK	-	-	-	1.24	1.52	1.85	2.20	2.58	2.96	3.35
UNJ9232GS	-	-	-	1.30	1.71	2.10	2.50	2.95	3.50	4.16
UNJ9232GK	-	-	-	1.35	1.69	2.05	2.42	2.81	3.23	3.66
UNJ9238GK	-	-	-	1.66	2.11	2.55	2.97	3.37	3.77	4.15
UNJ9238GS	-	-	-	1.69	2.08	2.47	2.85	3.24	3.64	4.05
UEMT2117GK	0.14	0.18	0.23	0.28	0.34	0.40	-	-	-	-
UNEK2125GK	0.17	0.22	0.28	0.35	0.43	0.52	-	-	-	-
UEMT2121GK	0.18	0.23	0.28	0.35	0.43	0.53	-	-	-	-
UEMT2125GK	0.20	0.25	0.32	0.39	0.46	0.54	-	-	-	-
UEMT2130GK	0.22	0.22	0.27	0.35	0.44	0.53	-	-	-	-
UNEK2134GK	0.23	0.31	0.40	0.50	0.62	0.75	-	-	-	-
UNEK2150GK	0.32	0.41	0.52	0.64	0.78	0.95	-	-	-	-
UNT2168GK	0.36	0.47	0.61	0.78	0.98	1.20	-	-	-	-
UNEK2168GK	0.37	0.48	0.62	0.79	0.97	1.17	-	-	-	-
UNT2178GK	0.44	0.56	0.71	0.89	1.09	1.32	-	-	-	-
UNT2180GK	0.55	0.70	0.86	1.04	1.24	1.46	-	-	-	-
UNT2192GKV	0.59	0.76	0.96	1.19	1.45	1.73	-	-	-	-
UNT2192GK	0.59	0.76	0.96	1.19	1.45	1.73	-	-	-	-
UNJ2192GK	0.66	0.85	1.07	1.29	1.52	1.75	-	-	-	-
UNT2210GK	0.69	0.83	1.07	1.34	1.57	1.71	-	-	-	-
UNT2212GK	0.80	0.99	1.22	1.48	1.77	2.07	-	-	-	-
UNJ2212GK	0.83	1.08	1.34	1.63	1.93	2.25	-	-	-	-
UNJ2212GS	0.85	1.07	1.30	1.52	1.75	1.97	-	-	-	-



R404A Duty: kW Evap Temperature: C

Model	-35	-30	-25	-20	-15	-10	-5	0	5	10
UEMT6144GK	-	-	-	0.27	0.32	0.38	0.45	0.52	0.60	0.68
UNEK6144GK	-	-	-	0.31	0.36	0.43	0.51	0.60	0.70	0.80
UEMT6165GK	-	-	-	0.34	0.41	0.50	0.59	0.69	0.78	0.86
UNEK6165GK	-	-	-	0.43	0.49	0.57	0.66	0.76	0.88	1.01
UNEK6181GK	-	-	-	0.45	0.54	0.65	0.77	0.91	1.05	1.22
UNEK6210GK	-	-	-	0.50	0.61	0.73	0.86	1.00	1.14	1.29
UNEK6213GK	-	-	-	0.69	0.83	0.98	1.14	1.31	1.48	1.65
UNT6217GK	-	-	-	0.70	0.86	1.06	1.27	1.49	1.73	1.96
UNEK6217GK	-	-	-	0.83	1.01	1.20	1.41	1.63	1.86	2.10
UNT6220GK	-	-	-	0.83	1.05	1.27	1.49	1.73	1.97	2.23
UNT6220GKV	-	-	-	0.83	1.04	1.26	1.49	1.73	1.97	2.23
UNT6222GK	-	-	-	0.99	1.21	1.46	1.73	2.02	2.31	2.60
UNJ9226GK	-	-	-	1.15	1.43	1.72	2.03	2.37	2.71	3.08
UNJ9226GK	-	-	-	1.15	1.43	1.72	2.03	2.37	2.71	3.08
UNJ9226GS	-	-	-	1.16	1.43	1.72	2.03	2.34	2.66	2.97
UNT6226GK	-	-	-	1.29	1.57	1.89	2.23	2.59	2.96	3.32
UNT6226GK	-	-	-	1.29	1.57	1.89	2.23	2.59	2.96	3.32
UNJ9232GS	-	-	-	1.40	1.78	2.15	2.54	2.99	3.53	4.19
UNJ9232GK	-	-	-	1.45	1.76	2.10	2.46	2.85	3.26	3.69
UNJ9238GK	-	-	-	1.78	2.20	2.61	3.02	3.41	3.80	4.18
UNJ9238GK	-	-	-	1.78	2.20	2.61	3.02	3.41	3.80	4.18
UEMT2117GK	0.15	0.19	0.23	0.28	0.34	0.40	-	-	-	-
UEMT2121GK	0.18	0.23	0.28	0.35	0.43	0.52	-	-	-	-
UNEK2125GK	0.18	0.24	0.30	0.37	0.44	0.53	-	-	-	-
UEMT2125GK	0.20	0.26	0.32	0.38	0.46	0.54	-	-	-	-
UEMT2130GK	0.22	0.23	0.27	0.35	0.44	0.53	-	-	-	-
UNEK2134GK	0.26	0.33	0.42	0.52	0.63	0.76	-	-	-	-
UNEK2150GK	0.36	0.45	0.55	0.67	0.80	0.96	-	-	-	-
UNT2168GK	0.36	0.49	0.63	0.80	1.00	1.20	-	-	-	-
UNEK2168GK	0.41	0.52	0.66	0.82	1.00	1.18	-	-	-	-
UNT2178GK	0.45	0.59	0.74	0.91	1.11	1.32	-	-	-	-
UNT2180GK	0.57	0.72	0.89	1.07	1.26	1.47	-	-	-	-
UNT2192GKV	0.60	0.78	0.99	1.22	1.47	1.74	-	-	-	-
UNT2192GK	0.60	0.78	0.99	1.22	1.47	1.74	-	-	-	-
UNT2210GK	0.70	0.86	1.11	1.38	1.60	1.72	-	-	-	-
UNJ2192GK	0.70	0.92	1.15	1.41	1.66	1.92	-	-	-	-
UNT2212GK	0.82	1.03	1.26	1.52	1.80	2.09	-	-	-	-
UNJ2212GK	0.88	1.15	1.45	1.76	2.10	2.48	-	-	-	-
UNJ2212GS	0.91	1.15	1.39	1.65	1.91	2.17	-	-	-	-

If No Duty Shown = Outside Operating Envelope EN13215, 32deg ambient



R449A Duty: kW Evap Temperature: C

Model	-35	-30	-25	-20	-15	-10	-5	0	5	10
UNEK6144GK	-	-	-	-	0.32	0.39	0.47	0.57	0.67	0.79
UNEK6165GK	-	-	-	-	0.42	0.51	0.60	0.71	0.84	0.99
UNEK6181GK	-	-	-	-	0.47	0.59	0.71	0.85	1.01	1.20
UNEK6210GK	-	-	-	-	0.53	0.65	0.79	0.93	1.10	1.28
UNEK6213GK	-	-	-	-	0.72	0.88	1.05	1.22	1.42	1.63
UNT6217GK	-	-	-	-	0.76	0.96	1.18	1.42	1.68	1.95
UNEK6217GK	-	-	-	-	0.88	1.08	1.29	1.53	1.79	2.07
UNT6220GKV	-	-	-	-	0.92	1.15	1.39	1.64	1.92	2.21
UNT6220GK	-	-	-	-	0.92	1.15	1.39	1.64	1.92	2.21
UNT6222GK	-	-	-	-	1.07	1.33	1.61	1.92	2.24	2.59
UNJ9226GK	-	-	-	-	1.25	1.56	1.90	2.28	2.69	3.13
UNJ9226GS	-	-	-	-	1.25	1.56	1.90	2.27	2.64	3.01
UNT6226GK	-	-	-	-	1.38	1.71	2.07	2.46	2.87	3.30
UNT6226GK	-	-	-	-	1.38	1.71	2.07	2.46	2.87	3.30
UNJ9232GK	-	-	-	-	1.54	1.90	2.30	2.74	3.22	3.75
UNJ9232GS	-	-	-	-	1.56	1.95	2.37	2.88	3.50	4.26
UNJ9238GS	-	-	-	-	1.89	2.29	2.71	3.16	3.64	4.16
UNJ9238GK	-	-	-	-	1.92	2.36	2.82	3.29	3.76	4.25

If No Duty Shown = Outside Operating Envelope EN13215, 32deg ambient

R134a Duty: kW Evap Temperature: C

Model	-35	-30	-25	-20	-15	-10	-5	0	5	10
UEMT6144Z	-	-	-	-	0.23	0.29	0.36	0.43	0.50	0.59
UNEK6160Z	-	-	-	-	0.30	0.37	0.46	0.55	0.66	0.78
UEMT6160Z	-	-	-	-	0.32	0.39	0.47	0.56	0.67	0.78
UNEK6170Z	-	-	-	-	0.34	0.42	0.51	0.62	0.73	0.86
UEMT6170Z	-	-	-	-	0.35	0.43	0.52	0.62	0.72	0.84
UNEK6187Z	-	-	-	-	0.42	0.52	0.63	0.77	0.92	1.08
UNEK6210Z	-	-	-	-	0.47	0.58	0.70	0.83	0.97	1.12
UNEK6212Z	-	-	-	-	0.54	0.66	0.81	0.97	1.15	1.35
UNEK6214Z	-	-	-	-	0.62	0.76	0.92	1.10	1.29	1.50
UNT6215Z	-	-	-	-	0.67	0.84	1.02	1.22	1.44	1.67
UNT6217Z	-	-	-	-	0.77	0.95	1.17	1.42	1.72	2.05
UNT6220Z	-	-	-	-	0.91	1.14	1.41	1.71	2.03	2.36
UNJ6220Z	-	-	-	-	0.99	1.25	1.54	1.86	2.22	2.59
UNJ6220ZX	-	-	-	-	1.01	1.26	1.53	1.84	2.17	2.54
UNT6220Z	-	-	-	-	1.03	1.26	1.51	1.79	2.12	2.52
UNJ6226Z	-	-	-	-	1.22	1.54	1.87	2.21	2.57	2.93
UNJ6226ZX	-	-	-	-	1.27	1.57	1.80	2.08	2.53	3.26
UNE2130Z	0.23	-	0.29	0.37	0.45	0.55	0.66	-	-	-

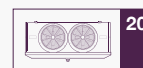
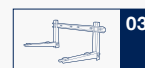
If No Duty Shown = Outside Operating Envelope EN13215, 32deg ambient

Related Items:



Model	Voltage	Application	Refrigerant	Power supply	Compressor	HP	Number of fans	Receiver Volume (dm ³)	Displacement	Height (mm)	Length (mm)
UEMT2117GK	A	LBP	R404A	220 - 240	EMT2117GK	1/4	1	0.5	4.5	226	430
UEMT2121GK	A	LBP	R404A	220 - 240	EMT2121GK	1/3	1	0.5	5.19	226	430
UEMT2125GK	A	LBP	R404A	220 - 240	EMT2125GK	1/3	1	1.1	5.96	254	308
UEMT2130GK	A	LBP	R404A	220 - 240	EMT2130GK	1/2	1	1.1	6.76	254	435
UEMT6144GK	A	M/HBP	R404A	220 - 240	EMT6144GK	1/4	1	0.6	3.97	226	430
UEMT6144Z	A	M/HBP	R134a	220 - 240	EMT6144Z	1/5	1	0.6	5.19	226	430
UEMT6160Z	A	M/HBP	R134a	220 - 240	EMT6160Z	1/4	1	1.1	6.76	254	435
UEMT6165GK	A	M/HBP	R404A	220 - 240	EMT6165GK	1/3	1	1.1	5.19	254	435
UEMT6170Z	A	M/HBP	R134a	220 - 240	EMT6170Z	1/3	1	1.1	7.69	254	435
UNE2130Z	A	LBP	R134a	220 - 240	NE2130Z	-	1	1.1	12.11	254	435
UNEK2125GK	A	LBP	R404A	220 - 240	NEK2125GK	1/3	1	1.1	6.2	254	435
UNEK2134GK	A	LBP	R404A	220 - 240	NEK2134GK	1/2	1	1.1	8.77	296	465
UNEK2150GK	A	LBP	R404A	220 - 240	NEK2150GK	3/4	1	1.1	12.11	296	465
UNEK2168GK	A	LBP	R404A	220 - 240	NEK2168GK	3/4	1	1.1	14.28	296	499
UNEK6144GK	A	M/HBP	R404A	220 - 240	NEK6144GK	1/4	1	0.6	4.51	254	435
UNEK6160Z	A	M/HBP	R134a	220 - 240	NEK6160Z	-	1	0.6	7.28	254	435
UNEK6165GK	A	M/HBP	R404A	220 - 240	NEK6165GK	1/3	1	1.1	6.2	254	435
UNEK6170Z	A	M/HBP	R134a	220 - 240	NEK6170Z	1/4	1	1.1	8.39	254	435
UNEK6181GK	A	M/HBP	R404A	220 - 240	NEK6181GK	1/3	1	1.1	7.28	296	465
UNEK6187Z	A	M/HBP	R134a	220 - 240	NEK6187Z	1/3	1	1.1	9.99	296	465
UNEK6210GK	A	M/HBP	R404A	220 - 240	NEK6210GK	1/2	1	1.1	8.77	296	465
UNEK6210Z	A	M/HBP	R134a	220 - 240	NEK6210Z	1/3	1	1.1	12.11	296	465
UNEK6212Z	A	M/HBP	R134a	220 - 240	NEK6212Z	1/2	1	1.1	14.28	296	465
UNEK6213GK	A	M/HBP	R404A	220 - 240	NEK6213GK	1/2	1	1.1	12.11	296	465
UNEK6214Z	A	M/HBP	R134a	220 - 240	NEK6214Z	1/2	1	1.1	16.8	296	465
UNEK6217GK	A	M/HBP	R404A	220 - 240	NEK6217GK	3/4	1	2.3	14.28	324	471
UNJ2192GK	A	LBP	R404A	220 - 240	NJ2192GK	1.25	1	2.3	26.11	324	481
UNJ2212GK	A	LBP	R404A	220 - 240	NJ2212GK	1.3	1	2.3	34.38	324	481
UNJ2212GS	M	LBP	R404A	380 - 420	NJ2212GS	-	1	2.3	34.38	324	481
UNJ6220Z	A	M/HBP	R134a	220 - 240	NJ6220Z	3/4	1	2.3	26.11	324	481
UNJ6220ZX	M	M/HBP	R134a	380 - 420	NJ6220ZX	1	1	2.3	26.11	324	481
UNJ6226Z	A	M/HBP	R134a	220 - 240	NJ6226Z	1	1	2.3	34.38	324	481
UNJ6226ZX	M	M/HBP	R134a	380 - 420	NJ6226ZX	1	1	2.3	34.38	324	481
UNJ9226GK	V	M/HBP	R404A	230	NJ9226GK	1	1	2.3	21.71	372	482
UNJ9226GS	M	M/HBP	R404A	380 - 420	NJ9226GS	1	1	2.3	21.71	372	481
UNJ9232GK	A	M/HBP	R404A	220 - 240	NJ9232GK	1.5	1	3.9	26.11	372	600
UNJ9232GS	M	M/HBP	R404A	380 - 420	NJ9232GS	1.25	1	-	26.11	372	600
UNJ9238GK	V	M/HBP	R404A	230	NJ9238GK	1.5	1	3.9	32.67	372	600
UNJ9238GS	M	M/HBP	R404A	380 - 420	NJ9238GS	1.5	1	-	32.67	372	600
UNT2168GK	N	LBP	R404A	200 - 240	NT2168GK	3/4	1	1.1	14.5	296	474
UNT2178GK	A	LBP	R404A	220 - 240	NT2178GK	3/4	1	1.2	17.39	296	474
UNT2180GK	A	LBP	R404A	220 - 240	NT2180GK	1	1	1.2	20.44	296	474
UNT2192GK	A	LBP	R404A	220 - 240	NT2192GK	1	1	2.3	22.37	324	494
UNT2192GKV	A	LBP	R404A	220 - 240	NT2192GKV	1	1	2.3	22.37	324	494
UNT2210GK	A	LBP	R404A	220 - 240	NT2210GK	1.3	1	2.3	26.21	324	494
UNT2212GK	A	LBP	R404A	220 - 240	NT2212GK	1.5	1	2.3	27.8	324	494
UNT6215Z	N	M/HBP	R134a	200 - 240	NT6215Z	1/2	1	1.2	17.39	296	465
UNT6217GK	A	M/HBP	R404A	220 - 240	NT6217GK	3/4	1	2.3	12.55	324	494
UNT6217Z	A	M/HBP	R134a	220 - 240	NT6217Z	3/4	1	2.3	20.44	324	494
UNT6220GK	N	M/HBP	R404A	200 - 240	NT6220GK	3/4	1	2.3	14.5	324	494
UNT6220GKV	N	M/HBP	R404A	200 - 240	NT6220GKV	3/4	1	2.3	14.5	323	471
UNT6220Z	N	HBP	R134a	200 - 240	NT6220Z	3/4	1	2.3	22.37	324	494
UNT6222GK	A	M/HBP	R404A	220 - 240	NT6222GK	3/4	1	2.3	17.39	324	494
UNT6226GK	A	M/HBP	R404A	220 - 240	NT6226GK	1	1	2.3	22.37	372	485
UNT6226GK	A	M/HBP	R404A	220 - 240	NT6226GK	1	1	2.3	22.37	372	485

A = 220-240V 50HZ 1 ~ N = 200-240V/50HZ 230V/60HZ M = 380-420V 50HZ / 440-480V 60HZ 3 ~ V = 230V 50HZ 1 ~



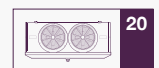
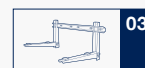
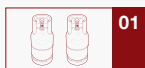
Width (mm)	Weight (kg)	Expansion Device	Connection Type	Suction (in)	Liquid (in)	I max (Amp)	Motor Type	Fan Blade			
								Power (w)	Fan angle (°)	Diam (mm)	Air flow (M3/H)
290	17.1	C-V	Flare	3/8"	1/4"	1.4	CSIR	10	28	200	300
290	20	C-V	Flare	3/8"	1/4"	1.46	CSIR	10	28	200	300
435	15.4	C-V	Flare	3/8"	1/4"	1.2	CSIR	10	31	230	420
300	15.4	C-V	Flare	3/8"	1/4"	2.5	CSIR	10	31	230	420
290	17.1	C-V	Flare	3/8"	1/4"	1.68	CSIR	10	28	200	300
290	15.2	C-V	Flare	3/8"	1/4"	1.48	RSIR	10	28	200	300
300	15.5	C-V	Flare	3/8"	1/4"	1.87	CSIR	10	31	230	420
300	16.5	C-V	Flare	3/8"	1/4"	2.32	CSIR	10	31	230	420
300	15.5	C-V	Flare	3/8"	1/4"	2.13	CSIR	10	31	230	420
300	16.5	C-V	Flare	3/8"	1/4"	2.35	CSIR	10	31	230	300
300	17.4	C-V	Flare	3/8"	1/4"	2.48	CSIR	10	31	230	420
340	20	C-V	Flare	3/8"	1/4"	2.77	CSIR	16	28	254	595
340	21.6	C-V	Flare	3/8"	1/4"	3.52	CSIR	16	28	254	595
340	24.2	C-V	Flare	3/8"	1/4"	4.2	CSR	16	28	254	460
300	17	C-V	Flare	3/8"	1/4"	2.2	CSIR	10	31	230	300
300	18.9	C-V	Flare	3/8"	1/4"	2.15	CSIR	10	31	230	420
300	16.5	C-V	Flare	3/8"	1/4"	2.79	CSIR	10	31	230	420
300	17.4	C-V	Flare	3/8"	1/4"	2.35	CSIR	10	31	230	420
340	21	C-V	Flare	3/8"	1/4"	2.7	CSIR	16	28	254	595
340	21	C-V	Flare	3/8"	1/4"	3.43	CSIR	16	28	254	320
340	21.4	C-V	Solder	3/8"	1/4"	4.2	CSIR	16	28	254	595
340	22.7	C-V	Solder	3/8"	1/4"	2.9	CSIR	16	28	254	595
340	21.7	C-V	Flare	3/8"	1/4"	3.95	CSIR	16	28	254	595
340	22.6	C-V	Flare	3/8"	1/4"	5.97	CSIR	16	28	254	595
340	21.7	C-V	Flare	3/8"	1/4"	5.17	CSIR	16	28	254	595
395	28.5	C-V	Flare	1/2"	3/8"	5.55	CSR	34	31	275	640
410	37.7	C-V	Solder	1/2"	3/8"	6.9	CSR	34	31	275	800
410	38.3	C-V	Solder	5/8"	3/8"	6.5	CSR	34	31	275	800
410	38.2	C-V	Solder	5/8"	3/8"	2.38	3PH	34	-	275	800
410	37.4	C-V	Solder	1/2"	3/8"	6.45	CSR	34	31	275	640
410	35.4	C-V	Solder	1/2"	3/8"	2.28	3PH	34	31	275	640
410	37	C-V	Solder	5/8"	3/8"	6.75	CSR	34	31	275	640
410	36.5	C-V	Flare	5/8"	3/8"	2.4	3PH	34	31	275	640
411	36.4	C-V	Solder	5/8"	3/8"	7.37	CSR	34	28	300	700
410	36.9	C-V	Solder	5/8"	3/8"	2.78	3PH	34	28	300	700
440	46.1	C-V	Solder	5/8"	1/2"	8.12	CSR	95	-	-	1450
440	43.8	C-V	Solder	5/8"	1/2"	3.35	3PH	60	-	-	1450
440	46.8	C-V	Solder	5/8"	1/2"	10.1	CSR	95	-	-	1300
440	42	C-V	Solder	5/8"	1/2"	4.49	3PH	60	-	-	1300
340	26.8	C-V	Flare	3/8"	1/4"	4.25	CSIR	16	28	254	460
340	27.5	C-V	Flare	3/8"	1/4"	4.24	CSIR	16	28	254	460
340	28.6	C-V	Solder	3/8"	1/4"	5.8	CSIR	16	28	254	460
395	36.2	C-V	Flare	3/8"	3/8"	5.5	CSR	34	31	275	800
395	32.3	C-V	Flare	1/2"	3/8"	4.21	CSR	34	31	275	800
395	34.6	C-V	Flare	1/2"	3/8"	7.18	CSR	34	31	275	800
395	34.6	C-V	Flare	1/2"	3/8"	5.75	CSR	34	31	275	800
340	28.2	C-V	Flare	3/8"	1/4"	5.52	CSIR	25	28	254	740
395	31.8	C-V	Flare	1/2"	3/8"	3.64	CSIR	34	31	275	640
395	30.1	C-V	Flare	1/2"	3/8"	5.43	CSIR	34	31	275	640
395	34.3	C-V	Solder	1/2"	3/8"	5.15	CSR	34	31	275	640
395	33	C-V	Flare	1/2"	3/8"	3.83	CSR	34	31	275	640
395	33.5	C-V	Flare	1/2"	3/8"	5.99	CSR	34	31	275	640
395	33.2	C-V	Solder	1/2"	3/8"	7.73	CSR	34	31	275	640
405	35.7	C-V	Solder	1/2"	3/8"	7.27	CSR	34	28	300	700
405	31.3	C-V	Flare	1/2"	3/8"	8.39	CSR	34	28	300	700

C = Capillary Line V = Expansion Valve

Related Items:



Model No.	Electrics kit	Suction Valve	Discharge Valve	Fan Kit	Fan Motor	Fan Guard	Fan Blade	Condenser
UEMT2117GK	912BA67K3A	2110024	2110025	1996700	-	-	-	2451204
UEMT2121GK	912CA6764A	2110024	2110025	1996581	1450102	2458021	2455008	2451204
UEMT2125GK	912DA67K3A	2110024	2110025	1996580	1450102	2458022	2455009	2451205
UEMT2130GK	913AA6264A	2110024	2110025	1996699	-	-	-	2451205
UEMT6144GK	912EA6764A	2110024	2110025	1996700	-	-	-	2451204
UEMT6144Z	194PA6764A	2110024	2110025	1996700	-	-	-	2451204
UEMT6160Z	194QA6764A	2110024	2110025	1996699	-	-	-	2451205
UEMT6165GK	912GA6764A	2110024	2110025	1996580	1450102	2458022	2455009	2451205
UEMT6170Z	194RA67F0A	2110024	2110025	1996699	-	-	-	2451205
UNE2130Z	262DA50N2A	2110024	2110025	1996699	-	-	-	2451205
UNEK2125GK	957EA51N1A	2110024	2110025	1996699	-	-	-	2451205
UNEK2134GK	958AA51N1A	2110046	2110047	1996579	1450103	2458020	2455003	2451206
UNEK2150GK	959AA51N1A	2110024	2110025	1996610	-	-	-	2451206
UNEK2168GK	959HA5190A	2110046	2110047	1996609	1450104	2458020	2455003	2451217
UNEK6144GK	957GA50N1A	2110024	2110025	1996699	-	-	-	2451205
UNEK6160Z	267BA51M1P	2110024	2110025	1996699	-	-	-	2451205
UNEK6165GK	957IA51N1A	2110024	2110025	1996699	-	-	-	2451205
UNEK6170Z	267DA51N1A	2110024	2110025	1996699	-	-	-	2451205
UNEK6181GK	957MA51N1A	2110046	2110047	1996610	-	-	-	2451206
UNEK6187Z	268AA51N1A	2110024	2110025	1996610	-	-	-	2451206
UNEK6210GK	958CA51N1A	2110046	2110047	1996610	-	-	-	2451206
UNEK6210Z	268BA51N1A	2110046	2110047	1996610	-	-	-	2451206
UNEK6212Z	269AA51N1A	2110024	2110025	1996579	1450103	2458020	2455003	2451206
UNEK6213GK	959BA51N1A	2110024	2110025	1996579	1450103	2458020	2455003	2451206
UNEK6214Z	269JA51N1A	2110024	2110025	1996579	1450103	2458020	2455003	2451206
UNEK6217GK	959GA5190A	2110051	2110056	1996583	1450087	2458023	2455010	2451218
UNJ2192GK	944AA1904A	2110050	2110049	1996583	1450087	2458023	2455010	2451218
UNJ2212GK	943DA1904A	2110054	2110049	1996583	1450087	2458023	2455010	2451140
UNJ2212GS	-	2110054	2110049	1996582	1450080	2458023	2455010	2451140
UNJ6220Z	144HA1904V	2110050	2110049	1996583	1450087	2458023	2455010	2451140
UNJ6220ZX	-	2110050	2110049	1996582	1450080	2458023	2455010	2451140
UNJ6226Z	142HA1504A	2110054	2110049	1996583	1450087	2458023	2455010	2451140
UNJ6226ZX	-	2110058	2110056	1996582	1450080	2458023	2455010	2451140
UNJ9226GK	944LV1104A	2110054	2110049	1996585	1450087	2458024	2455011	2451221
UNJ9226GS	-	2110054	2110049	1996586	1450080	2458024	2455011	2451221
UNJ9232GK	943NA1104A	2110054	2110050	1996589	-	-	-	2451198
UNJ9232GS	-	2110054	2110050	1996590	-	-	-	2451198
UNJ9238GK	943RV1904A	2110054	2110050	1996589	-	-	-	2451199
UNJ9238GS	-	2110054	2110050	1996590	-	-	-	2451199
UNT2168GK	922DN0412A	2110056	2110025	1996579	1450103	2458020	2455003	2451217
UNT2178GK	922EA0413A	2110056	2110025	1996579	1450103	2458020	2455003	2451217
UNT2180GK	923HA0412A	2110049	2110047	1996579	1450103	2458020	2455003	2451217
UNT2192GK	923EA0404A	2110056	2110056	1996583	1450087	2458023	2455010	2451218
UNT2192GKV	923DA0904AF	2110057	2110056	1996583	1450087	2458023	2455010	2451140
UNT2210GK	923KA0204A	2110057	2110056	1996583	1450087	2458023	2455010	2451140
UNT2212GK	925DA0204A	2110057	2110056	1996583	1450087	2458023	2455010	2451140
UNT6215Z	212AN0613A	2110056	2110025	1996587	1450105	2458020	2455003	2451206
UNT6217GK	922AA0413A	2110057	2110056	1996588	1450106	2458023	2455010	2451218
UNT6217Z	212BA0412A	2110057	2110056	1996588	1450106	2458023	2455010	2451218
UNT6220GK	922BN0404A	2110050	2110049	1996583	1450087	2458023	2455010	2451140
UNT6220GKV	922JN0464A	2110051	2110056	1996697	1450086	2458023	2455010	2451140
UNT6220Z	212CN0604A	2110057	2110056	1996583	1450087	2458023	2455010	2451140
UNT6222GK	922CA0404A	2110050	2110049	1996583	1450087	2458023	2455010	2451140
UNT6226GK	923BA0204A	2110050	2110049	1996585	1450087	2458024	2455011	2451221
UNT6226GK	923BA0204A	2110057	2110056	1996585	1450087	2458024	2455011	2451221



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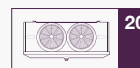
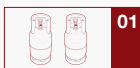


Product Range



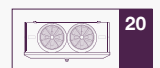
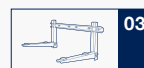
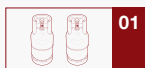
Model	Description	Part No.
AET2420ZBR-FZ	Tecumseh AET2420ZBR-FZ 220 - 240V 1~ 50 Hz	AE2420ZBR
AET2425ZBR-FZ	Tecumseh AET2425ZBR-FZ 220 - 240V 1~ 50 Hz	AE2425ZBR
AET4425YHR-FZ	Tecumseh AET4425YHR-FZ 220 - 240V 1~ 50 Hz	AE4425YHR2
AET4425ZHR-FZ	Tecumseh AET4425ZHR-FZ 220 - 240V 1~ 50 Hz	AET4425ZHR
AET4430YHR-FZ	Tecumseh AET4430YHR-FZ 220 - 240V 1~ 50 Hz	AE4430YHR
AET4430ZHR-FZ	Tecumseh AET4430ZHR-FZ 220 - 240V 1~ 50 Hz	AET4430ZHR
AET4440YHR-FZ	Tecumseh AET4440YHR-FZ 220 - 240V 1~ 50 Hz	AE4440YHR
AET4440ZHR-FZ	Tecumseh AET4440ZHR-FZ 220 - 240V 1~ 50 Hz	AET4440ZHR
AET4450ZHR-FZ	Tecumseh AET4450ZHR-FZ 220 - 240V 1~ 50 Hz	AET4450ZHR
AET4460ZHR-FZ	Tecumseh AET4460ZHR-FZ 220 - 240V 1~ 50 Hz	AET4460ZHR
AET4456YHR-FZ	Tecumseh AET4456YHR-FZ 220 - 240V 1~ 50 Hz	AE4456YHR
AET4470ZHR-FZ	Tecumseh AET4470ZHR-FZ 220 - 240V 1~ 50 Hz	AET4470ZHR
CAJN2428ZBR-FZ	Tecumseh CAJN2428ZBR-FZ 220 - 240V 1~ 50 Hz	CAJ2428ZB2
CAJN2432ZBR-FZ	Tecumseh CAJN2432ZBR-FZ 220 - 240V 1~ 50 Hz	CAJ2432ZB2
CAJN2446ZBR-FZ	Tecumseh CAJN2446ZBR-FZ 220 - 240V 1~ 50 Hz	CAJ2446ZB2
CAJN2464ZBR-FZ	Tecumseh CAJN2464ZBR-FZ 220 - 240V 1~ 50 Hz	CAJ2464ZB2
CAJN4461YHR-FZ	Tecumseh CAJN4461YHR-FZ 220 - 240V 1~ 50 Hz	CAJ4461YH2
CAJN4476YHR-FZ	Tecumseh CAJN4476YHR-FZ 220 - 240V 1~ 50 Hz	CAJ4476YH2
CAJN4492YHR-FZ	Tecumseh CAJN4492NH-FZ 220 - 240V 1~ 50 Hz	CAJ4492YH2
CAJN4511YHR-FZ	Tecumseh CAJN4511YHR-FZ 220 - 240V 1~ 50 Hz	CAJ4511YH2
CAJN4517ZHR-FZ	Tecumseh CAJN4517ZHR-FZ 220 - 240V 1~ 50 Hz	CAJ4517ZH2
CAJN4519ZHR-FZ	Tecumseh CAJN4519ZHR-FZ 220 - 240V 1~ 50 Hz	CAJ4519ZH2
CAJN9510ZMHR-FZ	Tecumseh CAJN9510ZMHR-FZ 220 - 240V 1~ 50 Hz	CAJ9510ZMH
CAJN9513ZMHR-FZ	Tecumseh CAJN9513ZMHR-FZ 220 - 240V 1~ 50 Hz	CAJ9513ZM2
CAJN9480ZMHR-FZ	Tecumseh CAJN9480ZMHR-FZ 220 - 240V 1~ 50 Hz	CAJ9480ZM2
FHT2480ZBR-XC	Tecumseh FHT2480ZBR-XC 220 - 240V 1~ 50 Hz	FHT2480ZBR
FHT2480ZBR-XG	Tecumseh FHT2480ZBR-XG 380-420V 3~ 50Hz / 460V 3~ 60 Hz	TFHT2480ZB
FHT2511ZBR-XC	Tecumseh FHT2511ZBR-XC 220 - 240V 1~ 50 Hz	FHT2511ZBR
FHT4518YHR-XC	Tecumseh FHT4518YHR-XC 220 - 240V 1~ 50 Hz	FHT4518YHR
FHT4518YHR-XG	Tecumseh FHT4518YHR-XG 380-420V 3~ 50Hz / 460V 3~ 60 Hz	TFHT4518YH
FHT4522ZHR-XC	Tecumseh FHT4522ZHR-XC 220 - 240V 1~ 50 Hz	FHT4522ZHR
FHT4522ZHR-XG	Tecumseh FHT4522ZHR-XG 380-420V 3~ 50Hz / 460V 3~ 60 Hz	TFH4522ZHR
FHT4524ZHR-XC	Tecumseh FHT4524ZHR-XC 220 - 240V 1~ 50 Hz	FHT4524ZHR
FHT4524ZHR-XG	Tecumseh FHT4524ZHR-XG 380-420V 3~ 50Hz / 460V 3~ 60 Hz	TFHT4524ZH
FHT4525YHR-XC	Tecumseh FHT4525YHR-XC 220 - 240V 1~ 50 Hz	FHT4525YHR
FHT4525YHR-XG	Tecumseh FHT4525YHR-XG 380-420V 3~ 50Hz / 460V 3~ 60 Hz	TFHT4525YH
FHT4532ZHR-XC	Tecumseh FHT4532ZHR-XC 220 - 240V 1~ 50 Hz	FHT4532ZHR
TAGT2516ZBR-TZ	Tecumseh TAGT2516ZBR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAGT2516ZR
TAGT2522ZBR-TZ	Tecumseh TAGT2522ZBR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAGT2522ZR
TAGT4528YHR-TZ	Tecumseh TAGT4528YHR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAGT4528YH
TAJN2446ZBR-TZ	Tecumseh TAJN2446ZBR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAJ2446ZBR
TAJN2464ZBR-TZ	Tecumseh TAJN2464ZBR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAJ2464ZB2
TAJN4517ZHR-TZ	Tecumseh TAJN4517ZHR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAJ4517ZH2
TAJN4519ZHR-TZ	Tecumseh TAJN4519ZHR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAJ4519ZH2
TAJN9480ZMHR-TZ	Tecumseh TAJN9480ZMHR-TZ 400V 3~ 50Hz / 440V 3~ 60 Hz	TAJ9480ZMH

Related Items:



Tecumseh Technical Data

Model	Application	Refrigerant	Power Supply	Horsepower	Net weight (kg)	Air Flow
AET2420ZBR-FZ	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/2	19.4	410
AET2425ZBR-FZ	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/2	25.5	500
AET4425YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	1/5	18.9	410
AET4425ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/5	19	410
AET4430YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	1/4	15.2	410
AET4430ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/4	19.3	410
AET4440YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	1/3	19.3	410
AET4440ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/3	23.9	500
AET4450ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/2	24.9	500
AET4460ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/2	24.8	1130
AET4456YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	1/2	25	500
AET4470ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1/2	27.6	1130
CAJN2428ZBR-FZ	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	3/4	30	550
CAJN2432ZBR-FZ	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	3/4	30	550
CAJN2446ZBR-FZ	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	1 1/4	33	900
CAJN2464ZBR-FZ	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	1 1/2	34	900
CAJN4461YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	1/2	29	550
CAJN4476YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	3/4	29	900
CAJN4492YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	3/4	32	900
CAJN4511YHR-FZ	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	1	35	900
CAJN4517ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1 1/2	44	1700
CAJN4519ZHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1 1/2	44	1700
CAJN9510ZMHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1 1/4	33	900
CAJN9513ZMHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1 3/4	34	900
CAJN9480ZMHR-FZ	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1	33	900
FHT2480ZBR-XC	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	2	52	1750
FHT2480ZBR-XG	LBP	R452A/R404A	380-420V 3~ 50Hz / 460V 3~ 60 Hz	2	53	1750 / 1850
FHT2511ZBR-XC	LBP	R452A/R404A	220 - 240V 1~ 50 Hz	2 1/2	53	1750
FHT4518YHR-XC	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	1 1/2	48	1650
FHT4518YHR-XG	H/MBP	R134a/R513A	380-420V 3~ 50Hz / 460V 3~ 60 Hz	1 1/2	49	1650 / 1730
FHT4522ZHR-XC	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	1 3/4	52	1650
FHT4522ZHR-XG	H/MBP	R452A/R404A	380-420V 3~ 50Hz / 460V 3~ 60 Hz	1 3/4	52	1650 / 1730
FHT4524ZHR-XC	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	2	61	3900
FHT4524ZHR-XG	H/MBP	R452A/R404A	380-420V 3~ 50Hz / 460V 3~ 60 Hz	2	61	3900 / 4300
FHT4525YHR-XC	H/MBP	R134a/R513A	220 - 240V 1~ 50 Hz	2	49	1650
FHT4525YHR-XG	H/MBP	R134a/R513A	380-420V 3~ 50Hz / 460V 3~ 60 Hz	2	50	1650 / 1730
FHT4532ZHR-XC	H/MBP	R452A/R404A	220 - 240V 1~ 50 Hz	2 1/2	66	3670 / 4050
TAGT2516ZBR-TZ	LBP	R452A/R404A	400V 3~ 50Hz / 440V 3~ 60 Hz	4	79	3300 / 3650
TAGT2522ZBR-TZ	LBP	R452A/R404A	400V 3~ 50Hz / 440V 3~ 60 Hz	5 1/2	86	2500
TAGT4528YHR-TZ	H/MBP	R134a/R513A	400V 3~ 50Hz / 440V 3~ 60 Hz	2 1/2	72	3900 / 4300
TAJN2446ZBR-TZ	LBP	R452A/R404A	400V 3~ 50Hz / 440V 3~ 60 Hz	1 1/4	33	900 / 900
TAJN2464ZBR-TZ	LBP	R452A/R404A	400V 3~ 50Hz / 440V 3~ 60 Hz	1 1/2	34	900 / 900
TAJN4517ZHR-TZ	H/MBP	R452A/R404A	400V 3~ 50Hz / 440V 3~ 60 Hz	1 1/2	40	1700 / 1700
TAJN4519ZHR-TZ	H/MBP	R452A/R404A	400V 3~ 50Hz / 440V 3~ 60 Hz	1 1/2	41	1700 / 1700
TAJN9480ZMHR-TZ	H/MBP	R452A/R404A	400V 3~ 50Hz / 440V 3~ 60 Hz	1	32	900 / 900



Mcc	LRA	Fan Diameter (mm)	Reservoir Volume	Suction	Liquid	Width (mm)	Height (mm)	Depth (mm)
4.6	16.6	200	0.75	9.5 (3/8")	6.35 (1/4")	322	257	404
4.6	18.8	250	0.75	9.5 (3/8")	6.35 (1/4")	346	303	501
2.6	9.6	200	0.75	9.5 (3/8")	6.35 (1/4")	322	257	404
3	10.8	200	0.75	9.5 (3/8")	6.35 (1/4")	322	257	404
3.3	12.7	200	0.75	9.5 (3/8")	6.35 (1/4")	322	257	404
3.1	11.6	200	0.75	9.5 (3/8")	6.35 (1/4")	322	257	404
3.9	13.4	200	0.75	9.5 (3/8")	6.35 (1/4")	322	257	404
4.1	15.9	250	0.75	9.5 (3/8")	6.35 (1/4")	346	303	501
5.5	18.4	250	0.75	9.5 (3/8")	6.35 (1/4")	346	303	501
6.5	20.2	300	0.75	9.5 (3/8")	6.35 (1/4")	433	338	496
6.2	18.2	250	0.75	9.5 (3/8")	6.35 (1/4")	346	303	501
5.9	19.9	300	0.75	9.5 (3/8")	6.35 (1/4")	433	338	496
5.7	22	250	1.5	12.7 (1/2")	6.35 (1/4")	345	304	511
6	21	250	1.5	12.7 (1/2")	6.35 (1/4")	345	304	511
8.4	30	300	2.35	12.7 (1/2")	9.5 (3/8")	432	340	488
10.8	40	300	2.35	15.9 (5/8")	9.5 (3/8")	432	340	488
5.9	19.5	250	1.5	12.7 (1/2")	6.35 (1/4")	345	304	511
7.1	23	300	1.5	12.7 (1/2")	9.5 (3/8")	432	340	488
9.1	28.2	300	30	12.7 (1/2")	8 (5/16")	432	340	488
8.8	30	300	2.35	15.9 (5/8")	9.5 (3/8")	432	340	488
13.5	39	350	2.35	15.9 (5/8")	9.5 (3/8")	513	437	608
16	46	350	2.35	15.9 (5/8")	9.5 (3/8")	513	437	608
8.6	30	300	1.5	15.9 (5/8")	9.5 (3/8")	432	340	488
11.5	33	300	1.5	15.9 (5/8")	9.5 (3/8")	432	340	488
6.9	23	300	1.5	12.7 (1/2")	9.5 (3/8")	432	340	488
12.4	65	350	1.5	15.9 (5/8")	9.5 (3/8")	512	436	607
7	31	350	1.5	15.9 (5/8")	9.5 (3/8")	512	436	607
24.4	71	350	1.5	15.9 (5/8")	9.5 (3/8")	512	436	607
11.1	40	350	1.5	15.9 (5/8")	9.5 (3/8")	512	436	607
5.3	18	350	1.5	15.9 (5/8")	9.5 (3/8")	512	436	607
14.4	52	350	2.35	15.9 (5/8")	9.5 (3/8")	512	436	607
5.8	20	420	2.35	15.9 (5/8")	9.5 (3/8")	512	436	607
17.2	53	420	2.35	15.9 (5/8")	9.5 (3/8")	592	540	643
7.8	27	420	2.35	15.9 (5/8")	9.5 (3/8")	592	540	643
14.4	52	350	1.5	15.9 (5/8")	9.5 (3/8")	512	436	607
6.3	26	350	1.5	15.9 (5/8")	9.5 (3/8")	512	436	607
7.8	0	420	3.9	22.2 (7/8")	12.7 (1/2")	592	540	643
10.2 10.3	43 43	420	2.35	22.2 (7/8")	9.5 (3/8")	710	540	685
14.2 14.6	57 59	450	3.9	28.6 (1" 1/8)	9.5 (3/8")	760	608	642
11.1 10.1	45 45	420	2.35	22.2 (7/8")	9.52	591	555	685
3.3 3.6	13.6 13.4	300	2.35	12.7 (1/2")	9.5 (3/8")	432	340	488
4 4.2	16.1 16.5	300	2.35	15.9 (5/8")	9.5 (3/8")	432	340	488
4.4 4.7	19 19	350	2.35	15.9 (5/8")	9.5 (3/8")	513	437	608
5.6 5.5	23 24	350	2.35	15.9 (5/8")	9.5 (3/8")	513	437	608
3.2 3.1	13.2 13.2	300	1.5	12.7 (1/2")	9.5 (3/8")	432	340	488

Related Items:

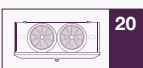
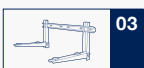
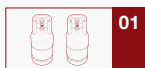


Tecumseh Capacity Data

R404A/R449A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
AET2420ZBR-FZ	0.34	0.42	0.51	0.61	-	-	-	-	-
AET2425ZBR-FZ	0.44	0.55	0.67	0.80	-	-	-	-	-
AET4425ZHR-FZ	-	-	-	-	0.36	0.43	0.51	0.60	0.69
AET4430ZHR-FZ	-	-	-	-	0.44	0.52	0.61	0.70	0.80
AET4440ZHR-FZ	-	-	-	-	0.60	0.71	0.83	0.96	1.09
AET4450ZHR-FZ	-	-	-	-	0.75	0.87	1.01	1.14	1.27
AET4460ZHR-FZ	-	-	-	-	0.98	1.15	1.33	1.53	1.74
AET4470ZHR-FZ	-	-	-	-	1.13	1.33	1.53	1.75	1.98
CAJN2428ZBR-FZ	0.42	0.54	0.67	0.81	-	-	-	-	-
CAJN2432ZBR-FZ	0.52	0.66	0.81	0.97	-	-	-	-	-
CAJN2446ZBR-FZ	0.87	1.10	1.34	1.59	-	-	-	-	-
CAJN2464ZBR-FZ	1.09	1.35	1.63	1.92	-	-	-	-	-
CAJN4517ZHR-FZ	-	-	-	-	2.23	2.63	3.05	3.49	3.95
CAJN4519ZHR-FZ	-	-	-	-	2.79	3.28	3.78	4.29	4.79
CAJN9480ZMHR-FZ	-	-	-	-	1.21	1.44	1.67	1.91	2.16
CAJN9510ZMHR-FZ	-	-	-	-	1.46	1.71	1.97	2.24	2.50
CAJN9513ZMHR-FZ	-	-	-	-	1.77	2.07	2.38	2.67	2.95
FHT2480ZBR-XC	1.95	2.51	3.13	3.80	-	-	-	-	-
FHT2480ZBR-XG	1.82	2.33	2.89	3.50	-	-	-	-	-
FHT2511ZBR-XC	2.67	3.44	4.26	5.14	-	-	-	-	-
FHT4522ZHR-XC	-	-	-	-	3.13	3.75	4.38	4.99	5.55
FHT4522ZHR-XG	-	-	-	-	3.03	3.66	4.30	4.94	5.52
FHT4524ZHR-XC	-	-	-	-	3.40	4.08	4.78	5.50	6.22
FHT4524ZHR-XG	-	-	-	-	3.30	3.98	4.70	5.44	6.17
TAGT2516ZBR-TZ	3.26	4.28	5.40	6.60	-	-	-	-	-
TAGT2522ZBR-TZ	4.04	5.21	6.51	7.92	-	-	-	-	-
TAJN2464ZBR-TZ	1.09	1.34	1.62	1.90	-	-	-	-	-
TAJN4517ZHR-TZ	-	-	-	-	2.24	2.67	3.12	3.58	4.05
TAJN4519ZHR-TZ	-	-	-	-	2.77	3.23	3.71	4.18	4.66

EN13215 Te°C Ta32°C Asp20°C SR3K



R452A /R449A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
AET2420ZBR-FZ	0.31	0.39	0.48	0.58	0.69	-	-	-	-
AET2425ZBR-FZ	0.41	0.51	0.63	0.76	0.90	-	-	-	-
CAJN2432ZBR-FZ	0.46	0.60	0.75	0.91	1.09	-	-	-	-
CAJN2446ZBR-FZ	0.80	1.02	1.25	1.51	1.79	-	-	-	-
CAJN2464ZBR-FZ	1.00	1.26	1.54	1.84	2.15	-	-	-	-
FHT2480ZBR-XC	1.52	1.96	2.43	2.98	3.59	-	-	-	-
FHT2480ZBR-XG	1.56	2.05	2.58	3.17	3.81	-	-	-	-
FHT2511ZBR-XC	2.27	3.01	3.81	4.68	5.61	-	-	-	-
FHT4522ZHR-XC	-	-	1.75	2.27	2.84	3.46	4.11	4.76	5.39
FHT4522ZHR-XG	-	-	1.67	2.15	2.72	3.33	3.96	4.59	5.20
FHT4524ZHR-XC	-	-	1.87	2.45	3.06	3.71	4.40	5.11	5.83
FHT4524ZHR-XG	-	-	1.78	2.34	2.96	3.62	4.32	5.04	5.78
TAGT2516ZBR-TZ	2.84	3.80	4.87	6.03	7.29	-	-	-	-
TAGT2522ZBR-TZ	3.27	4.35	5.57	6.96	8.54	-	-	-	-
TAJN2446ZBR-TZ	0.76	0.97	1.20	1.46	1.73	-	-	-	-
TAJN4517ZHR-TZ	-	-	1.37	1.74	2.14	2.57	3.03	3.51	4.11
TAJN4519ZHR-TZ	-	-	1.76	2.19	2.64	3.12	3.61	4.12	4.63
TAJN9480ZMHR-TZ	-	-	0.68	0.88	1.1	1.35	1.64	1.97	2.34

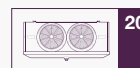
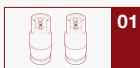
EN13215 Te°C Ta32°C Asp20°C SR3K

R134a/R513A Duty: kW Evap Temperature: C

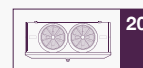
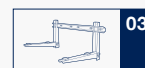
Model	-30	-25	-20	-15	-10	-5	0	5	10
AET4430YHR-FZ	-	-	-	-	0.41	0.51	0.61	0.73	0.85
AET4440YHR-FZ	-	-	-	-	0.52	0.63	0.74	0.87	1.00
AET4456YHR-FZ	-	-	-	-	0.77	0.93	1.10	1.28	1.48
AET4425YHR-FZ	-	-	-	-	0.32	0.40	0.50	0.59	0.70
CAJN4461YHR-FZ	-	-	-	-	0.74	0.90	1.07	1.25	1.43
CAJN4476YHR-FZ	-	-	-	-	0.98	1.23	1.50	1.79	2.10
CAJN4511YHR-FZ	-	-	-	-	1.51	1.82	2.16	2.49	2.83
FHT4518YHR-XC	-	-	-	-	2.33	2.94	3.63	4.38	5.18
FHT4518YHR-XG	-	-	-	-	2.25	2.84	3.50	4.22	5.00
FHT4525YHR-XC	-	-	-	-	2.99	3.76	4.60	5.50	6.44
FHT4525YHR-XG	-	-	-	-	2.92	3.67	4.49	5.38	6.31
TAGT4528YHR-TZ	-	-	-	-	3.05	4.08	5.20	6.38	7.57

EN13215 Te°C Ta32°C Asp20°C SR3K

Related Items:



Model	Condenser	Liquid Receiver	Liquid Receiver + Valve	Valve Kit			Complete Fan Motor	Fan Guard	Electrical Box		Electrical Kit		Overload		Start Capacitor	Mounting Feet
				Option 1	Option 2	Option 3			Option 1	Option 2	Option 1	Option 2	Option 1	Option 2		
AET4425YHR-FZ	8338205	-	8380142	8670201	8670203	-	8668755	-	8681003	-	-	-	-	-	-	8580318
AET4425ZHR-FZ	8338205	-	8380142	8670201	8670203	-	8668755	-	8681003	-	-	-	-	-	-	8580318
AET4430YHR-FZ	8338205	-	8380142	8670201	8670203	-	8668755	-	8681003	-	8655321	8655340	8570636	-	8662658	8680156
AET4430ZHR-FZ	8337203	-	8380142	8670201	8670203	-	8668755	-	8681003	-	-	-	-	-	-	8580319
AET4440YHR-FZ	8337203	-	8380142	8670201	8670204	-	8668753 or 8668755	-	8681003	-	8655322	-	8570602	-	8662662	8680209
AET4440ZHR-FZ	8338229	8380173	8661815	8660528	8683060	-	-	-	8681003	-	-	-	-	-	-	-
AET4450ZHR-FZ	8338229	8380173	8661815	8660528	8683060	-	-	-	8681003	-	-	-	-	-	-	-
AET4460ZHR-FZ	8338219	8380173	8661815	8660528	8683060	-	8668734	8363119	8681003	-	-	-	-	-	-	8580319
AET4456YHR-FZ	8338229	8380173	8661815	8660528	8683060	-	-	-	8681003	-	-	-	8570720	8570721	8662676	-
AET4470ZHR-FZ	8338219	8380173	8661815	8660528	8683060	-	8668734	8363119	8681003	-	-	-	8571538	-	8565103	-
CAJN2428ZBR-FZ	8338283	8380182	8661819	8683060	-	-	8551136	-	-	-	-	-	8571306	8571524	8565106	-
CAJN2432ZBR-FZ	8338283	8380182	8661819	8683060	-	-	8551136	-	-	-	-	-	8571316	8571500	8565445	-
CAJN2446ZBR-FZ	8338284	8380184	8661827	8683053	-	-	8551137	-	-	-	-	-	8571305	8571515	8565443	-
CAJN2464ZBR-FZ	8338284	8380184	8661828	8683053	8683059	-	8551137	-	-	-	-	-	8571519	-	8565103	-
CAJN4461YHR-FZ	8338229	8380182	8661819	8683060	-	-	8668733	-	-	-	8655422	-	8571315	8571508	8565443	8541161
CAJN4476YHR-FZ	8338284	8380182	8661819	8683053	-	-	8551137	-	-	-	8655420	-	8571300	8571506	8565407	8541161
CAJN4492YHR-FZ	8338284	8380184	8661827	8683053	-	-	8551137	-	-	-	8655418	-	8571305	8571515	8565400	8541161
CAJN4511YHR-FZ	8338284	8380184	8661828	8683053	8683059	-	8551137	-	-	-	-	-	8571317	8571502	8565103	-
CAJN4517ZHR-FZ	8338285	8380184	8661828	8683053	8683059	-	8551135	-	-	-	-	-	8571327	8571521	8565411	8541163
CAJN4519ZHR-FZ	8338285	8380184	8661828	8683053	8683059	-	8551135	-	-	-	-	-	8571452	-	8565400	-
CAJN9513ZMHR-FZ	8338284	8380182	8661820	8683053	8683059	-	8551137	-	-	-	-	-	8571322	8571507	8565414	-
CAJN9480ZMHR-FZ	8338284	8380182	8661819	8683053	-	-	8551137	-	-	-	-	-	8571314	8571520	8565407	8541168
FHT2480ZBR-XC	8338285	8380182	-	8683013	8683053	8683010	8551116	-	8627016	8681290	8655452	-	-	-	8565401	-
FHT2480ZBR-XG	8338285	8380182	-	8683013	8683053	-	8551116	-	8627016	8681299	-	-	-	-	-	-
FHT2511ZBR-XC	8338285	8380182	-	8683013	8683053	-	8551116	-	8627016	8681299	8655231	-	-	-	8565407	-
FHT4518YHR-XC	8338297	8380182	-	8683013	8683053	-	8551116	-	8627016	8681299	8655233	-	-	-	8565400	-
FHT4518YHR-XG	8338297	8380182	-	8683013	8683053	-	8551116	-	8627016	8681299	-	-	-	-	-	-
FHT4522ZHR-XC	8338297	8380184	-	8683013	8683053	-	8551116	-	8627016	8681299	8655234	-	-	-	8565407	-
FHT4522ZHR-XG	8338297	8380184	-	8683013	8683053	-	8551116	-	8627016	8681299	-	-	-	-	-	-
FHT4524ZHR-XG	8338310	8380184	-	8683013	8683053	-	8551124	-	8627016	8681299	-	-	-	-	-	-
FHT4525YHR-XC	8338297	8380182	-	8683013	8683053	-	8551116	-	8627016	8681299	8655236	-	-	-	8565102	8541163
FHT4525YHR-XG	8338297	8380182	-	8683013	8683053	-	8551116	-	8627016	8681299	-	-	-	-	-	-
FHT4532ZHR-XC	8338311	8380159	-	8683014	8683053	-	8551124	-	8627016	8681299	8655151	-	-	-	8565103	-
FHT4532ZHR-XG	8338311	8380159	-	8683014	8683053	-	8551124	-	8627016	8681299	-	-	-	-	-	-
TAGT2516ZBR-TZ	8338312	8380184	-	8683014	8683046	8683053	8551124	-	8627016	8681202	-	-	-	-	-	-
TAGT2522ZBR-TZ	8338326	8380159	8661559	8683046	8683053	8683140	8551141	-	8627016	8681202	-	-	-	-	-	-
TAGT4526YHR-TZ	8338310	8380184	-	8683014	8683046	8683053	8551124	-	8627016	8681202	-	-	-	-	-	-
TAJN2464ZBR-TZ	8338284	8380184	8661828	8683053	8683059	-	8551137	-	8627015	-	-	-	-	-	-	-
TAJN4519ZHR-TZ	8338285	8380184	8661828	8683053	8683059	-	8551135	-	-	-	-	-	-	-	-	-





Tecumseh

Pre-equipped condensing units



Ready to connect
time-saving



Tecumseh Reliability
100% components controlled



Complete equipment:



sight glass



HP/BP pressure switch to
manual and automatic reset



dryer filter



fitting to be soldered
(CAJN/TAJN units)



Cooling for a Better Tomorrow™
sales.eu@tecumseh.com - www.tecumseh.com

* Pre-Equipped condensing units available to order.



LHE Series with ECOLINE Compressors

The components of the air cooled condensing units, which include efficient ECOLINE compressors, EC fans and system-optimised condensing heat exchangers (mini-channel), are optimally coordinated and boast a compact and robust design, facilitating a whole host of applications with a large capacity range.

They conform with the Ecodesign Directive and can also be used with low-GWP refrigerants, making them future-proof. They're available as a modular system in several extension phases and with individual and tandem compressors.



Available Now 35 Models available as standard
(Varying options available at additional cost and on request)



Efficiency

- Highly efficient ECOLINE compressors
- Speed-controlled EC fans for energy-saving and low noise operation
- System-optimised mini-channel condensing heat exchanger for high heat transfer rates and small refrigerant charge

Future-Proof

- Conforms with Ecodesign
- HFO Blend ready
- Available for numerous refrigerants

Sophisticated Concept

- Robust design and compact dimensions
- Service-friendly thanks to easy access to system components
- Reduced noise level thanks to sound-optimised airflow

Extensive Range of Applications

- Design for high outside temperatures (> 43 °C)
- Design with tandem compressor
- Air conditioning, medium & low temperature apps

Accessories

- Weather protective housing
- Oil separator with check valve
- Start unloading
- Capacity control at the compressor (CRII)



Contact our
Technical Department
for more information

Bitzer Software

Selection-software for the reliable selection of products from the broad product range of BITZER

The BITZER software helps you to design systems and select the right items from our extensive range of products. You receive all the desired information, technical specifications, calculation results and individually designed performance tables for compressors as a print-out or in PDF format. The program is very user friendly, available in several languages and offers lots of additional information.

**The BITZER software is also available as an online version.
It's compatible with all browsers and always up to date.**

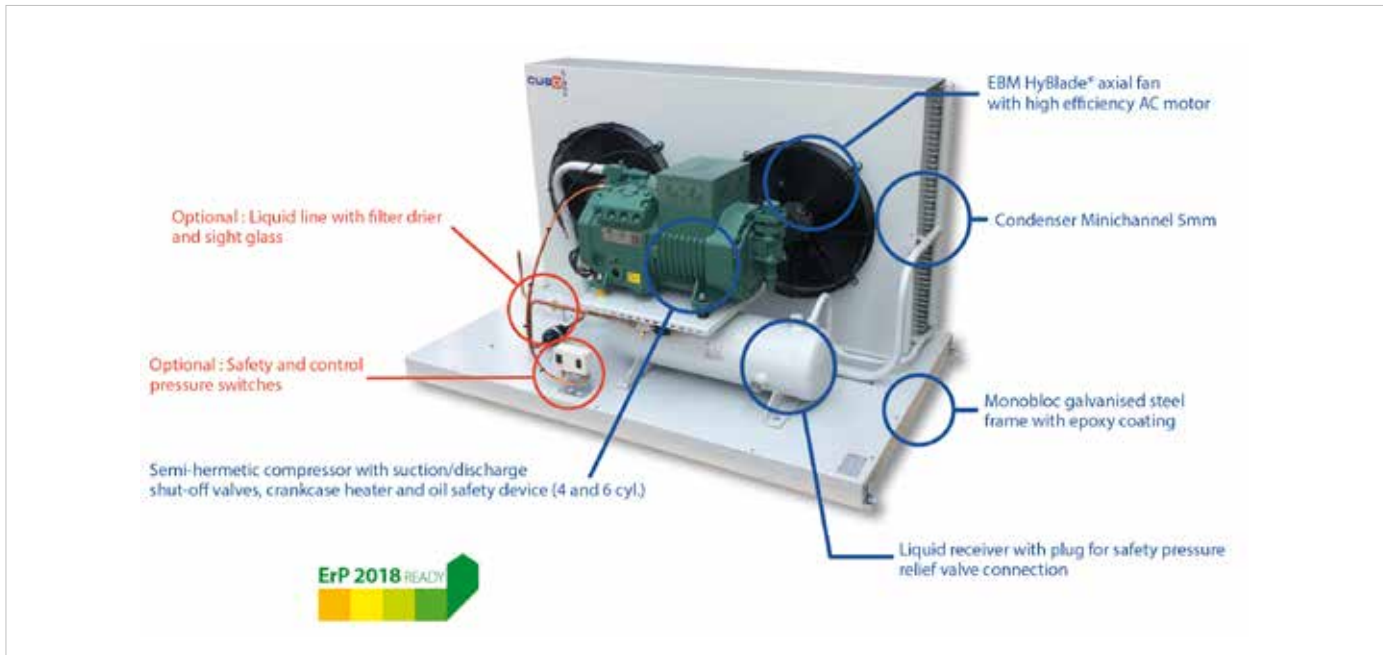


SCM REF

SCM CUBO Light

The CUBO Light range of semi-hermetic based condensing units offer a wide range of customised condensing units using Bitzers latest range of compressors. Covering all current refrigerants each unit can be tailored to match your specific requirements. A full range of metal unit housings is also available.





Available in 5 variations;

AMZ – Medium evaporating temperature application

Ambient temperature up to +32°C - Optimized for R449A and qualified for R134a, R404A and R407F.

ALZ – Low evaporating temperature application

Ambient temperature up to +32°C - Optimized for R449A and qualified for R404A and R407F.

AHZ – Medium evaporating temperature application

High ambient temperature up to +38°C - Optimized for R449A and qualified for R134a, R404A and R407F.

AMY – Medium evaporating temperature application

Ambient temperature up to +32°C - Optimized for R134a.

AHY – Medium evaporating temperature application

High ambient temperature up to +38°C - Optimized for R134a

Standard Components

- Semi-hermetic compressor with suction/discharge shut-off valves, crankcase heater and oil safety device (4 and 6 cyl.)
- Liquid receiver with plug for safety pressure relief valve connection
- Monobloc galvanised steel frame with epoxy coating
- Condenser Minichannel 5mm
- EBM HyBlade® axial fan with high efficiency AC motor

Optional

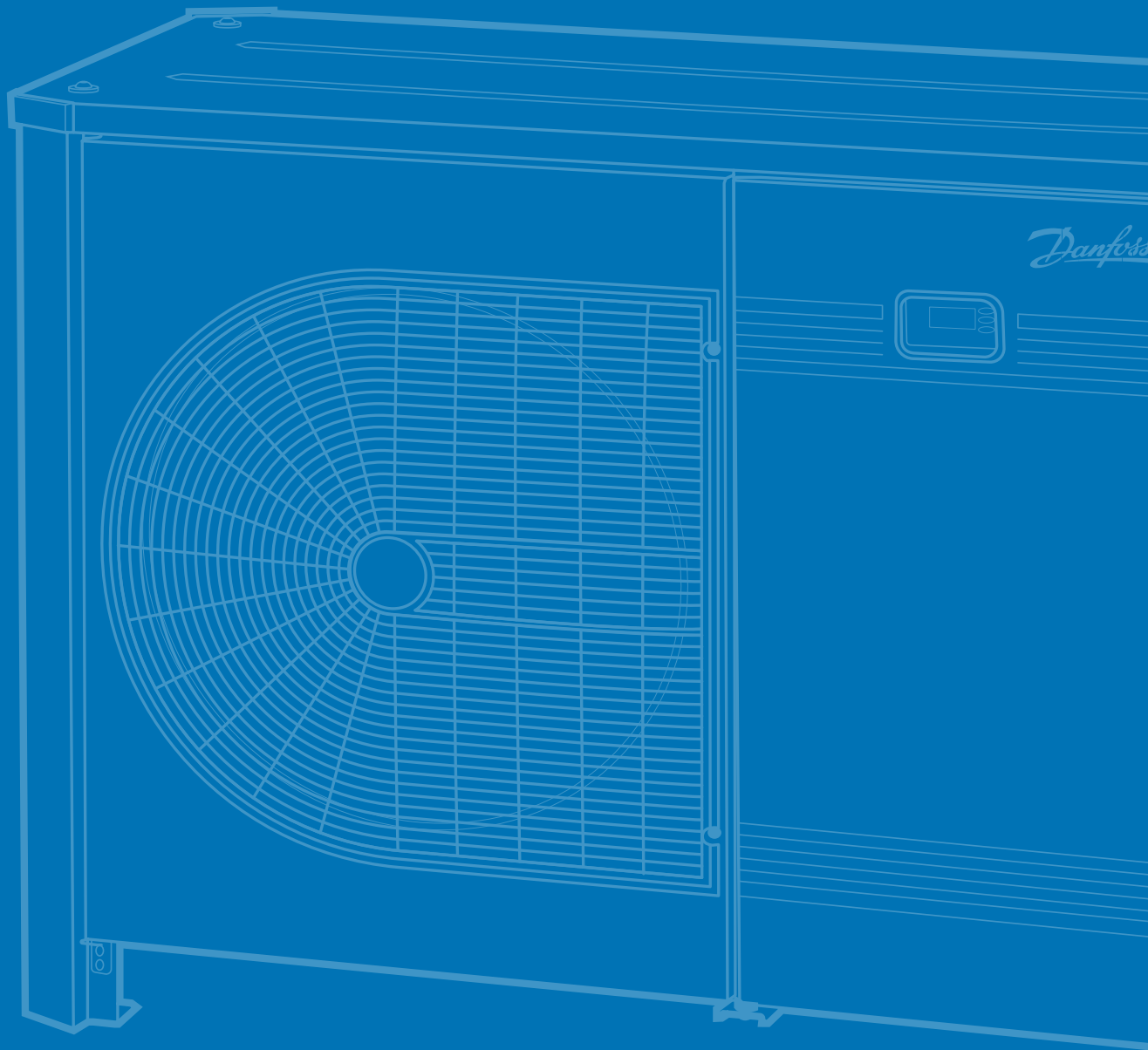
- Liquid line with filter drier & sight glass
- Safety and control pressure switches
- EC fan motors
- Suction Accumulator
- Single or double pressure relief valve fitted on liquid receiver
- Oil separator
- Compressor capacity control
- PHE additional condenser for desuper heater function, hot water production or back-up tap water cooled condenser





SECTION NINETEEN

Packaged Condensing Units



Contents



PAGE 425

Danfoss Optyma™



Match your application needs – every time. With the Danfoss Optyma™ outdoor and indoor condensing unit, with MBP and LBP refrigeration, there is a solution for your exact application needs. Featuring multiple lower-GWP refrigerants, high energy performance ratios and trouble-free installation, they help reduce running costs and increase cooling quality for the safer protection of perishables. Make the optimal choice from our extensive range of outdoor and indoor condensing units.

Optyma Slim™	428	Optyma Plus™	438	Optyma Inverter™	446
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TEV Marstair



A comprehensive range of condensing units with medium and low temperature products suitable for cold room and retail display cabinet applications, as well as air-conditioning condensing units suitable for air handling units. Part of our refrigeration range, the MRC+ and MRC+ LT units offer quiet, efficient and slim profile units which will operate free standing or wall mounted. All units are supplied with a nitrogen charge so the installer can select the appropriate refrigerant for the application. Designed and built in the UK.



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Bitzer Condensing Units



The Bitzer packaged condensing units use Semi-Hermetic compressors that are suitable for both MBP and LBP systems, providing a solution for all systems with a duty range stretching from 3.21kW – 22.2kW at MBP and 1.26kW – 11.77kW at LBP. Suitable for use with various low GWP refrigerants and A2L ready, these units offer high-energy performance ratios and come fitted with various unique components as standard making these units fantastic value for money. The units are easy to install whilst reducing the costs for the end-user.

Bitzer ECOLINE	462	Bitzer ECOSTAR	468
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SCM Frigo CUBO²



SCM leads the way in sustainable refrigeration by developing a range of CO₂ condensing units suitable for a wide range of applications. With a GWP of 1, R744 systems provide a long term environmentally friendly solution, ideal for any end user looking for a long term financial investment. All SCM Cubo₂ units utilise Carel control systems to give lower energy consumption than HFC solutions. Specialist CO₂ training also offered through Beijer Ref UK and Cool Concerns (see page 482).

CUBO₂ Smart	476	CUBO₂ Aqua	478	CUBO₂ Plus	480
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Danfoss Optyma™ Packaged Condensing Units

The Danfoss Optyma™ packaged condensing units are suitable for both MBP and LBP systems, providing a solution for all systems with a duty stretching from 0.8kW – 14.9kW at MBP.

Suitable for use with various low GWP refrigerants these units offer high energy performance ratios and come fitted with various key components as standard. The units are

easy to install whilst reducing the costs for the end-user. Available in three variants:

- **Optyma Slim** The compact & cost-effective variant
- **Optyma Plus** High specification version reducing running costs
- **Optyma Inverter** The Premium unit. Fast to install accurate in operation



Range Overview



Benefits for the Contractor

- Simple and fast selection and installation, reduced maintenance time
- Models compatible with multiple lower GWP refrigerants
- Reduced refrigerant costs thanks to micro-channel condenser inside

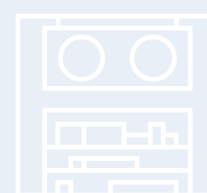


Benefits for the End-User

- Increased food safety and longer products shelf life
- Units suitable for residential areas thanks to low sound level operation
- Reduced life cycle costs of refrigeration equipment thanks to highly efficient units

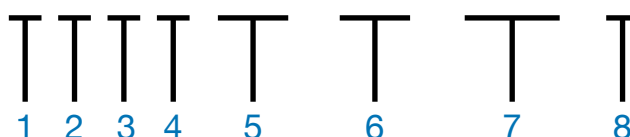
MBP & LBP Applications

- Cold rooms, display cabinets in convenience stores, mini markets, restaurants, fisheries, butcheries, bakeries, florists, laboratories
- Wine cellars
- Milk cooling
- Industrial processes
- Dairy and general food storage



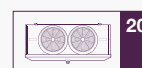
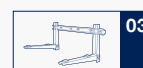
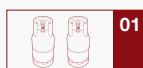
Nomenclature

OP - MSXM034 ML W05 G



OP = Optyma

1	Application: M = MBP; L = LBP
2	Condensing unit family: S = Slim Pack / P = OP Plus and PP Plus INVERTER
3	Refrigerant: B = R404A/R507, R449A, R452A; H = R404A/R507 ; G = R134a ; Q = R452A, R404A/R507 X = R404A/R507, R134a, R407A, R407F, R448A, R449A, R452A Y = R404A/R507, R449A ; P = R448A, R449A, R407A, R407A, R404A/507 O = R452A, R404A/R507, R448A, R449A
4	M = Microchannel heat condenser
5	Displacement in cm ³ : Example 034= 34cm ³
6	Compressor platform: such as VVL = variable speed scroll VLZ
7	Version: W05/W09 : Optyma™ Slim Pack P00 : Optyma™ Plus P01 : Optyma™ INVERTER P02 : Optyma™ Plus with liquid injection
8	Electrical code: G = 230V/1-phase compressor & fan E = 400v/3-phase compressor & 230V/1-phase fan



Specification Overview



	Optyma Slim	Optyma Plus	Optyma Inverter
IP Level	IP54	IP54	IP54
Compressor Technology	Reciprocating/Scroll	Reciprocating/Scroll	Variable Speed Scroll
Control Box	Yes	Yes	Yes
Microchannel Condenser	Yes	Yes	Yes
Fan Speed Controller	-	Yes	Yes
Main Switch (Circuit Breaker)	-	Yes	Yes
Filter Drier	Yes	Yes	Yes
Sightglass	Yes	Yes	Yes
Crankcase Heater	Yes	Yes	Yes
HP/LP Adjustable Pressostat	Auto/Manual Reset Mode	Electronic	Electronic
Fall Safe Mini-Pressostat	-	Mechanical	Mechanical
Access Door(s)	-	Yes	Yes
Acoustic Insulation	-	Yes	Yes
Electronic Controller	-	Yes	Yes
Network Connectivity	-	Yes	Yes
Stack Mounting	-	Yes	-
Oil Separator	-	-	Yes
Net Weight in kg	B1 Housing: from 50.4 to 53 B2 Housing: from 61.5 to 77 B3 Housing: from 76 to 79	H1 Housing: from 49 to 53 H2 Housing: from 80 to 94 H3 Housing: from 101 to 107 H4 Housing: 169	124 & 125
Dimensions in mm (height x width x depth)	B1 Housing: 530 x 910 x 364 B2 Housing: 690 x 1097 x 464 B3 Housing: 825 x 1105 x 464	H1 Housing: 605 x 941 x 406 H2 Housing: 813 x 1090 x 480 H3 Housing: 965 x 1441 x 531 H4 Housing: 966 x 1835 x 650	965 x 1406 x 481

Range by Cooling Capacity & Refrigerant

Min/Max Cooling capacity range (kW)	Optyma Slim	Optyma Plus	Optyma Inverter
Medium Temperature (MBP)			
R449A	0.8 - 10.2	0.7 - 14.9	1.7 - 8.3
R448A	3.3 - 10.2	3.3 - 14.49	1.7 - 8.3
R134a	0.6 - 6.6	1.7 - 10.2	-
R513A	0.62 - 7.0	1.7 - 10.3	-
R407A	3.3 - 9.9	3.3 - 14.6	1.7 - 8.4
R407F	3.5 - 10.2	3.5 - 15.5	1.8 - 9
R452A	1.5 - 10.8	1.5 - 16.2	-
Low Temperature (LBP)			
R452A	0.4 - 3.3	0.4 - 6.1	-

Nominal duty at following conditions: MBP: Ambient temp = 32°C, Evap temp = -10°C **LBP:** Ambient temp = 32°C, Evap temp = -35°C

Related Items:



Danfoss Optyma™ Slim

“Light on refrigerant, **heavy on efficiency**”

2.9kg

Less refrigerant on bigger sizes for more savings

Micro Channel Heat Exchanger

Micro-channel heat exchanger is light and easy to clean.

Corrosion Resistant

Resistance to corrosion of the heat exchanger and housing prolongs the lifetime of the unit.

Accessible Fan

Accessible fan and condenser for easy maintenance.

Quick Connections

Quick connections accelerate installation.



Filter Drier & Sight Glass

Filter drier protects the unit from moisture, acids and solid particles. Built in sight glass to aid maintenance tasks. Flare connections simplify maintenance.

Schrader Valve

Thanks to the Schrader valve the unit is compatible with various fan control devices.

Receiver With Shut-Off Valve

Receiver with shut-off valve makes servicing easier.

Accessible Service Ports

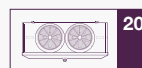
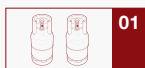
Accessible service ports on service valves (suction and liquid).

Dual Pressure Control

Dual KP17WB pressure control for enhanced safety.

Crankcase Heater

Crankcase heater protects the compressor when operating under cold weather conditions.



Specification



Quick & Safe, Installation & Service

Enjoy fast and easy installation with the service valves and quick connections. Additionally, the easy-to-clean Microchannel condenser saves you time and effort on servicing.



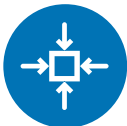
High SEPR (Seasonal Energy Performance Ratio)

All models are highly efficient and well above the thresholds required by the EcoDesign 2018 standard.



Suitable for Residential Areas

Optyma Slim units operates up to 7 dB(A) lower than other packaged units of the same capacity and the fan-speed controller further reduces the sound level by up to 4 dB(A).



Optimised Footprint for Floor & Wall Mounting

Thanks to its slim design and low weight, it is easy to transport and handle during installation - particularly for wall mounting.



Micro Channel Heat Exchanger

The design results in a reduction of refrigerant charge which reduces the amount of refrigerant required, thus saving money. The material is corrosion resistant which makes the units suitable for use in coastal areas and provides extensive service. The physical design is slimmer than traditional condensing units which results in the unit being easier to clean & lighter weight.



Scroll / Reciprocating Technology

Scroll compressors (fitted to the majority of units) provide low noise levels allowing installation in and difficult areas. All compressors use the latest designs to ensure efficient operation therefore reducing running costs. They are also designed to operate using a variety of low GWP refrigerants protecting your investment with long life.



Unit Design

Each unit has been designed to allow easy access to all components. This ease of access allows components to be worked on as required saving service costs. The design uses components that aid serviceability; items such as shut off valves on the receiver, service ports on service valves, and flare connection on the filter drier.

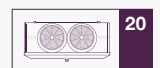
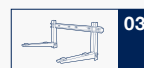
Related Items:



Product Range



Condensing Unit Model	Description	Part No.
R404A/R507, R134a, R407A, R407F, R448A, R513A, R449A, R452A		
OP-MSXM034MLW05G	Danfoss Optyma Slim OP-MSXM034MLW05G - 1ph	114X706100
OP-MSXM034MLW05E	Danfoss Optyma Slim OP-MSXM034MLW05E - 3ph	114X706200
OP-MSXM044MLW05G	Danfoss Optyma Slim OP-MSHM044MLW05G - 1ph	114X716100
OP-MSXM044MLW05E	Danfoss Optyma Slim OP-MSHM044MLW05E - 3ph	114X716200
OP-MSXM046MLW05G	Danfoss Optyma Slim OP-MSXM046MLW05G - 1ph	114X706300
OP-MSXM046MLW05E	Danfoss Optyma Slim OP-MSXM046MLW05E - 3ph	114X706400
OP-MSXM057MLW05G	Danfoss Optyma Slim OP-MSXM057MLW05G - 1ph	114X706500
OP-MSXM057MLW05E	Danfoss Optyma Slim OP-MSXM057MLW05E - 3ph	114X706600
OP-MSXM068MLW05G	Danfoss Optyma Slim OP-MSXM068MLW05G - 1ph	114X706700
OP-MSXM068MLW05E	Danfoss Optyma Slim OP-MSXM068MLW05E - 3ph	114X706800
OP-MSXM080MLW05G	Danfoss Optyma Slim OP-MSXM080MLW05G - 1ph	114X706900
OP-MSXM099MLW05E	Danfoss Optyma Slim OP-MSXM099MLW05E - 3ph	114X707100
OP-MSXM108MLW05E	Danfoss Optyma Slim OP-MSXM108MLW05E - 3ph	114X707200
R404A/R507, R449A, R452A		
OP-MSBM018AJW05G	Danfoss Optyma Slim OP-MSBM018AJW05G - 1ph	114X711100
OP-MSBM024AJW05G	Danfoss Optyma Slim OP-MSBM024AJW05G - 1ph	114X709700
OP-MSBM026AJW05G	Danfoss Optyma Slim OP-MSBM026AJW05G - 1ph	114X708300
OP-MSBM026AJW05E	Danfoss Optyma Slim OP-MSBM026AJW05E - 3ph	114X709300
OP-MSBM034AJW05G	Danfoss Optyma Slim OP-MSBM034AJW05G - 1ph	114X708400
OP-MSBM034AJW05E	Danfoss Optyma Slim OP-MSBM034AJW05E - 3ph	114X709400
R404A/R507, R449A		
OP-MSYM009MYW05G	Danfoss Optyma Slim OP-MSYM009MYW05G - 1ph	114X710800
OP-MSYM012MPW05G	Danfoss Optyma Slim OP-MSYM012MPW05G - 1ph	114X710900
OP-MSYM014MPW05G	Danfoss Optyma Slim OP-MSYM014MPW05G - 1ph	114X711000
R134a, R513A		
OP-MSGM012SCW05G	Danfoss Optyma Slim OP-MSGM012SCW05G - 1ph	114X709900
OP-MSGM015SCW05G	Danfoss Optyma Slim OP-MSGM015SCW05G - 1ph	114X710000
OP-MSGM018SCW05G	Danfoss Optyma Slim OP-MSGM018SCW05G - 1ph	114X710100
OP-MSGM021SCW05G	Danfoss Optyma Slim OP-MSGM021SCW05G - 1ph	114X710200
OP-MSGM026AJW05G	Danfoss Optyma Slim OP-MSGM026AJW05G - 1ph	114X710300
OP-MSGM033AJW05G	Danfoss Optyma Slim OP-MSGM033AJW05G - 1ph	114X710400
R452A, R404A/R507		
OP-LSQM014MPW05G	Danfoss Optyma Slim OP-LSQM014MPW05G - 1ph	114X710600
OP-LSQM018MPW05G	Danfoss Optyma Slim OP-LSQM018MPW05G - 1ph	114X710700
OP-LSQM026AJW05G	Danfoss Optyma Slim OP-LSQM026AJW05G - 1ph	114X708500
OP-LSQM034AJW05G	Danfoss Optyma Slim OP-LSQM034AJW05G - 1ph	114X708600
OP-LSQM048NTW05G	Danfoss Optyma Slim OP-LSQM048NTW05G - 1ph	114X708700
OP-LSQM048NTW05E	Danfoss Optyma Slim OP-LSQM048NTW05E - 3ph	114X708800
OP-LSQM067LLW05E	Danfoss Optyma Slim OP-LSQM067LLW05E - 3ph	114X709100
OP-LSQM068NTW05G	Danfoss Optyma Slim OP-LSQM068NTW05G - 1ph	114X708900
OP-LSQM068NTW05E	Danfoss Optyma Slim OP-LSQM068NTW05E - 3ph	114X709000
OP-LSQM074FHW05G	Danfoss Optyma Slim OP-LSQM074FHW05G - 1ph	114X709500
OP-LSQM074FHW05E	Danfoss Optyma Slim OP-LSQM074FHW05E - 3ph	114X709600
OP-LSQM084LLW05E	Danfoss Optyma Slim OP-LSQM084LLW05E - 3ph	114X709200
OP-LSQM098LLW05E	Danfoss Optyma Slim OP-LSQM098LLW05E - 3ph	114X707500



R448A Duty: kW Evap Temperature: C


Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MSXM034MLW05G	-	1.72	2.19	2.73	3.35	4.05	4.85	5.73	6.71
OP-MSXM034MLW05E	-	1.72	2.19	2.73	3.34	4.04	4.83	5.72	6.70
OP-MSXM046MLW05G	-	2.32	2.94	3.66	4.47	5.39	6.42	7.57	8.84
OP-MSXM046MLW05E	-	2.30	2.93	3.63	4.44	5.35	6.36	7.48	8.72
OP-MSXM057MLW05G	-	2.81	3.55	4.39	5.34	6.40	7.58	8.86	10.26
OP-MSXM057MLW05E	-	2.70	3.47	4.32	5.28	6.33	7.59	8.75	10.28
OP-MSXM068MLW05G	-	3.50	4.44	5.52	6.75	8.14	9.71	11.45	13.38
OP-MSXM068MLW05E	-	3.54	4.48	5.55	6.77	8.16	9.72	11.45	13.38
OP-MSXM080MLW05G	-	4.08	5.16	6.38	7.74	9.27	10.97	12.83	14.86
OP-MSXM080MLW05E	-	4.14	5.21	6.42	7.80	9.34	11.07	12.97	15.05
OP-MSXM099MLW05E	-	4.98	6.33	7.86	9.58	11.50	13.63	15.96	18.50
OP-MSXM108MLW05E	-	5.35	6.76	8.36	10.16	12.18	14.41	16.86	19.52

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R449A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MSYM009MYW05G	-	-	-	0.61	0.80	1.00	1.22	1.44	-
OP-MSYM012MPW05G	-	-	-	0.85	1.09	1.35	1.62	1.90	-
OP-MSYM014MPW05G	-	-	-	0.90	1.15	1.42	1.71	2.03	-
OP-MSBM018AJW05G	-	-	0.85	1.13	1.47	1.87	2.34	2.89	3.52
OP-MSBM024AJW05G	-	-	1.04	1.41	1.85	2.36	2.96	3.65	4.43
OP-MSBM026AJW05G	-	-	1.20	1.59	2.04	2.58	3.20	3.92	4.73
OP-MSBM026AJW05E	-	-	1.17	1.57	2.05	2.59	3.23	3.95	4.78
OP-MSBM034AJW05G	-	-	1.50	2.00	2.58	3.25	4.01	4.88	5.86
OP-MSBM034AJW05E	-	-	1.50	1.98	2.54	3.19	3.92	4.76	5.70
OP-MSXM034MLW05G	-	1.72	2.19	2.73	3.35	4.05	4.84	5.73	6.71
OP-MSXM034MLW05E	-	1.72	2.18	2.72	3.34	4.04	4.83	5.72	6.70
OP-MSXM046MLW05G	-	2.32	2.94	3.65	4.46	5.38	6.42	7.57	8.84
OP-MSXM046MLW05E	-	2.30	2.92	3.63	4.43	5.34	6.35	7.48	8.72
OP-MSXM057MLW05G	-	2.80	3.55	4.39	5.33	6.39	7.57	8.86	10.26
OP-MSXM057MLW05E	-	2.69	3.46	4.32	5.27	6.32	7.48	8.75	10.11
OP-MSXM068MLW05G	-	3.48	4.43	5.51	6.74	8.13	9.70	11.45	13.38
OP-MSXM068MLW05E	-	3.53	4.47	5.54	6.76	8.15	9.71	11.45	13.37
OP-MSXM080MLW05G	-	4.06	5.14	6.36	7.73	9.26	10.96	12.82	14.86
OP-MSXM080MLW05E	-	4.12	5.19	6.41	7.78	9.33	11.06	12.96	15.05
OP-MSXM099MLW05E	-	4.96	6.31	7.84	9.57	11.49	13.62	15.95	18.49
OP-MSXM108MLW05E	-	5.33	6.74	8.34	10.14	12.16	14.39	16.85	19.52

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K




High SEPR/COP Cuts Energy Costs

E.g. in a coldroom where fruit & vegetables are stored and with 2.7kW of cooling capacity. Optyma™ Slim Pack MBP units vs equivalent unit in the market.

Annual energy consumption saved: 2,391 kWh
Savings based on cost of energy in the UK: £0.13 / 1 kWh = 2,391 x 0.13 = £311.00

£311 annual electricity savings made by your customer in the UK



* Source: Danfoss



Capacity Data

R407A Duty: kW Evap Temperature: C

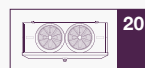
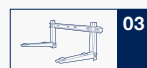
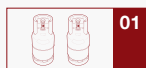
Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MSXM034MLW05G	-	-	-	2.68	3.32	4.06	4.91	5.87	6.94
OP-MSXM034MLW05E	-	-	-	2.65	3.28	4.02	4.86	5.81	6.86
OP-MSXM046MLW05G	-	-	-	3.51	4.34	5.28	6.34	7.51	8.80
OP-MSXM046MLW05E	-	-	-	3.45	4.27	5.20	6.24	7.40	8.67
OP-MSXM057MLW05G	-	-	-	4.19	5.17	6.26	7.47	8.80	10.24
OP-MSXM057MLW05E	-	-	-	4.12	5.09	6.17	7.36	8.68	10.10
OP-MSXM068MLW05G	-	-	-	5.37	6.58	7.98	9.58	11.39	13.41
OP-MSXM068MLW05E	-	-	-	5.41	6.63	8.04	9.66	11.48	13.51
OP-MSXM080MLW05G	-	-	-	6.09	7.43	8.98	10.74	12.73	14.92
OP-MSXM080MLW05E	-	-	-	6.16	7.52	9.09	10.87	12.88	15.09
OP-MSXM099MLW05E	-	-	-	7.36	9.14	11.16	13.42	15.93	18.67
OP-MSXM108MLW05E	-	-	-	7.93	9.84	11.99	14.39	17.04	19.92

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R452A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-LSQM014MPW05G	0.48	0.59	0.71	0.83	0.96	-	-	-	-
OP-LSQM018MPW05G	0.52	0.66	0.81	0.97	1.14	-	-	-	-
OP-LSQM026AJW05G	0.78	1.03	1.31	1.63	1.99	-	-	-	-
OP-LSQM034AJW05G	1.02	1.33	1.69	2.10	2.58	-	-	-	-
OP-LSQM048NTW05G	1.30	1.71	2.18	2.70	3.27	-	-	-	-
OP-LSQM048NTW05E	1.27	1.65	2.08	2.57	3.10	-	-	-	-
OP-LSQM067LLW05E	2.91	3.66	4.53	5.54	6.70	-	-	-	-
OP-LSQM068NTW05G	1.88	2.38	2.91	3.49	4.08	-	-	-	-
OP-LSQM068NTW05E	1.91	2.41	2.94	3.47	3.99	-	-	-	-
OP-LSQM074FHW05G	1.79	2.35	2.99	3.69	4.47	-	-	-	-
OP-LSQM074FHW05E	1.65	2.15	2.71	3.30	3.94	-	-	-	-
OP-LSQM084LLW05E	3.51	4.33	5.28	6.36	7.59	-	-	-	-
OP-LSQM098LLW05E	4.08	5.01	6.08	7.30	8.65	-	-	-	-
OP-MSXM034MLW05G	-	1.80	2.24	2.75	3.33	4.00	4.74	5.58	6.49
OP-MSXM034MLW05E	-	1.79	2.22	2.73	3.31	3.97	4.71	5.53	6.44
OP-MSXM046MLW05G	-	2.40	3.01	3.69	4.47	5.34	6.31	7.38	8.54
OP-MSXM046MLW05E	-	2.37	2.97	3.67	4.45	5.34	6.32	7.41	8.60
OP-MSXM057MLW05G	-	2.97	3.73	4.58	5.54	6.60	7.78	9.06	10.45
OP-MSXM057MLW05E	-	2.94	3.68	4.52	5.47	6.53	7.70	8.99	10.40
OP-MSXM068MLW05G	-	3.66	4.54	5.55	6.70	8.01	9.47	11.08	12.86
OP-MSXM068MLW05E	-	3.64	4.51	5.53	6.70	8.02	9.51	11.17	12.99
OP-MSXM080MLW05G	-	4.16	5.21	6.42	7.78	9.31	11.00	12.87	14.91
OP-MSXM080MLW05E	-	4.18	5.22	6.41	7.76	9.27	10.96	12.81	14.84
OP-MSXM099MLW05E	-	5.23	6.49	7.94	9.58	11.41	13.43	15.66	18.08
OP-MSXM108MLW05E	-	5.57	6.96	8.54	10.32	12.31	14.51	16.92	19.54
OP-MSBM018AJW05G	-	0.65	0.86	1.11	1.39	1.71	2.08	2.50	2.96
OP-MSBM024AJW05G	-	0.78	1.06	1.39	1.77	2.20	2.69	3.24	3.84
OP-MSBM026AJW05G	-	0.93	1.22	1.56	1.95	2.40	2.90	3.46	4.08
OP-MSBM026AJW05E	-	0.86	1.18	1.54	1.95	2.40	2.91	3.48	4.11
OP-MSBM034AJW05G	-	1.14	1.54	2.00	2.51	3.08	3.73	4.44	5.22
OP-MSBM034AJW05E	-	1.16	1.55	1.99	2.48	3.04	3.66	4.35	5.11

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K



R407F Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MSXM034MLW05G	-	-	-	2.88	3.56	4.34	5.23	6.24	7.35
OP-MSXM034MLW05E	-	-	-	2.82	3.48	4.25	5.12	6.11	7.21
OP-MSXM046MLW05G	-	-	-	3.77	4.65	5.64	6.75	7.97	9.31
OP-MSXM046MLW05E	-	-	-	3.70	4.57	5.55	6.64	7.85	9.17
OP-MSXM057MLW05G	-	-	-	4.49	5.52	6.67	7.94	9.32	10.80
OP-MSXM057MLW05E	-	-	-	4.37	5.37	6.49	7.73	9.09	10.55
OP-MSXM068MLW05G	-	-	-	5.79	7.05	8.52	10.19	12.07	14.16
OP-MSXM068MLW05E	-	-	-	5.83	7.11	8.59	10.27	12.17	14.27
OP-MSXM080MLW05G	-	-	-	6.55	7.96	9.58	11.42	13.48	15.74
OP-MSXM080MLW05E	-	-	-	6.57	7.99	9.61	11.46	13.52	15.80
OP-MSXM099MLW05E	-	-	-	7.89	9.77	11.88	14.24	16.84	19.69
OP-MSXM108MLW05E	-	-	-	8.24	10.19	12.37	14.81	17.49	20.41

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R134a Duty: kW Evap Temperature: C

Model	-30	-25	-25	-15	-10	-5	0	5	10
OP-MSXM034MLW05G	-	-	-	1.71	2.18	2.72	3.33	4.01	4.78
OP-MSXM034MLW05E	-	-	-	1.71	2.16	2.68	3.28	3.97	4.75
OP-MSXM046MLW05G	-	-	-	2.31	2.93	3.63	4.44	5.34	6.34
OP-MSXM046MLW05E	-	-	-	2.33	2.92	3.61	4.41	5.32	6.34
OP-MSXM057MLW05G	-	-	-	2.80	3.53	4.37	5.32	6.39	7.58
OP-MSXM057MLW05E	-	-	-	2.80	3.53	4.36	5.32	6.39	7.59
OP-MSXM068MLW05G	-	-	-	3.63	4.42	5.44	6.66	8.04	9.56
OP-MSXM068MLW05E	-	-	-	3.48	4.37	5.42	6.64	8.03	9.59
OP-MSXM080MLW05G	-	-	-	3.94	5.12	6.40	7.78	9.31	11.00
OP-MSXM080MLW05E	-	-	-	4.02	5.07	6.29	7.68	9.26	11.02
OP-MSXM099MLW05E	-	-	-	5.01	6.27	7.79	9.53	11.49	13.64
OP-MSXM108MLW05E	-	-	-	5.28	6.62	8.20	10.01	12.03	14.26
OP-MSGM012SCW05G	-	-	-	0.50	0.64	0.80	0.99	1.20	1.44
OP-MSGM015SCW05G	-	-	-	0.56	0.72	0.90	1.11	1.35	1.63
OP-MSGM018SCW05G	-	-	-	0.68	0.85	1.06	1.29	1.55	1.85
OP-MSGM021SCW05G	-	-	-	0.81	1.02	1.26	1.53	1.83	2.17
OP-MSGM026AJW05G	-	-	-	0.98	1.28	1.64	2.04	2.51	3.04
OP-MSGM033AJW05G	-	-	-	1.29	1.66	2.09	2.57	3.11	3.72
OP-MSHM044MLW05G	-	-	-	2.17	2.74	3.40	4.15	4.99	5.93
OP-MSHM044MLW05E	-	-	-	2.19	2.73	3.38	4.13	4.98	5.93

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R513A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MSXM034MLW05G	-	-	-	1.79	2.23	2.75	3.35	4.06	4.86
OP-MSXM034MLW05E	-	-	-	1.81	2.25	2.77	3.37	4.08	4.88
OP-MSXM046MLW05G	-	-	-	2.38	2.97	3.65	4.44	5.34	6.36
OP-MSXM046MLW05E	-	-	-	2.44	3.03	3.72	4.51	5.42	6.43
OP-MSXM057MLW05G	-	-	-	2.92	3.63	4.45	5.38	6.44	7.61
OP-MSXM057MLW05E	-	-	-	2.95	3.68	4.52	5.46	6.53	7.71
OP-MSXM068MLW05G	-	-	-	3.67	4.54	5.56	6.74	8.10	9.65
OP-MSXM068MLW05E	-	-	-	3.74	4.63	5.68	6.89	8.29	9.88
OP-MSXM080MLW05G	-	-	-	4.29	5.33	6.53	7.93	9.53	11.33
OP-MSXM080MLW05E	-	-	-	4.36	5.39	6.59	7.98	9.56	11.36
OP-MSXM099MLW05E	-	-	-	5.32	6.58	8.03	9.70	11.60	13.72
OP-MSXM108MLW05E	-	-	-	5.64	6.98	8.53	10.32	12.34	14.60
OP-MSGM012SCW05G	-	-	-	0.52	0.66	0.82	1.01	1.23	1.47
OP-MSGM015SCW05G	-	-	-	0.58	0.74	0.93	1.14	1.38	1.66
OP-MSGM018SCW05G	-	-	-	0.70	0.88	1.08	1.32	1.58	1.88
OP-MSGM021SCW05G	-	-	-	0.84	1.05	1.30	1.57	1.87	2.20
OP-MSGM026AJW05G	-	-	-	1.06	1.36	1.71	2.11	2.56	3.07
OP-MSGM033AJW05G	-	-	-	1.39	1.75	2.17	2.64	3.17	3.75

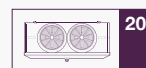
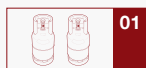
If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Related Items:



Technical Data

Condensing Unit Model	Compressor Model	Application	Power Supply	Noise Level 50hz (@10 M Distance) [Dba(A)]*	Number Of Fans	Receiver Volume [L]	Net Weight	Pipe Connections		Dimensions			Fan Power Supply [V/Ph/Hz]	Mcc (A)	Lra (A)	Min Fuse rating gL/gG (A)
								Liquid Line Connection [in]	Suction Connection Size [in]	Length (Mm)	Width (Mm)	Total Height (Mm)				
OP-MSXM034MLW05G	MLZ015T5	MBP	220 - 240 V 1 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/50	19	60	25
OP-MSXM034MLW05E	MLZ015T4	MBP	380 - 400 V 3 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/50	7	30	10
OP-MSXM044MLW05G	MLZ019T5	MBP	220 - 240 V 1 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/60	23	97	32
OP-MSXM044MLW05E	MLZ019T4	MBP	380 - 400 V 3 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/60	9.5	45	16
OP-MSXM046MLW05G	MLZ021T5	MBP	220 - 240 V 1 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/50	25	97	32
OP-MSXM046MLW05E	MLZ021T4	MBP	380 - 400 V 3 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/50	9.5	45	16
OP-MSXM057MLW05G	MLZ026T5	MBP	220 - 240 V 1 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/50	26	97	32
OP-MSXM057MLW05E	MLZ026T4	MBP	380 - 400 V 3 ph	38	1	3.4	70	1/2	3/4	464	1079	690	230/1/50	10	45	16
OP-MSXM068MLW05G	MLZ030T5	MBP	220 - 240 V 1 ph	39	1	6.2	76	1/2	7/8	464	1105	825	230/1/50	32	127	40
OP-MSXM068MLW05E	MLZ030T4	MBP	380 - 400 V 3 ph	39	1	6.2	76	1/2	7/8	464	1105	825	230/1/50	13	60	16
OP-MSXM080MLW05G	MLZ038T5	MBP	220 - 240 V 1 ph	39	1	6.2	77	1/2	7/8	464	1105	825	230/1/50	38	130	40
OP-MSXM099MLW05E	MLZ045T4	MBP	380 - 400 V 3 ph	39	1	6.2	79	1/2	7/8	464	1105	825	230/1/50	15	82	20
OP-MSXM108MLW05E	MLZ048T4	MBP	380 - 400 V 3 ph	39	1	6.2	79	1/2	7/8	464	1105	825	230/1/50	16	87	20
OP-MSBM018AJW05G	CAJ9510Z	MBP	220 - 240 V 1 ph	33	1	3.4	62	1/2	1/2	464	1079	690	230/1/50	8	30	10
OP-MSBM024AJW05G	CAJ9513Z	MBP	220 - 240 V 1 ph	33	1	3.4	63	1/2	1/2	464	1079	690	230/1/50	10.2	33.5	16
OP-MSBM026AJW05G	CAJ4517Z	MBP	220 - 240 V 1 ph	36	1	3.4	68	1/2	1/2	464	1079	690	230/1/50	14.4	38.5	16
OP-MSBM026AJW05E	TAJ4517Z	MBP	380 - 400 V 3 ph	36	1	3.4	59	1/2	1/2	464	1079	690	230/1/50	4	18	10
OP-MSBM034AJW05G	CAJ4519Z	MBP	220 - 240 V 1 ph	37	1	3.4	63	1/2	1/2	464	1079	690	230/1/50	14.4	45	16
OP-MSBM034AJW05E	TAJ4519Z	MBP	380 - 400 V 3 ph	37	1	3.4	62	1/2	1/2	464	1079	690	230/1/50	4.8	22	10
OP-MSYM009MYW05G	MLY90Rab	MBP	220 - 240 V 1 ph	31	1	1.3	50	3/8	3/8	364	910	530	230/1/50	5.3	17	10
OP-MSYM012MPW05G	MPT12RA	MBP	220 - 240 V 1 ph	34	1	1.3	51	3/8	3/8	364	910	530	230/1/50	5.3	18.5	10
OP-MSYM014MPW05G	MPT14RA	MBP	220 - 240 V 1 ph	34	1	1.3	52	3/8	3/8	364	910	530	230/1/50	6.5	21	10
OP-MSGM012SCW05G	SC12G	MBP	220 - 240 V 1 ph	31	1	1.3	52	3/8	3/8	364	910	530	230/1/50	3.17	12.4	10
OP-MSGM015SCW05G	SC15G	MBP	220 - 240 V 1 ph	32	1	1.3	52	3/8	3/8	364	910	530	230/1/50	3.88	14.8	10
OP-MSGM018SCW05G	SC18G	MBP	220 - 240 V 1 ph	32	1	1.3	53	3/8	3/8	364	910	530	230/1/50	4.34	18.6	10
OP-MSGM021SCW05G	SC21G	MBP	220 - 240 V 1 ph	32	1	1.3	53	3/8	3/8	364	910	530	230/1/50	4.6	21.8	10
OP-MSGM026AJW05G	CAJ4492Y	MBP	220 - 240 V 1 ph	31	1	3.4	63	1/2	1/2	464	1079	690	230/1/50	8.9	28	16
OP-MSGM033AJW05G	CAJ4511Y	MBP	220 - 240 V 1 ph	36	1	3.4	64	1/2	1/2	464	1079	690	230/1/50	8.6	30	16
OP-LSQM014MPW05G	MPT14LA	LBP	220 - 240 V 1 ph	32	1	1.3	51	3/8	3/8	364	910	530	230/1/50	5	16	10
OP-LSQM018MPW05G	MPT16LA	LBP	220 - 240 V 1 ph	32	1	1.3	51	3/8	3/8	364	910	530	230/1/50	5.3	19	10
OP-LSQM026AJW05G	CAJ2446Z	LBP	220 - 240 V 1 ph	36	1	3.4	62	1/2	1/2	464	1079	690	230/1/50	7.9	29	10
OP-LSQM034AJW05G	CAJ2464Z	LBP	220 - 240 V 1 ph	37	1	3.4	62	1/2	1/2	464	1079	690	230/1/50	10	40	16
OP-LSQM048NTW05G	NTZ048-5	LBP	220 - 240 V 1 ph	40	1	3.4	62	1/2	5/8	464	1079	690	230/1/50	11	37	16
OP-LSQM048NTW05E	NTZ048-4	LBP	380 - 400 V 3 ph	40	1	3.4	62	1/2	5/8	464	1079	690	230/1/50	4.8	16	10
OP-LSQM067LLW05E	LLZ013T4	LBP	380 - 400 V 3 ph	40	1	6.2	78	1/2	3/4	464	1105	825	230/1/50	12	62	16
OP-LSQM068NTW05G	NTZ068-5	LBP	220 - 240 V 1 ph	40	1	3.4	64	1/2	5/8	464	1079	690	230/1/50	17	53	25
OP-LSQM068NTW05E	NTZ068-4	LBP	380 - 400 V 3 ph	40	1	3.4	65	1/2	5/8	464	1079	690	230/1/50	8.4	25	16
OP-LSQM074FWH05G	FH2511Z	LBP	220 - 240 V 1 ph	44	1	3.4	77	1/2	5/8	464	1079	690	230/1/50	24	81	32
OP-LSQM074FWH05E	TFH2511Z	LBP	380 - 400 V 3 ph	44	1	3.4	73	1/2	5/8	464	1079	690	230/1/50	7.2	28	10
OP-LSQM084LLW05E	LLZ015T4	LBP	380 - 400 V 3 ph	42	1	6.2	78	1/2	3/8	464	1105	825	230/1/50	15	88.5	20
OP-LSQM098LLW05E	LLZ018T4	LBP	380 - 400 V 3 ph	43	1	6.2	78	1/2	3/4	464	1105	825	230/1/50	14.4	90	20



Condensing Unit Model	Compressor	Condenser	Contact Kit	Crankcase Heater	Dual Pressure Switch	Fan Speed Controller	Fan Blade	Fan Capacitor
OP-MSBM018AJW05G	118U398800	118U521800	118U389400	118U005100	060-53976600	061H314000	118U348100	118U329700
OP-MSBM024AJW05G	118U399500	118U521800	118U389400	120Z005700	060-53976600	061H314000	118U348100	118U329700
OP-MSBM026AJW05E	118U399100	118U521800	118U389300	118U005100	060-53976600	061H314000	118U348100	118U329700
OP-MSBM026AJW05G	118U399300	118U521800	118U389600	118U005100	060-53976600	061H314000	118U348100	118U329700
OP-MSBM034AJW05G	118U399400	118U521800	118U389600	118U005100	060-53976600	061H314000	118U348100	118U329700
OP-MSBM034AJW05E	118U398900	118U521800	118U389300	118U005100	060-53976600	061H314000	118U348100	118U329700
OP-MSGM012SCW05G	195B005000	118U521700	118U389300	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-MSGM015SCW05G	195B005300	118U521700	118U389300	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-MSGM018SCW05G	195B005900	118U521700	118U389300	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-MSGM021SCW05G	195B063600	118U521700	118U389300	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-MSGM026AJW05G	118U399700	118U521800	118U389400	120Z045900	060-53976600	061H314000	118U348100	118U329700
OP-MSGM033AJW05G	123B212600	118U521700	118U389400	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-MSHM044MLW05G	121U802600	118U521800	118U389500	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSHM044MLW05E	121U800400	118U521800	118U386700	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSXM034MLW05G	121L863100	118U521800	118U389500	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSXM034MLW05E	121L862900	118U521800	118U389300	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSXM046MLW05G	121L863500	118U521800	118U389500	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSXM046MLW05E	121L863300	118U521800	118U386700	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSXM057MLW05G	121L863900	118U521800	118U389500	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSXM057MLW05E	121L863700	118U521800	118U386700	120Z504000	060-53976600	061H314000	118U348100	118U329700
OP-MSXM068MLW05G	121L864300	118U521900	118U386800	120Z504000	060-53976600	061H314000	-	-
OP-MSXM068MLW05E	121L864100	118U521900	118U389600	120Z504000	060-53976600	061H314000	-	-
OP-MSXM080MLW05G	121L864700	118U521900	118U386800	120Z504000	060-53976600	061H314000	-	-
OP-MSXM099MLW05E	121L864900	118U521900	118U389600	120Z504000	060-53976600	061H314000	-	-
OP-MSXM108MLW05E	121L865100	118U521900	118U389600	120Z504000	060-53976600	061H314000	-	-
OP-MSYM009MYW05G	123B251400	118U521700	118U389400	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-MSYM012MPW05G	123B251800	118U521700	118U389400	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-MSYM014MPW05G	123B270400	118U521700	118U389400	118U005100	060-53976600	061H314000	118U348000	118U329600

Condensing Unit Model	Fan Cowl / Grill	Fan Motor	Filter Drier	Fusible Plug	Liquid Valve	Overload Relay	Receiver
OP-MSBM018AJW05G	118U348400	118U382300	023Z504100	118U517000	118U341400	118U387600	118U347500
OP-MSBM024AJW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387700	118U347500
OP-MSBM026AJW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387700	118U347500
OP-MSBM026AJW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U397800	118U347500
OP-MSBM034AJW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387800	118U347500
OP-MSBM034AJW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U397800	118U347500
OP-MSGM012SCW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U387500	118U347400
OP-MSGM015SCW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U387500	118U347400
OP-MSGM018SCW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U387500	118U347400
OP-MSGM021SCW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U387500	118U347400
OP-MSGM026AJW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387600	118U347500
OP-MSGM033AJW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U397800	118U347400
OP-MSHM044MLW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U388000	118U347500
OP-MSHM044MLW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387600	118U347500
OP-MSXM034MLW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387900	118U347500
OP-MSXM034MLW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387500	118U347500
OP-MSXM046MLW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U388000	118U347500
OP-MSXM046MLW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387600	118U347500
OP-MSXM057MLW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U388000	118U347500
OP-MSXM057MLW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387700	118U347500
OP-MSXM068MLW05G	118U348500	-	023Z504400	118U517000	118U376100	118U388000	118U347600
OP-MSXM068MLW05E	118U348500	-	023Z504400	118U517000	118U376100	118U387700	118U347600
OP-MSXM080MLW05G	118U348500	-	023Z504400	118U517000	118U376100	118U388100	118U347600
OP-MSXM099MLW05E	118U348500	-	023Z504400	118U517000	118U376100	118U387800	118U347600
OP-MSXM108MLW05E	118U348500	-	023Z504400	118U517000	118U376100	118U387800	118U347600
OP-MSYM009MYW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U397800	118U347400
OP-MSYM012MPW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U387600	118U347400
OP-MSYM014MPW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U387600	118U347400

Related Items:



Spares

Condensing Unit Model	Compressor	Condenser	Contactor Kit	Crankcase Heater	Dual Pressure Switch	Fan Speed Controller	Fan Blade	Fan Capacitor
OP-LSQM014MPW05G	123B212600	118U521700	118U389400	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-LSQM018MPW05G	123B212700	118U521700	118U389400	118U005100	060-53976600	061H314000	118U348000	118U329600
OP-LSQM026AJW05G	118U399200	118U521800	118U389300	120Z005700	060-53976600	061H314000	118U348100	118U329700
OP-LSQM034AJW05G	118U399000	118U521800	118U389400	120Z005700	060-53976600	061H314000	118U348100	118U329700
OP-LSQM048NTW05G	120F022800	118U521800	118U389400	120Z045900	060-53976600	061H314000	118U348100	118U329700
OP-LSQM048NTW05E	120F022600	118U521800	118U389300	120Z045900	060-53976600	061H314000	118U348100	118U329700
OP-LSQM067LLW05E	121L953500	118U521900	118U389600	120Z504000	060-53976600	061H314000	-	-
OP-LSQM068NTW05G	120F023200	118U521800	118U389500	120Z045900	060-53976600	061H314000	118U348100	118U329700
OP-LSQM068NTW05E	120F023000	118U521800	118U389300	120Z045900	060-53976600	061H314000	118U348100	118U329700
OP-LSQM074FWW05G	118U391400	118U521800	118U389500	120Z045900	060-53976600	061H314000	118U348100	118U329700
OP-LSQM074FWW05E	118U391500	118U521800	118U389300	120Z045900	060-53976600	061H314000	118U348100	118U329700
OP-LSQM084LLW05E	121L953700	118U521900	118U389600	120Z504000	060-53976600	061H314000	-	-
OP-LSQM098LLW05E	121L953900	118U521900	118U389600	120Z504000	060-53976600	061H314000	-	-

Condensing Unit Model	Fan Cowl/Grill	Fan Motor	Filter Drier	Fusible Plug	Liquid Valve	Overload Relay	Receiver
OP-LSQM014MPW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U397800	118U347400
OP-LSQM018MPW05G	118U348300	118U347700	023Z504000	118U517000	118U341400	118U397800	118U347400
OP-LSQM026AJW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387600	118U347500
OP-LSQM034AJW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387700	118U347500
OP-LSQM048NTW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387700	118U347500
OP-LSQM048NTW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U397800	118U347500
OP-LSQM067LLW05E	118U348500	-	023Z504400	118U517000	118U376100	118U387700	118U347600
OP-LSQM068NTW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387900	118U347500
OP-LSQM068NTW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387600	118U347500
OP-LSQM074FWW05G	118U348400	118U382300	023Z504100	118U517000	118U376100	118U388000	118U347500
OP-LSQM074FWW05E	118U348400	118U382300	023Z504100	118U517000	118U376100	118U387600	118U347500
OP-LSQM084LLW05E	118U348500	-	023Z504400	118U517000	118U376100	118U387800	118U347600
OP-LSQM098LLW05E	118U348500	-	023Z504400	118U517000	118U376100	118U387800	118U347600



Contactur Kit
118U384600



Relay Kit
118U387800



Crankcase Heater
120Z504000



Fan Motor
118U382300



Condenser Fan
118U348100



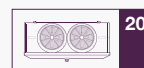
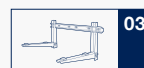
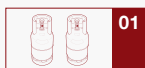
Fan Cowl / Grill
118U348500



Fan Capacitor
118U329600



Fan Speed Controller
061H314000



Optyma™ Plus with Liquid Injection

Inject a little **simplicity** **and reliability**



Best-in-class
operating conditions
at ambient
temperatures up to

43°C

The Optyma™ **Plus** now comes with electronic liquid injection technology and R448A/R449A refrigerants on the LBP models. This enables precise temperature control of the application with an extended operating envelope and much easier maintenance.

Optyma™
by Danfoss

EcoDesign

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ENGINEERING
TOMORROW

Danfoss

Danfoss Optyma™ Plus

“Equipped for quietness & top performance”

In-Field Stacking Cuts Costs

With its unique load-bearing design, it's possible to stack units up to 2 high in the field. This cuts installation time, and saves on frame construction and brackets to reduce cost.

Compact Cabinet Speeds Installation

New compact design makes it easier to handle when fitting in tight spaces, saving installation time and increases number of potential locations where the units can be sited.



Accessibility to Speed up Service:

Easier and quicker accessibility to all components with new double door design – saves time during servicing, maintenance and repair.

Intelligent Technology Speeds Start-Up and Enhances Reliability:

Pre-set parameters make it easier to commission the unit straight from the box. Fewer mistakes reduce the risk of damage and save time and money on repairs.

Specification



The Best Sound Performance in the Market

Due to its long-life compressor, acoustic insulation, component design as well as intelligent fan speed reduction during low capacity operation.



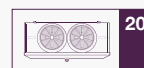
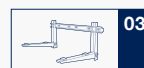
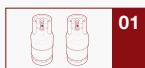
Connectivity

Contributes to considerable energy savings, making the Optyma™ Plus up to 20% more economical than an equivalent product.



SEPR (Seasonal Efficiency Performance Ratio)

All models in the range are highly efficient and are well above EcoDesign 2018 thresholds, contributing to a reduction in energy costs.





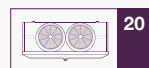
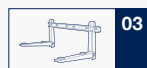
Quick & Safe Installation & Service

It is another step forward in plug and play. It will not just save you valuable time in installation, set up and service, it will also reduce your customers' bill.

Product Range

Condensing Unit Model	Description	Part No.
R404A/R507, R134a, R407A, R407F, R448A, R513A, R449A, R452A		
OP-MPXM034MLP00G	Danfoss Optyma Plus OP-MPXM034MLP00G - 1ph	114X426100
OP-MPXM034MLP00E	Danfoss Optyma Plus OP-MPXM034MLP00E - 3ph	114X426400
OP-MPXM046MLP00G	Danfoss Optyma Plus OP-MPXM046MLP00G - 1ph	114X428100
OP-MPXM046MLP00E	Danfoss Optyma Plus OP-MPXM046MLP00E - 3ph	114X428400
OP-MPXM057MLP00G	Danfoss Optyma Plus OP-MPXM057MLP00G - 1ph	114X429000
OP-MPXM057MLP00E	Danfoss Optyma Plus OP-MPXM057MLP00E - 3ph	114X429300
OP-MPXM068MLP00G	Danfoss Optyma Plus OP-MPXM068MLP00G - 1ph	114X430800
OP-MPXM068MLP00E	Danfoss Optyma Plus OP-MPXM068MLP00E - 3ph	114X431100
OP-MPXM080MLP00G	Danfoss Optyma Plus OP-MPXM080MLP00G - 1ph	114X432100
OP-MPXM080MLP00E	Danfoss Optyma Plus OP-MPXM080MLP00E - 3ph	114X432400
OP-MPXM108MLP00E	Danfoss Optyma Plus OP-MPXM108MLP00E - 3ph	114X434400
OP-MPXM125MLP00E	Danfoss Optyma Plus OP-MPXM125MLP00E - 3ph	114X441400
OP-MPXM162MLP00E	Danfoss Optyma Plus OP-MPXM162MLP00E - 3ph	114X443400
R404A/R507, R449A, R452A		
OP-MPBM018AJP00G	Danfoss Optyma Plus OP-MPBM018AJP00G - 1ph	114X423000
OP-MPBM024AJP00G	Danfoss Optyma Plus OP-MPBM024AJP00G - 1ph	114X420000
OP-MPBM026AJP00G	Danfoss Optyma Plus OP-MPBM026AJP00G - 1ph	114X421200
OP-MPBM026AJP00E	Danfoss Optyma Plus OP-MPBM026AJP00E - 3ph	114X421300
OP-MPBM034AJP00G	Danfoss Optyma Plus OP-MPBM034AJP00G - 1ph	114X422600
OP-MPBM034AJP00E	Danfoss Optyma Plus OP-MPBM034AJP00E - 3ph	114X422700
R404A/R507, R449A		
OP-MPYM008MYP00G	Danfoss Optyma Plus OP-MPYM008MYP00G - 1ph	114X411900
OP-MPYM009MYP00G	Danfoss Optyma Plus OP-MPYM009MYP00G - 1ph	114X412000
OP-MPYM012MPP00G	Danfoss Optyma Plus OP-MPYM012MPP00G - 1ph	114X412100
OP-MPYM014MPP00G	Danfoss Optyma Plus OP-MPYM014MPP00G - 1ph	114X412200
R134a, R513A		
OP-MPGM033AJP00G	Danfoss Optyma Plus OP-MPGM033AJP00G - 1ph	114X422000
R452A, R404A/R507		
OP-LPQM017MPP00G	Danfoss Optyma Plus OP-LPQM017MPP00G - 1ph	114X311800
OP-LPQM026AJP00G	Danfoss Optyma Plus OP-LPQM026AJP00G - 1ph	114X321600
OP-LPQM048NTP00G	Danfoss Optyma Plus OP-LPQM048NTP00G - 1ph	114X322500
OP-LPQM048NTP00E	Danfoss Optyma Plus OP-LPQM048NTP00E - 3ph	114X323300
OP-LPQM068NTP00G	Danfoss Optyma Plus OP-LPQM068NTP00G - 1ph	114X324100
OP-LPQM068NTP00E	Danfoss Optyma Plus OP-LPQM068NTP00E - 3ph	114X324900
OP-LPQM074FHP00G	Danfoss Optyma Plus OP-LPQM074FHP00G - 1ph	114X325200
OP-LPQM074FHP00E	Danfoss Optyma Plus OP-LPQM074FHP00E - 3ph	114X325300
OP-LPQM096NTP00E	Danfoss Optyma Plus OP-LPQM096NTP00E - 3ph	114X335700
OP-LPQM136NTP00E	Danfoss Optyma Plus OP-LPQM136NTP00E - 3ph	114X336500
R452A, R404A/R507, R448A, R449A		
OP-LPOM067LL	Danfoss Optyma Plus OP-LPOM067LL - 3ph	114X337100
OP-LPOM084LL	Danfoss Optyma Plus OP-LPOM084LL - 3ph	114X337200
OP-LPOM098LL	Danfoss Optyma Plus OP-LPOM098LL - 3ph	114X337300
OP-LPOM120LL	Danfoss Optyma Plus OP-LPOM120LL - 3ph	114X348500
OP-LPOM168LL	Danfoss Optyma Plus OP-LPOM168LL - 3ph	114X348600

Related Items:



Capacity Data

R448A Duty: kW Evap Temperature: C

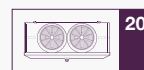
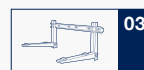
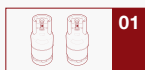
Model	-35	-30	-25	-20	-15	-10	-5	0	5	10
OP-MPXM034MLP00E	-	-	1.72	2.19	2.73	3.34	4.04	4.83	5.72	6.70
OP-MPXM034MLP00G	-	-	1.72	2.19	2.73	3.35	4.05	4.85	5.73	6.71
OP-MPXM046MLP00E	-	-	2.30	2.93	3.63	4.44	5.35	6.36	7.48	8.72
OP-MPXM046MLP00G	-	-	2.32	2.94	3.66	4.47	5.39	6.42	7.57	8.84
OP-MPXM057MLP00E	-	-	2.70	3.47	4.32	5.28	6.33	7.49	8.75	10.11
OP-MPXM057MLP00G	-	-	2.81	3.55	4.39	5.34	6.40	7.58	8.86	10.26
OP-MPXM068MLP00E	-	-	3.54	4.48	5.55	6.77	8.16	9.72	11.45	13.38
OP-MPXM068MLP00G	-	-	3.50	4.44	5.52	6.75	8.14	9.71	11.45	13.38
OP-MPXM080MLP00E	-	-	4.14	5.21	6.42	7.80	9.34	11.07	12.97	15.05
OP-MPXM080MLP00G	-	-	4.08	5.16	6.38	7.74	9.27	10.97	12.83	14.86
OP-MPXM108MLP00E	-	-	5.35	6.76	8.36	10.16	12.18	14.41	16.86	19.52
OP-MPXM125MLP00E	-	-	6.41	8.08	9.98	12.14	14.56	17.26	20.24	23.51
OP-MPXM162MLP00E	-	-	7.47	9.64	12.11	14.91	18.07	21.58	25.46	29.69
OP-LPOM067LL	2.34	3.02	3.81	4.73	5.76	6.92	-	-	-	-
OP-LPOM084LL	2.94	3.81	4.80	5.94	7.22	8.63	-	-	-	-
OP-LPOM098LL	3.49	4.49	5.64	6.98	8.48	10.17	-	-	-	-
OP-LPOM120LL	4.29	5.42	6.75	8.29	10.06	12.04	-	-	-	-
OP-LPOM168LL	6.08	7.63	9.45	11.54	13.90	16.54	-	-	-	-

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R449A Duty: kW Evap Temperature: C

Model	-35	-30	-25	-20	-15	-10	-5	0	5	10
OP-MPBM018AJP00G	-	-	-	0.85	1.13	1.47	1.87	2.34	2.89	3.52
OP-MPBM024AJP00G	-	-	-	1.04	1.41	1.85	2.36	2.96	3.65	4.43
OP-MPBM026AJP00E	-	-	-	1.17	1.57	2.05	2.59	3.23	3.95	4.78
OP-MPBM026AJP00G	-	-	-	1.20	1.59	2.04	2.58	3.20	3.92	4.73
OP-MPBM034AJP00E	-	-	-	1.51	1.99	2.56	3.21	3.96	4.80	5.76
OP-MPBM034AJP00G	-	-	-	1.50	2.00	2.58	3.25	4.01	4.88	5.86
OP-MPXM034MLP00E	-	-	1.72	2.18	2.72	3.34	4.04	4.83	5.72	6.70
OP-MPXM034MLP00G	-	-	1.72	2.19	2.73	3.35	4.05	4.84	5.73	6.71
OP-MPXM046MLP00E	-	-	2.30	2.92	3.63	4.43	5.34	6.35	7.48	8.72
OP-MPXM046MLP00G	-	-	2.32	2.94	3.65	4.46	5.38	6.42	7.57	8.84
OP-MPXM057MLP00E	-	-	2.69	3.46	4.32	5.27	6.32	7.48	8.75	10.11
OP-MPXM057MLP00G	-	-	2.80	3.55	4.39	5.33	6.39	7.57	8.86	10.26
OP-MPXM068MLP00E	-	-	3.53	4.47	5.54	6.76	8.15	9.71	11.45	13.37
OP-MPXM068MLP00G	-	-	3.48	4.43	5.51	6.74	8.13	9.70	11.45	13.38
OP-MPXM080MLP00E	-	-	4.12	5.19	6.41	7.78	9.33	11.06	12.96	15.05
OP-MPXM080MLP00G	-	-	4.06	5.14	6.36	7.73	9.26	10.96	12.82	14.86
OP-MPXM108MLP00E	-	-	5.33	6.74	8.34	10.14	12.16	14.39	16.85	19.52
OP-MPXM125MLP00E	-	-	6.39	8.06	9.96	12.12	14.54	17.25	20.23	23.50
OP-MPXM162MLP00E	-	-	7.45	9.61	12.08	14.89	18.04	21.56	25.44	29.68
OP-MPYM008MYP00G	-	-	-	-	0.57	0.75	0.94	1.14	1.35	-
OP-MPYM009MYP00G	-	-	-	-	0.61	0.80	1.00	1.22	1.44	-
OP-MPYM012MPP00G	-	-	-	-	0.85	1.09	1.35	1.62	1.90	-
OP-MPYM014MPP00G	-	-	-	-	0.90	1.15	1.42	1.71	2.03	-
OP-LPOM067LL	2.34	3.02	3.81	4.73	5.76	6.92	-	-	-	-
OP-LPOM084LL	2.94	3.81	4.80	5.94	7.22	8.63	-	-	-	-
OP-LPOM098LL	3.49	4.49	5.64	6.98	8.48	10.17	-	-	-	-
OP-LPOM120LL	4.29	5.42	6.75	8.29	10.06	12.04	-	-	-	-
OP-LPOM168LL	6.08	7.63	9.45	11.54	13.90	16.54	-	-	-	-

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K



R452A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MPBM018AJP00G	-	0.65	0.86	1.11	1.39	1.71	2.08	2.50	2.96
OP-MPBM026AJP00E	-	0.86	1.18	1.54	1.95	2.40	2.91	3.48	4.11
OP-MPBM024AJP00G	-	0.78	1.06	1.39	1.77	2.20	2.69	3.24	3.84
OP-MPBM026AJP00G	-	0.93	1.22	1.56	1.95	2.40	2.90	3.46	4.08
OP-MPBM034AJP00G	-	1.14	1.54	2.00	2.51	3.08	3.73	4.44	5.22
OP-MPBM034AJP00E	-	1.16	1.55	1.99	2.48	3.04	3.66	4.35	5.11
OP-MPXM034MLP00G	-	1.80	2.24	2.75	3.33	4.00	4.74	5.58	6.49
OP-MPXM034MLP00E	-	1.79	2.22	2.73	3.31	3.97	4.71	5.53	6.44
OP-MPXM046MLP00G	-	2.40	3.01	3.69	4.47	5.34	6.31	7.38	8.54
OP-MPXM046MLP00E	-	2.37	2.97	3.67	4.45	5.34	6.32	7.41	8.60
OP-MPXM057MLP00G	-	2.97	3.73	4.58	5.54	6.60	7.78	9.06	10.45
OP-MPXM057MLP00E	-	2.94	3.68	4.52	5.47	6.53	7.70	8.99	10.40
OP-MPXM068MLP00G	-	3.66	4.54	5.55	6.70	8.01	9.47	11.08	12.86
OP-MPXM068MLP00E	-	3.64	4.51	5.53	6.70	8.02	9.51	11.17	12.99
OP-MPXM080MLP00G	-	4.16	5.21	6.42	7.78	9.31	11.00	12.87	14.91
OP-MPXM080MLP00E	-	4.18	5.22	6.41	7.76	9.27	10.96	12.81	14.84
OP-MPXM108MLP00E	-	5.57	6.96	8.54	10.32	12.31	14.51	16.92	19.54
OP-MPXM125MLP00E	-	6.68	8.39	10.35	12.57	15.07	17.84	20.90	24.23
OP-MPXM162MLP00E	-	7.93	10.10	12.54	15.26	18.27	21.57	25.17	29.05
OP-LPQM017MPP00G	0.52	0.66	0.81	0.97	1.14	-	-	-	-
OP-LPQM026AJP00G	0.78	1.03	1.31	1.63	1.99	-	-	-	-
OP-LPQM048NTP00G	1.30	1.71	2.18	2.70	3.27	-	-	-	-
OP-LPQM048NTP00E	1.27	1.65	2.08	2.57	3.10	-	-	-	-
OP-LPQM068NTP00G	1.88	2.38	2.91	3.49	4.08	-	-	-	-
OP-LPQM068NTP00E	1.91	2.41	2.94	3.47	3.99	-	-	-	-
OP-LPQM074FHP00G	1.79	2.35	2.99	3.69	4.47	-	-	-	-
OP-LPQM074FHP00E	1.65	2.15	2.71	3.30	3.94	-	-	-	-
OP-LPQM096NTP00E	2.33	2.97	3.68	4.43	5.21	-	-	-	-
OP-LPQM136NTP00E	4.28	5.52	6.96	8.60	10.42	-	-	-	-
OP-LPQM215LLP00E	5.33	6.62	8.11	9.84	11.81	-	-	-	-
OP-LPQM271LLP00E	7.54	9.29	11.31	13.60	16.19	-	-	-	-
OP-LPOM067LL	2.93	3.68	4.55	5.57	6.73	-	-	-	-
OP-LPOM084LL	3.53	4.35	5.31	6.40	7.63	-	-	-	-
OP-LPOM098LL	4.10	5.04	6.12	7.34	8.70	-	-	-	-
OP-LPOM120LL	5.36	6.65	8.15	9.89	11.87	-	-	-	-
OP-LPOM168LL	7.58	9.34	11.37	13.68	16.27	-	-	-	-

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

UNIT	Danfoss	Market
COP	1.08	0.97
USAGE	-25 820 kWh	-30 012 kWh

* Source: Danfoss

High SEPR/COP Cuts Energy Costs

E.g. in a coldroom where fruit & vegetables are stored and with 4.2kW of cooling capacity. **Optyma™ Plus LBP units vs equivalent unit in the market.**

Annual energy consumption saved: 4,192 kWh
Savings based on cost of energy in the UK: £0.13 / 1 kWh = 4,192 x 0.13 = £545.00

£545 annual electricity savings made by your customer in the UK

Related Items:



Capacity Data



R407A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MPX034MLP00E	-	-	2.108	2.649	3.283	4.017	4.856	5.805	6.863
OP-MPX034MLP00G	-	-	2.134	2.681	3.322	4.064	4.912	5.87	6.938
OP-MPX046MLP00E	-	-	2.727	3.445	4.265	5.196	6.239	7.397	8.667
OP-MPX046MLP00G	-	-	2.776	3.505	4.339	5.283	6.341	7.514	8.8
OP-MPX057MLP00E	-	-	3.274	4.123	5.085	6.165	7.363	8.677	10.1
OP-MPX057MLP00G	-	-	3.329	4.19	5.166	6.26	7.473	8.802	10.24
OP-MPX068MLP00E	-	-	4.387	5.414	6.629	8.042	9.659	11.48	13.51
OP-MPX068MLP00G	-	-	4.353	5.371	6.577	7.979	9.584	11.39	13.41
OP-MPX080MLP00E	-	-	5.006	6.158	7.515	9.085	10.87	12.88	15.09
OP-MPX080MLP00G	-	-	4.948	6.085	7.425	8.977	10.74	12.73	14.92
OP-MPX108MLP00E	-	-	6.256	7.933	9.841	11.99	14.39	17.04	19.92
OP-MPX125MLP00E	-	-	7.436	9.337	11.5	13.92	16.62	19.6	22.84
OP-MPX162MLP00E	-	-	9.155	11.68	14.54	17.76	21.34	25.27	29.55

R407F Duty: kW Evap Temperature: C

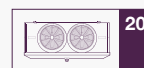
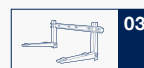
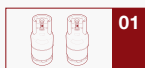
Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MPX034MLP00E	-	-	2.25	2.82	3.48	4.25	5.12	6.11	7.21
OP-MPX034MLP00G	-	-	2.30	2.88	3.56	4.34	5.23	6.24	7.35
OP-MPX046MLP00E	-	-	2.94	3.70	4.57	5.55	6.64	7.85	9.17
OP-MPX046MLP00G	-	-	2.99	3.77	4.65	5.64	6.75	7.97	9.31
OP-MPX057MLP00E	-	-	3.48	4.37	5.37	6.49	7.73	9.09	10.55
OP-MPX057MLP00G	-	-	3.58	4.49	5.52	6.67	7.94	9.32	10.80
OP-MPX068MLP00E	-	-	4.75	5.83	7.11	8.59	10.27	12.17	14.27
OP-MPX068MLP00G	-	-	4.71	5.79	7.05	8.52	10.19	12.07	14.16
OP-MPX080MLP00E	-	-	5.37	6.57	7.99	9.61	11.46	13.52	15.80
OP-MPX080MLP00G	-	-	5.35	6.55	7.96	9.58	11.42	13.48	15.74
OP-MPX108MLP00E	-	-	6.51	8.24	10.19	12.37	14.81	17.49	20.41
OP-MPX125MLP00E	-	-	8.02	10.03	12.30	14.84	17.65	20.73	24.07
OP-MPX162MLP00E	-	-	9.80	12.45	15.45	18.81	22.52	26.58	30.97

R134a Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MPGM033AJP00G	-	-	-	1.32	1.70	2.12	2.60	3.13	3.73
OP-MPX034MLP00E	-	-	-	1.71	2.16	2.68	3.28	3.97	4.75
OP-MPX034MLP00G	-	-	-	1.71	2.18	2.72	3.33	4.01	4.78
OP-MPX046MLP00E	-	-	-	2.33	2.92	3.61	4.41	5.32	6.34
OP-MPX046MLP00G	-	-	-	2.31	2.93	3.63	4.44	5.34	6.34
OP-MPX057MLP00E	-	-	-	2.80	3.53	4.36	5.32	6.39	7.59
OP-MPX057MLP00G	-	-	-	2.80	3.53	4.37	5.32	6.39	7.58
OP-MPX068MLP00E	-	-	-	3.48	4.37	5.42	6.64	8.03	9.59
OP-MPX068MLP00G	-	-	-	3.63	4.42	5.44	6.66	8.04	9.56
OP-MPX080MLP00E	-	-	-	4.02	5.07	6.29	7.68	9.26	11.02
OP-MPX080MLP00G	-	-	-	3.94	5.12	6.40	7.78	9.31	11.00
OP-MPX108MLP00E	-	-	-	5.28	6.62	8.20	10.01	12.03	14.26
OP-MPX125MLP00E	-	-	-	6.33	7.96	9.82	11.93	14.29	16.92
OP-MPX162MLP00E	-	-	-	8.15	10.22	12.61	15.31	18.35	21.73

R513A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
OP-MPGM033AJP00G	-	-	-	1.39	1.75	2.17	2.64	3.17	3.75
OP-MPX034MLP00E	-	-	-	1.81	2.25	2.77	3.37	4.08	4.88
OP-MPX034MLP00G	-	-	-	1.79	2.23	2.75	3.35	4.06	4.86
OP-MPX046MLP00E	-	-	-	2.44	3.03	3.72	4.51	5.42	6.43
OP-MPX046MLP00G	-	-	-	2.38	2.97	3.65	4.44	5.34	6.36
OP-MPX057MLP00E	-	-	-	2.95	3.68	4.52	5.46	6.53	7.71
OP-MPX057MLP00G	-	-	-	2.92	3.63	4.45	5.38	6.44	7.61
OP-MPX068MLP00E	-	-	-	3.74	4.63	5.68	6.89	8.29	9.88
OP-MPX068MLP00G	-	-	-	3.67	4.54	5.56	6.74	8.10	9.65
OP-MPX080MLP00E	-	-	-	4.36	5.39	6.59	7.98	9.56	11.36
OP-MPX080MLP00G	-	-	-	4.29	5.33	6.53	7.93	9.53	11.33
OP-MPX108MLP00E	-	-	-	5.64	6.98	8.53	10.32	12.34	14.60
OP-MPX125MLP00E	-	-	-	6.79	8.43	10.33	12.52	15.02	17.84
OP-MPX162MLP00E	-	-	-	8.25	10.29	12.63	15.31	18.33	21.69



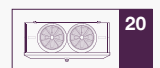
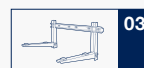
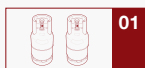
Condensing Unit Model	Compressor Model	Application	Power Supply	Noise Level 50hz (@10 M Distance) [Db(A)]	Number Of Fans	Receiver Volume [L]	Net Weight	Pipe Connections		Dimensions			Fan Power Supply [W/Ph/Hz]	Mcc (A)	Lra (A)	Min Fuse rating gL/gG (A)
								Liquid Line Connection [In]	Suction Connection Size [In]	Length (Mm)	Width (Mm)	Total Height (Mm)				
OP-MPXM034MLP00G	MLZ015T5	MBP	220 - 240 V 1 ph	37	1	3.4	87	1/2	3/4	480	1090	813	230/1/50	19	60	25
OP-MPXM034MLP00E	MLZ015T4	MBP	380 - 400 V 3 ph	37	1	3.4	87	1/2	3/4	480	1090	813	230/1/50	7	30	16
OP-MPXM046MLP00G	MLZ021T5	MBP	220 - 240 V 1 ph	37	1	3.4	87	1/2	3/4	480	1090	813	230/1/50	25	97	40
OP-MPXM046MLP00E	MLZ021T4	MBP	380 - 400 V 3 ph	37	1	3.4	87	1/2	3/4	480	1090	813	230/1/50	9.5	45	20
OP-MPXM057MLP00G	MLZ026T5	MBP	220 - 240 V 1 ph	37	1	3.4	87	1/2	3/4	480	1090	813	230/1/50	26	97	40
OP-MPXM057MLP00E	MLZ026T4	MBP	380 - 400 V 3 ph	37	1	3.4	87	1/2	3/4	480	1090	813	230/1/50	10	45	20
OP-MPXM068MLP00G	MLZ030T5	MBP	220 - 240 V 1 ph	38	1	6.2	101	5/8	7/8	531	1441	965	230/1/50	32	127	50
OP-MPXM068MLP00E	MLZ030T4	MBP	380 - 400 V 3 ph	38	1	6.2	101	5/8	7/8	531	1441	965	230/1/50	13	60	20
OP-MPXM080MLP00G	MLZ038T5	MBP	220 - 240 V 1 ph	38	1	6.2	101	5/8	7/8	531	1441	965	230/1/50	38	130	50
OP-MPXM080MLP00E	MLZ038T4	MBP	380 - 400 V 3 ph	38	1	6.2	101	5/8	7/8	531	1441	965	230/1/50	15	70	20
OP-MPXM108MLP00E	MLZ048T4	MBP	380 - 400 V 3 ph	44	1	6.2	101	5/8	7/8	531	1441	965	230/1/50	16	87	25
OP-MPXM125MLP00E	MLZ058T4	MBP	380 - 400 V 3 ph	46	2	10	169	3/4	1 1/8	650	1835	966	230/1/50	20	95	32
OP-MPXM162MLP00E	MLZ076T4	MBP	380 - 400 V 3 ph	46	2	10	169	3/4	1 1/8	650	1835	966	230/1/50	25	140	40
OP-MPBM018AJP00G	CAJ9510Z	MBP	220 - 240 V 1 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	8	30	16
OP-MPBM024AJP00G	CAJ9513Z	MBP	220 - 240 V 1 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	10.2	33.5	20
OP-MPBM026AJP00G	CAJ4517Z	MBP	220 - 240 V 1 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	12.7	38.5	20
OP-MPBM026AJP00E	TAJ4517Z	MBP	380 - 400 V 3 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	4	18	10
OP-MPBM034AJP00G	CAJ4519Z	MBP	220 - 240 V 1 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	15.2	4.9	20
OP-MPBM034AJP00E	TAJ4519Z	MBP	380 - 400 V 3 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	7	30	10
OP-MPYM008MYP00G	MLY80RAB	MBP	220 - 240 V 1 ph	29	1	1.3	49	1/4	3/8	406	941	650	230/1/50	4.9	14	10
OP-MPYM009MYP00G	MLY90RAB	MBP	220 - 240 V 1 ph	30	1	1.3	49	1/4	3/8	406	941	650	230/1/50	5.3	17	10
OP-MPYM012MPP00G	MPT12RA	MBP	220 - 240 V 1 ph	32	1	1.3	49	3/8	3/8	406	941	650	230/1/50	5.3	18.5	10
OP-MPYM014MPP00G	MPT14RA	MBP	220 - 240 V 1 ph	29	1	1.3	49	3/8	3/8	406	941	650	230/1/50	6.5	21	16
OP-MPGM033AJP00G	CAJ4511Y	MBP	220 - 240 V 1 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	8.9	30	16
OP-LPQM017MPP00G	MPT16LA	LBP	220 - 240 V 1 ph	29	1	1.3	49	3/8	3/8	406	941	650	230/1/50	4	19	10
OP-LPQM026AJP00G	CAJ2446Z	LBP	220 - 240 V 1 ph	36	1	3.4	80	3/8	1/2	480	1090	813	230/1/50	7.2	29	16
OP-LPQM048NTP00G	NTZ048-5	LBP	220 - 240 V 1 ph	38	1	3.4	80	3/8	5/8	480	1090	813	230/1/50	11	37	20
OP-LPQM048NTP00E	NTZ048-4	LBP	380 - 400 V 3 ph	38	1	3.4	80	3/8	5/8	480	1090	813	230/1/50	4.8	16	10
OP-LPQM068NTP00G	NTZ068-5	LBP	220 - 240 V 1 ph	39	1	3.4	80	3/8	5/8	480	1090	813	230/1/50	17	53	25
OP-LPQM068NTP00E	NTZ068-4	LBP	380 - 400 V 3 ph	39	1	3.4	80	3/8	5/8	480	1090	813	230/1/50	8.4	25	16
OP-LPQM074FHP00G	FH2511Z	LBP	220 - 240 V 1 ph	38	1	3.4	94	3/8	5/8	480	1090	813	230/1/50	24	81	32
OP-LPQM074FHP00E	TFH2511Z	LBP	380 - 400 V 3 ph	38	1	3.4	89	3/8	5/8	480	1090	813	230/1/50	7.2	28	16
OP-LPQM096NTP00E	NTZ096-4	LBP	380 - 400 V 3 ph	41	1	6.2	107	1/2	7/8	481	1406	967	230/1/50	10.1	32	16
OP-LPOM067LL	LLZ013T4A	LBP	380 - 400 V 3 ph	40	1	6.2	135	1/2	3/4	531	1441	965	230/1/50	12	62	16
OP-LPOM084LL	LLZ015T4A	LBP	380 - 400 V 3 ph	42	1	6.2	135	1/2	3/4	531	1441	965	230/1/50	15	88.5	20
OP-LPOM098LL	LLZ018T4A	LBP	380 - 400 V 3 ph	43	1	6.2	136	1/2	3/4	531	1441	965	230/1/50	15	90	20
OP-LPOM120LL	LLZ024T4A	LBP	380 - 400 V 3 ph	47	2	10	161	3/4	1 1/8	650	1835	966	230/1/50	21	95	32
OP-LPOM168LL	LLZ034T4A	LBP	380 - 400 V 3 ph	47	2	10	166	3/4	1 1/8	650	1835	966	230/1/50	26	150	40



Spares

Condensing Unit Model	Compressor	Condenser	Contact Kit	Crankcase Heater	Fan Blade	Fan Capacitor	Fan Cowl/Grill	Fan Motor
OP-MPGM033AJP00G	118U399600	118U521800	118U384500	192H209600	118U348100	118U329700	118U348400	118U382300
OP-MPXM034MLP00E	121L862900	118U521800	118U384500	120Z504000	118U348100	118U329700	118U348400	118U382300
OP-MPXM034MLP00G	121L863100	118U521800	118U384800	120Z504000	118U348100	118U329700	118U348400	118U382300
OP-MPXM046MLP00E	121L863300	118U521800	118U384600	120Z504000	118U348100	118U329700	118U348400	118U382300
OP-MPXM046MLP00G	121L863500	118U521800	118U384800	120Z504000	118U348100	118U329700	118U348400	118U382300
OP-MPXM057MLP00E	121L863700	118U521800	118U384600	120Z504000	118U348100	118U329700	118U348400	118U382300
OP-MPXM057MLP00G	121L863900	118U521800	118U384900	120Z504000	118U348100	118U329700	118U348400	118U382300
OP-MPXM068MLP00E	121L864100	118U521900	118U384700	120Z504000	-	-	118U348500	-
OP-MPXM068MLP00G	121L864300	118U521900	118U384900	120Z504000	-	-	118U348500	-
OP-MPXM080MLP00E	121L864500	118U521900	118U384700	120Z504000	-	-	118U348500	-
OP-MPXM080MLP00G	121L864700	118U521900	118U385000	120Z504000	-	-	118U348500	-
OP-MPXM108MLP00E	121L865100	118U521900	118U384800	120Z504000	-	-	118U348500	-
OP-MPXM125MLP00E	121L865300	118U522000	118U384700	120Z504000	-	-	118U348500	-
OP-MPXM162MLP00E	121L865500	118U522000	118U384800	120Z504000	-	-	118U348500	-
OP-MPBM018AJP00G	118U398800	118U521800	118U384500	192H209600	118U348100	118U329700	118U348400	118U382300
OP-MPBM024AJP00G	118U399500	118U521800	118U384500	192H209600	118U348100	118U329700	118U348400	118U382300
OP-MPBM026AJP00E	118U399100	118U521800	118U384500	192H209600	118U348100	118U329700	118U348400	118U382300
OP-MPBM026AJP00G	118U399300	118U521800	118U384600	192H209600	118U348100	118U329700	118U348400	118U382300
OP-MPBM034AJP00E	118U398900	118U521800	118U384700	192H209600	118U348100	118U329700	118U348400	118U382300
OP-MPBM034AJP00G	118U399400	118U521800	118U384700	192H209600	118U348100	118U329700	118U348400	118U382300
OP-MPYM008MYP00G	123B251000	118U521700	118U384500	192H209600	118U348000	118U329600	118U348300	118U347700
OP-MPYM009MYP00G	123B270400	118U521700	118U384500	192H209600	118U348000	118U329600	118U348300	118U347700
OP-MPYM012MPP00G	123B270400	118U521700	118U384500	192H209600	118U348000	118U329600	118U348300	118U347700
OP-MPYM014MPP00G	123B270400	118U521700	118U384500	192H209600	118U348000	118U329600	118U348300	118U347700

Condensing Unit Model	Filter Drier	Fusible Plug	Liquid Valve	Main Switch Kit	Controller	Receiver	Sight Glass
OP-MPGM033AJP00G	023Z504100	118U517000	009G702200	118U385100	118U346500	118U347500	014L017200
OP-MPXM034MLP00E	023Z504100	118U517000	009G7052	118U385100	118U346500	118U347500	014L017300
OP-MPXM034MLP00G	023Z504100	118U517000	009G7052	118U385400	118U346500	118U347500	014L017300
OP-MPXM046MLP00E	023Z504100	118U517000	009G7052	118U385200	118U346500	118U347500	014L017300
OP-MPXM046MLP00G	023Z504100	118U517000	009G7052	118U385600	118U346500	118U347500	014L017300
OP-MPXM057MLP00E	023Z504100	118U517000	009G7052	118U385200	118U346500	118U347500	014L017300
OP-MPXM057MLP00G	023Z504100	118U517000	009G7052	118U385600	118U346500	118U347500	014L017300
OP-MPXM068MLP00E	023Z504500	118U517000	009G705300	118U385700	118U346500	118U347600	014L017400
OP-MPXM068MLP00G	023Z504500	118U517000	009G705300	118U385200	118U346500	118U347600	014L017400
OP-MPXM080MLP00E	023Z504500	118U517000	009G705300	118U385700	118U346500	118U347600	014L017400
OP-MPXM080MLP00G	023Z504500	118U517000	009G705300	118U385200	118U346500	118U347600	014L017400
OP-MPXM108MLP00E	023Z504500	118U517000	009G705300	118U385400	118U346500	118U347600	014L017400
OP-MPXM125MLP00E	023Z504600	118U517000	009G705400	118U385500	118U346500	118U371600	014L017500
OP-MPXM162MLP00E	023Z504600	118U517000	009G705400	118U385600	118U346500	118U371600	014L017500
OP-MPBM018AJP00G	023Z504100	118U517000	009G702200	118U385100	118U346500	118U347500	014L017200
OP-MPBM024AJP00G	023Z504000	118U517000	009G702200	118U385100	118U346500	118U347500	014L017200
OP-MPBM026AJP00E	023Z504000	118U517000	009G702200	118U385100	118U346500	118U347500	014L017200
OP-MPBM026AJP00G	023Z504000	118U517000	009G702200	118U385100	118U346500	118U347500	014L017200
OP-MPBM034AJP00E	023Z504000	118U517000	009G702200	118U385200	118U346500	118U347500	014L017200
OP-MPBM034AJP00G	023Z504000	118U517000	009G702200	118U385200	118U346500	118U347500	014L017200
OP-MPYM008MYP00G	023Z503900	118U517000	009G705000	118U385300	118U346500	118U347400	014L018100
OP-MPYM009MYP00G	023Z504000	118U517000	009G705100	118U385300	118U346500	118U347400	014L018100
OP-MPYM012MPP00G	023Z504000	118U517000	009G705100	118U385300	118U346500	118U347400	014L018100
OP-MPYM014MPP00G	023Z504000	118U517000	009G705100	118U385300	118U346500	118U347400	014L018100



Condensing Unit Model	Compressor	Condenser	Contact Kit	Crankcase Heater	Fan Blade	Fan Capacitor	Fan Cowl/Grill	Fan Motor
OP-LPQM017MPP00G	123B212700	118U521700	118U384500	192H209600	118U348000	118U329600	118U348300	118U347700
OP-LPQM026AJP00G	118U399200	118U521800	118U384500	192H209600	118U348100	118U329700	118U348400	118U382300
OP-LPQM048NTP00E	120F022600	118U521800	118U384500	120Z045900	118U348100	118U329700	118U348400	118U382300
OP-LPQM048NTP00G	120F022800	118U521800	118U384600	120Z045900	118U348100	118U329700	118U348400	118U382300
OP-LPQM068NTP00E	120F023000	118U521800	118U384500	120Z045900	118U348100	118U329700	118U348400	118U382300
OP-LPQM068NTP00G	120F023200	118U521800	118U384800	120Z045900	118U348100	118U329700	118U348400	118U382300
OP-LPQM074FHP00E	118U391500	118U521800	118U384500	120Z045900	118U348100	118U329700	118U348400	118U382300
OP-LPQM074FHP00G	118U391400	118U521800	118U384500	120Z045900	118U348100	118U329700	118U348400	118U382300
OP-LPQM096NTP00E	120F023400	118U521900	118U384600	120Z045900	-	-	118U348500	-
OP-LPQM136NTP00E	120F023600	118U521900	118U384700	120Z045900	-	-	118U348500	-
OP-LPQM215LLP00E	121L954100	118U522000	118U384800	120Z504000	-	-	118U348500	-
OP-LPQM271LLP00E	121L954300	118U522000	118U384800	120Z504000	-	-	118U348500	-
OP-LPOM067LL	121L953500	118U5219	118U3846	120Z504000	-	-	118U348500	-
OP-LPOM084LL	121L953700	118U5219	118U3847	120Z504000	-	-	118U348500	-
OP-LPOM098LL	121L953900	118U5219	118U3847	120Z504000	-	-	118U348500	-
OP-LPOM120LL	121L954100	118U5220	118U3848	120Z504000	-	-	118U348500	-
OP-LPOM168LL	121L954300	118U5220	118U3849	120Z504000	-	-	118U348500	-

Condensing Unit Model	Filter Drier	Fusible Plug	Liquid Valve	Main Switch Kit	Controller	Receiver	Sight Glass
OP-LPQM017MPP00G	023Z503900	118U517000	009G705100	118U385300	118U346500	118U347400	014L018200
OP-LPQM026AJP00G	023Z504000	118U517000	009G705100	118U385100	118U346500	118U347500	014L017200
OP-LPQM048NTP00E	023Z504000	118U517000	009G705100	118U385300	118U346500	118U347500	014L017200
OP-LPQM048NTP00G	023Z504000	118U517000	009G705100	118U385200	118U346500	118U347500	014L017200
OP-LPQM068NTP00E	023Z504000	118U517000	009G705100	118U385100	118U346500	118U347500	014L017200
OP-LPQM068NTP00G	023Z504000	118U517000	009G705100	118U385400	118U346500	118U347500	014L017200
OP-LPQM074FHP00E	023Z504000	118U517000	009G705100	118U385300	118U346500	118U347500	014L017200
OP-LPQM074FHP00G	023Z504000	118U517000	009G705100	118U385300	118U346500	118U347500	014L017200
OP-LPQM096NTP00E	023Z504400	118U517000	009G705200	118U385100	118U346500	118U347600	014L017300
OP-LPQM136NTP00E	023Z504400	118U517000	009G705200	118U385200	118U346500	118U347600	014L017300
OP-LPQM215LLP00E	023Z504600	118U517000	009G705400	118U385600	118U346500	118U371600	014L017500
OP-LPQM271LLP00E	023Z504600	118U517000	009G705400	118U385600	118U346500	118U371600	014L017500
OP-LPOM067LL	023Z504400	118U517000	009G705200	118U385200	118U346500	118U347600	014L017300
OP-LPOM084LL	023Z504400	118U517000	009G705200	118U385200	118U346500	118U347600	014L017300
OP-LPOM098LL	023Z504400	118U517000	009G705200	118U385200	118U346500	118U347600	014L017300
OP-LPOM120LL	023Z504600	118U517000	009G705400	118U385500	118U346500	118U392600	014L017500
OP-LPOM168LL	023Z504600	118U517000	009G705400	118U385600	118U346500	118U392600	014L017500



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“Capacity modulation in a simple & adaptive package”

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Preset drive parameters with dedicated refrigeration software.

Future-Proof

Working with lower GWP refrigerants such as R448A and R449. Also compatible with R407A/F and R404A.

Stepless Capacity Modulation

From 30 to 100rps modulation leads to 20-30% higher energy efficiency compared to fixed-speed condensing units.



Full Intelligent Control Through The Optyma™ Plus Controller

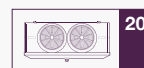
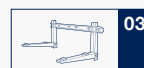
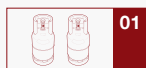
Control, alarm management, day & night operation, can connect to ADAP-KOOL® software, etc.

Simple Plug-and-Play Installation

Safe, simple and hassle-free installation with tried-and-tested components.

Product Range

Model	Description	Part Number
OP-MPPM028VVL01	Danfoss Optyma Plus Inverter MPPM028VVL01E - 3ph	114X430200
OP-MPPM035VVL01	Danfoss Optyma Plus Inverter MPPM035VVL01E - 3ph	114X431600
OP-MPPM044VVL01	Danfoss Optyma Plus Inverter MPPM044VVL01E - 3ph	114X433400





Quick & Safe Installation & Service

Preset parameters and Modbus communication makes start-up and maintenance of the condensing unit effortlessly quick and easy.



High SEPR: 3.84 Certified by ASERCOM

All models in the range are highly efficient and well above EcoDesign 2018 thresholds, contributing to a reduction in energy costs.



Accurate Temperature Control

Accurate temperature control and low in-rush current result in a more stable storage temperature and longer product shelf life.

Capacity Data

R448A Duty: kW Evap Temperature: C

Model	-15	-10	-5	0	5
OP-MPPM028VVLP01	4.41	5.44	6.64	8.02	9.59
OP-MPPM035VVLP01	5.44	6.69	8.13	9.78	11.65
OP-MPPM044VVLP01	6.77	8.36	10.13	12.08	14.23

R449A Duty: kW Evap Temperature: C

Model	-15	-10	-5	0	5
OP-MPPM028VVLP01	4.41	5.44	6.64	8.01	9.59
OP-MPPM035VVLP01	5.44	6.69	8.13	9.78	11.65
OP-MPPM044VVLP01	6.77	8.36	10.12	12.08	14.23

R407A Duty: kW Evap Temperature: C

Model	-15	-10	-5	0	5
OP-MPPM028VVLP01	4.31	5.43	6.72	8.18	9.83
OP-MPPM035VVLP01	5.36	6.73	8.29	10.04	12.01
OP-MPPM044VVLP01	6.72	8.40	10.29	12.39	14.71

R407F Duty: kW Evap Temperature: C

Model	-15	-10	-5	0	5
OP-MPPM028VVLP01	4.69	5.85	7.19	8.70	10.39
OP-MPPM035VVLP01	5.82	7.25	8.87	10.69	12.72
OP-MPPM044VVLP01	7.29	9.04	11.01	13.20	15.61

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Related Items:



Technical Data

Condensing Unit Model	Compressor Model	Application	Power Supply	Noise Level 50hz (@10 M Distance) [Db(A)]	Number Of Fans	Receiver Volume [L]	Net Weight	Pipe Connections		Dimensions			Fan Power Supply [V/Ph/Hz]	Mcc (A)	Lra (A)
								Liquid Line Connection [In]	Suction Connection Size [In]	Length (Mm)	Width (Mm)	Total Height (Mm)			
OP-MPPM028VVL01	VLZ028TGA	MBP	380 - 400 V 3 ph	41	1	6.2	124	5/8	3/4	481	1406	965	230/1/50	8.1	7
OP-MPPM035VVL01	VLZ035TGA	MBP	380 - 400 V 3 ph	41	1	6.2	125	5/8	3/4	481	1406	965	230/1/50	9.8	8.5
OP-MPPM044VVL01	VLZ044TGA	MBP	380 - 400 V 3 ph	43	1	6.2	125	5/8	3/4	481	1406	965	230/1/50	12	10.5

Spares

Condensing Unit Model	Acoustic Hood	Compressor	Compressor Contactor	Condenser	Controller	Crankcase Heater	Discharge Temperature Sensor	Fan Assembly	Fan Cowl / Grill	Frequency Converter	Oil Separator	Receiver
OP-MPPM028VVL01	120Z504300	120G016200	118U384700	118U521900	118U346500	120Z504000	084N200700	118U382900	118U348500	118U397300	118U398100	118U347600
OP-MPPM035VVL01	120Z504300	120G015900	118U384700	118U521900	118U346500	120Z504000	084N200700	118U382900	118U348500	118U397300	118U398100	118U347600
OP-MPPM044VVL01	120Z504300	120G015600	118U384700	118U521900	118U346500	120Z504000	084N200700	118U382900	118U348500	118U397300	118U398200	118U347600

High SEPR/COP Cuts Energy Costs

E.g. in a coldroom where fruit & vegetables are stored and with 9kW of cooling capacity. **Optyma™ Inverter MBP units vs equivalent unit in the market.**

Cooling cap. 9 kW		
Refrigerant: R407F		
UNIT	Danfoss	Market
SEPR	3.84	2.50
USAGE	- 14 000 kWh	- 21 600 kWh

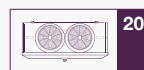
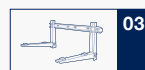
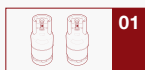
Annual energy consumption saved: 7,600 kWh

Savings based on cost of energy in the UK: £0.13 / 1 kWh = 7,600 x 0.13 = £988.00

£988 annual electricity savings made by your customer in the UK



* Source: Danfoss



Danfoss Chiller ROI

Compare Chillers & Save Money

Purchasing a chiller for an office, school, hospital, data-centre, or other large building is a complex decision with far-reaching consequences. You not only need to consider the initial investment and installation parameters but also think long-term to keep monthly energy costs as low as possible and minimize environmental impact.

The Danfoss ChillerROI app simplifies the decision-making process by allowing you to estimate the return on investment (ROI) using a few pieces of basic information. Simply enter the parameters into the app, and you'll get a side-by-side comparison that displays the expected long- and short-term costs. Then, you can choose the best chiller for the situation.

The ChillerROI app calculates ROI based on:

- **Chiller efficiency data (IPLV)**
- **Capex cost (£/ton)**
- **Chiller capacity**
- **Initial cost**
- **Local electrical rates**
- **Expected hours of operation**

Whether you are installing a chiller at your own facility or sharing the benefits of your chiller system with a customer, the ChillerROI app helps make the decision process quick and easy.

**Download it today
for free to get started**



Danfoss Coolselector2

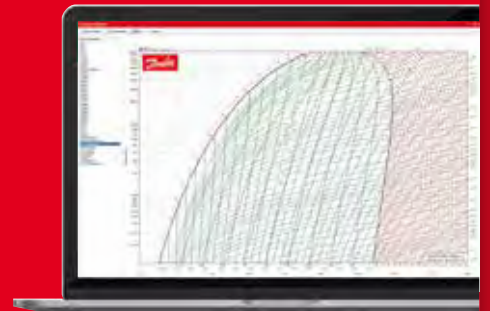
Optimise Energy Consumption

Coolselector@2 helps you optimize energy consumption and increase efficiency in any HVACR system.

Run unbiased calculations based on a set of operating conditions — such as cooling capacity, refrigerant, evaporation, and condensation temperature — and then select the best components for your design. We've removed the complexity from the equation so that you can focus on what you do best: being awesome.

CoolSelector2 allows you to:

- **Customize your preferences**
- **Save time on complicated calculations**
- **View and download detailed log(p)-h diagrams**
- **Export easy-to-read reports to share with clients and colleagues**
- **Print or save component code lists for easy ordering**



Danfoss Trouble Shooter

Refrigeration Trouble Shooting App

Trouble Shooter gives you instant access to essential information about refrigeration applications and their functions, enabling you to provide superior service when troubleshooting refrigeration systems.

When you are attempting to resolve a refrigeration system error, simply open Trouble Shooter and compare the symptoms. A clean, intuitive interface guides you through each step to help you correctly identify the issue.

Danfoss





MARSTAIR
REFRIGERATION AND SPECIALIST AIR CONDITIONING

Marstair MRC+ Packaged Condensing Units

This quiet, efficient and slim profile unit will operate free standing or wall mounted. All units are supplied with a nitrogen charge so the installer can select the appropriate refrigerant for the application. Standard equipment for all models includes; HP/LP switch for system protection, 3-minute start delay timer and fan speed control for operation in low-ambient temperatures.





Benefits for the Contractor

- Selected units feature on the ECA approval list offering financial support for projects of any size
- Compact design offers the contractor a solution for almost any project, increasing their job potential and thus increasing business



Benefits for the End-User

- 5-year warranty for all spare parts offers longevity and peace of mind for any end-user
- Reduced noise levels does not hinder and cause obstructions to the working environment post installation

MBP & LBP Applications

- Food display cabinets
- Coldrooms
- Marine & offshore environments
- ATEX zones and many more outdoor refrigeration applications



Specification Overview

	Marstair MRC+
Compressor Technology	Scroll/Reciprocating
Fan Speed Controller	Yes
Sight Glass	Yes
Crankcase Heater	Yes
HP/LP Adjustable Pressostat	Yes
Electronic Controller	Yes
Net Weight in kg	46 - 118
Dimensions in mm	Width: 900 - 1100 Depth: 300 - 425 Height: 560 - 1215

Cooling Capacity Overview

Min/Max Cooling capacity range (kW)	Marstair MRC+
Medium Temperature (MBP)	
R448A/R449A	1.0kW - 11.16kW
R407A	1.09kW - 11.57kW
R407F	1.07kW - 11.36kW
Low Temperature (LBP)	
R407A	0.74kW - 3.26kW
R407F	0.76kW - 3.44kW
R448A/R449A	0.96kW - 3.59kW

Nominal duty at following conditions: MBP: Ambient temp = 32°C, Evap temp = -10°C **LBP:** Ambient temp = 32°C, Evap temp = -35°C

Related Items:



TEV Marstair MRC+

“Quality products which add value”



MARSTAIR
REFRIGERATION AND SPECIALIST AIR CONDITIONING

Heat Exchanger

All MRC units come pre-fabricated with a selection of European manufactured components, including; Heat exchangers and fans.



Quality Components

Standard Components Include:

- Suction and liquid valves
- Sight glass
- Filter drier
- Compressor noise jacket
- Fan speed controller
- Hp switch with auto reset and alarm
- Lp switch with auto reset and alarm
- Contactor (overload on 3ph units)
- Crankcase heater (reciprocating only)
- Liquid receiver
- Copeland compressors MRC 45-180
- Tecumseh compressors MRC 15-40
- Capacitor start relay (15-40 1ph only)
- Internal noise reducing insulation

Manufactured in the UK

The casework for all MRC units is manufactured within the UK, alongside a detachable isolator, timer protection PCBA and solenoid.

Specification



Designed for Today's Needs

The MRC+ unit is ECA listed, EcoDesign ready and, using the Green Heat Kit, allows the user to tap into the free heat available. Clearly the MRC+ is ready for the challenges of today's needs



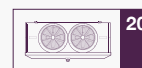
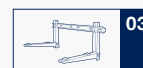
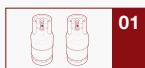
Single phase units

The MRC+ range is available with 11 single phase units available. Covering 1/2hp through to 5hp the range allows installations to be fitted where 3 phase isn't available, reducing the need for a 3 phase supply to be installed.



Green Heating

The MRC+ can be supplied with a Green Heat Kit that allows the discharge gases to be taken to a heat recovery system allowing the user to take advantage of this free heat.





5mm Tubes Within the Heat Exchanger

Incorporates 5mm tubes within the heat exchanger which gives a large reduction in the amount of refrigerant charge required, thus saving cost.



Low GWP Refrigerants

New low GWP refrigerants approved, including R448a, R449a & R452A. This increases the life-cycle of the installation and reduces installations cost for the end user over a prolonged period of time.



Low Noise Levels

Compressor jackets and noise attenuation insulation as standard reduces noise levels to as low as 34dba.



5-Year Warranty

5 year warranty on all unit spares offers longevity to any installation & renewed peace of mind for any end user.

Product Range

Condensing Unit Model	Description	Part No.
MBP Units		
MCR+ 15 (1ph)	MRC+ 15 Packaged Cond Unit 1/2HP 1 Phase	MRC15-1
MCR+ 20 (1ph)	MRC+ 20 Packaged Cond Unit 5/8 HP 1 Phase	MRC20-1
MCR+ 30 (1ph)	MRC+ 30 Packaged Cond Unit 1 3/8 HP 1 Phase	MRC30-1
MCR+ 40 (1ph)	MRC+ 40 Packaged Cond Unit 1 1/2 HP 1 Phase	MRC40-1
MCR+ 45 (1ph)	MRC+ 45 Packaged Cond Unit 1 1/2 Hp 1 Phase	MRC45-1
MCR+ 50 (1ph)	MRC+ 50 Packaged Cond Unit 1 1/2 Hp 1 Phase	MRC50-1
MCR+ 60 (1ph)	MRC+ 60 Packaged Cond Unit 2 1/2 Hp 1 Phase	MRC60-1
MCR+ 80 (1ph)	MRC+ 80 Packaged Cond Unit 3 HP 1 Phase	MRC80-1
MCR+ 90 (1ph)	MRC+ 90 Packaged Cond Unit 3 HP 1 Phase	MRC90-1
MCR+ 100 (1ph)	MRC+100 Packaged Cond Unit 4 HP 1 Phase	55017998
MCR+ 150 (1ph)	MRC+150 Packaged Cond Unit 5 HP 1 Phase	-
MCR+ 30 (3ph)	MRC+ 30 Packaged Cond Unit 1 3/8 HP 3 Phase	MRC30-3
MCR+ 40 (3ph)	MRC+ 40 Packaged Cond Unit 1 1/2 Hp 3 Phase	MRC40-3
MCR+ 50 (3ph)	MRC+ 45 Packaged Cond Unit 2 Hp 3 Phase	MRC50-3
MCR+ 60 (3ph)	MRC+ 60 Packaged Cond Unit 2 1/2 Hp 3 Phase	MRC60-3
MCR+ 80 (3ph)	MRC+ 80 Packaged Cond Unit 3 HP 3 Phase	MRC80-3
MCR+ 90 (3ph)	MRC+ 90 Packaged Cond Unit 3 1/2 HP 3 Phase	MRC90-3
MCR+ 100 (3ph)	MRC+ 100 Packaged Cond Unit 4 HP 3 Phase	MRC100-3
MCR+ 130 (3ph)	MRC+ 130 Packaged Cond Unit 4 2/5 HP 3 Phase	MRC130-3
MCR+ 150 (3ph)	MRC+ 150 Packaged Cond Unit 5 HP 3 Phase	MRC150-3
MCR+ 165 (3ph)	MRC+ 165 Packaged Cond Unit 6 HP 3 Phase	MRC165-3
MCR+ 180 (3ph)	MRC+ 180 Packaged Cond Unit 7 1/2 HP 3 Phase	MRC180-3
LBP Units		
MRC+LT 40 (1ph)	MRC+ 40 LT Packaged Cond Unit 1 1/2 HP 1Ph	MRCL40-1
MRC+LT 50 (1ph)	MRC+ 50 LT Packaged Cond Unit 2 HP 1 Phase	MRCL50-1
MRC+LT 60 (1ph)	MRC+ 60 LT Packaged Cond Unit 2 1/2 HP 1Ph	MRCL60-1
MRC+LT 50 (3ph)	MRC+ 50 LT Packaged Cond Unit 2 HP 3 Phase	MRCL50-3
MRC+LT 60 (3ph)	MRC+ 60 LT Packaged Cond Unit 2 1/2 HP 3Ph	MRCL60-3
MRC+LT 80 (3ph)	MRC+ 80 LT Packaged Cond Unit 4 HP 3 Phase	MRCL80-3
MRC+LT 90 (3ph)	MRC+ 90 LT Packaged Cond Unit 5 HP 3 Phase	MRCL90-3
MRC+LT 100 (3ph)	MRC+ 100 LT Packaged Cond Unit 3 Phase	-

Related Items:



Capacity Data

R448A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope - Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Model	Phase	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
MRC+ 15	1	-	-	-	-	-	0.74	1	1.29	1.6	2.01	2.1
MRC+ 20	1	-	-	-	-	-	0.97	1.3	1.68	2.08	2.61	2.73
MRC+ 30	1 & 3	-	-	-	-	-	1.45	1.86	2.32	2.8	3.43	3.77
MRC+ 40	1 & 3	-	-	-	-	-	2.13	2.68	3.29	3.95	4.62	5.34
MRC+ 45	1	-	-	-	-	-	2.15	2.65	3.1	3.65	4.23	4.99
MRC+ 50	1 & 3	-	-	-	-	-	2.87	3.56	4.19	4.96	5.76	6.85
MRC+ 60	1 & 3	-	-	-	-	-	3.37	4.18	4.92	5.82	6.76	8.04
MRC+ 80	1 & 3	-	-	-	-	-	4.01	4.97	5.86	6.93	8.05	9.57
MRC+ 90	1 & 3	-	-	-	-	-	4.79	5.94	7.01	8.3	9.63	11.43
MRC+ 100	1 & 3	-	-	-	-	-	5.46	6.53	7.96	9.45	11.02	13.13
MRC+ 130	3	-	-	-	-	-	6.57	7.84	9.54	11.19	13.03	15.49
MRC+ 165	3	-	-	-	-	-	8.49	10.18	12.33	14.54	16.96	20.23
MRC+ 180	3	-	-	-	-	-	9.33	11.16	13.54	16	18.64	22.16
MRC+ LT50	1 & 3	-	0.96	1.39	1.89	2.46	-	-	-	-	-	-
MRC+ LT60	1 & 3	-	1.2	1.75	2.42	3.23	-	-	-	-	-	-
MRC+ LT80	3	1.76	2.23	2.79	3.46	4.22	-	-	-	-	-	-
MRC+ LT90	3	2.38	3.01	3.77	4.58	5.51	-	-	-	-	-	-
MRC+ LT100	3	2.64	3.58	4.42	5.36	5.18	-	-	-	-	-	-

R449A Duty: kW Evap Temperature: C

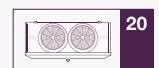
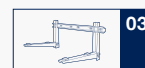
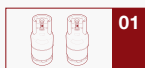
If No Duty Shown = Outside Operating Envelope - Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Model	Phase	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
MRC+ 15	1	-	-	-	-	-	0.74	1	1.29	1.6	2.01	2.1
MRC+ 20	1	-	-	-	-	-	0.97	1.3	1.68	2.08	2.61	2.73
MRC+ 30	1 & 3	-	-	-	-	-	1.45	1.86	2.32	2.8	3.43	3.77
MRC+ 40	1 & 3	-	-	-	-	-	2.13	2.68	3.29	3.95	4.62	5.34
MRC+ 45	1	-	-	-	-	-	2.15	2.65	3.1	3.65	4.23	4.99
MRC+ 50	1 & 3	-	-	-	-	-	2.87	3.56	4.19	4.96	5.76	6.85
MRC+ 60	1 & 3	-	-	-	-	-	3.37	4.18	4.92	5.82	6.76	8.04
MRC+ 80	1 & 3	-	-	-	-	-	4.01	4.97	5.86	6.93	8.05	9.57
MRC+ 90	1 & 3	-	-	-	-	-	4.79	5.94	7.01	8.3	9.63	11.43
MRC+ 100	1 & 3	-	-	-	-	-	5.46	6.53	7.96	9.45	11.02	13.13
MRC+ 130	3	-	-	-	-	-	6.57	7.84	9.54	11.19	13.03	15.49
MRC+ 165	3	-	-	-	-	-	8.49	10.18	12.33	14.54	16.96	20.23
MRC+ 180	3	-	-	-	-	-	9.33	11.16	13.54	16	18.64	22.16
MRC+ LT50	1 & 3	-	0.96	1.39	1.89	2.46	-	-	-	-	-	-
MRC+ LT60	1 & 3	-	1.2	1.75	2.42	3.23	-	-	-	-	-	-
MRC+ LT80	3	1.76	2.23	2.79	3.46	4.22	-	-	-	-	-	-
MRC+ LT90	3	2.38	3.01	3.77	4.58	5.51	-	-	-	-	-	-
MRC+ LT100	3	2.64	3.58	4.42	5.36	5.18	-	-	-	-	-	-

R452A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope - Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Model	Phase	-15	-10	-5	0	5	10
MRC+ 15	1	0.84	1.1	1.38	1.67	2.04	2.08
MRC+ 20	1	1.09	1.43	1.8	2.17	2.65	2.7
MRC+ 30	1 & 3	1.64	2.04	2.48	2.91	3.48	3.73
MRC+ 40	1 & 3	2.4	2.94	3.52	4.11	4.69	5.28
MRC+ 45	1	2.43	2.91	3.31	3.8	4.29	4.94
MRC+ 50	1 & 3	3.24	3.91	4.48	5.16	5.85	6.78
MRC+ 60	1 & 3	3.81	4.59	5.26	6.06	6.86	7.95
MRC+ 80	1 & 3	4.53	5.46	6.26	7.21	8.17	9.47
MRC+ 90	1 & 3	5.29	6.35	7.31	8.42	9.54	11.05
MRC+ 100	1 & 3	6.06	7.06	8.37	9.65	10.93	12.66
MRC+165	3	9.04	10.53	12.48	14.38	16.29	18.87
MRC+ 180	3	9.99	11.64	13.79	15.9	18	20.86



R407A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope - Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Model	Phase	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
MRC+ 15	1	-	-	-	-	-	0.81	1.09	1.42	1.74	2.19	2.24
MRC+ 20	1	-	-	-	-	-	1.05	1.42	1.84	2.26	2.84	2.91
MRC+ 30	1 & 3	-	-	-	-	-	1.57	2.03	2.53	3.03	3.74	4.02
MRC+ 40	1 & 3	-	-	-	-	-	2.31	2.92	3.6	4.28	5.04	5.68
MRC+ 45	1	-	-	-	-	-	3.12	3.89	4.58	5.37	6.29	7.29
MRC+ 50	1 & 3	-	-	-	-	-	3.66	4.56	5.38	6.3	7.38	8.56
MRC+ 60	1 & 3	-	-	-	-	-	4.35	5.43	6.4	7.5	8.78	10.18
MRC+ 80	1 & 3	-	-	-	-	-	5.08	6.34	7.47	8.76	10.25	11.89
MRC+ 90	1 & 3	-	-	-	-	-	5.82	7.02	8.56	10.03	11.75	13.62
MRC+ 100	1 & 3	-	-	-	-	-	6.67	8.05	9.81	11.5	13.46	15.61
MRC+ 165	3	-	-	-	-	-	8.68	10.47	12.76	14.96	17.51	20.31
MRC+ 180	3	-	-	-	-	-	9.6	11.57	14.1	16.53	19.35	22.44
MRC+ LT40	1	0.49	0.74	1	1.42	1.87	-	-	-	-	-	-
MRC+ LT50	1 & 3	0.61	1.05	1.41	1.98	2.58	-	-	-	-	-	-
MRC+ LT60	1 & 3	0.85	1.37	1.94	2.69	3.47	-	-	-	-	-	-
MRC+ LT80	3	1.6	2.1	2.55	3.2	3.9	-	-	-	-	-	-
MRC+ LT90	3	2.16	2.83	3.44	4.25	5.09	-	-	-	-	-	-
MRC+ LT100	3	2.39	3.26	4.04	4.96	5.94	-	-	-	-	-	-

R407F Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope - Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Model	Phase	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
MRC+ 15	1	-	-	-	-	-	0.79	1.07	1.4	1.74	2.21	2.29
MRC+ 20	1	-	-	-	-	-	1.03	1.39	1.81	2.26	2.87	2.97
MRC+ 30	1 & 3	-	-	-	-	-	1.54	1.99	2.5	3.03	3.76	4.09
MRC+ 40	1 & 3	-	-	-	-	-	2.25	2.87	3.56	4.28	5.08	5.79
MRC+ 45	1	-	-	-	-	-	2.28	2.84	3.35	3.95	4.65	5.42
MRC+ 50	1 & 3	-	-	-	-	-	3.04	3.82	4.53	5.37	6.33	7.43
MRC+ 60	1 & 3	-	-	-	-	-	3.57	4.48	5.31	6.3	7.43	8.72
MRC+ 80	1 & 3	-	-	-	-	-	4.25	5.33	6.32	7.5	8.85	10.38
MRC+ 90	1 & 3	-	-	-	-	-	4.96	6.23	7.38	8.76	10.33	12.12
MRC+ 100	1 & 3	-	-	-	-	-	5.69	6.9	8.46	10.03	11.83	13.89
MRC+ 130	3	-	-	-	-	-	6.51	7.9	9.69	11.5	13.56	15.91
MRC+ 165	3	-	-	-	-	-	8.48	10.28	12.61	14.96	17.64	20.7
MRC+ 180	3	-	-	-	-	-	9.37	11.36	13.93	16.53	19.5	22.88
MRC+ LT40	1	0.51	0.76	1.05	1.46	1.96	-	-	-	-	-	-
MRC+ LT50	1 & 3	0.61	1.26	1.5	1.69	1.88	-	-	-	-	-	-
MRC+ LT60	1 & 3	0.89	1.4	2.04	2.77	3.63	-	-	-	-	-	-
MRC+ LT80	3	1.68	2.14	2.68	3.3	4.08	-	-	-	-	-	-
MRC+ LT90	3	2.22	2.9	3.6	4.43	5.39	-	-	-	-	-	-
MRC+ LT100	3	2.64	3.44	4.22	5.18	6.28	-	-	-	-	-	-

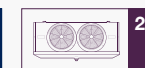
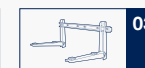
DID YOU KNOW...



Marstair offer a 5-YEAR parts warranty as standard, with everything being designed & built right here in the UK!

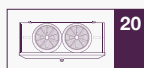
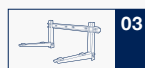
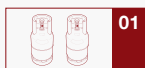


Related Items:



Condensing Unit Model	Compressor model	Application	Power supply	Noise level 50Hz (@10 m distance) [db(A)]	Number of fans	Receiver volume [L]	Net weight	Pipe Connections		Dimensions			Fan power supply [V/Ph/Hz]	Mcc (A)	LRA (A)
								Liquid line connection [in]	Suction connection size [in]	Length (mm) *	Width (mm)	Total height (mm) **			
MRC+15 1 ph	AJ5510C	MBP	1/50/230	34	1	2	46	3/8	3/8	900	300	560	1/50/230	7.3	4.6
MRC+20 1 ph	AJ5512C	MBP	1/50/230	34	1	2	47	3/8	1/2"	900	300	560	1/50/230	9.3	5.9
MRC+30 1 ph	AJ5515C	MBP	1/50/230	34	1	2	48	3/8	1/2"	900	300	560	1/50/230	12	7.3
MRC+40 1 ph	AJ5518C	MBP	1/50/230	34	1	2	53	3/8	1/2"	900	300	560	1/50/230	14	9.7
MRC+45 1 ph	ZR18K5E-PFJ-622	MBP	1/50/230	33	1	2	60	3/8	1/2"	1000	350	660	1/50/230	12.5	8.9
MRC+50 1ph	ZR24K3E-PFJ522	MBP	1/50/230	33	1	4	64	3/8	1/2"	1000	350	660	1/50/230	16	11.4
MRC+60 1 ph	ZR28K3E-PFJ522	MBP	1/50/230	33	1	4	65	3/8	5/8"	1000	350	660	1/50/230	18	12.9
MRC+80 1 ph	ZR34K3E-PFJ522	MBP	1/50/230	34	1	4	66	1/2"	5/8"	1000	350	660	1/50/230	19	13.6
MRC+90 1 ph	ZR40K3E-PFJ522	MBP	1/50/230	37	1	4	76	1/2"	5/8"	1000	350	760	1/50/230	24	17.1
MRC+100 1 ph	ZR48K3E-PFJ522	MBP	1/50/230	38	1	4	84	1/2"	3/4"	1000	350	1020	1/50/230	27	19.3
MRC+150 1ph	ZB38KCE-PFJ	MBP	1/50/230	37	2	4	107	1/2"	3/4"	1000	425	560	1/50/230	36	25.7
MRC+30 3 ph	TAJ5515C	MBP	3/50/400	34	1	2	48	1/2"	1/2"	900	300	560	1/50/230	4.2	2.8
MRC+40 3 ph	TAJ5519C	MBP	3/50/400	34	1	2	53	1/2"	1/2"	900	300	560	1/50/230	5.4	4.1
MRC+50 3ph	ZR24K3E-TFD522	MBP	3/50/400	33	1	4	62	1/2"	1/2"	1000	350	660	1/50/230	6	4.3
MRC+60 3 ph	ZR28K3E-TFD522	MBP	3/50/400	33	1	4	63	1/2"	5/8"	1000	350	660	1/50/230	7	5
MRC+80 3 ph	ZR34K3E-TFD522	MBP	3/50/400	34	1	4	64	1/2"	5/8"	1000	350	660	1/50/230	8	5.7
MRC+90 3 ph	ZR40K3E-TFD522	MBP	3/50/400	37	1	4	73	1/2"	5/8"	1000	350	760	1/50/230	9	6.4
MRC+100 3 ph	ZR48K3E-TFD522	MBP	3/50/400	38	1	4	81	1/2"	3/4"	1000	350	760	1/50/230	11	7.9
MRC+130 3 ph	ZR57KCE-TFD522	MBP	3/50/400	37	2	7.5	101	1/2"	3/4"	1000	425	1020	1/50/230	11.6	8.3
MRC+150 3ph	ZR61KCE-TFD522	MBP	3/50/400	37	2	7.5	103	1/2"	3/4"	1000	425	1020	1/50/230	14	10
MRC+165 3 ph	ZR72KCE-TFD522	MBP	3/50/400	37	2	7.5	103	1/2"	3/4"	1000	425	1020	1/50/230	14	10
MRC+ 180 3 ph	ZR81KCE-TFD522	MBP	3/50/400	39	2	7.5	118	1/2"	7/8"	1100	425	1215	1/50/230	17	12.1
MRC+LT40 1ph	CAJ2464Z	LBP	1/50/230	35	1	2	55	3/8	1/2"	1000	350	560	1/50/230	10	5.7
MRC+LT50 1ph	FH2480Z	LBP	1/50/230	35	1	4	68	3/8	1/2"	1000	350	660	1/50/230	16	7.2
MRC+LT60 1ph	FH2511Z	LBP	1/50/230	35	1	4	69	3/8	5/8"	1000	350	660	1/50/230	24	11.5
MRC+LT50 3ph	TFH2480Z	LBP	3/50/400	35	1	4	66	3/8	1/2"	1000	350	660	1/50/230	4.8	2.8
MRC+LT60 3ph	TFH2511Z	LBP	3/50/400	35	1	4	67	3/8	5/8"	1000	350	660	1/50/230	7.2	3.7
MRC+LT80 3ph	ZF11	LBP	3/50/400	37	1	4	68	1/2"	5/8"	1000	425	760	1/50/230	9.1	6.5
MRC+LT90 3ph	ZF15	LBP	3/50/400	40	1	4	78	1/2"	5/8"	1000	425	760	1/50/230	12.5	8.9
MRC+LT100 3ph	ZF18	LBP	3/50/400	41	1	4	80	1/2"	3/4"	1000	425	760	1/50/230	11	7.9

*Does not include service valves **Does not include 60mm for feet



Condensing Unit Model	Compressor Single Pack	Crankcase Heater	Fan Speed Controller	Fan Blade	Fan Capacitor	Fan Motor
MRC+15 1 ph	04200502S	04400064S	55021977	55023950S	04400547S	55023950S
MRC+20 1 ph	04200503S	04400064S	55021977	55023950S	04400547S	55023950S
MRC+30 1 ph	04200504S	04400064S	55021977	55023950S	04400547S	55023950S
MRC+30 3 ph	04200510S	04400064S	55021977	55023950S	04400547S	55023950S
MRC+40 1 ph	04200504S	04400064S	55021977	55023950S	04400547S	55023950S
MRC+40 3 ph	04200511S	04400064S	55021977	55023950S	04400547S	55023950S
MRC+45 1 ph	04200012S	-	55021977	55023950S	04400547S	55023950S
MRC+50 1ph	04200570S	-	55021977	55023950S	04400547S	55023950S
MRC+50 3ph	04200573S	-	55021977	55023950S	04400547S	55023950S
MRC+60 1 ph	04200553S	-	55021977	55023950S	04400547S	55023950S
MRC+60 3 ph	04200554S	-	55021977	55023950S	04400547S	55023950S
MRC+80 1 ph	04200571S	-	55021977	55023950S	04400547S	55023950S
MRC+80 3 ph	04200574S	-	55021977	55023950S	04400547S	55023950S
MRC+90 1 ph	04200870S	-	55021977	55023950S	04401025S	55023950S
MRC+90 3 ph	04200871S	-	55021977	55023950S	04401025S	55023950S
MRC+100 1 ph	04200867S	-	55021977	55023950S	04401025S	55023950S
MRC+150 1ph	04200868S	-	55021977	55023950S	04401025S	55023950S
MRC+130 3 ph	04200576S	-	55021977	55023950S	04400547S	55023950S
MRC+150 1ph	04200075S	-	55021977	55023950S	04400547S	55023950S
MRC+150 3ph	04200555S	-	55021977	55023950S	04400547S	55023950S
MRC+165 3 ph	04200577S	-	55021977	55023950S	04400547S	55023950S
MRC+ 180 3 ph	04200578S	-	55021977	55023950S	04401025S	55023950S
MRC+LT40 1ph	04200877S	-	55021977	55023950S	04400547S	55023950S
MRC+LT50 1ph	04200059S	-	55021977	55023950S	04400547S	55023950S
MRC+LT60 1ph	04200061S	-	55021977	55023950S	04400547S	55023950S
MRC+LT50 3ph	04200060S	-	55021977	55023950S	04400547S	55023950S
MRC+LT60 3ph	04200062S	-	55021977	55023950S	04400547S	55023950S
MRC+LT80 3ph	04200893S	-	55021977	55023950S	04400547S	55023950S
MRC+LT90 3ph	04200894S	-	55021977	55023950S	04401025S	55023950S
MRC+LT100 3ph	04200895S	-	55021977	55023950S	04401025S	55023950S





DAS HERZ DER FRISCHE



ECOLITE // LHL3E



ECOLITE // LHL5E

A2L-APPROVED

FULL EQUIPMENT. MAXIMUM ADAPTABILITY.

ECOLITE condensing units are the solution for reliable low and medium temperature cooling applications. Their plug and play concept supports overall monitoring and boosts optimal usability. The seven models are suited for operation in different climate zones, allowing flexibility due to the VARISTEP capacity control and sophisticated controller functions. Thanks to low-noise and solid design, the ECOLITE series can be integrated into an urban environment. The product family is also approved for low GWP A2L refrigerants. Learn more at www.bitzer.de



HFO
READY



LOW GWP
READY



ECODESIGN
CONFORM



MECHATRONIC
CAPACITY CONTROL



BEST
SOFTWARE



Bitzer Packaged Condensing Units

The Bitzer packaged condensing units are suitable for both MBP and LBP systems, providing a solution for all systems with a duty range stretching from 3.21kW – 22.2kW at MBP and 1.26kW – 11.77kW at LBP.

Suitable for use with various low GWP refrigerants these units offer high-energy performance ratios and come fitted with various key components as standard. The units are easy to

install whilst reducing the costs for the end-user. Available in two variants:

Bitzer Ecolite

Highly efficient and cost-conscious

Bitzer Ecostar

Premium solution with enhanced performance





Benefits for the Contractor

- Simple design reduces commissioning and maintenance time
- Compatible with a variety of lower GP refrigerants, including A2L refrigerants, future proofing the installation.
- BEST (Bitzer Electronic Service Tool) software allows you to connect to your laptop, PC or mobile device to commission and service the installation using state of art systems, not normally found on a packaged unit of this size



Benefits for the End-User

- Reduced life cycle costs of refrigeration equipment thanks to highly efficient units
- The Ecolite units are supplied A2L ready so any installation carried out today using low GWP refrigerants can reuse the condensing unit when converted to an A2L refrigerant (Other parts of the system may need replacing)

MBP & LBP Applications

- Cold rooms, display cabinets in convenience stores, mini markets, restaurants, fisheries, butcheries, bakeries, florists, laboratories
- Wine cellars
- Milk cooling
- Industrial processes
- Dairy and general food storage



Nomenclature

LHL3E/2DES-2Y

Condenser type
3 = Small housing
5 = Large housing

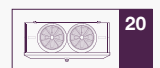
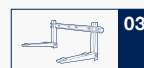
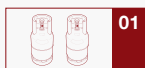
Compressor type

Oil charge
Y = Ester oil



① DID YOU KNOW...

Bitzer started manufacturing compressors in 1934. It provides compressors for traditional systems, reefers, buses and trains. It is also a worldwide manufacturer of large screw compressors capable of over 300kw of refrigerant duty for large food processing plants.



Specification Overview



	Bitzer Ecolite	Bitzer Ecostar
Compressor Technology	Semi-Hermetic Reciprocating	Semi-Hermetic Inverter
Minichannel Condenser	Yes	Yes
Fan Speed Controller	Yes	Yes
Filter Drier	Yes	Yes
Sight Glass	Yes	Yes
Crankcase Heater	Yes	Yes
HP/LP Pressure Switch	Yes	Yes
Access Door(s)	Yes	Yes
Acoustic Insulation	Yes	-
Electronic Controller	Yes	Yes
Network Connectivity	Yes	Yes
OLC-K1 Oil Level Monitor	Yes	Optional for Ecostar
Oil Separator	Optional	Optional
Receiver Connection	Blanking Plug**	Blanking Plug**
Net Weight in kg	157 - 210	310 - 410
Dimensions in mm (height x width x depth)	Height: 830 - 1230 Width: 1300 Depth: 430	Height: 1660 Width: 1350 Depth: 690

Optional Accessories

* Accessories labelled optional must be requested at point of quotation. There are certain Accessories that must be fitted where specific conditions apply. Please review the Tech Tips section or consult our technical team for more information.

** Blanking plug fitted as standard with no PRV. PRV to be ordered as an extra if required. Please review the Tech Tips section or consult our technical team for more information.

Cooling Capacity Overview

Min/Max Cooling capacity range (kW)	Bitzer Ecolite	Bitzer Ecostar
Medium Temperature (MBP)		
R448A/R449A	5.23 - 14.05	9.78 - 21.6
R134a	3.57 - 9.93	6.7 - 23
R407A	5.07 - 13.71	9.47 - 17.53
R407F	5.43 - 14.62	-
R450A	3.11 - 8.69	-
R513A	3.72 - 10.25	6.98 - 23.4
R407C	5 - 13.28	-
Low Temperature (LBP)		
R407A	1.15 - 3.61	3.15 - 11.7
R407F	1.26 - 3.94	-
R448A/R449A	1.25 - 3.86	3.33 - 8.32

Nominal duty at following conditions: MBP: Ambient temp = 32°C, Evap temp = -10°C **LBP:** Ambient temp = 32°C, Evap temp = -35°C

Related Items:



Bitzer ECOLITE

“Advanced line condensing unit series”



Semi-Hermetic Reciprocating Compressor

Bitzer semi-hermetic reciprocating compressor technology provides control flexibility, local maintenance and reliability as a more robust alternative to scroll applications. Reduced cost of operation and maintenance with increased utilisation of a valuable asset. Overall improved life cycle cost benefit of unit.

Capacity Control

Outside of the ‘design day’ condensing units are typically over capacity for majority of working life leading to on/off cycling which does not enable close control to set point. Offered as standard our unique capacity control helps minimise on/off cycling and therefore helps systems maintain set point. End user achieves closer control of set point and benefits from less ‘spikes’ in energy usage seen by on/off scroll alternatives.

Oil Return Function

The controller can be set to flush the system through after certain compressor run times. This ensures the oil is returned to the compressor and doesn't accumulate in the evaporator.

Oil Level Monitoring

All units are supplied as standard with the Bitzer OLC-K1 optical oil sensor that monitors oil along the crankshaft. This is a very effective method to protect the compressor against the loss of oil in the system.

MT/LT Application From Same Model

Designed to achieve MT/LT application with single unit. Best use of asset.

Room Temperature or Suction Pressure Control

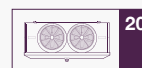
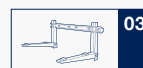
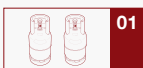
Optional control of unit using either room temperature sensor (additional component) or standard configuration for suction pressure control. Direct room sensing provides close control of condensing unit operation.

BEST Software Interface for Commissioning & Maintenance

Laptop software with USB connectivity achieves simple configuration for commissioning, maintenance and alarm rectification. Minimises on site time for engineer to set to work or diagnose issues due to alarm.



The Ecolite Condensing Unit is supplied with built-in Bluetooth connectivity, allowing the unit to connect wirelessly.





Semi-Hermetic Reciprocating Compressor

Bitzer Semi Hermetic reciprocating compressor technology provides control flexibility, local maintenance and reliability as a more robust alternative to scroll applications. Reduced cost of operation and maintenance with increased utilisation of a valuable asset. Overall improved life cycle cost benefit of unit.



Capacity Control

Outside of the 'design day' condensing units are typically over capacity for majority of working life leading to on/off cycling which does not enable close control to set point. Offered as standard our unique capacity control helps minimise on/off cycling and therefore helps systems maintain set point. End user achieves closer control of set point and benefits from less 'spikes' in energy usage seen by on/off scroll alternatives.



Mt/Lt Application From Same Model

Designed to achieve MT/LT application with single unit. Best use of asset



Room Temperature or Suction Pressure Control

Optional control of unit using either room temperature sensor (additional component) or standard configuration for suction pressure control. Direct room sensing provides close control of condensing unit operation.



BEST Software Interface for Commissioning & Maintenance

Laptop software with USB connectivity achieves simple configuration for commissioning, maintenance and alarm rectification. Minimise on site time for engineer to set to work or diagnose issues due to alarm.



Extended Warranty

The Bitzer Ecolite Condensing Unit is supplied with a standard warranty period of 12 months. For a fixed fee, this warranty period can be extended to up to 5 years in yearly increments.

Product Range

Model	Description	Part No.
LHL3E-2EES-2Y	Bitzer Ecolite LHL3E-2EES-2Y	461624
LHL3E-2DES-2Y	Bitzer Ecolite LHL3E-2DES-2Y	461625
LHL3E-2CES-3Y	Bitzer Ecolite LHL3E-2CES-3Y	461626
LHL5E-4FES-3Y	Bitzer Ecolite LHL5E-4FES-3Y	461627
LHL5E-4EES-4Y	Bitzer Ecolite LHL5E-4EES-4Y	461628
LHL5E-4DES-5Y	Bitzer Ecolite LHL5E-4DES-5Y	461629
LHL5E-4CES-6Y	Bitzer Ecolite LHL5E-4CES-6Y	461630



Capacity Data



R134a Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
LHL3E-2EES-2Y	-	-	-	1.52	2.09	2.77	3.57	4.49	5.56	6.76	8.12
LHL3E-2DES-2Y	-	-	-	1.82	2.49	3.28	4.2	5.26	6.48	7.85	9.38
LHL3E-2CES-3Y	-	-	-	2.25	3.05	3.99	5.07	6.31	7.72	9.3	11.05
LHL5E-4FES-3Y	-	-	-	2.42	3.3	4.36	5.62	7.1	8.83	10.81	13.06
LHL5E-4EES-4Y	-	-	-	3.34	4.43	5.73	7.24	8.99	11	13.27	15.83
LHL5E-4DES-5Y	-	-	-	3.69	4.95	6.46	8.24	10.3	12.66	15.33	18.32
LHL5E-4CES-6Y	-	-	-	4.57	6.07	7.85	9.93	12.32	15.03	18.08	21.4

R449A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-40	-35	-30	-25	-20	-15	-10	-5	0
LHL3E-2EES-2Y	0.82	1.25	1.77	2.51	3.28	4.19	5.23	6.42	7.77
LHL3E-2DES-2Y	1	1.47	2.05	2.74	3.76	4.76	5.91	7.23	8.7
LHL3E-2CES-3Y	1.32	1.9	2.6	3.43	4.64	5.83	7.18	8.7	-
LHL5E-4FES-3Y	1.51	2.2	3.03	4.24	5.49	6.96	8.67	10.63	12.86
LHL5E-4EES-4Y	1.86	2.69	3.7	5.17	6.68	8.43	10.46	12.76	15.37
LHL5E-4DES-5Y	2.08	3	4.13	5.48	7.44	9.39	11.62	14.15	-
LHL5E-4CES-6Y	2.73	3.86	5.22	6.83	9.18	11.46	14.05	16.94	-

R448A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
LHL3E-2EES-2Y	0.82	1.26	1.77	2.53	3.3	4.21	5.26	6.46	7.82	-	-
LHL3E-2DES-2Y	1	1.48	2.06	2.76	3.78	4.79	5.95	7.27	8.76	-	-
LHL3E-2CES-3Y	1.33	1.91	2.61	3.45	4.67	5.86	7.22	8.75	-	-	-
LHL5E-4FES-3Y	1.51	2.21	3.05	4.27	5.53	7	8.72	10.69	12.94	-	-
LHL5E-4EES-4Y	1.87	2.7	3.72	4.94	6.72	8.48	10.52	12.84	15.46	-	-
LHL5E-4DES-5Y	2.08	3.02	4.15	5.51	7.49	9.45	11.69	14.24	-	-	-
LHL5E-4CES-6Y	2.74	3.88	5.25	6.87	9.24	11.53	14.14	17.05	-	-	-

R407A Duty: kW Evap Temperature: C

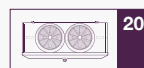
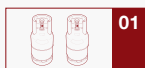
If No Duty Shown = Outside Operating Envelope

Model	-40	-35	-30	-25	-20	-15	-10	-5	0
LHL3E-2EES-2Y	0.73	1.15	1.65	2.25	2.98	4.03	5.07	6.27	7.62
LHL3E-2DES-2Y	0.9	1.36	1.92	2.6	3.41	4.59	5.75	7.06	8.54
LHL3E-2CES-3Y	1.21	1.77	2.45	3.27	4.24	5.36	7	8.52	10.21
LHL5E-4FES-3Y	1.46	2.13	2.95	3.93	5.11	6.84	8.54	10.5	12.73
LHL5E-4EES-4Y	1.69	2.5	3.49	4.68	6.09	8.16	10.18	12.48	15.08
LHL5E-4DES-5Y	1.88	2.79	3.89	5.22	6.79	8.63	11.31	13.83	16.67
LHL5E-4CES-6Y	2.5	3.61	4.94	6.54	8.4	10.56	13.71	16.6	-

R407C Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-25	-20	-15	-10	-5
LHL3E-2EES-2Y	2.34	3.09	3.97	5	6.18
LHL3E-2DES-2Y	2.69	3.53	4.51	5.65	6.95
LHL3E-2CES-3Y	3.35	4.36	5.53	6.87	8.38
LHL5E-4FES-3Y	3.63	4.82	6.23	7.89	9.79
LHL5E-4EES-4Y	4.48	5.92	7.63	9.6	11.86
LHL5E-4DES-5Y	5.18	6.8	8.71	10.9	13.38
LHL5E-4CES-6Y	6.52	8.47	10.72	13.28	16.15



R407F Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-40	-35	-30	-25	-20	-15	-10	-5	0
LHL3E-2EES-2Y	0.82	1.26	1.8	2.45	3.22	4.34	5.43	6.67	8.08
LHL3E-2DES-2Y	0.99	1.49	2.1	2.83	3.68	4.93	6.14	7.52	9.06
LHL3E-2CES-3Y	1.33	1.93	2.67	3.54	4.56	5.74	7.47	9.05	-
LHL5E-4FES-3Y	1.52	2.24	3.11	4.15	5.4	7.22	9.01	11.05	13.38
LHL5E-4EES-4Y	1.87	2.74	3.79	5.06	6.56	8.75	10.87	13.28	15.99
LHL5E-4DES-5Y	2.08	3.05	4.23	5.65	7.31	9.25	12.08	14.72	17.67
LHL5E-4CES-6Y	2.76	3.94	5.37	7.06	9.03	11.31	14.62	17.64	-

R507A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-40	-35	-30	-25	-20	-15	-10	-5	0
LHL3E-2EES-2Y	1.12	1.68	2.26	2.94	3.73	4.63	5.65	6.8	8.06
LHL3E-2DES-2Y	1.32	1.95	2.6	3.37	4.24	5.23	6.35	7.58	8.93
LHL3E-2CES-3Y	1.7	2.47	3.25	4.16	5.18	6.32	7.59	8.97	-
LHL5E-4FES-3Y	2.01	2.86	3.73	4.83	6.1	7.57	9.25	11.16	13.29
LHL5E-4EES-4Y	2.49	3.54	4.64	5.94	7.46	9.2	11.18	13.39	15.82
LHL5E-4DES-5Y	2.84	4.03	5.27	6.72	8.4	10.33	12.5	14.91	17.56
LHL5E-4CES-6Y	3.36	4.79	6.25	7.96	9.93	12.15	14.64	17.37	-

R450A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-25	-20	-15	-10	-5	0	5	10
LHL3E-2EES-2Y	1.3	1.8	2.4	3.11	3.93	4.88	5.97	7.2
LHL3E-2DES-2Y	1.56	2.15	2.84	3.66	4.61	5.7	6.94	8.34
LHL3E-2CES-3Y	1.94	2.64	3.47	4.43	5.55	6.82	8.25	9.86
LHL5E-4FES-3Y	2.07	2.84	3.77	4.88	6.2	7.74	9.53	11.56
LHL5E-4EES-4Y	2.87	3.83	4.97	6.31	7.87	9.68	11.74	14.06
LHL5E-4DES-5Y	3.16	4.28	5.61	7.19	9.04	11.17	13.6	16.34
LHL5E-4CES-6Y	3.93	5.26	6.83	8.69	10.84	13.31	16.1	19.21

R513A Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	-25	-20	-15	-10	-5	0	5	10
LHL3E-2EES-2Y	1.64	2.22	2.91	3.72	4.64	5.7	6.9	8.25
LHL3E-2DES-2Y	1.96	2.64	3.44	4.36	5.42	6.63	7.99	9.5
LHL3E-2CES-3Y	2.41	3.22	4.16	5.25	6.48	7.87	9.42	11.13
LHL5E-4FES-3Y	2.6	3.5	4.58	5.86	7.36	9.09	11.07	13.31
LHL5E-4EES-4Y	3.55	4.66	5.98	7.5	9.25	11.25	13.51	16.03
LHL5E-4DES-5Y	3.93	5.22	6.75	8.54	10.6	12.94	15.58	18.51
LHL5E-4CES-6Y	4.85	6.38	8.17	10.25	12.62	15.29	18.27	21.5



Technical Data

Condensing Unit Model	Compressor Model	Application	Power Supply	Noise Level 50hz (@10 M Distance) [Db(A)]	Number Of Fans	Receiver Volume [L]	Net Weight	Pipe Connections		Dimensions					Fan Power Supply [V/Ph/Hz]	MRA (A)
								Liquid Line Connection [In]	Suction Connection Size [In]	Length (Mm)	Width (Mm)	Total Height (Mm)	Fan Diameter (Mm)	Fan Blade Size (Mm)		
LHL3E-2EES-2Y	2EES-2	LBP/MBP	3/50/400	39.5	1	7.8	163	1/2	7/8	450	1300	830	450	450	230v-1-50/60Hz	6.56
LHL3E-2DES-2Y	2DES-2	LBP/MBP	3/50/400	40	1	7.8	163	1/2	7/8	450	1300	830	450	450	230v-1-50/60Hz	8.06
LHL3E-2CES-3Y	2CES-3	LBP/MBP	3/50/400	40.5	1	7.8	163	1/2	7/8	450	1300	830	450	450	230v-1-50/60Hz	9.66
LHL5E-4FES-3Y	4FES-3	LBP/MBP	3/50/400	41.5	2	15	222	5/8	1 1/8	450	1300	1230	450	450	230v-1-50/60Hz	10.06
LHL5E-4EES-4Y	4EES-4	LBP/MBP	3/50/400	42.5	2	15	222	5/8	1 1/8	450	1300	1230	450	450	230v-1-50/60Hz	12.76
LHL5E-4DES-5Y	4DES-5	LBP/MBP	3/50/400	43.5	2	15	222	5/8	1 1/8	450	1300	1230	450	450	230v-1-50/60Hz	15.05
LHL5E-4CES-6Y	4CES-6	LBP/MBP	3/50/400	43.5	2	15	222	5/8	1 1/8	450	1300	1230	450	450	230v-1-50/60Hz	18.26



Tech Tips

Q. Why is a Crankcase Heater fitted to a compressor?

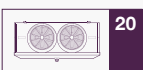
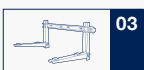
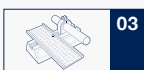
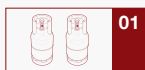
A. The oil heater ensures the lubricity of the oil even after long standstill periods. It prevents increased refrigerant concentration in the oil and therefore reduction of viscosity. The oil heater must be operated while the compressor is at standstill in case of;

- Outdoor installation of the compressor
- Long shut-off periods
- High refrigerant charge
- Possible refrigerant condensation in the compressor

Q. What is the maximum number of starts a compressor can have per hour?

A. The compressor should not start more than 8 times per hour. Be sure to adhere to the minimum running time:

- Motor Power: <5.5kW - Minimum Running Time: 2 mins
- Motor Power: 5.5kW - 15kW - Minimum Running Time: 3 mins
- Motor Power: >15kW - Minimum Running Time: 5 mins



Condensing Unit Model	High Pressure Transducer	Low Pressure Transducer	CRII Controller	Crankcase heater	Filter Drier (with Sight Glass)	Ball Valve (Shut-off DBV)	Oil Separator	Check Valve	Oil Level Switch	Capillary Hose
LHL3E-2EES-2Y	34731492	34731491	34760147	34321921	36211601	36159310	35501191	36120901	34733491	36032691
LHL3E-2DES-2Y	34731492	34731491	34760147	34321921	36211601	36159310	35501191	36120901	34733491	36032691
LHL3E-2CES-3Y	34731492	34731491	34760147	34321921	36211601	36159310	35501191	36120901	34733491	36032691
LHL5E-4FES-3Y	34731492	34731491	34760147	34321921	36211602	36159311	35501192	36120902	34733491	36032691
LHL5E-4EES-4Y	34731492	34731491	34760147	34321921	36211602	36159311	35501192	36120902	34733491	36032691
LHL5E-4DES-5Y	34731492	34731491	34760147	34321921	36211602	36159311	35501192	36120902	34733491	36032691
LHL5E-4CES-6Y	34731492	34731491	34760147	34321921	36211602	36159311	35501192	36120902	34733491	36032691

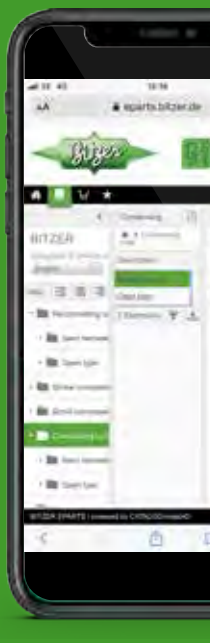
Condensing Unit Model	Condenser Coil	Fan Motor	Fan Blade	Fan Grille Condenser	Fan For Compressor Compartment	Fan Grille For Compressor Compartment	Controller With Display
LHL3E-2EES-2Y	35055191	34304891	32440391	32612591	34304191	32612592	34792091
LHL3E-2DES-2Y	35055191	34304891	32440391	32612591	34304191	32612592	34792091
LHL3E-2CES-3Y	35055191	34304891	32440391	32612591	34304191	32612592	34792091
LHL5E-4FES-3Y	35055291	34304891	32440391	32612591	34304191	32612592	34792091
LHL5E-4EES-4Y	35055291	34304891	32440391	32612591	34304191	32612592	34792091
LHL5E-4DES-5Y	35055291	34304891	32440391	32612591	34304191	32612592	34792091
LHL5E-4CES-6Y	35055291	34304891	32440391	32612591	34304191	32612592	34792091

Bitzer e-Parts

Spares Directory for BITZER Products

ePARTS allows you to quickly and simply locate spare parts for our products. These are listed according to model range and appear as a straightforward exploded-view drawing. The free software makes selecting the appropriate spare part fast and easy.

For more information contact your local branch today.

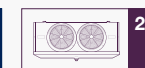
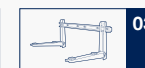
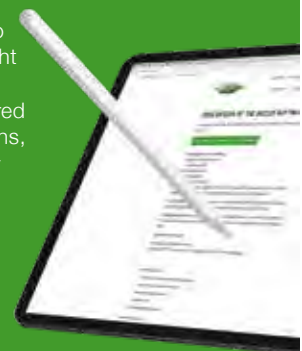


Bitzer Software

Selection-software for the reliable selection of products from the broad product range of BITZER

The BITZER software helps you to design systems and select the right items from our extensive range of products. You receive all the desired information, technical specifications, calculation results and individually designed performance tables for compressors as a print-out or in PDF format. The program is very user friendly, available in several languages and offers lots of additional information.

The BITZER software is also available as an online version. It's compatible with all browsers and always up to date.





Bitzer ECOSTAR

“Premium quality, premium performance”

System-Optimized Condenser:

Mini channel condenser with high heat transfer rate and low refrigerant charge.

Controller with Display:

The Ecostar controller has built in dedicated software, which allows full connectivity to Bitzer's BEST software. The BEST software USB connectivity achieves simple configuration for commissioning, maintenance and alarm rectification. Minimising the onsite time required for engineers to commission or diagnose alarm issues. The controller has other built in functions such as; Automatic emergency information, Oil Flush option and Night-time mode.

Speed-Controlled Fans:

Low power consuming fan motor with variable speed controller.

Pre-Wired Switch Board:

The Ecostar offers the installing engineer a simple commissioning process through Bitzer's plug and play concept, whilst the main power service switch aids a fast and easy process for maintenance purposes.

Comprehensive Equipment As Standard:

- Liquid receiver
- Sight glass
- Filter drier
- High and low pressure switches and transmitters
- Crankcase heater
- Suction, discharge and ambient temperature sensors

Sound Proof Design:

Unit housing and compressor compartment developed for maximum sound protection.

Bitzer Ecoline Compressor:

Highly efficient BITZER ECOLINE compressor with:

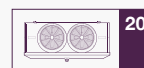
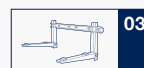
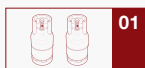
- > VARISPEED capacity control (30% to 100%)
- > Start unloading

2 Year Warranty:

The Bitzer Ecolite Condensing Unit is supplied with a standard warranty period of 2 years. For a fixed fee, this warranty period can be extended to up to 5 years in yearly increments.

Bluetooth®

The Ecostar Condensing Unit is supplied with built-in Bluetooth connectivity, allowing the unit to connect wirelessly.





Simple Construction

One captive screw in each air intake and air discharge assembly offers simple access without loss of fixings. Less time taken by engineer to access internal components or likelihood of fixings going missing.



Minimised Footprint

Front air intake and vertical discharge ensures slim profile and ability for installation against a wall. Space is always a prime consideration and Ecostar optimises location options without the need for large footprint due to air path.



Plug and Play Controls

Simple installation and commissioning of unit. Digital or Analogue I/O provides optional integration to BMS or just commissioned for stand-alone operation. Integration to meet customers' needs allowing stand-alone control of set point or BMS control of operating parameters.



Bluetooth interface

Ease of engineer laptop connectivity for commissioning and maintenance. Speed of interrogation of unit to set to work, maintenance review of parameters or diagnose alarm issues.



Inverter Compressor

Widest range of compressor capacity. Operating to 87Hz offers largest capacity and ability to select smaller unit to achieve given duty. Economy of operation across the operating range. Minimise unit size to achieve capacity at design along with reduced speed of operation at normal operating conditions. Energy saving provides maximum cost benefit and minimised life cycle cost.



EC Fans

EC fans provide option for lowest noise operation. Low noise operation for acoustically challenging applications.



Master/Slave

Up to 4 units can be connected for combined larger duties. Units control their own evaporator and set up in temperature control mode. This is a considered solution for F-Gas constraints.



Extended Warranty

The Bitzer Ecostar Condensing Unit is supplied with a standard warranty period of 2 years. For a fixed fee, this warranty period can be extended to up to 5 years in yearly increments.



Product Range



Condensing Unit Model	Description	Part No.
LHV5E/2DES-3.F1Y	Bitzer Ecostar LHV5E/2DES-3.F1Y	447000
LHV5E/4FE-5.F1Y	Bitzer Ecostar LHV5E/4FE-5.F1Y	447001
LHV5E/4EE-6.F1Y	Bitzer Ecostar LHV5E/4EE-6.F1Y	447002
LHV7E/4FE-5.F1Y	Bitzer Ecostar LHV7E/4FE-5.F1Y	447003
LHV7E/4EE-6.F1Y	Bitzer Ecostar LHV7E/4EE-6.F1Y	447004
LHV7E/4DE-5.F1Y	Bitzer Ecostar LHV7E/4DE-5.Y1Y	447005
LHV7E/4CE-6.F1Y	Bitzer Ecostar LHV7E/4CE-6.F1Y	447006
LHV7E/4DE-7.F3Y	Bitzer Ecostar LHV7E/4DE-7.F3Y	447007
LHV7E/4CE-9.F3Y	Bitzer Ecostar LHV7E/4CE-9.F3Y	447008
LHV7E/4VE-7.F3Y	Bitzer Ecostar LHV7E/4VE-7.F3Y	447009
LHV7E/4TE-9.F3Y	Bitzer Ecostar LHV7E/4TE-9.F3Y	447010
LHV7E/4PE-12.F3Y	Bitzer Ecostar LHV7E/4PE-12.F3Y	447011
LHV7E/4NE-14.F3Y	Bitzer Ecostar LHV7E/4NE-14.F3Y	447012

Capacity Data

R448A Duty: kW Evap Temperature: C

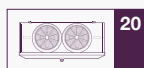
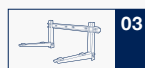
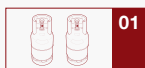
Model	-30	-25	-20	-15	-10	-5	0	5	10
LHV5E/2DES-3.F1Y	3.53	4.75	6.2	7.88	9.78	11.94	14.39	-	-
LHV5E/4FE-5.F1Y	4.87	6.47	8.3	10.58	12.79	15.53	18.49	21.8	-
LHV7E/4FE-5.F1Y	5	6.68	8.68	10.99	13.62	16.63	20.1	23.8	-
LHV5E/4EE-6.F1Y	5.93	7.78	10.04	12.35	15.13	18.14	-	-	-
LHV7E/4EE-6.F1Y	6.13	8.17	10.54	13.24	16.33	19.86	-	-	-
LHV7E/4DE-7.F3Y	6.87	9.13	11.72	14.69	18.07	22	26.1	30.7	-
LHV7E/4CE-9.F3Y	8.74	11.36	14.37	17.79	21.6	25.9	-	-	-

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R449A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
LHV5E/2DES-3.F1Y	3.51	4.72	6.16	7.83	9.72	11.87	14.35	17.07	-
LHV5E/4FE-5.F1Y	4.84	6.43	8.25	10.33	12.7	15.39	18.37	21.7	-
LHV7E/4FE-5.F1Y	4.98	6.64	8.63	10.92	13.54	16.52	19.93	23.7	-
LHV5E/4EE-6.F1Y	5.9	7.74	9.85	12.27	14.99	18.01	-	-	-
LHV7E/4EE-6.F1Y	6.1	8.13	10.48	13.16	16.23	19.7	-	-	-
LHV7E/4DE-7.F3Y	6.83	9.08	11.65	14.59	17.98	21.7	25.9	30.5	-
LHV7E/4CE-9.F3Y	8.69	11.29	14.28	17.7	21.5	25.7	-	-	-

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K



R407A Duty: kW Evap Temperature: C

Model	-25	-20	-15	-10	-5	0	5	10
LHV5E/2DES-3.F1Y	4.48	5.91	7.57	9.47	11.68	14.06	16.81	-
LHV5E/4FE-5.F1Y	6.15	7.97	10.04	12.41	15.14	18.09	21.4	-
LHV7E/4FE-5.F1Y	6.34	8.31	10.6	13.21	16.19	19.59	23.4	-
LHV5E/4EE-6.F1Y	7.43	9.53	11.94	14.67	17.7	-	-	-
LHV7E/4EE-6.F1Y	7.76	10.11	12.78	15.84	19.34	23.2	-	-
LHV7E/4DE-7.F3Y	8.67	11.23	14.18	17.53	21.3	25.5	30.1	-
LHV7E/4CE-9.F3Y	10.85	13.83	17.26	21.1	25.3	-	-	-

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R134a Duty: kW Evap Temperature: C

Model	-25	-20	-15	-10	-5	0	5	10
LHV5E/2DES-3.F1Y	2.83	3.9	5.18	6.7	8.47	10.49	12.73	15.21
LHV5E/4FE-5.F1Y	3.57	4.9	6.52	8.44	10.66	13.11	15.85	18.9
LHV7E/4FE-5.F1Y	3.64	5	6.66	8.64	10.99	13.72	16.78	20.2
LHV5E/4EE-6.F1Y	4.99	6.66	8.63	10.86	13.32	16.08	19.14	22.5
LHV7E/4EE-6.F1Y	5.09	6.81	8.85	11.25	14.01	17.07	20.5	24.3
LHV7E/4DE-5.F1Y	5.63	7.63	10.02	12.83	15.99	19.52	23.5	27.8
LHV7E/4DE-7.F3Y	5.63	7.62	10.02	12.82	15.99	19.52	23.5	27.8
LHV7E/4CE-6.F1Y	7.06	9.44	12.25	15.44	19.01	23	27.4	-
LHV7E/4CE-9.F3Y	7.06	9.44	12.25	15.44	19.01	23	27.4	32.2
LHV7E/4VE-7.F3Y	6.84	9.47	12.54	15.95	19.73	23.9	28.5	-
LHV7E/4TE-9.F3Y	8.37	11.42	14.85	18.63	22.8	27.4	32.4	-
LHV7E/4PE-12.F3Y	8.98	12.38	16.11	20.3	24.9	29.8	35	-
LHV7E/4NE-14.F3Y	10.72	14.41	18.48	23	28	-	-	-

If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

R513A Duty: kW Evap Temperature: C

Model	-30	-25	-20	-15	-10	-5	0	5	10
LHV5E/2DES-3.F1Y	-	3.04	4.14	5.45	6.98	8.76	10.78	12.99	15.43
LHV5E/4FE-5.F1Y	-	3.83	5.2	6.85	8.79	10.99	13.4	16.1	19.08
LHV7E/4FE-5.F1Y	-	3.91	5.31	7.01	9.02	11.39	14.12	17.15	20.5
LHV5E/4EE-6.F1Y	-	5.29	7	8.97	11.17	13.6	16.3	19.27	22.5
LHV7E/4EE-6.F1Y	-	5.41	7.17	9.24	11.66	14.41	17.43	20.8	24.5
LHV7E/4DE-5.F1Y	-	6.02	8.05	10.48	13.29	16.41	19.89	23.7	27.9
LHV7E/4DE-7.F3Y	-	6.01	8.05	10.48	13.29	16.41	19.89	23.7	28
LHV7E/4CE-6.F1Y	-	7.49	9.92	12.75	15.89	19.39	23.3	-	-
LHV7E/4CE-9.F3Y	-	7.49	9.92	12.75	15.89	19.39	23.3	-	32.1
LHV7E/4VE-7.F3Y	-	7.37	10.04	13.1	16.45	20.1	24.2	28.5	-
LHV7E/4TE-9.F3Y	-	8.97	12.03	15.39	19.09	23.2	27.5	32.2	-
LHV7E/4PE-12.F3Y	-	9.67	13.05	16.7	20.7	25.1	29.8	-	-
LHV7E/4NE-14.F3Y	-	11.44	15.05	19.02	23.4	28	-	-	-

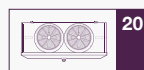
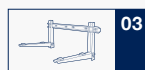
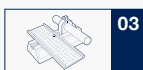
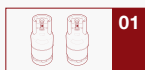
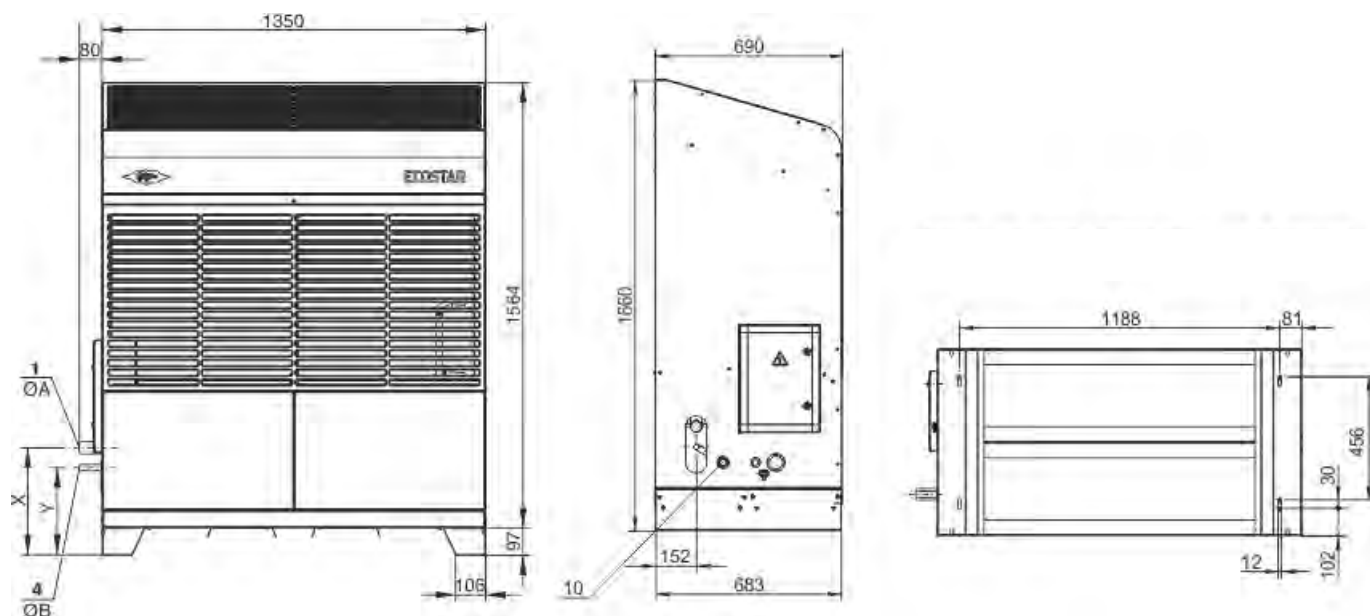
If No Duty Shown = Outside Operating Envelope Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K



Technical Data

Condensing Unit Model	Compressor Model	Application	Power Supply	Noise Level 80Hz (@10 M Distance) [Db(A)]	Number Of Fans	Receiver Volume [L]	Net Weight	Pipe Connections			Dimensions					Fan Power Supply [V/Ph/Hz]	MRA (A)
								Liquid Line Connection [in]	Suction Connection Size [in]	Length (Mm)	Width (Mm)	Total Height (mm)	Fan Diameter (mm)	Fan Blade Size (mm)			
LHV5E/2DES-3.F1Y	-	MBP/LBP	380 - 400 V 3 ph	41.5	1	23.2	310	5/8	7/8	690	1350	1660	500	500	230v-1-50/60Hz	16	
LHV5E/4FE-5.F1Y	-	MBP/LBP	380 - 400 V 3 ph	42.5	1	23.2	320	5/8	1 1/8	690	1350	1660	500	500	230v-1-50/60Hz	21	
LHV5E/4EE-6.F1Y	-	MBP/LBP	380 - 400 V 3 ph	43	1	23.2	320	5/8	1 1/8	690	1350	1660	500	500	230v-1-50/60Hz	23	
LHV7E/4FE-5.F1Y	-	MBP/LBP	380 - 400 V 3 ph	43	2	23.2	340	5/8	1 1/8	696	1430	1661	500	500	230v-1-50/60Hz	22	
LHV7E/4EE-6.F1Y	-	MBP/LBP	380 - 400 V 3 ph	43.5	2	23.2	340	5/8	1 1/8	696	1430	1661	500	500	230v-1-50/60Hz	24	
LHV7E/4DE-5.F1Y	-	MBP/LBP	380 - 400 V 3 ph	47	2	23.2	340	7/8	1 3/8	696	1430	1661	500	500	230v-1-50/60Hz	24	
LHV7E/4CE-6.F1Y	-	MBP/LBP	380 - 400 V 3 ph	47.5	2	23.2	340	7/8	1 3/8	696	1430	1661	500	500	230v-1-50/60Hz	24	
LHV7E/4DE-7.F3Y	-	MBP/LBP	380 - 400 V 3 ph	47	2	23.2	340	7/8	1 3/8	696	1430	1661	500	500	230v-1-50/60Hz	30	
LHV7E/4CE-9.F3Y	-	MBP/LBP	380 - 400 V 3 ph	47.5	2	23.2	340	7/8	1 3/8	696	1430	1661	500	500	230v-1-50/60Hz	36	
LHV7E/4VE-7.F3Y	-	MBP/LBP	380 - 400 V 3 ph	47.5	2	23.2	400	7/8	1 5/8	696	1430	1661	500	500	230v-1-50/60Hz	25	
LHV7E/4TE-9.F3Y	-	MBP/LBP	380 - 400 V 3 ph	48	2	23.2	400	7/8	1 5/8	696	1430	1661	500	500	230v-1-50/60Hz	28	
LHV7E/4PE-12.F3Y	-	MBP/LBP	380 - 400 V 3 ph	48.5	2	23.2	410	7/8	1 5/8	696	1430	1661	500	500	230v-1-50/60Hz	32	
LHV7E/4NE-14.F3Y	-	MBP/LBP	380 - 400 V 3 ph	49.5	2	23.2	410	7/8	1 5/8	696	1430	1661	500	500	230v-1-50/60Hz	36	

Sound pressure in 10m (to=-10°C, tamb=32°C)



Condensing Unit Model	Main Contactor	Main Switch	Cartridge Pressure Switch HD	Ntc-Sensor Cooling Position/Suction Temp	Dis. Gastemp. Sensor	Temperature Sensor	Fuse	Pressure Sensor	Pressure Sensor	Best Converter
LHV5E/2DES-3.F1Y	34792201	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV5E/4FE-5.F1Y	34792201	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV5E/4EE-6.F1Y	34792201	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4FE-5.F1Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4EE-6.F1Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4DE-5.Y1Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4CE-6.F1Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4DE-7.F3Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4CE-9.F3Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4VE-7.F3Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4TE-9.F3Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4PE-12.F3Y	34792202	34792402	34731552	34703301	34703701	34703702	34593003	34731401	34731402	34431402
LHV7E/4NE-14.F3Y	34792202	34792402	34731553	34703301	34703701	34703702	34593003	34731401	34731402	34431402

Condensing Unit Model	Fan Complete	Air-Cooled Condenser	Air Grille Top	Air Grille Plate	Check Valve	Filter Drier	Sight Glass	Solenoid Valve	Coil	Frequency Inverter	Kit Controller	Display	Transformer
LHV5E/2DES-3.F1Y	34302305	35053598	32492021	32492022	36120003	36210109	36183103	34716601	34330902	34793515	34792902	34792025	34792101
LHV5E/4FE-5.F1Y	34302305	35053598	32492021	32492022	36120003	36210109	36183103	34716601	34330902	34793515	34792902	34792025	34792101
LHV5E/4EE-6.F1Y	34302305	35053598	32492021	32492022	36120003	36210109	36183103	34716601	34330902	34793515	34792902	34792025	34792101
LHV7E/4FE-5.F1Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793515	34792902	34792025	34792101
LHV7E/4EE-6.F1Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793515	34792902	34792025	34792101
LHV7E/4DE-5.Y1Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793515	34792902	34792025	34792101
LHV7E/4CE-6.F1Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793515	34792902	34792025	34792101
LHV7E/4DE-7.F3Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793551	34792902	34792025	34792101
LHV7E/4CE-9.F3Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793551	34792902	34792025	34792101
LHV7E/4VE-7.F3Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793551	34792902	34792025	34792101
LHV7E/4TE-9.F3Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793551	34792902	34792025	34792101
LHV7E/4PE-12.F3Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793551	34792902	34792025	34792101
LHV7E/4NE-14.F3Y	34302305	35053598	32492021	32492022	36120003	36210108	36183102	34716601	34330902	34793551	34792902	34792025	34792101

Tech Tips

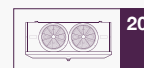
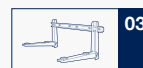
Q. Do I need to install an oil management system?

A. Installing an oil management system is a must if your installation involves more than one Ecostar unit commissioned as a master-slave.

Q. Do I need any specific accessories for freezer applications?

A. Bitzer's refrigerant injection system is recommended for any installation with evaporating conditions of -35 or below.

Related Items:





SCM Cubo₂ Packaged Condensing Units

SCM leads the way in sustainable refrigeration by developing a range of CO₂ condensing units suitable for a wide range of applications. With a GWP of 1, R744 systems provide a long term environmentally friendly solution, ideal for any end user looking for a long term financial investment.

All SCM Cubo₂ units utilise Carel control systems to give lower energy consumption than HFC solutions. Combining Carel's HECU controller with an inverter driven DC compressor the system offers superior performance compared with traditional systems. This combination offers real time modulation of cooling capacity in order to achieve the best combination of energy consumption and environmental benefits. This assists the system with complying with the Ecodesign regulation set by the FGAS regulations for condensing unit applications. These systems also provide remote, real-time communications and diagnostics together with extremely stable temperature control, compared with a mechanical expansion device.

The system comprises of 3 product families;
Cubo₂ Smart, Cubo₂ Aqua and Cubo₂ Plus.

Cubo₂ Smart – DC Hermetic based system, comprising of 7 units. This compact unit comes fitted with an electrical panel which is factory pre-set, making it easy to install and maintain. Available in 3 LT models, 3.66kW – 7.27kW and 4 MT models, 2.55kW – 8.21kW.

Cubo₂ Aqua – Water-cooled version of Cubo₂ Smart, comprising of 7 units. This compact unit comes fitted with a gas cooler, electrical panel which is factory pre-set, making it easy to install and maintain. The units are ready to be plumbed into an existing cooling water system or a suitable pump set/dry cooler for standalone systems.

Cubo₂ Plus – This range of semi-hermetic based CO₂ condensing units covers a duty range 5.8kw – 26.8kw using Dorin compressors spread across a range of 6 condensing Units in a MT application. Dorin compressors are also used on 4 LT condensing units covering a range of 1.9kw through to 10.5 kw. If fitted with the Bitzer compressor the duty range extends from 9.5kw – 28.7kw across a range of 4 condensing units.





Benefits for the Contractor

Cubo2's compatibility with the Carel HECU controller offers market leading unit monitoring, settings management and reporting of all plant equipment. Peace of mind for any maintenance contractor.



Benefits for the End-User

Cubo2's compatibility with the Carel HECU controller offers market leading unit monitoring, settings management and reporting of all plant equipment. Peace of mind for any maintenance contractor.

MBP & LBP Applications

- Cold rooms, display cabinets in convenience stores, mini markets, restaurants, fisheries, butcheries, bakeries, florists, laboratories
- Wine cellars
- Milk cooling
- Industrial processes
- Dairy and general food storage



Specification Overview

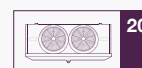
	CUBO ₂ Smart	CUBO ₂ Aqua	CUBO ₂ Plus
Compressor Technology	Rotary	Rotary	Semi Hermetic
Control Box	Yes	Yes	Yes
Fan Speed Controller	Yes	Yes	No
Main Switch (Circuit Breaker)	No	No	Yes
Filter Drier	Yes	Yes	Yes
Sight Glass	Yes	Yes	Yes
Crankcase Heater	Yes	Yes	Yes
HP/LP Adjustable Pressostat	Pressure Stat	Pressure Stat	Yes
Access Door(s)	Yes	Yes	Yes
Acoustic Insulation	Yes	Yes	Yes
Electronic Controller	Yes	Yes	Yes
Network Connectivity	Yes	Yes	Yes
Oil Separator	No	No	Yes
Net Weight in kg	150kg – 176kg	150kg – 176kg	460kg - 655kg
Dimensions in mm (height x width x depth)	805mm x 1150mm x 620mm (MBP) 805mm x 1545mm x 620mm (LBP)	805mm x 1525mm x 620mm	1340mm x 760mm x 1485mm 1895mm x 760mm x 1486mm

Cooling Capacity Overview

Min/Max Cooling Capacity Range (kW)	CUBO ₂ Smart	CUBO ₂ Aqua	CUBO ₂ Plus
Medium Temperature (MBP) - R744	2.55kw – 8.21kw	2.64kw – 8.29kw	5.57kw – 28.39kw
Low Temperature (LBP) - R744	2.95kw - 6.63kw	2.95kw - 6.63kw	1.9kw - 11.03kw

Nominal duty at following conditions: MBP: Ambient temp = 32°C, Evap temp = -10°C **LBP:** Ambient temp = 32°C, Evap temp = -30°C

Related Items:



CUBO₂ Smart



SCM have developed a range of CO₂ transcritical condensing units that use inverter technology with the Carel Hecu smart control strategy to give lower energy consumption than traditional HFC solutions. This compact condensing unit comes factory pre-set making it easy to install and maintain. With a GWP of 1, R744 systems provide a long term environmentally friendly solution.

Low GWP Refrigerant

Using CO₂ as a refrigerant is as green as it gets. With an ODP of 0 and GWP of 1, the Cubo₂Smart condensing unit is the greenest solution on the market. CO₂ has many other benefits for both the contractor and end user, these include being up to 5 times more efficient than R404A and is a non-flammable refrigerant.

Low Noise

Due to its inverter compressor, component design as well as EC fan specification, the Cubo₂Smart unit offers low db(A) ratings across the range, ideal for challenging installation conditions.

Please call for industry leading noise level data (supplied upon application).

EC Fan Motor

EC Fans consume significantly lower power compared to normal AC fans. Not only does this translate into energy savings but also peace of mind for the contractor and end-user. EC fans are an ideal solution for acoustically challenging applications.

Inverter Compressor

The inverter compressors from Toshiba offer great energy saving rewards and provides maximum cost benefit and a minimised life cycle cost to the end user.



Carel HECU Controller **H-ECU**

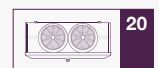
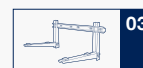
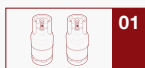
Carel's HECU controller offers real-time modulation of cooling capacity aiding in low energy consumption at all times. This high performance means the system both complies with the Eco-design directive on energy performance and exceeds the limits set by the F-Gas Regulation for condensing unit applications.

Capacity Data

R744 Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Model	Part Number	-30	-25	-20	-15	-10	-5	0	5
UMTT 030 MTDX/S	480067	-	-	-	2.18	2.55	2.94	3.36	3.83
UMTT 045 MTDX/S	480068	-	-	-	3.29	3.85	4.44	5.08	5.78
UMTT 067 MTDX/S	480069	-	-	-	4.72	5.50	6.36	7.28	8.25
UMTT 100 MTDX/S	480070	-	-	-	7.05	8.21	9.49	10.87	-
UMTT 030 BTDX/S	480071	3.34	3.66	3.90	-	-	-	-	-
UMTT 045 BTDX/S	480072	5.05	5.33	5.70	-	-	-	-	-
UMTT 067 BTDX/S	480073	6.60	7.27	7.80	-	-	-	-	-



Condensing Unit Model	Part No.	Compressor model	Application	Power supply	Number of fans	Receiver volume [L]	Net weight	Pipe Connections		Dimensions						LRA (A)
								Liquid line connection [in]	Suction connection size [in]	Length (mm)	Width (mm)	Total height (mm)	Fan diameter (mm)	Fan blade size (mm)	Fan power supply [V/Ph/Hz]	
UMTT 030 MTDX/S	480067	DY30N1F-10FU	MBP	220 - 240 V 1 ph	1	8	150	3/8	3/8	1150	620	805	500	500	220 - 240 V 1 ph	11.6
UMTT 045 MTDX/S	480068	DY45N1F-10FU	MBP	220 - 240 V 1 ph	1	8	150	3/8	3/8	1150	620	805	500	500	220 - 240 V 1 ph	16.1
UMTT 067 MTDX/S	480069	DY67L1F-10FU	MBP	220 - 240 V 1 ph	1	8	150	3/8	3/8	1150	620	805	500	500	220 - 240 V 1 ph	23.1
UMTT 100 MTDX/S	480070	RY100L1F-10FU	MBP	380 - 400 V 3 ph	1	8	150	3/8	1/2	1150	620	805	500	500	220 - 240 V 1 ph	17.3
UMTT 030 BTDX/S	480071	DY30N1F-10FU	LBP	220 - 240 V 1 ph	1	8	176	3/8	3/8	1545	620	805	500	500	220 - 240 V 1 ph	16.1
UMTT 045 BTDX/S	480072	DY45N1F-10FU	LBP	220 - 240 V 1 ph	1	8	176	3/8	3/8	1545	620	805	500	500	220 - 240 V 1 ph	22.9
UMTT 067 BTDX/S	480073	DY67N1F-10FU	LBP	380 - 400 V 3 ph	1	8	176	3/8	3/8	1545	620	805	500	500	220 - 240 V 1 ph	20.4

Spares

Condensing Unit Model	Compressor	Inverter	Condenser Fan	Filter/Drier	High Pressure Switch	Liq receiver/ Suction Press. Transducer	Gas Cooler Press. Transducer	Press. Transducer Cable (For all SPKT)	3/8" Non Return Valve
UMTT 030 MTDX/S	48101	48142	48119	48112	48114	48148	48147	48146	48115
UMTT 045 MTDX/S	48100	48143	48119	48112	48114	48148	48147	48146	48115
UMTT 067 MTDX/S	48102	48144	48119	48112	48114	48148	48147	48146	48115
UMTT 100 MTDX/S	48103	48145	48119	48112	48114	48148	48147	48146	48115
UMTT 030 BTDX/S	48101	48142	48119	48112	48114	48148	48147	48146	48115
UMTT 045 BTDX/S	48100	48143	48119	48112	48114	48148	48147	48146	48115
UMTT 067 BTDX/S	48102	48144	48119	48112	48114	48148	48147	48146	48115

Condensing Unit Model	Unloaded Start Solenoid Valve	Back Pressure Valve - Body RPR	Back Pressure Valve - Body HPV	Back Pressure Valve - Coil	Back Pressure Valve - Filter	Mini Oil Separator	Liquid receiver PRV	HECU Controller	Small Display
UMTT 030 MTDX/S	48116	48130	48131	48136	48135	-	48117	48137	48141
UMTT 045 MTDX/S	48116	48131	48132	48136	48135	-	48117	48137	48141
UMTT 067 MTDX/S	48116	48132	48133	48136	48135	-	48117	48137	48141
UMTT 100 MTDX/S	48116	48134	48134	48136	48135	-	48117	48137	48141
UMTT 030 BTDX/S	48116	-	48131	48136	48135	48110	48117	48137	48141
UMTT 045 BTDX/S	48116	-	48132	48136	48135	48110	48117	48137	48141
UMTT 067 BTDX/S	48116	-	48133	48136	48135	48110	48117	48137	48141

Related Items:



01



02



02



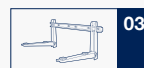
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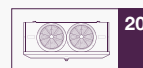
03



03



03



20

CUBO₂ Aqua



SCM have a range of CO₂ transcritical water cooled units that use inverter technology with the Carel Hecu smart control strategy to give lower energy consumption than traditional HFC solutions. This compact unit comes fitted with a gas cooler, electrical panel which is factory pre-set making it easy to install and maintain. The units are ready to be plumbed into an existing cooling water system or a suitable pump set/dry cooler for standalone systems.

Low GWP Refrigerant

Using CO₂ as a refrigerant is as green as it gets. With an ODP of 0 and GWP of 1, the Cubo₂Aqua condensing unit is the greenest solution on the market. CO₂ has many other benefits for both the contractor and end user, these include being up to 5 times more efficient than R404A and is a non-flammable refrigerant.

Low Noise

Due to its inverter compressor, component design as well as EC fan specification, the Cubo₂Aqua unit offers low db(A) ratings across the range, ideal for challenging installation conditions.



EC Fan Motor

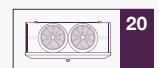
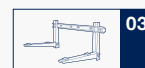
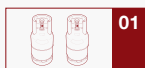
EC Fans consume significantly lower power compared to normal AC fans. Not only does this translate into energy savings but also peace of mind for the contractor and end-user. EC fans are an ideal solution for acoustically challenging applications.

Inverter Compressor

The inverter compressors from Toshiba offer great energy saving rewards and provides maximum cost benefit and a minimised life cycle cost to the end user.

Carel HECU Controller

Carel's HECU controller offers real-time modulation of cooling capacity aiding in low energy consumption at all times. This high performance means the system both complies with the Eco-design directive on energy performance and exceeds the limits set by the F-Gas Regulation for condensing unit applications.



Capacity Data



R744 Duty: kW Evap Temperature: C

If No Duty Shown = Outside Operating Envelope

Condensing Unit Model	Part No.	-30	-25	-20	-15	-10	-5	0	5
UMT WG T 030 MTDX	480100	-	-	-	2.24	2.61	3.04	3.48	3.97
UMT WG T 045 MTDX	480101	-	-	-	3.40	3.96	4.62	5.32	6.08
UMT WG T 067 MTDX	480102	-	-	-	4.75	5.61	6.49	7.48	8.41
UMT WG T 100 MTDX	480103	-	-	-	7.10	8.29	9.62	11.03	12.34
UMT WG T 030 BTDX	480150	3.34	3.66	3.90	-	-	-	-	-
UMT WG T 045 BTDX	480151	5.04	5.33	5.70	-	-	-	-	-
UMT WG T 067 BTDX	480152	6.59	7.26	7.79	-	-	-	-	-

T Brine, Ambient Temperature: 32°C

Technical Data

Condensing Unit Model	Part No.	Compressor model	Application	Power Supply	Net Weight	Pipe Connections		Dimensions			LRA (A)
						Liquid Line [in]	Suction [in]	Length (mm)	Width (mm)	Total Height (mm)	
UMT WG T 030 MTDX	480100	DY30N1F-10FU	MBP	230 V 1 ph	150	3/8	3/8	1150	620	805	11.6
UMT WG T 045 MTDX	480101	DY45N1F-10FU	MBP	230 V 1 ph	150	3/8	3/8	1150	620	805	16.1
UMT WG T 067 MTDX	480102	DY67L1F-10FU	MBP	230 V 1 ph	150	3/8	3/8	1150	620	805	23.1
UMT WG T 100 MTDX	480103	RY100L1F-10FU	MBP	400 V 3 ph	150	3/8	3/8	1150	620	805	17.3
UMT WG T 030 BTDX	480150	DY30N1F-10FU	LBP	230 V 1 ph	176	3/8	3/8	1525	620	805	16.1
UMT WG T 045 BTDX	480151	DY45N1F-10FU	LBP	230 V 1 ph	176	3/8	3/8	1525	620	805	22.9
UMT WG T 067 BTDX	480152	DY67N1F-10FU	LBP	400 V 3 ph	176	3/8	3/8	1525	620	805	20.4



ⓘ DID YOU KNOW...

Do you know SCM Frigo is one of the worlds leading manufacturer of CO2 packs.

Related Items:



CUBO₂ Plus



SCM Frigo have developed a range of CO₂ transcritical condensing units that use inverter technology with semi hermetic reciprocating compressors. This compact condensing unit comes factory pre-set making it easy to install and maintain. With a GWP of 1, R744 systems provide a long term environmentally friendly solution.



Low GWP Refrigerant

Using CO₂ as a refrigerant is as green as it gets. With an ODP of 0 and GWP of 1, the Cubo2Plus condensing unit is the greenest solution on the market. CO₂ has many other benefits for both the contractor and end user, these include being up to 5 times more efficient than R404A and is a non-flammable refrigerant.

Low Noise

Due to its inverter compressor, component design as well as EC fan specification, the Cubo2Plus unit offers low db(A) ratings across the range, ideal for challenging installation conditions.



EC Fan Motor

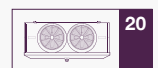
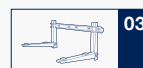
EC Fans consume significantly lower power compared to normal AC fans. Not only does this translate into energy savings but also peace of mind for the contractor and end-user. EC fans are an ideal solution for acoustically challenging applications.

Inverter Compressor

The inverter compressors from either Dorin or Bitzer offer great energy saving rewards and provides maximum cost benefit and a minimised life cycle cost to the end user.

Carel HECU Controller

Carel's HECU controller offers real-time modulation of cooling capacity aiding in low energy consumption at all times. This high performance means the system both complies with the Eco-design directive on energy performance and exceeds the limits set by the F-Gas Regulation for condensing unit applications."



Capacity Data



R744 Duty: kW Evap Temperature: C (Dorin Compressor)

If No Duty Shown = Outside Operating Envelope
For capacity data using Bitzer Compressor please contact us

Condensing Unit Model	Part No.	-40	-35	-30	-25	-20	-15	-10	-5	0	5
UMT 036 MTDX*	480057	-	-	-	-	-	4.49	5.57	6.78	8.08	9.49
UMT 075 MTDX*	480058	-	-	-	-	-	9.30	11.35	13.44	16.19	18.47
UMT 120 MTDX*	480060	-	-	-	-	-	12.44	15.20	18.22	21.50	25.12
UMT 150 MTDX	480061	-	-	-	-	-	18.43	22.52	27.07	31.09	36.20
UMT 190 MTDX	480062	-	-	-	-	-	22.62	27.94	33.54	32.34	36.70
UMT 030 BTDX	480063	1.62	1.90	2.29	2.59	-	-	-	-	-	-
UMT 035 BTDX	480064	1.96	2.30	2.68	3.10	-	-	-	-	-	-
UMT 036 BTDX	480065	2.51	2.95	3.43	4.02	-	-	-	-	-	-
UMT 120 BTDX	480066	9.24	11.03	12.86	14.94	-	-	-	-	-	-

All Models: Inverter modulation from 30 to 60 Hz except * from 40 to 60 Hz

ⓘ DID YOU KNOW...

CUBO₂ Plus also available with Bitzer compressors.
Please call for details and data.

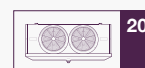
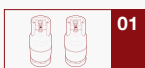


Technical Data

Condensing Unit Model	Part No.	Compressor model	Application	Power supply	Noise level 50Hz (@10 m distance) [db(A)]	Number of fans	Receiver volume [L]	Net weight (kg)	Pipe Connections		Length (mm)	Dimensions			MRA (A)
									Liquid line connection K65 pipe size [in]	Suction connection K65 pipe size [in]		Width (mm) - DEPTH	Total height (mm)	Fan diameter (mm)	
UMT 036 MTDX*	480057	CD360H	MBP	400 V 3 ph	43	2	15	460	5/8	7/8	1340	760	1485	500	15.9
UMT 075 MTDX*	480058	CD750H	MBP	400 V 3 ph	44	2	15	560	5/8	7/8	1340	760	1485	500	20.5
UMT 120 MTDX*	480060	CD1200H	MBP	400 V 3 ph	45	2	15	570	5/8	7/8	1340	760	1485	500	27.4
UMT 150 MTDX	480061	CD1400H	MBP	400 V 3 ph	45	3	15	650	5/8	7/8	1895	760	1485	500	37.2
UMT 190 MTDX	480062	CD2000H	MBP	400 V 3 ph	45	3	15	655	5/8	7/8	1895	760	1485	500	41.2
UMT 030 BTDX	480063	CD2S300	LBP	400 V 3 ph	48	2	15	460	5/8	7/8	1340	760	1485	500	10.4
UMT 035 BTDX	480064	CD2S350	LBP	400 V 3 ph	48	2	15	465	5/8	7/8	1340	760	1485	500	11.7
UMT 036 BTDX	480065	CD2S360	LBP	400 V 3 ph	48	2	15	470	5/8	7/8	1340	760	1485	500	11.9
UMT 120 BTDX	480066	CD2S1200	LBP	400 V 3 ph	50	2	15	560	5/8	7/8	1340	760	1485	500	32.4

All Models: Inverter modulation from 30 to 60 Hz except * from 40 to 60 Hz

Related Items:



CUBO₂ Smart CO₂ Specialist Training

SCM
FRIGO



This one day course is for installers and maintainers of the SCM CUBO₂ Smart range of condensing units and associated equipment supplied by Beijer Ref, and for anyone who needs to know more about small R744 transcritical systems.

The following theory and practical topics are included:

- Basics of R744 including hazards and safe handling
- Explanation of transcritical operation
- Key installation and service tool differences
- Overview of the SCM CUBO₂ Smart condensing unit range
- Explanation of SCM operation and Carel control
- Key installation differences including K65 pipework and pressure testing
- Pre-commissioning and set-up including electronic control overview
- Processing, charging and running the system
- Service & maintenance

High quality course notes will be provided by Cool Concerns. The venue for this course is at our training center in Twynning near Tewkesbury, Gloucestershire, a few minutes from junction 8 of the M5.

What is the Cost?

Beijer Ref UK and Cool Concerns Ltd are in a partnership to offer a one day mandatory training course in sales support of the CUBO₂ Smart product range for CO₂ refrigerant.

Beijer Ref UK have agreed to pay Cool Concerns Ltd £250 plus VAT for you or one member of your company to attend the training course. This is a funded place on the proviso that you commit to purchase at least one CUBO₂ Smart condensing unit within six months from the course completion date. Further places can be booked at the discounted rate of £250 (normally £325) which can be purchased through any Beijer Ref company.

Cool Concerns Ltd.

Unit 5 Duddage Business Park, Brockridge Road,
Twynning, Tewkesbury, Glos GL20 6BY

Directors: Stephen Benton & Jane Gartshore

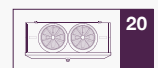
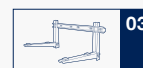
Tel: 01684 290 333

Email: beijerref@coolconcerns.co.uk

Web: www.coolconcerns.co.uk

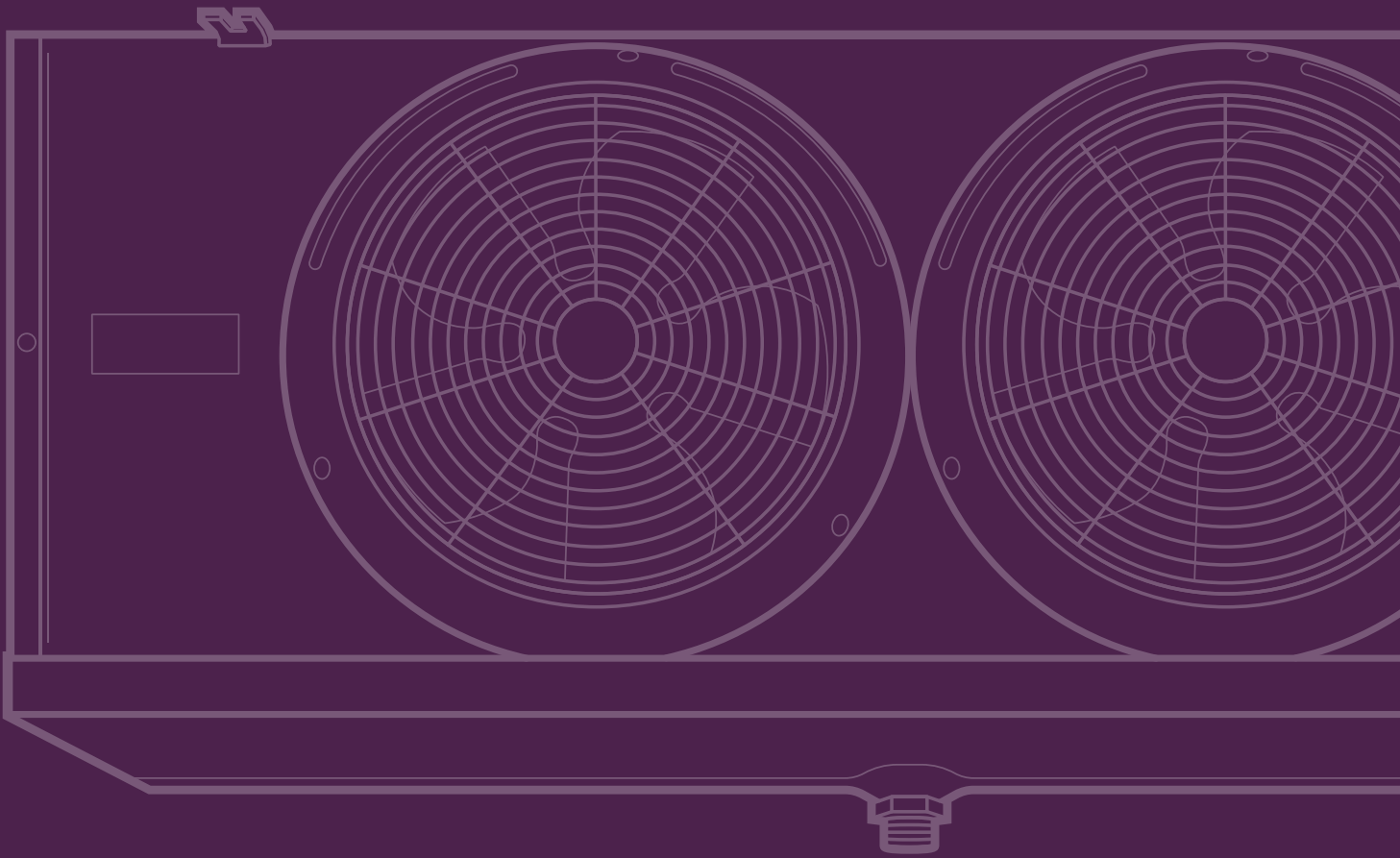


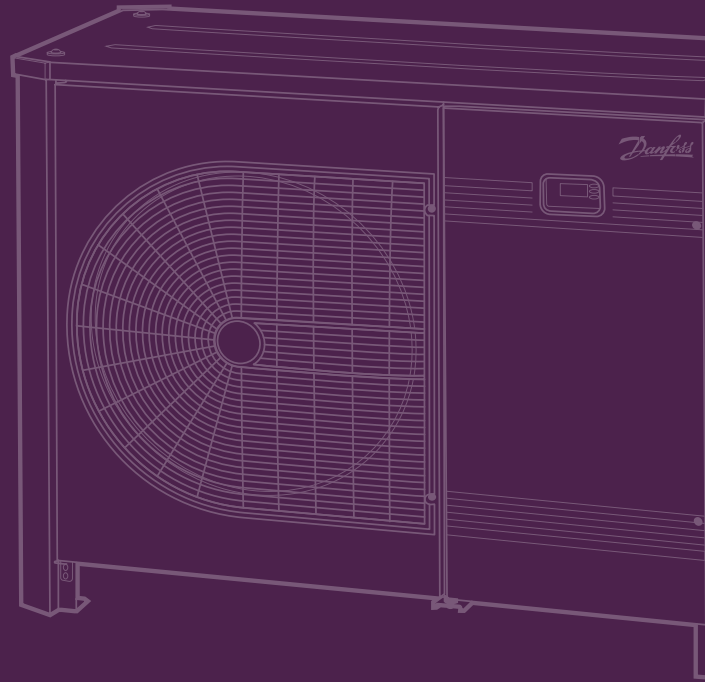
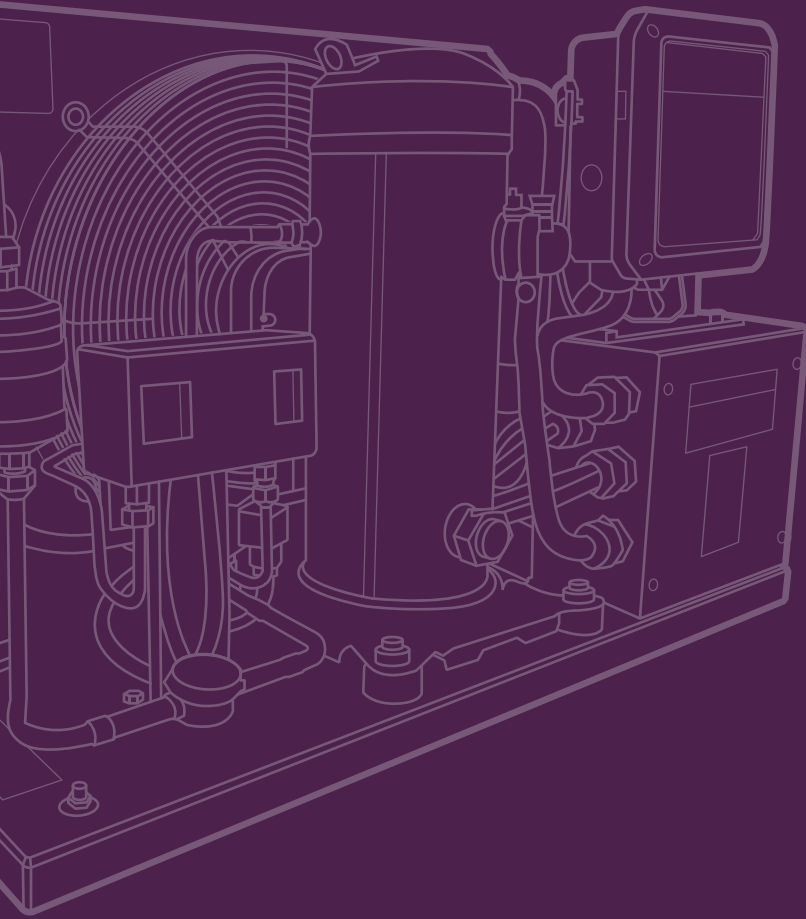
coolconcerns
Training | Consultancy | Technical Support



SECTION TWENTY

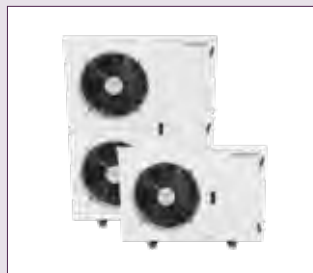
Evaporators & Condensers





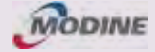
Need a unit to go with these evaporators?

Make sure to take a look at our extensive range of standard & packaged condensing units...





PAGE 486



Modine ECO™ Coolers

Our commitment to excellence goes beyond standard expectations. The ECO™ heat transfer coolers are among the foremost brand names of HVAC/R coolers in the world. Known for unsurpassed quality, performance, and reliability, Modine reserves this landmark for all our finished Commercial Coolers solutions.

ECO™ EVS Cooler	487	ECO™ GME Cooler	488	ECO™ GCE Cooler	489
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PAGE 490



LU-VE Evaporators

A new way of conceiving and making refrigeration and air conditioning. Outstanding quality components for high added-value products and energy saving. The LU-VE Group is the combination of experience, tradition, forward thinking, and innovation.



F27HC	496	F31HC	498	F35HC	500	F45HC	502	FHA	504
FHD	506	SMA	508	SHS	509	SHF	510	Spares	512



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Friga-Bohn Coolers

A world of solutions. Friga-Bohn part of Lennox International Incorporated (LII) is a leading provider of climate control solutions for heating, air conditioning and refrigeration markets and has the commitment to assisting its customers in their projects, to provide optimized and sustainable solutions.

3C-A Cooler	517	GTA / GTA-W Cooler	522	NK Cooler	526
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ECO™ heat transfer coolers

ECO / Modine Heat Transfer Coolers

Modine's commitment to excellence goes beyond standard expectations. We take quality to the next level. As a world leader in thermo engineering, there is no room for compromise. We are committed to partnering with our customers to help them increase their competitiveness.

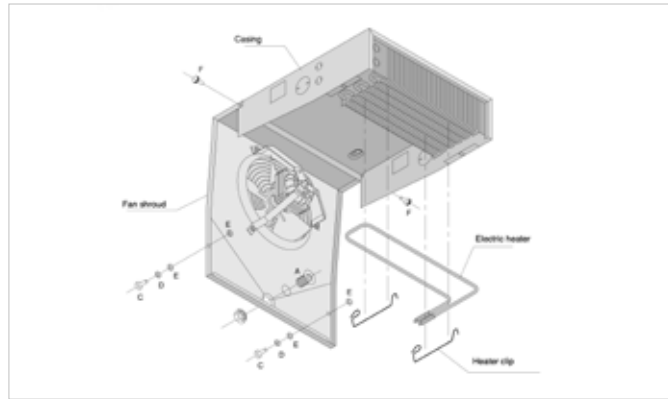
For our ECO™ heat transfer coolers and Coiltech® industrial heat transfer products, we select only the highest quality, most technologically advanced materials, and combine them with our expertise in engineering and manufacturing. The results – unsurpassed quality, startling performance, and trusted reliability.

The ECO™ heat transfer coolers are among the foremost brand names of HVAC/R coolers in the world. Known for unsurpassed quality, performance, and reliability, Modine reserves this landmark for all our finished Commercial Coolers solutions.



ECO™ EVS Cooler

Quality, performance & reliability.



The EVS range has been specifically designed for application in reach-in cabinets, display cases and small cold rooms. In accordance to the room temperature this range is subdivided into two types:

- EVS for higher temperatures ($\geq -12\text{ }^{\circ}\text{C}$), with 3,5/7 mm dual fin spacing and electric defrost;
- EVS/B for lower temperatures ($\geq -25\text{ }^{\circ}\text{C}$), with 4,5/9 mm dual fin spacing and electric defrost.

The entire range is equipped with high efficiency coils made from special profile aluminium fins and inner grooved copper tube, suitable for new generation refrigerants.

The standard fan motors employed have the following features: **Ø 200 mm**, single-phase 230V/1/50-60Hz and fibreglass charged polyamide fan guard;

- IP 42 protection grade
- class B insulation
- internal thermal contact protection
- operating temperature: 40 to +40 °c.

The optional high efficiency EC fan motors have the following features:

- IP 54 protection grade
- class F insulation
- built-in electronic protection
- operating temperature 40 to +50 °c.

The versions with standard electric defrost (ed) are equipped with stainless steel heaters with vulcanised terminals preset for 230V/1/50-60Hz connection.

The EVS/B models are equipped with internal drip tray and a junction box (IP 54) for the wiring of the fan motors and for possible electric heaters.

Model number	No. Fans 230 v	Capacity Watts 8 DT1	Air Volume (m3/hr)	Air Throw (m)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Part No.
EVS131ED	2	1,01	520	4.5	120	611	435	7.7	302100
EVS201ED	2	1.46	565	4	170	611	435	10.7	302110
EVS291ED	3	2.06	780	4	120	1111	435	12.1	302120
EVS391ED	3	2.52	980	4	170	1111	435	17	302130
EVS201/BED	2	1.4	605	4.5	170	611	435	10.7	302105
EVS291/BED	3	1.77	830	4	120	1111	435	12.1	302115
EVS391/BED	3	2.46	1050	4.5	170	1111	435	17	302125

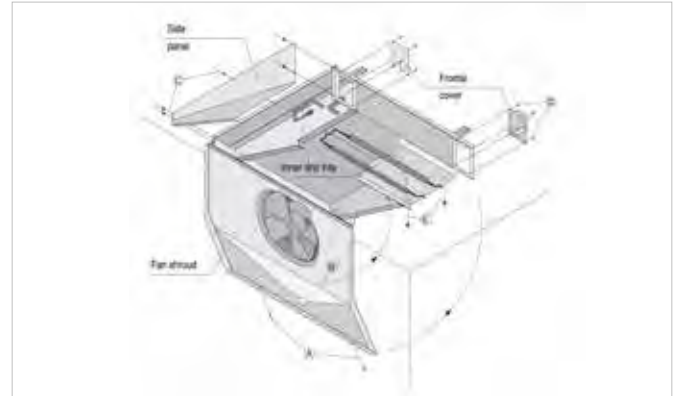
Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Related Items:



ECO™ GME Cooler

Highly efficient cold room cooler.



The GME range has been specifically designed for applications in cold rooms with limited height for the preservation of fresh or frozen products. The entire range is equipped with highly efficient coils made from special profile aluminium fins and inner grooved copper tube, suitable for new generation refrigerants.

According to the room temp the range is divided follows:

- GME H4 for higher temperatures ($\geq +2$ °C) with 4 mm fin spacing
- GME L7 for lower temperatures (≥ -25 °C) with 7 mm fin spacing and ED electric defrost.

The standard fan motors employed have the following features: **Ø 200 mm**, shaded pole singlephase 230V/1/50-60 Hz with fibreglass charged polyamide fan guards.

- IP 44 protection grade
- class B insulation
- internal thermal contact protection
- quick cable connection
- operating temperature: -40 to $+40$ °C.

The optional high efficiency ec fan motors have the following features:

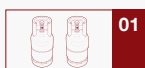
- IP 54 protection grade
- class H insulation
- built-in electronic protection
- operating temperature: -40 to 50 °C.

The versions with standard electric defrost (ED) are equipped with stainless steel heaters with vulcanised terminals preset for 230V/1/50-60 Hz connection.

The electric parts and casework are connected to a grounding terminal, the wiring of the motors and heaters is carried out in separate IP 54 protection grade junction boxes. On request the models may be equipped with non-standard coils, enhanced defrosting and fan motors.

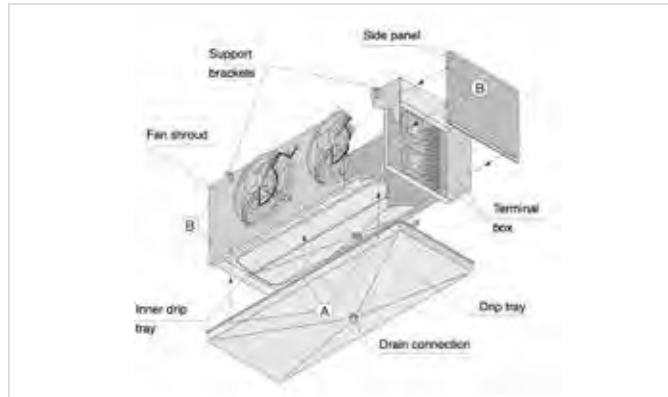
Model number	No. Fans 230 v	Capacity Watts 8 DT1	Air Volume (m3/hr)	Air Throw (m)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Part No.
GME43E4ED	3	3.14	1800	7	277	1639	629	27	302305
GME43EL7ED	3	2.63	2010	9	277	1639	629	26	302300

Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K



ECO™ GCE Cooler

Quality, performance & reliability.



The GCE range of unit coolers is suitable for installation in cold rooms for the preservation of fresh or frozen products. Thanks to the optimization of the heat exchangers in relation to fan motors, the particular structure of the units enables to maximise the storage space of the cold rooms.

The entire range is equipped with highly efficient coils made from aluminum fins and inner grooved tube. The new geometry allows a substantial reduction of the inner volume resulting in decreased refrigerant use. The updated coil design responds to the recent guidelines governing the reduction of HFC gases with high greenhouse effect.

According to the room temperature the range is divided as follows:

- GCE G6 E6 F6 A6 for medium temperatures (≥ -15 °C) with 6 mm fin spacing, electric defrost version (ED) is recommended
- GCE G8 E8 F8 A8 for low temperatures (≥ -35 °C) with 8 mm fin spacing, equipped with electric defrost

The GCE range employs 3 types of standard fan motors:

- **Ø 200 mm**, shaded pole singlephase 230V/1/50-60Hz with fiberglass charged polyamide fan guards. operating temperature: -40 to $+40$ °C.
- **Ø 315 mm**, external rotor singlephase 230V/1/50-60Hz with builtin electric capacitor and epoxy coated steel fan guard. Operating temperature: -40 to $+45$ °C.
- **Ø 350 mm**, external rotor singlephase 230V/1/50-60Hz with builtin electric capacitor and epoxy coated steel fan guard. Operating temperature: -40 to $+50$ °C.

The optional high efficiency EC fan motors have the following features:

- **Ø 250 mm:** IP 54 protection grade, class H insulation, built-in electronic protection, operating temperature: -40 to $+50$ °C.
- **Ø 315 mm:** - IP 54 protection grade, class B insulation, built-in electronic protection, operating temperature: -40 to $+40$ °C.
- **Ø 350 mm:** IP 54 protection grade, class B insulation, built-in electronic protection, operating temperature: -25 to $+60$ °C.

Model number	No. Fans 230 v	Capacity Watts 8 DT1	Air Volume (m3/hr)	Air Throw (m)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Part No.
GCE253G6ED	3	3.45	2540	12	431	1674	509	28	302210
GCE253E6ED	3	4.18	2430	11	431	1674	509	31	302200
GCE254E6ED	4	5.61	3250	13	468	2124	561	39	302215
GCE253E8ED	3	3.66	2530	12	431	1674	509	31	302205
GCE312F8ED	2	4.96	3290	16	468	1424	561	32.5	302200

Ambient Temperature: 32°C Superheat: 8K Subcooling: 0K

Related Items:





LU-VE Exchangers Evaporators & Condensers

A new way of conceiving and making refrigeration and air conditioning.
Outstanding quality components for high added-value products and energy saving.

The LU-VE Group is the combination of experience, tradition, forward thinking, and innovation.

The Group is the embodiment of the principle that, first and foremost, companies are women, men and ideas. People with years of experience, young people blessed with creativity and enthusiasm, highly qualified professionals, all united in their passion for their work and in their vision of a world which will be more aware, more livable, more advanced, and better balanced.

LU-VE has introduced a new way of conceiving and making refrigeration and air conditioning products, using avant-garde technologies which have then become a constant reference-point for the entire industry.

The Group is an international entity (with its main offices and production facility in Uboldo, Varese) made up of 16 production units.

There are also 7 sales companies in the LU-VE Group located in the Australia, Austria, France, Germany, India, Spain, UAE. A network of experts - technicians and qualified staff – at the service of clients to satisfy their every need.



LU-VE 'Box' Coolers F27HC

UNITS ALSO AVAILABLE IN CO₂



Description	Standard Refrigerants Part No.
F27HC25 4.5mm Fin ED	F27HC25E4
F27HC36 4.5mm Fin ED	F27HC36E4
F27HC49 4.5mm Fin ED	F27HC49E4
F27HC71 4.5mm Fin ED	F27HC71E4
F27HC107 4.5mm Fin ED	F27HC107E4
F27HC142 4.5mm Fin ED	F27HC142E4
F27HC25 4.5mm Fin ND	F27HC25N4
F27HC36 4.5mm Fin ND	F27HC36N4
F27HC49 4.5mm Fin ND	F27HC49N4
F27HC71 4.5mm Fin ND	F27HC71N4
F27HC107 4.5mm Fin ND	F27HC107N
F27HC142 4.5mm Fin ND	F27HC142N4
F27HC19 6mm Fin ED	F27HC19E6
F27HC28 6mm Fin ED	F27HC28E6
F27HC38 6mm Fin ED	F27HC38E6
F27HC55 6mm Fin ED	F27HC55E6
F27HC85 6mm Fin ED	F27HC85E6
F27HC110 6mm Fin ED	F27HC110E6
F27HC19 6mm Fin ND	F27HC19N4
F27HC28 6mm Fin ND	F27HC28N4
F27HC38 6mm Fin ND	F27HC38N4
F27HC55 6mm Fin ND	F27HC55N4
F27HC85 6mm Fin ND	F27HC85N6
F27HC110 6mm Fin ND	F27HC110N6
F27HC16 7mm Fin ED	F27HC16E7
F27HC23 7mm Fin ED	F27HC23E7
F27HC31 7mm Fin ED	F27HC31E7
F27HC46 7mm Fin ED	F27HC46E7
F27HC70 7mm Fin ED	F27HC70E7
F27HC92 7mm Fin ED	F27HC92E7
F27HC16 7mm Fin ND	F27HC16N7
F27HC23 7mm Fin ND	F27HC23N7
F27HC31 7mm Fin ND	F27HC31N7
F27HC46 7mm Fin ND	F27HC46N7
F27HC70 7mm Fin ND	F27HC70N7
F27HC92 7mm Fin ND	F27HC92N7

LU-VE 'Box' Coolers F31HC

UNITS ALSO AVAILABLE IN CO₂



Description	Standard Refrigerants Part No.
F31HC115 4.5mm Fin ED	F31HC115E4
F31HC116 4.5mm Fin ED	F31HC116E4
F31HC125 4.5mm Fin ED	F31HC125E4
F31HC126 4.5mm Fin ED	F31HC126E4
F31HC135 4.5mm Fin ED	F31HC135E4
F31HC136 4.5mm Fin ED	F31HC136E4
F31HC146 4.5mm Fin ED	F31HC146E4
F31HC146 4.5mm Fin ND	F31HC115N4
F31HC116 4.5mm Fin ND	F31HC116N4
F31HC125 4.5mm Fin ND	F31HC125N4
F31HC126 4.5mm Fin ND	F31HC126N4
F31HC135 4.5mm Fin ND	F31HC135N4
F31HC136 4.5mm Fin ND	F31HC136N4
F31HC146 4.5mm Fin ND	F31HC146N4
F31HC215 6mm Fin ED	F31HC215E6
F31HC216 6mm Fin ED	F31HC216E6
F31HC225 6mm Fin ED	F31HC225E6
F31HC226 6mm Fin ED	F31HC226E6
F31HC235 6mm Fin ED	10165149
F31HC236 6mm Fin ED	F31HC236E6
F31HC246 6mm Fin ED	F31HC246E6
F31HC215 6mm Fin ND	F31HC215N6
F31HC216 6mm Fin ND	F31HC216N6
F31HC225 6mm Fin ND	F31HC225N6
F31HC226 6mm Fin ND	F31HC226N6
F31HC235 6mm Fin ND	F31HC235N6
F31HC236 6mm Fin ND	F31HC236N6
F31HC246 6mm Fin ND	F31HC246N6
F31HC315 7mm Fin ED	F31HC315E7
F31HC316 7mm Fin ED	F31HC316E7
F31HC325 7mm Fin ED	F31HC325E7
F31HC326 7mm Fin ED	F31HC326E7
F31HC335 7mm Fin ED	F31HC335E7
F31HC336 7mm Fin ED	F31HC336E7
F31HC346 7mm Fin ED	F31HC346E7
F31HC315 7mm Fin ND	F31HC315N7
F31HC316 7mm Fin ND	F31HC316N7
F31HC325 7mm Fin ND	F31HC325N7
F31HC326 7mm Fin ND	F31HC326N7
F31HC335 7mm Fin ND	F31HC335N7
F31HC336 7mm Fin ND	F31HC336N7
F31HC346 7mm Fin ND	F31HC346N7

Related Items:



Range Overview

LU-VE 'Box' Coolers F35HC

UNITS ALSO AVAILABLE IN CO₂



Description	Standard Refrigerants Part No.
F35HC73 4.5mm Fin ED	F35HC73E4
F35HC106 4.5mm Fin ED	F35HC106E4
F35HC145 4.5mm Fin ED	F35HC145E4
F35HC215 4.5mm Fin ED	F35HC215E4
F35HC272 4.5mm Fin ED	F35HC272E4
F35HC323 4.5mm Fin ED	F35HC323E4
F35HC362 4.5mm Fin ED	F35HC362E4
F35HC430 4.5mm Fin ED	F35HC430E4
F35HC73 4.5mm Fin ND	F35HC73N4
F35HC106 4.5mm Fin ND	F35HC106N4
F35HC145 4.5mm Fin ND	F35HC145N4
F35HC215 4.5mm Fin ND	F35HC215N4
F35HC272 4.5mm Fin ND	F35HC272N4
F35HC323 4.5mm Fin ND	F35HC323N4
F35HC362 4.5mm Fin ND	F35HC362N4
F35HC430 4.5mm Fin ND	F35HC430N4
F35HC59 6mm Fin ED	F35HC59E6
F35HC84 6mm Fin ED	F35HC84E6
F35HC117 6mm Fin ED	F35HC117E6
F35HC174 6mm Fin ED	F35HC174E6
F35HC218 6mm Fin ED	F35HC218E6
F35HC261 6mm Fin ED	F35HC261E6
F35HC290 6mm Fin ED	F35HC290E6
F35HC348 6mm Fin ED	F35HC348E6
F35HC59 6mm Fin ND	F35HC59N6
F35HC84 6mm Fin ND	F35HC84N6
F35HC117 6mm Fin ND	F35HC117N6
F35HC174 6mm Fin ND	F35HC174N6
F35HC218 6mm Fin ND	F35HC218N6
F35HC261 6mm Fin ND	F35HC261N6
F35HC290 6mm Fin ND	F35HC290N6
F35HC348 6mm Fin ND	F35HC348N6
F35HC47 7mm Fin ED	F35HC47E7
F35HC69 7mm Fin ED	F35HC69E7
F35HC94 7mm Fin ED	F35HC94E7
F35HC143 7mm Fin ED	F35HC143E7
F35HC179 7mm Fin ED	F35HC179E7
F35HC213 7mm Fin ED	F35HC213E7
F35HC238 7mm Fin ED	F35HC238E7
F35HC284 7mm Fin ED	F35HC284E7
F35HC47 7mm Fin ND	F35HC47N7
F35HC69 7mm Fin ND	F35HC69N7
F35HC94 7mm Fin ND	F35HC94N7
F35HC143 7mm Fin ND	F35HC143N7
F35HC179 7mm Fin ND	F35HC179N7
F35HC213 7mm Fin ND	F35HC213N7
F35HC238 7mm Fin ND	F35HC238N7
F35HC284 7mm Fin ND	F35HC284N7

LU-VE 'Box' Coolers F45HC

UNITS ALSO AVAILABLE IN CO₂



Description	Standard Ref Part No.	Description	Standard Ref Part No.
F45HC1100 4.5mm Fin ED	F45HC1100E4	F45HC1300 7.5mm Fin ED	F45HC1300E
F45HC1102 4.5mm Fin ED	F45HC1102E4	F45HC1302 7.5mm Fin ED	F45HC1302E7
F45HC1106 4.5mm Fin ED	F45HC1106E4	F45HC1306 7.5mm Fin ED	F45HC1306
F45HC1108 4.5mm Fin ED	F45HC1108	F45HC1308 7.5mm Fin ED	F45HC1308E7
F45HC1112 4.5mm Fin ED	F45HC1112E4	F45HC1312 7.5mm Fin ED	F45HC1312E7
F45HC1114 4.5mm Fin ED	F45HC1114E4	F45HC1314 7.5mm Fin ED	F45HC1314E7
F45HC1118 4.5mm Fin ED	F45HC1118	F45HC1318 7.5mm Fin ED	F45HC1318
F45HC1120 4.5mm Fin ED	F45HC1120E4	F45HC1320 7.5mm Fin ED	F45HC1320E7
F45HC1100 4.5mm Fin ND	10054539	F45HC1300 7.5mm Fin ND	F45HC1300N7
F45HC1102 4.5mm Fin ND	F45HC1102N4	F45HC1302 7.5mm Fin ND	F45HC1302N7
F45HC1106 4.5mm Fin ND	F45HC1106N4	F45HC1306 7.5mm Fin ND	F45HC1306N7
F45HC1108 4.5mm Fin ND	F45HC1108N4	F45HC1308 7.5mm Fin ND	F45HC1308N7
F45HC1112 4.5mm Fin ND	F45HC1112N4	F45HC1312 7.5mm Fin ND	F45HC1312N7
F45HC1114 4.5mm Fin ND	F45HC1114N4	F45HC1314 7.5mm Fin ND	F45HC1314N7
F45HC1118 4.5mm Fin ND	F45HC1118N4	F45HC1318 7.5mm Fin ND	F45HC1318N7
F45HC1120 4.5mm Fin ND	F45HC1120N4	F45HC1320 7.5mm Fin ND	F45HC1320N7
F45HC1200 6mm Fin ED	F45HC1200E6	F45HC1400 10mm Fin ED	F45HC1400E10
F45HC1202 6mm Fin ED	F45HC1202E6	F45HC1402 10mm Fin ED	F45HC1402E10
F45HC1206 6mm Fin ED	F45HC1206	F45HC1406 10mm Fin ED	F45HC1406E10
F45HC1208 6mm Fin ED	F45HC1208E	F45HC1408 10mm Fin ED	F45HC1408E10
F45HC1212 6mm Fin ED	F45HC1212E	F45HC1412 10mm Fin ED	F45HC1412E10
F45HC1214 6mm Fin ED	F45HC1214E	F45HC1414 10mm Fin ED	F45HC1414E10
F45HC1218 6mm Fin ED	F45HC1218	F45HC1418 10mm Fin ED	F45HC1418E10
F45HC1220 6mm Fin ED	F45HC1220E6	F45HC1420 10mm Fin ED	F45HC1420E10
F45HC1200 6mm Fin ND	F45HC1200N6	F45HC1400 10mm Fin ND	F45HC1400N10
F45HC1202 6mm Fin ND	F45HC1202N6	F45HC1402 10mm Fin ND	F45HC1402N10
F45HC1206 6mm Fin ND	F45HC1206N6	F45HC1406 10mm Fin ND	F45HC1406N10
F45HC1208 6mm Fin ND	F45HC1208N6	F45HC1408 10mm Fin ND	F45HC1408N10
F45HC1212 6mm Fin ND	F45HC1212N6	F45HC1412 10mm Fin ND	F45HC1412N10
F45HC1214 6mm Fin ND	F45HC1214N6	F45HC1414 10mm Fin ND	F45HC1414N10
F45HC1218 6mm Fin ND	F45HC1218N6	F45HC1418 10mm Fin ND	F45HC1418N10
F45HC1220 6mm Fin ND	F45HC1220N6	F45HC1420 10mm Fin ND	F45HC1420N10



LU-VE 'Wedge' Angled Coolers **FHA**



LU-VE Slimline Angled Coolers **FHD**

UNITS ALSO AVAILABLE IN CO₂



Description	Standard Refrigerants Part No.
FHA30E32 3mm Fin ED	FHA30E32
FHA40E32 3mm Fin ED	FHA40E32
FHA60E32 3mm Fin ED	FHA60E32
FHA80E32 3mm Fin ED	FHA80E32
FHA120E32 3mm Fin ED	FHA120E32
FHA160E32 3mm Fin ED	FHA160E32
FHA30N32 3mm Fin ND	FHA30N32
FHA40N32 3mm Fin ND	FHA40N32
FHA60N32 3mm Fin ND	FHA60N32
FHA80N32 3mm Fin ND	FHA80N32
FHA120N32 3mm Fin ND	FHA120N32
FHA160N32 3mm Fin ND	FHA160N32
FHA21E50 4.5mm Fin ED	FHA21E50
FHA27E50 4.5mm Fin ED	FHA27E50
FHA41E50 4.5mm Fin ED	FHA41E50
FHA53E50 4.5mm Fin ED	FHA53E50
FHA79E50 4.5mm Fin ED	FHA79E50
FHA106E50 4.5mm Fin ED	FHA106E50
FHA21N50 4.5mm Fin ND	FHA21N50
FHA27N50 4.5mm Fin ND	FHA27N50
FHA41N50 4.5mm Fin ND	FHA41N50
FHA53N50 4.5mm Fin ND	FHA53N50
FHA79N50 4.5mm Fin ND	FHA79N50
FHA106N50 4.5mm Fin ND	FHA106N50
FHA14E80 7mm Fin ED	FHA14E80
FHA17E80 7mm Fin ED	FHA17E80
FHA28E80 7mm Fin ED	FHA28E80
FHA35E80 7mm Fin ED	FHA35E80
FHA52E80 7mm Fin ED	FHA52E80
FHA70E80 7mm Fin ED	FHA70E80
FHA14N80 7mm Fin ND	FHA14N80
FHA17N80 7mm Fin ND	FHA17N80
FHA28N80 7mm Fin ND	FHA28N80
FHA35N80 7mm Fin ND	FHA35N80
FHA52N80 7mm Fin ND	FHA52N80
FHA70N80 7mm Fin ND	FHA70N80

Description	Standard Refrigerants Part No.
FHD7113 3mm Fin ED	FHD711E3
FHD7123 3mm Fin ED	FHD7123E3
FHD7213 3mm Fin ED	FHD7213E3
FHD7223 3mm Fin ED	FHD7223E3
FHD7323 3mm Fin ED	FHD7323E3
FHD7423 3mm Fin ED	FHD7423E3
FHD7113 3mm Fin ND	FHD7113N3
FHD7123 3mm Fin ND	FHD712N3
FHD7213 3mm Fin ND	FHD721N3
FHD7223 3mm Fin ND	FHD722N3
FHD7323 3mm Fin ND	FHD732N3
FHD7423 3mm Fin ND	FHD742N3
FHD8114 4mm Fin ED	FHD811E4
FHD8124 4mm Fin ED	FHD812E4
FHD8214 4mm Fin ED	FHD821E4
FHD8224 4mm Fin ED	FHD822E4
FHD8324 4mm Fin ED	FHD832E4
FHD8424 4mm Fin ED	FHD842E4
FHD8114 6mm Fin ND	FHD8114N6
FHD8124 6mm Fin ND	FHD8124N6
FHD8214 6mm Fin ND	FHD821N4
FHD8224 6mm Fin ND	FHD822N4
FHD8324 6mm Fin ND	FHD832N4
FHD8424 6mm Fin ND	FHD842N4
FHD9117 7mm Fin ED	FHD9117E7
FHD9127 7mm Fin ED	FHD9127E7
FHD9217 7mm Fin ED	FHD9217E7
FHD9227 7mm Fin ED	FHD9227E7
FHD9327 7mm Fin ED	FHD932E7
FHD9427 7mm Fin ED	FHD9427E7
FHD9117 7mm Fin ND	FHD9117N7
FHD9127 7mm Fin ND	FHD9127N7
FHD9217 7mm Fin ND	FHD921N7
FHD9227 7mm Fin ND	FHD922N7
FHD9327 7mm Fin ND	FHD9327N7
FHD9427 7mm Fin ND	FHD9427N7

Related Items:



Range Overview

LU-VE 'Wedge' Angled Coolers **SMA**

UNITS ALSO AVAILABLE IN CO₂



Description	Standard Refrigerants Part No.
SMA21145 4.5mm Fin ED	SMA211E45
SMA21245 4.5mm Fin ED	SMA212E45
SMA21345 4.5mm Fin ED	SMA213E45
SMA21445 4.5mm Fin ED	SMA214E45
SMA22145 4.5mm Fin ED	SMA221E45
SMA22245 4.5mm Fin ED	SMA222E45
SMA23145 4.5mm Fin ED	SMA231E45
SMA23245 4.5mm Fin ED	SMA232E45
SMA24145 4.5mm Fin ED	SMA241E45
SMA24245 4.5mm Fin ED	SMA242E45
SMA21145 4.5mm Fin ND	SMA211N45
SMA21245 4.5mm Fin ND	SMA212N45
SMA21345 4.5mm Fin ND	SMA213N45
SMA21445 4.5mm Fin ND	SMA214N45
SMA22145 4.5mm Fin ND	SMA221N45
SMA22245 4.5mm Fin ND	SMA222N45
SMA23145 4.5mm Fin ND	SMA231N45
SMA23245 4.5mm Fin ND	SMA232N45
SMA24145 4.5mm Fin ND	SMA241N45
SMA24245 4.5mm Fin ND	SMA242N45
SMA31170 7mm Fin ED	SMA311E70
SMA31270 7mm Fin ED	SMA312E70
SMA31370 7mm Fin ED	SMA313E70
SMA31470 7mm Fin ED	SMA314E70
SMA32170 7mm Fin ED	SMA321E70
SMA32270 7mm Fin ED	SMA322E70
SMA33170 7mm Fin ED	SMA331E70
SMA33270 7mm Fin ED	SMA332E70
SMA34170 7mm Fin ED	SMA341E70
SMA34270 7mm Fin ED	SMA342E70
SMA31170 7mm Fin ND	SMA311N70
SMA31270 7mm Fin ND	SMA312N70
SMA31370 7mm Fin ND	SMA313N70
SMA31470 7mm Fin ND	SMA314N70
SMA32170 7mm Fin ND	SMA321N70
SMA32270 7mm Fin ND	SMA322N70
SMA33170 7mm Fin ND	SMA331N70
SMA33270 7mm Fin ND	SMA332N70
SMA34170 7mm Fin ND	SMA341N70
SMA34270 7mm Fin ND	SMA342N70

LU-VE Slimline Coolers **SHS**

UNITS ALSO AVAILABLE IN CO₂

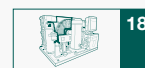


Description	Standard Refrigerants Part No.
SHS8 5mm Fin ED	SHS8E
SHS12 5mm Fin ED	SHS12E
SHS13 5mm Fin ED	SHS13E
SHS15 5mm Fin ED	SHS15E
SHS18 5mm Fin ED	SHS18E
SHS22 5mm Fin ED	SHS22E
SHS26 5mm Fin ED	SHS26E
SHS32 5mm Fin ED	SHS32E
SHS8 5mm Fin ND	SHS8
SHS12 5mm Fin ND	SHS12
SHS13 5mm Fin ND	SHS13
SHS15 5mm Fin ND	SHS15
SHS18 5mm Fin ND	SHS18
SHS22 5mm Fin ND	SHS22
SHS26 5mm Fin ND	SHS26
SHS32 5mm Fin ND	SHS32

LU-VE Compact Cabinet Coolers **SHF**



Description	Standard Refrigerants Part No.
SHF50S 5.5mm Fin ED	SHF50SE
SHF60S 5.5mm Fin ED	SHF60SE
SHF70S 5.5mm Fin ED	SHF70SE
SHF55D 5.5mm Fin ED	SHF55DE
SHF65D 5.5mm Fin ED	SHF65DE
SHF50S 5.5mm Fin ND	SHF50S
SHF60S 5.5mm Fin ND	SHF60S
SHF70S 5.5mm Fin ND	SHF70S
SHF55D 5.5mm Fin ND	SHF55D
SHF65D 5.5mm Fin ND	SHF65D



THE NATURAL LEADER

CO₂ - GLYCOL - NH₃ - R290

HIGH EFFICIENCY HEAT EXCHANGERS FOR NATURAL REFRIGERANTS

Commercial and industrial unit coolers

* MAXIMUM WORKING PRESSURE UP TO 85 BAR



CO₂ gas coolers, condensers and dry coolers

* MAXIMUM WORKING PRESSURE UP TO 130 BAR



Emeritus

NEW
COMBINED SPRAY
+ ADIABATIC SYSTEM



- > RELIABLE PERFORMANCE
- > REDUCED FOOT PRINT

- > LOWER REFRIGERANT CHARGE
- > LOWER ENERGY CONSUMPTION

F27HC

Unit Cooler for Cold Rooms



UNIT RANGE ALSO AVAILABLE IN CO2



Very compact overall dimensions

Reduced frost formation

Reduced dehumidification

New super efficient TURBOCOIL 2 Heat Exchanger - high efficiency small diameter copper tubes with turbulated aluminium fins

Low energy consumption

Low noise levels

Suction pressure gauge connection allows checking of suction pressure and correct performance of unit cooler

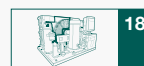
Increased air throw

Technical Data

Fin 4.5mm

Capacity	SC2	F27HC25	F27HC36	F27HC49	F27HC71	F27HC107	F27HC142
R449A	DT = 8K - SC2 (kW)	1.68	2.13	3.49	4.31	6.5	8.5

Data	Units	F27HC25	F27HC36	F27HC49	F27HC71	F27HC107	F27HC142
Surface	m ³	7.3	7.3	14.6	14.6	21.9	29.2
Circuit Volume	dm ³	0.8	1.3	1.6	2.3	3.3	4.3
Air Throw	m	10.5	10.5	12.5	12.5	14	15.5
Air Volume	m ³ /h	900	900	1800	1800	2700	3600
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	W max	85	85	170	170	255	340
	A max	0.6	0.6	1.2	1.2	1.8	2.4
Dimensions	Length (mm)	678	678	1048	1048	1418	1788
	Width (mm)	330	330	330	330	330	330
	Height (mm)	415	415	415	415	415	415
Connections	Inlet (OD In)	3/8	1/2	1/2	1/2	1/2	1/2
	Outlet (OD in)	3/8	7/8	7/8	1.1/8	1.1/8	1.1/8
Net Weight	kg	12	13	19	21	28	36



Fin 6mm

Capacity	SC2	F27HC19	F27HC28	F27HC38	F27HC55	F27HC85	F27HC110
R449A	DT = 8K - SC2 (kW)	1.45	1.86	3	3.77	5.7	7.5

Data	Units	F27HC19	F27HC28	F27HC38	F27HC55	F27HC85	F27HC110
Surface	m ³	5.6	5.6	11.2	11.2	16.9	22.4
Circuit Volume	dm ³	0.8	1.3	1.6	2.3	3.3	4.3
Air Throw	m	11	11	13	13	14.5	16
Air Volume	m ³ /h	950	950	1900	1900	2850	3800
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	W max	85	85	170	170	255	340
	A max	0.6	0.6	1.2	1.2	1.8	2.4
Dimensions	Length (mm)	678	678	1048	1048	1418	1788
	Width (mm)	330	330	330	330	330	330
	Height (mm)	415	415	415	415	415	415
Connections	Inlet (OD In)	3/8	1/2	1/2	1/2	1/2	1/2
	Outlet (OD in)	3/8	7/8	7/8	1.1/8	1.1/8	1.1/8
Net Weight	kg	11	12	18	20	27	34

Fin 7.5mm

Capacity	SC2	F27HC16	F27HC23	F27HC31	F27HC46	F27HC70	F27HC92
R449A	DT = 8K - SC2 (kW)	1.32	1.68	2.72	3.36	5.2	6.9

Data	Units	F27HC16	F27HC23	F27HC31	F27HC46	F27HC70	F27HC92
Surface	m ³	4.9	4.9	9.8	9.8	14.7	19.6
Circuit Volume	dm ³	0.8	1.3	1.6	2.3	3.3	4.3
Air Throw	m	11.5	11.5	13.5	13.5	15.5	17
Air Volume	m ³ /h	1000	1000	2000	2000	3000	4000
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	W max	85	85	170	170	255	340
	A max	0.6	0.6	1.2	1.2	1.8	2.4
Dimensions	Length (mm)	678	678	1048	1048	1418	1788
	Width (mm)	330	330	330	330	330	330
	Height (mm)	415	415	415	415	415	415
Connections	Inlet (OD In)	3/8	1/2	1/2	1/2	1/2	1/2
	Outlet (OD in)	3/8	7/8	7/8	1.1/8	1.1/8	1.1/8
Net Weight	kg	10	11	17	19	26	32

8K DT1 is based on the Eurovent conditions of: Room 0c / Evap -8c / R404A

Related Items:



F31HC

Unit Cooler for Cold Rooms



UNIT RANGE ALSO AVAILABLE IN CO₂



Very compact overall dimensions

Reduced frost formation

Reduced dehumidification

New super efficient TURBOCOIL 2 Heat Exchanger - high efficiency small diameter copper tubes with turbulated aluminium fins

Low energy consumption

Low noise levels & greatly reduced internal volume

Suction pressure gauge connection allows checking of suction pressure and correct performance of unit cooler

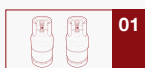
Increased air throw

Technical Data

Fin 4.5mm

Capacity	SC2	F31HC115	F31HC116	F31HC125	F31HC126	F31HC135	F31HC136	F31HC146
R449A	DT = 8K - SC2 (kW)	3.18	3.9	6.4	7.7	9.4	12	15.8

Data	Units	F31HC115	F31HC116	F31HC125	F31HC126	F31HC135	F31HC136	F31HC146
Surface	m ³	8.9	13.3	17.8	26.6	26.7	39.9	53.2
Circuit Volume	dm ³	1.5	2.3	2.8	4.2	4.1	6.3	8.1
Air Throw	m	17	15	20	18	24	21	22
Air Volume	m ³ /h	1600	1400	3200	2800	4800	4200	5600
	230 V/1/50z (Qty)	1	1	2	2	3	3	4
Fan	W max	66	66	132	132	198	198	264
	A max	0.6	0.6	1.2	1.2	1.8	1.8	2.4
Dimensions	Length (mm)	760	760	1210	1210	1660	1660	2110
	Width (mm)	416	416	416	416	416	416	416
	Height (mm)	415	415	415	415	415	415	415
Connections	Inlet (OD In)	1/2	1/2	1/2	1/2	1/2	5/8	5/8
	Outlet (OD in)	5/8	3/4	3/4	7/8	7/8	1.3/8	1.3/8
Net Weight	kg	23	25	39	44	56	63	82



Fin 6mm

Capacity	SC2	F31HC215	F31HC216	F31HC225	F31HC226	F31HC235	F31HC236	F31HC246
R449A	DT = 8K - SC2 (kW)	2.72	3.45	4.4	6.9	8.2	10.6	14.2

Data	Units	F31HC215	F31HC216	F31HC225	F31HC226	F31HC235	F31HC236	F31HC246
Surface	m ³	19	16	22	19	25	22	23
Circuit Volume	dm ³	1.5	2.3	2.8	4.2	4.1	6.3	8.1
Air Throw	m	19	16	22	19	25	22	23
Air Volume	m ³ /h	1700	1500	3400	3000	5100	4500	6000
	230 V/1/50z (Qty)	1	1	2	2	3	3	4
Fan	W max	66	66	132	132	198	198	264
	A max	0.6	0.6	1.2	1.2	1.8	1.8	2.4
Dimensions	Length (mm)	760	760	1210	1210	1660	1660	2110
	Width (mm)	416	416	416	416	416	416	416
	Height (mm)	415	415	415	415	415	415	415
Connections	Inlet (OD In)	1/2	1/2	1/2	1/2	1/2	5/8	5/8
	Outlet (OD in)	5/8	3/4	3/4	7/8	7/8	1.3/8	1.3/8
Net Weight	kg	22	24	38	42	54	60	78

Fin 7.5mm

Capacity	SC2	F31HC315	F31HC316	F31HC325	F31HC326	F31HC335	F31HC336	F31HC346
R449A	DT = 8K - SC2 (kW)	2.45	3.18	4.9	6.4	7.4	9.7	13

Data	Units	F31HC315	F31HC316	F31HC325	F31HC326	F31HC335	F31HC336	F31HC346
Surface	m ³	20	17	23	20	26	24	25
Circuit Volume	dm ³	1.5	2.3	2.8	4.2	4.1	6.3	8.1
Air Throw	m	20	17	23	20	26	24	25
Air Volume	m ³ /h	1750	1600	3500	3200	5250	4800	6400
	230 V/1/50z (Qty)	1	1	2	2	3	3	4
Fan	W max	66	66	132	132	198	198	264
	A max	0.6	0.6	1.2	1.2	1.8	1.8	2.4
Dimensions	Length (mm)	760	760	1210	1210	1660	1660	2110
	Width (mm)	416	416	416	416	416	416	416
	Height (mm)	415	415	415	415	415	415	415
Connections	Inlet (OD In)	1/2	1/2	1/2	1/2	1/2	5/8	5/8
	Outlet (OD in)	5/8	3/4	3/4	7/8	7/8	1.3/8	1.3/8
Net Weight	kg	21	23	37	41	53	58	76

8K DT1 is based on the Eurovent conditions of: Room 0c / Evap -8c / R404A



F35HC

Unit Cooler for Cold Rooms



UNIT RANGE ALSO AVAILABLE IN CO₂



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Increased air throw

Very compact overall dimensions

Reduced frost formation

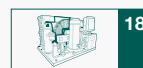
Reduced dehumidification

Technical Data

Fin 4.5mm

Capacity	SC2	F35HC73	F35HC106	F35HC145	F35HC515	F35HC272	F35HC323	F35HC362	F35HC430
R449A	DT = 8K - SC2 (kW)	4.9	6.2	9.9	12.3	17	18.5	22.8	25

Data	Units	F35HC73	F35HC106	F35HC145	F35HC515	F35HC272	F35HC323	F35HC362	F35HC430
Surface	m ³	13.1	19.7	26.2	39.4	49.1	59.1	65.5	78.8
Circuit Volume	dm ³	2.1	3.2	4	6	7.4	8.7	9.7	11.5
Air Throw	m	19.5	18	23	22	26	25	30	29
Air Volume	m ³ /h	2600	2400	5200	4800	7450	7200	9950	9600
	230 V/1/50z (Qty)	1	1	2	2	3	3	4	4
Fan	W max	175	175	350	350	525	525	700	700
	A max	0.8	0.8	1.6	1.6	2.4	2.4	3.2	3.2
Dimensions	Length (mm)	865	865	1420	1420	1975	1975	2530	2530
	Width (mm)	416	416	416	416	416	416	416	416
	Height (mm)	487	487	487	487	487	487	487	487
Connections	Inlet (OD in)	1/2	1/2	1/2	5/8	5/8	5/8	5/8	7/8
	Outlet (OD in)	1.1/8	1.1/8	1.1/8	1.1/8	1.3/8	1.3/8	1.5/8	1.5/8
Net Weight	kg	27	32	44	51	65	71	86	93



Fin 6mm

Capacity	SC2	F35HC59	F35HC84	F35HC117	F35HC174	F35HC218	F35HC261	F35HC290	F35HC348
R449A	DT = 8K - SC2 (kW)	4.8	5.4	8.4	8.85	14.6	16.3	19.5	21.8

Data	Units	F35HC59	F35HC84	F35HC117	F35HC174	F35HC218	F35HC261	F35HC290	F35HC348
Surface	m ³	10.1	15.1	20.2	30.2	37.9	45.3	50.5	60.4
Circuit Volume	dm ³	2.1	3.2	4	6	7.4	8.7	9.7	11.5
Air Throw	m	20	18.5	23.5	22.5	26.5	25.5	30.5	29.5
Air Volume	m ³ /h	2650	2500	5300	5000	7700	7500	10300	10000
	230 V/1/50z (Qty)	1	1	2	2	3	3	4	4
Fan	W max	175	175	350	350	525	525	700	700
	A max	0.8	0.8	1.6	1.6	2.4	2.4	3.2	3.2
Dimensions	Length (mm)	865	865	1420	1420	1975	1975	2530	2530
	Width (mm)	416	416	416	416	416	416	416	416
	Height (mm)	487	487	487	487	487	487	487	487
Connections	Inlet (OD In)	1/2	1/2	1/2	5/8	5/8	5/8	5/8	7/8
	Outlet (OD in)	1.1/8	1.1/8	1.1/8	1.1/8	1.3/8	1.3/8	1.5/8	1.5/8
Net Weight	kg	26	31	42	49	62	67	82	88

Fin 7.5mm

Capacity	SC2	F35HC47	F35HC69	F35HC94	F35HC143	F35HC179	F35HC213	F35HC238	F35HC284
R449A	DT = 8K - SC2 (kW)	3.63	4.9	7.4	10	13.3	15	17.6	20

Data	Units	F35HC47	F35HC69	F35HC94	F35HC143	F35HC179	F35HC213	F35HC238	F35HC284
Surface	m ³	8.7	13.1	17.4	26.2	32.6	39.3	43.5	52.4
Circuit Volume	dm ³	2.1	3.2	4	6	7.4	8.7	9.7	11.5
Air Throw	m	20.5	19	24	23	27	26	31	30
Air Volume	m ³ /h	2700	2600	5400	5200	7950	7800	10600	10400
	230 V/1/50z (Qty)	1	1	2	2	3	3	4	4
Fan	W max	175	175	350	350	525	525	700	700
	A max	0.8	0.8	1.6	1.6	2.4	2.4	3.2	3.2
Dimensions	Length (mm)	865	865	1420	1420	1975	1975	2530	2530
	Width (mm)	416	416	416	416	416	416	416	416
	Height (mm)	487	487	487	487	487	487	487	487
Connections	Inlet (OD In)	1/2	1/2	1/2	5/8	5/8	5/8	5/8	7/8
	Outlet (OD in)	1.1/8	1.1/8	1.1/8	1.1/8	1.3/8	1.3/8	1.5/8	1.5/8
Net Weight	kg	25	30	41	47	60	65	79	85

8K DT1 is based on the Eurovent conditions of: Room 0c / Evap -8c / R404A

Related Items:



F45HC

Unit Cooler for Cold Rooms



UNIT RANGE ALSO AVAILABLE IN CO2



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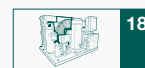
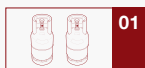
Reduced dehumidification

Technical Data

Fin 4.5mm

Capacity	SC2	F45HC1100	F45HC1102	F45HC1106	F45HC1108	F45HC1112	F45HC1114	F45HC1118	F45HC1120
R449A	DT = 8K - SC2 (kW)	11.3	13.3	22.4	26.6	33.7	39.3	45.4	53.5

Data	Units	F45HC1100	F45HC1102	F45HC1106	F45HC1108	F45HC1112	F45HC1114	F45HC1118	F45HC1120
Surface	m ²	34	45.3	68.1	90.8	102.1	136.1	136.1	181.5
Circuit Volume	dm ³	7	9	13	17	19	25	26	34
Air Throw	m	25	23	30	28	34	32	37	34
Air Volume	m ³ /h	5200	4900	10400	9800	15600	14700	20800	19600
	230 V/1/50z (Qty)	1	1	2	2	3	3	4	4
Fan	W max	-	-	-	-	-	-	-	-
	A max	2.2	2.2	4.4	4.4	6.6	6.6	8.8	8.8
Dimensions	Length (mm)	1285	1285	2085	2085	2885	2885	3685	3685
	Width (mm)	655	655	655	655	655	655	655	655
	Height (mm)	655	655	655	655	655	655	655	655
Connections	Inlet (OD in)	5/8	5/8	5/8	5/8	1.1/8	1.1/8	1.1/8	1.1/8
	Outlet (OD in)	1.3/8	1.3/8	1.5/8	1.5/8	2.1/8	2.1/8	2.1/8	2.5/8
Net Weight	kg	82	89	134	146	185	203	241	266



Fin 6mm

Capacity	SC2	F45HC1200	F45HC1202	F45HC1206	F45HC1208	F45HC1212	F45HC1214	F45HC1218	F45HC1220
R449A	DT = 8K - SC2 (kW)	8.3	9.9	16.6	19.8	25	29.3	33.8	39.7

Data	Units	F45HC1200	F45HC1202	F45HC1206	F45HC1208	F45HC1212	F45HC1214	F45HC1218	F45HC1220
Surface	m ³	26.1	34.8	52.3	69.6	78.3	104.4	104.4	139.3
Circuit Volume	dm ³	7	9	13	17	19	25	26	34
Air Throw	m	26	25	31	30	35	34	38	36
Air Volume	m ³ /h	5400	5100	10800	10200	16200	15300	21600	20400
	230 V/1/50z (Qty)	1	1	2	2	3	3	4	4
Fan	W max	-	-	-	-	-	-	-	-
	A max	2.2	2.2	4.4	4.4	6.6	6.6	8.8	8.8
Dimensions	Length (mm)	1285	1285	2085	2085	2885	2885	3685	3685
	Width (mm)	655	655	655	655	655	655	655	655
	Height (mm)	655	655	655	655	655	655	655	655
Connections	Inlet (OD In)	5/8	5/8	5/8	5/8	1.1/8	1.1/8	1.1/8	1.1/8
	Outlet (OD in)	1.3/8	1.3/8	1.5/8	1.5/8	2.1/8	2.1/8	2.1/8	2.5/8
Net Weight	kg	79	85	128	138	176	191	229	249

Fin 7.5mm

Capacity	SC2	F45HC1300	F45HC1302	F45HC1306	F45HC1308	F45HC1312	F45HC1314	F45HC1318	F45HC1320
R449A	DT = 8K - SC2 (kW)	9	11.2	17.9	22.3	21.6	33.2	36.7	44.7

Data	Units	F45HC1300	F45HC1302	F45HC1306	F45HC1308	F45HC1312	F45HC1314	F45HC1318	F45HC1320
Surface	m ³	21.3	28.5	42.7	57	64	85.4	85.4	113.9
Circuit Volume	dm ³	7	9	13	17	19	25	26	34
Air Throw	m	27	26	33	31	37	35	40	38
Air Volume	m ³ /h	5600	5400	11200	10800	16800	16200	22400	21600
	230 V/1/50z (Qty)	1	1	2	2	3	3	4	4
Fan	W max	-	-	-	-	-	-	-	-
	A max	2.2	2.2	4.4	4.4	6.6	6.6	8.8	8.8
Dimensions	Length (mm)	1285	1285	2085	2085	2885	2885	3685	3685
	Width (mm)	655	655	655	655	655	655	655	655
	Height (mm)	655	655	655	655	655	655	655	655
Connections	Inlet (OD In)	5/8	5/8	5/8	5/8	5/8	1.1/8	1.1/8	1.1/8
	Outlet (OD in)	1.3/8	1.3/8	1.5/8	1.5/8	1.5/8	2.1/8	2.1/8	2.5/8
Net Weight	kg	77	82	124	133	170	184	221	240

8K DT1 is based on the Eurovent conditions of: Room 0c / Evap -8c / R404A

Fin 10mm

Capacity	SC2	F45HC1400	F45HC1402	F45HC1406	F45HC1408	F45HC1412	F45HC1414	F45HC1418	F45HC1420
R449A	DT = 8K - SC2 (kW)	6.8	8.7	14.2	17.6	21.2	21	28	34.9

Data	Units	F45HC1400	F45HC1402	F45HC1406	F45HC1408	F45HC1412	F45HC1414	F45HC1418	F45HC1420
Surface	m ³	16.6	22.1	33.2	44.2	49.8	66.3	66.3	88.6
Circuit Volume	dm ³	7	9	13	17	19	25	26	34
Air Throw	m	28	26	34	32	39	37	42	40
Air Volume	m ³ /h	5800	5600	11600	11200	17400	16800	23200	22400
	230 V/1/50z (Qty)	1	1	2	2	3	3	4	4
Fan	W max	-	-	-	-	-	-	-	-
	A max	2.2	2.2	4.4	4.4	6.6	6.6	8.8	8.8
Dimensions	Length (mm)	1285	1285	2085	2085	2885	2885	3685	3685
	Width (mm)	655	655	655	655	655	655	655	655
	Height (mm)	655	655	655	655	655	655	655	655
Connections	Inlet (OD In)	5/8	5/8	5/8	5/8	5/8	1.1/8	1.1/8	1.1/8
	Outlet (OD in)	1.3/8	1.3/8	1.3/8	1.5/8	1.5/8	2.1/8	2.1/8	2.5/8
Net Weight	kg	75	80	120	128	165	176	214	230

8K DT1 is based on the Eurovent conditions of: Room 0c / Evap -8c / R404A



FHA

Unit Cooler for Cold Rooms



STEEL PROTECTED

GLYCOL



New super efficient TURBOCOIL 2 Heat Exchanger - high efficiency small diameter copper tubes and turbulated aluminium fins

Low energy consumption

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Reduced frost formation

Reduced dehumidification

Technical Data

Fin 3mm

Capacity	SC2	FHA30	FHA40	FHA60	FHA80	FHA120	FHA160
R449A	DT = 8K - SC2 (kW)	1.5	1.86	3.04	3.77	5.7	7.5

Data	Units	FHA30	FHA40	FHA60	FHA80	FHA120	FHA160
Surface	m ³	5.6	7.8	11.2	15.6	23.4	31.2
Circuit Volume	dm ³	0.6	0.9	1.2	1.7	2.5	3.2
Air Throw	m	8	8	9	9	10	11
Air Volume	m ³ /h	550	650	1100	1300	1950	2600
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	W max	105	105	196	196	315	340
	A max	0.65	0.65	1.3	1.3	1.95	2.6
Dimensions	Length (mm)	605	730	920	1170	1630	2080
	Width (mm)	555	555	555	555	555	555
	Height (mm)	260	260	260	260	260	260
Connections	Inlet (OD In)	3/8	1/2	1/2	1/2	1/2	1/2
	Outlet (OD in)	3/8	1/2	1/2	1.1/8	1.1/8	1.1/8
Net Weight	kg	9.5	11.5	16.5	20.5	29.5	39



01



02



02



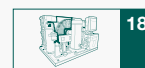
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03



03



18



19

Fin 4.5mm

Capacity	SC2	FHA21	FHA27	FHA41	FHA53	FHA79	FHA106
R449A	DT = 8K - SC2 (kW)	1.32	1.63	2.68	3.27	5	6.7

Data	Units	FHA21	FHA27	FHA41	FHA53	FHA79	FHA106
Surface	m ²	3.8	5.3	7.7	10.6	15.9	21.2
Circuit Volume	dm ³	0.6	0.9	1.2	1.7	2.5	3.2
Air Throw	m	9	9	10	10	11	12
Air Volume	m ³ /h	600	720	1200	1440	2160	2880
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	W max	105	105	196	196	315	340
	A max	0.65	0.65	1.3	1.3	1.95	2.6
Dimensions	Length (mm)	605	730	920	1170	1630	2080
	Width (mm)	555	555	555	555	555	555
	Height (mm)	260	260	260	260	260	260
Connections	Inlet (OD In)	3/8	1/2	1/2	1/2	1/2	1/2
	Outlet (OD in)	3/8	1/2	1/2	1.1/8	1.1/8	1.1/8
Net Weight	kg	9	10.5	15.5	19	27.5	39

8K DT1 is based on the Eurovent conditions of Room 0c / Evap -8c / R404A

Fin 7mm

Capacity	SC2	FHA14	FHA17	FHA28	FHA35	FHA52	FHA70
R449A	DT = 8K - SC2 (kW)	1.03	1.24	2.06	2.48	3.87	5.2

Data	Units	FHA14	FHA17	FHA28	FHA35	FHA52	FHA70
Surface	m ²	2.6	3.5	5.1	7.1	10.6	14.2
Circuit Volume	dm ³	0.6	0.9	1.2	1.7	2.5	3.2
Air Throw	m	10	10	11	11	12	13
Air Volume	m ³ /h	670	750	1340	1500	2250	3000
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	W max	105	105	196	196	315	340
	A max	0.65	0.65	1.3	1.3	1.95	2.6
Dimensions	Length (mm)	605	730	920	1170	1630	2080
	Width (mm)	555	555	555	555	555	555
	Height (mm)	260	260	260	260	260	260
Connections	Inlet (OD In)	3/8	1/2	1/2	1/2	1/2	1/2
	Outlet (OD in)	3/8	1/2	1/2	1.1/8	1.1/8	1.1/8
Net Weight	kg	8.5	10	15	18	26	34

8K DT1 is based on the Eurovent conditions of Room 0c / Evap -8c / R404A



Commercial Coolers

FHD Unit Cooler for Cold Rooms



UNIT RANGE ALSO AVAILABLE IN CO2



Very compact overall dimensions

Reduced frost formation

Reduced dehumidification

New super efficient TURBOCOIL 2 Heat Exchanger - high efficiency small diameter copper tubes and turbulated aluminium fins

Low energy consumption

Low noise levels & greatly reduced internal volume

Suction pressure gauge connection allows checking of suction pressure and correct performance of unit cooler

Increased air throw

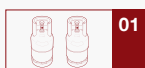
Technical Data

Fin 3mm

Capacity	SC2	FHD711	FHD712	FHD721	FHD722	FHD732	FHD742
R449A	S (kW)	3.45	4.86	6.9	9.8	11.7	18
DT = 8K - SC2 (kW)	L (kW)	2.97	4.13	6	8.3	10.5	16.3

Data	Units	FHD711	FHD712	FHD721	FHD722	FHD732	FHD742
Surface (EXT)	m ³	19.2	19.2	38.4	38.4	57.6	76.8
Circuit Volume	dm ³	1.1	2.3	2.1	4.2	6.1	7.9
Air Throw	S (m)	11	11	12	12	14	15
	L (m)	8	8	10	10	11	11
Air Volume	S (m ³ /h)	1800	1800	3600	3600	5400	7200
	L (m ³ /h)	1400	1400	2800	2800	4200	5500
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	S (W max)	82	82	164	164	246	328
	S (A max)	0.7	0.7	1.4	1.4	2.1	2.8
	L (W max)	40	40	80	80	120	160
	L (A max)	0.4	0.4	0.8	0.8	1.2	1.6
Dimensions	Length (mm)	888	888	1443	1443	1998	2553
	Width (mm)	886	886	886	886	886	886
	Height (mm)	263	263	263	263	263	263
Connections	Inlet (OD In)	1/2	1/2	1/2	5/8	5/8	5/8
	Outlet (OD in)	7/8	1.1/8	1.1/8	1.3/8	1.3/8	1.3/8
Net Weight	kg	22.8	24.6	38.8	41.5	58.9	76.8

L = Low Fan Speed S = High Fan Speed



Fin 4.5mm

Capacity	SC2	FHD811	FHD812	FHD821	FHD822	FHD832	FHD842
R449A	S (kW)	2.81	4.13	5.6	8.3	12.5	16
DT = 8K - SC2 (kW)	L (kW)	2.48	3.67	5	7.3	11.3	14.8

Data	Units	FHD811	FHD812	FHD821	FHD822	FHD832	FHD842
Surface (EXT)	m ³	13.1	13.1	26.2	26.2	39.3	52.4
Circuit Volume	dm ³	1.1	2.3	2.1	4.2	6.1	7.9
Air Throw	S (m)	11	11	13	13	14	15
	L (m)	9	9	10	10	11	12
Air Volume	S (m ³ /h)	1900	1900	3800	3800	5700	7600
	L (m ³ /h)	1500	1500	2900	2900	4400	5900
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	S (W max)	82	82	164	164	246	328
	S (A max)	0.7	0.7	1.4	1.4	2.1	2.8
	L (W max)	40	40	80	80	120	160
	L (A max)	0.4	0.4	0.8	0.8	1.2	1.6
Dimensions	Length (mm)	888	888	1443	1443	1998	2553
	Width (mm)	886	886	886	886	886	886
	Height (mm)	263	263	263	263	263	263
Connections	Inlet (OD In)	1/2	1/2	1/2	5/8	5/8	5/8
	Outlet (OD in)	7/8	1.1/8	1.1/8	1.3/8	1.3/8	1.3/8
Net Weight	kg	20.8	22.3	34.9	37.6	53	68.5

L = Low Fan Speed S = High Fan Speed

Fin 7mm

Capacity	SC2	FHD911	FHD912	FHD921	FHD922	FHD932	FHD942
R449A	S (kW)	2	3.13	3.99	6.2	9.6	12.6
DT = 8K - SC2 (kW)	L (kW)	1.79	2.78	3.59	5.6	8.7	11.6

Data	Units	FHD911	FHD912	FHD921	FHD922	FHD932	FHD942
Surface (EXT)	m ³	8.7	8.7	17.5	17.5	26.2	34.9
Circuit Volume	dm ³	1.1	2.3	2.1	4.2	6.1	7.9
Air Throw	S (m)	12	12	14	14	15	16
	L (m)	9	9	11	11	12	13
Air Volume	S (m ³ /h)	2000	2000	4000	4000	6000	8000
	L (m ³ /h)	1600	1600	3100	3100	4700	6200
	230 V/1/50z (Qty)	1	1	2	2	3	4
Fan	S (W max)	82	82	164	164	246	328
	S (A max)	0.7	0.7	1.4	1.4	2.1	2.8
	L (W max)	40	40	80	80	120	160
	L (A max)	0.4	0.4	0.8	0.8	1.2	1.6
Dimensions	Length (mm)	888	888	1443	1443	1998	2553
	Width (mm)	886	886	886	886	886	886
	Height (mm)	263	263	263	263	263	263
Connections	Inlet (OD In)	1/2	1/2	1/2	5/8	5/8	5/8
	Outlet (OD in)	7/8	1.1/8	1.1/8	1.3/8	1.3/8	1.3/8
Net Weight	kg	19.3	20.8	31.9	34.6	48.4	62.4

L = Low Fan Speed S = High Fan Speed

8K DT1 is based on the Eurovent conditions of Room 0c / Evap -8c / R404A



Commercial Coolers

SMA

Unit Cooler for Cold Rooms



UNIT RANGE ALSO AVAILABLE IN CO₂



New super efficient TURBOCOIL 2 Heat Exchanger - high efficiency small diameter copper tubes and turbulated aluminium fins

Low energy consumption

Low noise levels & greatly reduced internal volume

Suction pressure gauge connection allows checking of suction pressure and correct performance of unit cooler

Increased air throw

Very compact overall dimensions

Reduced frost formation

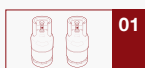
Reduced dehumidification

Technical Data

Fin 4.5mm

Capacity	SC2	SMA211	SMA212	SMA213	SMA214	SMA221	SMA222	SMA231	SMA232	SMA241	SMA242
R449A	DT = 8K - SC2 (kW)	2.36	2.95	3.13	3.81	3.75	5.6	6.9	8.5	9.3	11.2

Data	Units	SMA211	SMA212	SMA213	SMA214	SMA221	SMA222	SMA231	SMA232	SMA241	SMA242
Surface	m ³	6.6	9.8	10.6	15.9	13.1	19.7	19.7	29.5	26.2	39.3
Circuit Volume	dm ³	1.1	1.6	1.7	2.5	2	3.1	3	4.5	4	5.9
Air Throw	m	10	9	9	9	12	11	13	12	14	13
Air Volume	m ³ /h	1200	1100	1400	1300	2400	2200	3600	3300	4800	4400
	230 V/1/50z (Qty)	1	1	1	1	2	2	3	3	4	4
Fan	W max	75	75	75	75	150	150	225	225	300	300
	A max	0.34	0.34	0.34	0.34	0.68	0.68	1.02	1.02	1.36	1.36
Dimensions	Length (mm)	792	792	1137	1137	1347	1347	1902	1902	2457	2457
	Width (mm)	683	683	683	683	683	683	683	683	683	683
	Height (mm)	292	292	292	292	292	292	292	292	292	292
Connections	Inlet (OD In)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	5/8
	Outlet (OD in)	5/8	3/4	3/4	3/4	3/4	1.1/8	1.1/8	1.1/8	1.1/8	1.3/8
Net Weight	kg	19.7	21.6	25.3	28.2	31.8	35.4	44.2	49.3	56.6	63.6



Fin 7mm

Capacity	SC2	SMA311	SMA312	SMA313	SMA314	SMA321	SMA322	SMA331	SMA332	SMA341	SMA342
R449A	DT = 8K - SC2 (kW)	1.77	2.36	2.31	3.13	2.85	4.58	5.3	5.75	7.1	9.2

Data	Units	SMA311	SMA312	SMA313	SMA314	SMA321	SMA322	SMA331	SMA332	SMA341	SMA342
Surface	m ³	4.4	6.6	7.1	10.6	8.7	13.1	13.1	19.7	17.5	26.2
Circuit Volume	dm ³	1.1	1.6	1.7	2.5	2	3.1	3	4.5	4	5.9
Air Throw	m	11	10	10	9	13	12	14	13	15	14
Air Volume	m ³ /h	1300	1200	1450	1400	2600	2400	3900	3600	5200	4800
	230 V/1/50z (Qty)	1	1	1	1	2	2	3	3	4	4
Fan	W max	75	75	75	75	150	150	225	225	300	300
	A max	0.34	0.34	0.34	0.34	0.68	0.68	1.02	1.02	1.36	1.36
Dimensions	Length (mm)	792	792	1137	1137	1347	1347	1902	1902	2457	2457
	Width (mm)	683	683	683	683	683	683	683	683	683	683
	Height (mm)	292	292	292	292	292	292	292	292	292	292
Connections	Inlet (OD In)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	5/8
	Outlet (OD in)	5/8	3/4	3/4	3/4	3/4	1.1/8	1.1/8	1.1/8	1.1/8	1.3/8
Net Weight	kg	19	20.5	24.1	26.3	30.2	33.1	42	46	53.5	59

8K DT1 is based on the Eurovent conditions of Room 0c / Evap -8c / R404A



FRIGA-BOHN

Our parent company, Beijer Ref, own production facilities throughout the world manufacturing a wide range of packs, chillers, pumping stations and outdoor packaged solutions. In partnership with Friga-Bohn Industrial Evaporators and Condensers we have the solution for all Heavy Commercial applications.

Contact your local branch with your project and our specialist Heavy Commercial technical team will design a commercially acceptable solution.



SPEAK TO THE SPECIALISTS...
when it comes to your next Heavy Commercial Refrigeration project!

Commercial Coolers

SHS

Unit Cooler for small cold rooms



UNIT RANGE ALSO AVAILABLE IN CO2

Key Features

- New super efficient TURBOCOIL 2 Heat Exchanger - high efficiency small diameter copper tubes and aluminium fins
- Reduced dehumidification
- Reduced frost formation
- Increased air throw
- Greatly reduced internal volume
- Low noise levels
- Low energy consumption
- Very compact overall dimensions



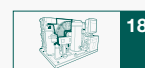
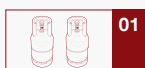
Technical Data

Fin 5mm

Capacity	SC2	SHS8	SHS12	SHS13	SHS15	SHS18	SHS22	SHS26	SHS32
R449A	DT = 8K - SC2 (kW)	0.64	0.71	0.86	0.94	1.3	1.43	1.86	2.08

Data	Units	SHS8	SHS12	SHS13	SHS15	SHS18	SHS22	SHS26	SHS32
Air Throw	m	6	6	5	5	7	7	6	7
Air Volume	m3/h	440	440	500	500	850	850	980	1250
	230 V/1/50z (Qty)	1	1	1	1	2	2	2	3
Fan	W max	35	35	35	35	70	70	70	105
	A max	0.22	0.22	0.22	0.22	0.44	0.44	0.44	0.66
Dimensions	Length (mm)	493	493	647	647	803	803	1126	1126
	Width (mm)	428	428	428	428	428	428	428	428
	Height (mm)	171	171	171	171	171	171	171	171
Connections	Inlet (OD In)	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
	Outlet (OD in)	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Net Weight	kg	5.1	5.2	6.1	6.2	8.6	8.7	10.8	12.3

8K DT1 is based on the Eurovent conditions of Room 0c / Evap -8c / R404A



SHF

Compact unit coolers for refrigerated cabinets



Key Features

- New super high efficient Heat Exchanger a combination of small diameter copper tubes and aluminium fins
- High in performance with low air quality required
- Low motor consumption
- Low noise operation
- Very compact overall dimensions



Technical Data

Fin 5.5mm

Capacity	SC2	SHF50	SHF60	SHF70	SHS55	SHF665
R449A	DT = 8K - SC2 (kW)	0.41	0.48	0.57	0.47	0.56

Data	Units	SHF50	SHF60	SHF70	SHS55	SHF665
Air Throw	m	3.1	3.4	2.9	2 x 2.0	2 x 2.2
Air Volume	m3/h	190	210	280	240	265
	230 V/1/50z (Qty)	1	1	2	2	2
Fan	W max	30	30	60	60	60
	A max	0.24	0.24	0.48	0.48	0.48
Dimensions	Length (mm)	382	472	472	382	472
	Width (mm)	93	93	97	97	97
	Height (mm)	418-463	418-463	418-463	418-463	418-463
Connections	Inlet (OD In)	5/16	5/16	5/16	5/16	5/16
	Outlet (OD in)	5/16	5/16	5/16	5/16	5/16
Net Weight	kg	3.9	4.6	5.6	4.7	5.6

8K DT1 is based on the Eurovent conditions of Room 0c / Evap -8c / R404A

Related Items:



F27HC Spares

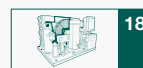
Model	Coil Heaters	Qty.	Drain Tray Heater	Qty.	Drain Tray Kit	Fan Shroud Heater Kit	Side Panel	Fan Motor	Fan Blade	Fan Motor Bracket	Qty.	Fan Guard	Qty.	3/4" Drain Fitting	Heater Clips
F27HC254	30087241	2	30087262	1	30130210	30101012	30084566	30087240	30087594	30087596	1	30087637	1	30098419	30087853
F27HC364	30087241	2	30087262	1	30130210	30101012	30084566	30087240	30087594	30087596	1	30087637	1	30098419	30087853
F27HC494	30087242	2	30087263	1	30130211	30101012	30084566	30087240	30087594	30087596	2	30087637	1	30098419	30087853
F27HC714	30087242	2	30087263	1	30130211	30101012	30084566	30087240	30087594	30087596	2	30087637	1	30098419	30087853
F27HC1074	30087243	2	30087264	1	30130212	30101012	30084566	30087240	30087594	30087596	3	30087637	1	30098419	30087853
F27HC1424	30087244	2	30087265	1	30130213	30101012	30084566	30087240	30087594	30087596	4	30087637	1	30098419	30087853
F27HC196	30087241	2	30087262	1	30130210	30101012	30084566	30087240	30087594	30087596	1	30087637	1	30098419	30087853
F27HC286	30087241	2	30087262	1	30130210	30101012	30084566	30087240	30087594	30087596	1	30087637	1	30098419	30087853
F27HC386	30087242	2	30087263	1	30130211	30101012	30084566	30087240	30087594	30087596	2	30087637	1	30098419	30087853
F27HC556	30087242	2	30087263	1	30130211	30101012	30084566	30087240	30087594	30087596	2	30087637	1	30098419	30087853
F27HC856	30087243	2	30087264	1	30130212	30101012	30084566	30087240	30087594	30087596	3	30087637	1	30098419	30087853
F27HC1106	30087244	2	30087265	1	30130213	30101012	30084566	30087240	30087594	30087596	4	30087637	1	30098419	30087853
F27HC167	30087241	2	30087262	1	30130210	30101012	30084566	30087240	30087594	30087596	1	30087637	1	30098419	30087853
F27HC237	30087241	2	30087262	1	30130210	30101012	30084566	30087240	30087594	30087596	1	30087637	1	30098419	30087853
F27HC317	30087242	2	30087263	1	30130211	30101012	30084566	30087240	30087594	30087596	2	30087637	1	30098419	30087853
F27HC467	30087242	2	30087263	1	30130211	30101012	30084566	30087240	30087594	30087596	2	30087637	1	30098419	30087853
F27HC707	30087243	2	30087264	1	30130212	30101012	30084566	30087240	30087594	30087596	3	30087637	1	30098419	30087853
F27HC927	30087244	2	30087265	1	30130213	30101012	30084566	30087240	30087594	30087596	4	30087637	1	30098419	30087853

F31HC Spares

Model	Coil Heaters	Qty.	Drain Heater	Drain Tray Kit	Fan Shroud Heater Kit	Side Panel	Fan Motor EC (Supplied Version)	Fan Motor AC	Fan Motor Bracket	Fan Guard	Qty.	3/4" Drain Fitting	Heater Clips
F31HC1154	30087512	2	30123863	30110371	30104610	30085032	30306283	30338867	30087636	30087635	1	30098419	30087853
F31HC1164	30087512	3	30123863	30110371	30104610	30085032	30306283	30338867	30087636	30087635	1	30098419	30087853
F31HC1254	30087513	2	30123864	30106887	30104610	30085032	30306283	30338867	30087636	30087635	2	30098419	30087853
F31HC1264	30087513	3	30123864	30106887	30104610	30085032	30306283	30338867	30087636	30087635	2	30098419	30087853
F31HC1354	30087514	2	30123865	30110372	30104610	30085032	30306283	30338867	30087636	30087635	3	30098419	30087853
F31HC1364	30087514	3	30123865	30110372	30104610	30085032	30306283	30338867	30087636	30087635	3	30098419	30087853
F31HC1464	30087515	3	30123866	30110373	30104610	30085032	30306283	30338867	30087636	30087635	4	30098419	30087853
F31HC2156	30087512	2	30123863	30110371	30104610	30085032	30306283	30338867	30087636	30087635	1	30098419	30087853
F31HC2166	30087512	3	30123863	30110371	30104610	30085032	30306283	30338867	30087636	30087635	1	30098419	30087853
F31HC2256	30087513	2	30123864	30106887	30104610	30085032	30306283	30338867	30087636	30087635	2	30098419	30087853
F31HC2266	30087513	3	30123864	30106887	30104610	30085032	30306283	30338867	30087636	30087635	2	30098419	30087853
F31HC2356	30087514	2	30123865	30110372	30104610	30085032	30306283	30338867	30087636	30087635	3	30098419	30087853
F31HC2366	30087514	3	30123865	30110372	30104610	30085032	30306283	30338867	30087636	30087635	3	30098419	30087853
F31HC2466	30087515	3	30123866	30110373	30104610	30085032	30306283	30338867	30087636	30087635	4	30098419	30087853
F31HC3157	30087512	2	30123863	30110371	30104610	30085032	30306283	30338867	30087636	30087635	1	30098419	30087853
F31HC3167	30087512	3	30123863	30110371	30104610	30085032	30306283	30338867	30087636	30087635	1	30098419	30087853
F31HC3257	30087513	3	30123864	30106887	30104610	30085032	30306283	30338867	30087636	30087635	2	30098419	30087853
F31HC3267	30087513	3	30123864	30106887	30104610	30085032	30306283	30338867	30087636	30087635	2	30098419	30087853
F31HC3357	30087514	3	30123865	30110372	30104610	30085032	30306283	30338867	30087636	30087635	3	30098419	30087853
F31HC3367	30087514	3	30123865	30110372	30104610	30085032	30306283	30338867	30087636	30087635	3	30098419	30087853
F31HC3467	30087515	3	30123866	30110373	30104610	30085032	30306283	30338867	30087636	30087635	4	30098419	30087853

F35HC Spares

Model	Coil Heaters	Qty.	Drain Tray Heaters	Qty.	Drain Tray Kit	Fan Shroud Heater Kit	Fan Capacitor	Fan Motor	Fan Motor Bracket	Fan Guard	Qty.	3/4" Drain Fitting	Heater Clips
F35HC734	30087477	4	30087266	1	30106661	30101013	30098735	30087443	30087593	30087591	1	30098419	30087853
F35HC1064	30087477	6	30087266	1	30106661	30101013	30098735	30087443	30087593	30087591	1	30098419	30087853
F35HC1454	30087478	4	30087264	1	30103054	30101013	30098735	30087443	30087593	30087591	2	30098419	30087853
F35HC5154	30087478	6	30087264	1	30103054	30101013	30098735	30087443	30087593	30087591	2	30098419	30087853
F35HC2724	30087479	6	30087267	1	30110390	30101013	30098735	30087443	30087593	30087591	3	30098419	30087853



F35HC Spares

Model	Coil Heaters	Qty.	Drain Tray Heaters	Qty.	Drain Tray Kit	Fan Shroud Heater Kit	Fan Capacitor	Fan Motor	Fan Motor Bracket	Fan Guard	Qty.	3/4" Drain Fitting	Heater Clips
F35HC3234	30087479	6	30087267	1	30110390	30101013	30098735	30087443	30087593	30087591	3	30098419	30087853
F35HC3624	30087480	6	30087268	1	30110391	30101013	30098735	30087443	30087593	30087591	4	30098419	30087853
F35HC4304	30087480	6	30087268	1	30110391	30101013	30098735	30087443	30087593	30087591	4	30098419	30087853
F35HC596	30087477	4	30087266	1	30106661	30101013	30098735	30087443	30087593	30087591	1	30098419	30087853
F35HC846	30087477	6	30087266	1	30106661	30101013	30098735	30087443	30087593	30087591	1	30098419	30087853
F35HC1176	30087478	4	30087264	1	30103054	30101013	30098735	30087443	30087593	30087591	2	30098419	30087853
F35HC1746	30087478	6	30087264	1	30103054	30101013	30098735	30087443	30087593	30087591	2	30098419	30087853
F35HC2186	30087479	6	30087267	1	30110390	30101013	30098735	30087443	30087593	30087591	3	30098419	30087853
F35HC2616	30087479	6	30087267	1	30110390	30101013	30098735	30087443	30087593	30087591	3	30098419	30087853
F35HC2906	30087480	6	30087268	1	30110391	30101013	30098735	30087443	30087593	30087591	4	30098419	30087853
F35HC3486	30087480	6	30087268	1	30110391	30101013	30098735	30087443	30087593	30087591	4	30098419	30087853
F35HC477	30087477	4	30087266	1	30106661	30101013	30098735	30087443	30087593	30087591	1	30098419	30087853
F35HC697	30087477	6	30087266	1	30106661	30101013	30098735	30087443	30087593	30087591	1	30098419	30087853
F35HC947	30087478	4	30087264	1	30103054	30101013	30098735	30087443	30087593	30087591	2	30098419	30087853
F35HC1437	30087478	6	30087264	1	30103054	30101013	30098735	30087443	30087593	30087591	2	30098419	30087853
F35HC1797	30087479	6	30087267	1	30110390	30101013	30098735	30087443	30087593	30087591	3	30098419	30087853
F35HC2137	30087479	6	30087267	1	30110390	30101013	30098735	30087443	30087593	30087591	3	30098419	30087853
F35HC2387	30087480	6	30087268	1	30110391	30101013	30098735	30087443	30087593	30087591	4	30098419	30087853
F35HC2847	30087480	6	30087268	1	30110391	30101013	30098735	30087443	30087593	30087591	4	30098419	30087853

F45HC Spares

Model	Coil Heaters	Qty.	Part No.	Qty.	Drain Tray Heaters	Qty.	Drain Tray Kit	Fan Shroud Heater Kit	Air Streamer	Fan Motor	Fan Guard	Qty.	Drain Fitting 1 1/4"	Heater Clips
F35HC734	30087482	3	n/a	-	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC1064	30087482	3	30087488	2	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC1454	30087484	3	n/a	-	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC5154	30087484	3	30087490	2	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC2724	30087485	3	n/a	-	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC3234	30087485	3	30087491	2	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC3624	30087486	3	n/a	-	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990
F35HC4304	30087486	3	30087492	2	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990
F35HC596	30087482	3	n/a	-	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC846	30087482	3	30087488	2	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC1176	30087484	3	n/a	-	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC1746	30087484	3	30087490	2	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC2186	30087485	3	n/a	-	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC2616	30087485	3	30087491	2	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC2906	30087486	3	n/a	-	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990
F35HC3486	30087486	3	30087492	2	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990
F35HC477	30087482	3	n/a	-	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC697	30087482	3	30087488	2	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC947	30087484	3	n/a	-	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC1437	30087484	3	30087490	2	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC1797	30087485	3	n/a	-	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC2137	30087485	3	30087491	2	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC2387	30087486	3	n/a	-	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990
F35HC2847	30087486	3	30087492	2	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990
F35HC947	30087482	3	n/a	-	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC1437	30087482	3	30087488	2	30087488	1	30106661	30101007	30106417	30091240	30109147	1	30111697	30106990
F35HC1797	30087484	3	n/a	-	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC2137	30087484	3	30087490	2	30087490	1	30103054	30101007	30106417	30091240	30109147	2	30111697	30106990
F35HC2387	30087485	3	n/a	-	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC2847	30087485	3	30087491	2	30087491	1	30110401	30101007	30106417	30091240	30109147	3	30111697	30106990
F35HC2387	30087486	3	n/a	-	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990
F35HC2847	30087486	3	30087492	2	30087492	1	30110391	30101007	30106417	30091240	30109147	4	30111697	30106990

Related Items:

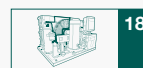


FHA Spares

Model	Heater Kit	FHA Casing inc Drain Tray & Fan Guard	Fan Motor	Fan Blade	Fan Motor Bracket	Fan Guard	Part No.	Qty.	Inspection Cover	Heater Clips
FHA3032	30101015	30260542	30086943	30087555	30085257	30222381	30098419	1	30086763	30086779
FHA4032	30101023	30260453	30086943	30087555	30085257	30222381	30098419	1	30086763	30086779
FHA6032	30101016	30260454	30086943	30087555	30085257	30222381	30098419	2	30086763	30086779
FHA8032	30101024	30260455	30086943	30087555	30085257	30222381	30098419	2	30086763	30086779
FHA12032	30101025	30260456	30086943	30087555	30085257	30222381	30098419	3	30086763	30086779
FHA16032	30101014	30260457	30086943	30087555	30085257	30222381	30098419	4	30086763	30086779
FHA2150	30101015	30260542	30086943	30087555	30085257	30222381	30098419	1	30086763	30086779
FHA2750	30101023	30260453	30086943	30087555	30085257	30222381	30098419	1	30086763	30086779
FHA4150	30101016	30260454	30086943	30087555	30085257	30222381	30098419	2	30086763	30086779
FHA5350	30101024	30260455	30086943	30087555	30085257	30222381	30098419	2	30086763	30086779
FHA7950	30101025	30260456	30086943	30087555	30085257	30222381	30098419	3	30086763	30086779
FHA10650	30101014	30260457	30086943	30087555	30085257	30222381	30098419	4	30086763	30086779
FHA1480	30101015	30260542	30086943	30087555	30085257	30222381	30098419	1	30086763	30086779
FHA1780	30101023	30260453	30086943	30087555	30085257	30222381	30098419	1	30086763	30086779
FHA2880	30101016	30260454	30086943	30087555	30085257	30222381	30098419	2	30086763	30086779
FHA3580	30101024	30260455	30086943	30087555	30085257	30222381	30098419	2	30086763	30086779
FHA5280	30101025	30260456	30086943	30087555	30085257	30222381	30098419	3	30086763	30086779
FHA7080	30101014	30260457	30086943	30087555	30085257	30222381	30098419	4	30086763	30086779

FHD Spares

Model	Fan Motor	Guard	Drain Tray Kit	Side Panel Electrics	Side Panel Tube	Drain Pump Kit	Drain Heater	Coil Heaters	Qty.	Heater Clips
FHD7113	30167866	30170565	30180982	30168388	30168389	30180987	30086920	30164422	2	30086779
FHD7123	30167866	30170565	30180982	30168388	30168389	30180987	30086920	30164422	2	30086779
FHD7213	30167866	30170565	30180984	30168388	30168389	30180987	30086920	30164423	2	30086779
FHD7223	30167866	30170565	30180984	30168388	30168389	30180987	30086920	30164423	2	30086779
FHD7323	30167866	30170565	30180985	30168388	30168389	30180987	30086920	30164424	2	30086779
FHD7423	30167866	30170565	30180986	30168388	30168389	30180987	30086920	30164425	2	30086779
FHD8114	30167866	30170565	30180982	30168388	30168389	30180987	30086920	30164422	2	30086779
FHD8124	30167866	30170565	30180982	30168388	30168389	30180987	30086920	30164422	2	30086779
FHD8214	30167866	30170565	30180984	30168388	30168389	30180987	30086920	30164423	2	30086779
FHD8224	30167866	30170565	30180984	30168388	30168389	30180987	30086920	30164423	2	30086779
FHD8324	30167866	30170565	30180985	30168388	30168389	30180987	30086920	30164424	2	30086779
FHD8424	30167866	30170565	30180986	30168388	30168389	30180987	30086920	30164425	2	30086779
FHD9117	30167866	30170565	30180982	30168388	30168389	30180987	30086920	30164422	2	30086779
FHD9127	30167866	30170565	30180982	30168388	30168389	30180987	30086920	30164422	2	30086779
FHD9217	30167866	30170565	30180984	30168388	30168389	30180987	30086920	30164423	2	30086779
FHD9227	30167866	30170565	30180984	30168388	30168389	30180987	30086920	30164423	2	30086779
FHD9327	30167866	30170565	30180985	30168388	30168389	30180987	30086920	30164424	2	30086779
FHD9427	30167866	30170565	30180986	30168388	30168389	30180987	30086920	30164425	2	30086779



SMA Spares

Model	Heater Kit	Casing / Drain tray	Side Panel TEV	Side Panel Electrics	Fan Motor	Fan Motor Bracket	Fan Guard	Qty.	3/4" Drain Fitting	Heater Clips	Qty.
SMA21145	30137536	10104496	30084396	30084397	30091252	30087632	30087633	1	30098419	30086779	2
SMA21245	30127530	10104496	30084396	30084397	30091252	30087632	30087633	1	30098419	30086780	2
SMA21345	30137537	10104497	30084396	30084397	30091252	30087632	30087633	1	30098419	30086779	2
SMA21445	30137532	10104497	30084396	30084397	30091252	30087632	30087633	1	30098419	30086780	2
SMA22145	30137538	10104498	30084396	30084397	30091252	30087632	30087633	2	30098419	30086779	2
SMA22245	30108054	10104498	30084396	30084397	30091252	30087632	30087633	2	30098419	30086780	2
SMA23145	30137539	10101475	30084396	30084397	30091252	30087632	30087633	3	30098419	30086779	3
SMA23245	30137534	10101475	30084396	30084397	30091252	30087632	30087633	3	30098419	30086780	3
SMA24145	30137540	10104499	30084396	30084397	30091252	30087632	30087633	4	30098419	30086779	3
SMA24245	30137535	10104499	30084396	30084397	30091252	30087632	30087633	4	30098419	30086780	2
SMA31170	30137536	10104496	30084396	30084397	30091252	30087632	30087633	1	30098419	30086779	2
SMA31270	30127530	10104496	30084396	30084397	30091252	30087632	30087633	1	30098419	30086780	2
SMA31370	30137537	10104497	30084396	30084397	30091252	30087632	30087633	1	30098419	30086779	2
SMA31470	30137532	10104497	30084396	30084397	30091252	30087632	30087633	1	30098419	30086780	2
SMA32170	30137538	10104498	30084396	30084397	30091252	30087632	30087633	2	30098419	30086779	2
SMA32270	30108054	10104498	30084396	30084397	30091252	30087632	30087633	2	30098419	30086780	2
SMA33170	30137539	10101475	30084396	30084397	30091252	30087632	30087633	3	30098419	30086779	3
SMA33270	30137534	10101475	30084396	30084397	30091252	30087632	30087633	3	30098419	30086780	3
SMA34170	30137540	10104499	30084396	30084397	30091252	30087632	30087633	4	30098419	30086779	3
SMA34270	30137535	10104499	30084396	30084397	30091252	30087632	30087633	4	30098419	30086780	2

SHS Spares

Model	Heater Kit	Casing / Drain Tray (incl. Fan Guard & Fitting)	Fan Motor	Fan Blade	Guard	Fan Motor Bracket	Drain Fitting	SHS Inspection Cover
SHS8	30087370	30098424	233322001	30087534	30087611	30098750	30083634	30144030
SHS12	30087370	30098424	233322001	30087534	30087611	30098750	30083634	30144030
SHS13	30087371	30098425	233322001	30087534	30087611	30098750	30083634	30144030
SHS15	30087371	30098425	233322001	30087534	30087611	30098750	30083634	30144030
SHS18	30087372	30098426	233322001	30087534	30087611	30098750	30083634	30144030
SHS22	30087372	30098426	233322001	30087534	30087611	30098750	30083634	30144030
SHS26	30098423	30101397	233322001	30087534	30087611	30098750	30083634	30144030
SHS32	30098423	30101224	233322001	30087534	30087611	30098750	30083634	30144030

SHF Spares

Model	Heater Kit	Drain Tray Kit	Fan Motor	Fan Blade	Fan Guard
SHF50S	30087451	30086798	30087466	30087547	30087618
SHF60S	30087452	30086799	30087466	30087547	30087618
SHF70S	30087451	30086798	30087466	30087547	30087618
SHF55D	30087452	30086799	30087466	30087547	30087618
SHF65D	30087452	30086799	30087466	30087547	30087618

Related Items:



FRIGA-BOHN

Friga-Bohn Evaporators & Condensers

A world of solutions.

LENNOX EMEA (Europe, Middle-East, Africa), part of Lennox International Incorporated (LII) is a leading provider of climate control solutions for heating, air conditioning and refrigeration markets and has the commitment to assisting its customers in their projects, to provide optimized and sustainable solutions.

LENNOX EMEA ensures that each employee flourishes within the group, so as to contribute to the success of our customers' projects. Every day we develop our reputation by providing maximum comfort and efficiency through our air conditioning and refrigeration solutions.

Our reputation as a leading market player is based on simple principles that guide our action: capacity to listen to our customers, knowledges of their fields of applications and understanding of their needs.

The devotion and expertise of all employees of LENNOX EMEA are key assets in building the trust shown to us by our customers every day and in ensuring the continuity of our relations. More than ever, LENNOX EMEA is committed to meeting the challenges of tomorrow, by your side.

This section covers 3 large commercial evaporators which is only a small proportion of the Friga-Bohn range. Please call for more information on other models.



3C-A Cubic Unit Cooler

Commercial & semi industrial range

HFC **GLYCOL** **CO2**

1 > 35kW
* Operating pressure 60 bar

- The 3C-A range is designed for commercial and semi industrial refrigeration applications or low temperature storage.
- Numerous electric, hot water or hot gas defrost possibilities.
- Available with various coil finishes including Blygold, Heresite, paint protection.
- EC motor (optional) enables optimization of noise level and power consumption.



Casing

- The aesthetic, white pre-painted galvanized sheet steel casing enables easy cleaning of the unit.
- Articulated drain pan with rounded corners to eliminate condensate retention zones and no sharp or cutting edges to guarantee total safety.
- Hinged intermediate drain pan to help limit condensation (3C-A .. E/C).

Ventilation

- High efficiency motor fan factory wired.
- EC fans available as an option (electronic commutation).
- Fan guards are compliant with safety standards.
- The 3C-A unit cooler range is equipped with axial fans, requiring no routine maintenance:

Coil

- The highly efficient and compact 3C-A range finned coils are designed with aluminium fins (fin spacing 4 or 6 mm) and internally grooved copper tubes.
- The coils are supplied via a Venturi distributor.
- Coils for using the same unit cooler in positive or negative application.
- Multi refrigerant (HFC) coil.
- CO2 or water glycol as an option on the entire range.

Defrost

- Depending on the condition in the cold room, different level of defrost capacity are available factory wired or delivered as kits (see table below).
- Shielded electric heating elements are in the sleeved tubes in the finned coil.

Defrost Cont...

- One of the heaters is fastened under the intermediate drain pan.
- This facility enables homogenous heat distribution for fast and efficient defrosting.
- 230V/1-phase, 230V/3-phase or 400V/3-phase connection possible.
- 3C-A .. E/C range: standard, the heaters are factory wired to a terminal block in a sealed junction box and connected for 230V/1 and 400V/3.
- 3C-A .. R/L range: optional heaters and wiring (E1U and E2U).
- The condensate is recovered in an intermediate drain pan and then drained via a large drain fitting (Ø 1" G).
- Hot gas or glycol water defrost in option.

Defrost Options

Defrost	Models	Kit	Mounting	Number of heaters					
				Ø 300 mm			Ø 450 mm		
			Factory	Models	Coil	Drain pan	Models	Coil	Drain pan
Light	3C-A .. R/L	E1K option	E1U option	3xxx	3	-	all	3	-
				except 3142	2	-	all	3	-
Intermediate	3C-A .. R/L	E2K option	-	all	2	1	all	5	1
Full	3C-A .. L	E3K option	-	3xx3 3xx4	3 3	1 1	4xxx	8	1
	3C-A .. C	-	Standard	3xx5	4	1	except 4263	5	1
	3C-A .. R	E3K option	-	3xx2 3xx3	2 3	1 1	4xxx	8	1
	3C-A .. E	-	Standard	3xxx	5	1	except 4263	5	1

3C-A⁽¹⁾ 3⁽²⁾ 3⁽³⁾ 54⁽⁴⁾-R⁽⁵⁾

1. Advanced Range
2. Fan diameter: 3 = Ø 300 mm - 4 = Ø 450 mm
3. Number of Fans
4. Model
5. Fin spacing: R/E = 4mm - L/C = 6mm



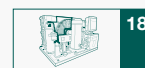
3C-A 1/2 - 4mm



Capacity	3142	3143	3145	3155	3165	3243	3245	3343	3344	3345	4165	4166	3354
SC2 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)													
R134a	1,3	1,8	2,2	2,6	3,0	3,6	4,6	5,5	6,4	6,9	7,0	7,3	7,5
R449A	1,4	2,0	2,5	3,0	3,4	4,0	5,3	6,2	7,3	8,0	7,9	8,2	8,6
R452A	1,5	2,0	2,6	3,0	3,4	4,2	5,2	6,3	7,3	7,9	8,0	8,4	8,5
R404A (1)	1,5	2,0	2,4	2,9	3,3	4,0	5,0	6,0	7,0	7,6	7,7	8,0	8,2
W (7)	1,6	2,1	3,1	3,7	4,0	3,9	5,9	6,1	7,1	8,2	8,2	9,2	7,9
SC3 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)													
R449A	1,0	1,3	1,9	2,2	2,5	2,9	4,0	4,5	5,4	5,8	5,7	6,2	6,4
R452A	1,1	1,5	2,0	2,3	2,6	3,2	4,1	4,9	5,7	6,1	6,2	6,8	6,7
R404A (1)	1,1	1,5	1,9	2,2	2,5	3,1	4,0	4,7	5,5	5,8	6,0	6,5	6,5
SC4 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)													
R449A	0,7	1,0	1,4	1,7	2,0	2,3	3,1	3,5	4,2	4,6	4,3	4,9	5,1
R452A	0,9	1,1	1,6	1,8	2,0	2,5	3,3	3,8	4,5	4,8	4,8	5,3	5,3
R404A (1)	0,8	1,1	1,5	1,8	2,0	2,4	3,2	3,7	4,4	4,7	4,7	5,1	5,2

		3142	3143	3145	3155	3165	3243	3245	3343	3344	3345	4165	4166	3354	
Surface	m ²	4,1	6,1	10,2	12,8	15,4	12,3	20,5	18,4	24,6	30,7	23,0	27,6	30,7	
Circuit volume	dm ³	0,6	1,0	1,6	2,0	2,4	1,9	3,2	2,9	3,9	4,8	3,6	4,4	4,8	
Air flow	m ³ /h	1600	1480	1270	1420	1530	2950	2530	4420	4100	3800	5160	4130	4510	
Air throw (2)	m	15	14	12	14	15	17	15	20	19	18	25	24	21	
Fan 1320 r.p.m.	Nb	1	1	1	1	1	2	2	3	3	3	1	1	3	
	Ø	300	300	300	300	300	300	300	300	300	300	450	450	300	
	230 V/1/50-60 Hz	W max	72	72	72	72	72	144	144	216	216	216	-	-	216
		A max (3)	0,32	0,32	0,32	0,32	0,32	0,64	0,64	0,96	0,96	0,96	-	-	0,96
	400 V/3/50 Hz	W max	-	-	-	-	-	-	-	-	-	-	500	500	-
		A max (3)	-	-	-	-	-	-	-	-	-	-	1,00	1,00	-
3C-A -R Electric defrost E1K (4)	Nb	2	3	3	3	3	3	3	3	3	3	3	3	3	
	W Total	580	870	870	1080	1290	1740	1740	2580	2580	2580	1080	1080	3240	
	230 V/1/50 Hz	A Total	2,5	3,8	3,8	4,7	5,6	7,6	7,6	11,2	11,2	11,2	4,7	4,7	14,1
400 V/3/50 Hz	A Total	-	-	-	-	-	-	-	-	-	-	-	-	-	
3C-A -E Standard electric defrost	Coil + Drain pan	Nb	2 + 1	3 + 1	5 + 1	5 + 1	5 + 1	3 + 1	5 + 1	3 + 1	5 + 1	5 + 1	8 + 1	8 + 1	5 + 1
	W Total	870	1160	1740	2160	2580	2320	3480	3440	5160	5160	3240	3240	6480	
	230 V/1/50 Hz	A Total	3,8	5,1	7,6	9,4	11,2	10,1	15,1	15,0	-	-	14,1	14,1	-
	400 V/3/50 Hz	A Total	-	-	-	-	-	-	-	-	7,4	7,4	-	-	9,4
Dimensions	Length	mm	672	672	672	772	872	1072	1072	1567	1567	1567	1011	1011	1867
	Width	mm	484	484	484	484	484	484	484	484	484	484	610	610	484
	Height	mm	428	428	428	428	428	428	428	428	428	428	635	635	428
Connections (5) R404A	Inlet	Ø OD	3/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"	5/8"	
	Outlet	Ø OD	3/8"	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	
Net weight	kg	17	18	20	22	24	28	32	41	43	45	41	43	48	

(1) Standard conditions: SC2 : 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K SC3 : -18°C (air inlet temp.) / -25°C (evaporating temp.) / DT1 = 7K SC4 / -25°C (air inlet temp.) / -31°C (evaporating temp.) / DT1 = 6K (2) Residual air speed: 0.25 m/s, certain models air throw based on 3ph connection in Delta. (3) Setting of overload protection levels. For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the chamber temperature is attained. (4) Electric defrost option. (5) OD : Male connector - ODF: Female to receive a tube of the same diameter. (6) Specific coil - Operating pressure 60 bar - Tube diameter to define the order. (7) Glycol water: Fluid: Percentage of glycol = 30% - Fluid inlet temperature = -8°C - Fluid outlet temperature = -4°C - Air: Inlet dry temp. = +2°C - Relative humidity = 85% Other conditions: please contact us. 8) Models 4165 & 4166, capacities shown based on 3ph delta connection.



3C-A 2/2 - 4mm



Capacity	3444	3445	4263	3455	3545	4264	4265	4266	4364	4366	4386	4466
SC2 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)												
R134a	8,5	9,4	10,5	10,8	11,8	12,7	14,4	15,3	19,3	22,6	28,7	29,7
R449A	9,7	10,9	11,2	12,5	13,7	13,8	15,9	17,6	20,9	26,1	33,2	34,4
R452A	9,7	10,8	11,5	12,3	13,5	14,2	16,5	17,5	21,6	25,8	32,8	34,0
R404A (1)	9,4	10,4	11,6	11,8	13,0	14,0	15,8	16,8	21,2	24,8	31,5	32,7
W (7)	8,9	10,6	8,7	12,3	12,9	12,4	14,6	17,3	16,6	23,9	28,4	29,9
SC3 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)												
R449A	7,2	8,0	8,0	9,3	9,6	9,7	11,6	12,8	15,0	19,8	23,7	25,6
R452A	7,7	8,3	8,7	9,3	10,0	10,7	12,7	13,5	16,4	20,8	24,7	26,8
R404A (1)	7,4	8,1	8,8	9,0	9,6	10,6	12,3	13,0	16,2	20,0	23,9	25,8
SC4 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)												
R449A	5,7	6,4	6,2	7,2	7,6	7,5	9,0	10,1	11,6	15,5	18,5	19,9
R452A	6,0	6,6	6,9	7,4	7,8	8,4	10,0	10,6	13,0	16,3	19,3	20,8
R404A (1)	5,9	6,4	6,9	7,2	7,6	8,3	9,7	10,3	12,7	15,9	18,8	20,2

		3444	3445	4263	3455	3545	4264	4265	4266	4364	4366	4386	4466	
Surface	m ²	32,8	41,0	27,6	51,2	51,2	36,9	46,1	55,3	55,3	82,9	110,6	110,6	
Circuit volume	dm ³	5,2	6,5	4,4	8,1	8,1	5,8	7,3	8,7	8,7	13,1	17,4	17,4	
Air flow	m ³ /h	5460	5070	11740	5700	6340	10990	10310	8270	16480	12400	16780	16540	
Air throw (2)	m	22	21	32	23	24	31	30	29	35	33	35	36	
Fan 1320 r.p.m.	Nb	4	4	2	4	5	2	2	2	3	3	3	4	
		Ø	300	300	450	300	300	450	450	450	450	450	450	
	230 V/1/50-60 Hz	W max	288	288	-	288	360	-	-	-	-	-	-	
		A max (3)	1,28	1,28	-	1,28	1,60	-	-	-	-	-	-	
	400 V/3/50 Hz	W max	-	-	1000	-	-	1000	1000	1000	1500	1500	1500	2000
		A max (3)	-	-	2,00	-	-	2,00	2,00	2,00	3,00	3,00	3,00	4,00
3C-A -R Electric defrost E1K (4)	Nb	3	3	3	3	3	3	3	3	3	3	3	3	
	W Total	3450	3450	2160	4320	4320	2160	2160	2160	3240	3240	3960	3960	
	230 V/1/50 Hz	A Total	15,0	15,0	9,4	-	-	9,4	9,4	9,4	14,1	14,1	-	-
400 V/3/50 Hz	A Total	-	-	-	6,2	6,2	-	-	-	-	-	5,7	5,7	
3C-A -E Standard electric defrost	Coil + Drain pan	Nb	5 + 1	5 + 1	5 + 1	5 + 1	5 + 1	8 + 1	8 + 1	8 + 1	8 + 1	8 + 1	8 + 1	
	W Total	6900	6900	4320	8640	8640	6480	6480	6480	9720	9720	11880	11880	
	230 V/1/50 Hz	A Total	-	-	-	-	-	-	-	-	-	-	-	
	400 V/3/50 Hz	A Total	10,0	10,0	6,3	12,5	12,5	9,4	9,4	9,4	14,0	14,0	17,1	17,1
Dimensions	Length	mm	1967	1967	1611	2673	2673	1611	1611	1611	2211	2211	2811	2811
	Width	mm	484	484	610	484	484	610	610	610	610	610	610	
	Height	mm	428	428	635	428	428	635	635	635	635	635	635	
Connections (5) R404A	Inlet	Ø OD	5/8"	7/8"	7/8"	7/8"	7/8"	1"1/8	1"1/8	1"1/8	1"1/8	1"3/8	1"3/8	
	Outlet	Ø OD	7/8"	1"1/8	1"3/8	1"3/8	1"3/8	1"3/8	1"3/8	1"3/8	1"5/8	1"5/8	2"1/8	2"1/8
Net weight	kg	54	57	58	65	70	62	65	69	84	95	114	123	

(1) Standard conditions: SC2 : 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K SC3 : -18°C (air inlet temp.) / -25°C (evaporating temp.) / DT1 = 7K SC4 / -25°C (air inlet temp.) / -31°C (evaporating temp.) / DT1 = 6K (2) Residual air speed: 0.25 m/s, certain models air throw based on 3ph connection in Delta. (3) Setting of overload protection levels. For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the chamber temperature is attained. (4) Electric defrost option. (5) OD : Male connector - ODF: Female to receive a tube of the same diameter. (6) Specific coil - Operating pressure 60 bar - Tube diameter to define the order. (7) Glycol water: Fluid: Percentage of glycol = 30% - Fluid inlet temperature = -8°C - Fluid outlet temperature = -4°C - Air: Inlet dry temp. = +2°C - Relative humidity = 85% Other conditions: please contact us. 8) Models 4264, 4265, 4266, 4364, 4366, 4386 & 4466, capacities shown based on 3ph delta connection.

3C-A 1/2 - 6mm



Capacity	3143	3144	3145	3155	3165	3243	3244	3245	3343	3344	4165	3345	3354
SC2 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)													
R134a	1,5	1,8	2,1	2,4	2,7	3,2	3,8	4,2	5,0	5,8	6,3	6,3	6,6
R449A	1,6	2,0	2,3	2,7	3,2	3,4	4,2	4,8	5,6	6,4	6,9	7,3	7,5
R452A	1,7	2,1	2,4	2,7	3,1	3,6	4,4	4,8	5,8	6,6	7,2	7,3	7,5
R404A (1)	1,7	2,0	2,3	2,6	3,0	3,5	4,2	4,6	5,5	6,3	7,0	7,0	7,2
W (7)	1,9	2,4	2,8	3,3	3,6	3,7	4,5	5,4	5,2	6,5	7,7	7,5	7,8
SC3 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)													
R449A	1,1	1,4	1,7	2,0	2,3	2,4	2,9	3,5	3,8	4,5	4,9	5,2	5,4
R452A	1,2	1,5	1,8	2,1	2,4	2,7	3,2	3,7	4,2	4,9	5,5	5,5	5,8
R404A (1)	1,2	1,5	1,7	2,0	2,3	2,6	3,1	3,6	4,0	4,8	5,3	5,3	5,6
SC4 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)													
R449A	0,9	1,1	1,3	1,5	1,8	1,9	2,3	2,8	3,0	3,6	3,8	4,1	4,2
R452A	1,0	1,2	1,4	1,7	1,9	2,1	2,5	3,0	3,3	3,9	4,2	4,3	4,5
R404A (1)	1,0	1,2	1,4	1,6	1,8	2,0	2,5	2,9	3,2	3,8	4,1	4,2	4,4

		3143	3144	3145	3155	3165	3243	3244	3245	3343	3344	4165	3345	3354	
Surface	m ²	4,2	5,7	7,1	8,9	10,6	8,5	11,3	14,2	12,7	17,0	15,9	21,2	21,2	
Circuit volume	dm ³	1,0	1,3	1,6	2,0	2,4	1,9	2,6	3,2	2,9	3,9	3,6	4,8	4,8	
Air flow	m ³ /h	1560	1470	1380	1520	1600	3120	2940	2770	4680	4410	5560	4150	4740	
Air throw (2)	m	15	14	13	15	16	18	17	16	21	20	26	19	22	
Fan 1320 r.p.m.	Nb	1	1	1	1	1	2	2	2	3	3	1	3	3,00	
	Ø	300	300	300	300	300	300	300	300	300	300	450	300	300	
	230 V/1/50-60 Hz	W max	72	72	72	72	72	144	144	144	216	216	-	216	216
		A max (3)	0,32	0,32	0,32	0,32	0,32	0,64	0,64	0,64	0,96	0,96	-	0,96	0,96
	400 V/3/50 Hz	W max	-	-	-	-	-	-	-	-	-	-	500	-	-
		A max (3)	-	-	-	-	-	-	-	-	-	-	1,00	-	-
3C-A -R Electric defrost E1K (4)	Nb	3	3	3	3	3	3	3	3	3	3	3	3	3	
	W Total	870	870	870	1080	1290	1740	1740	1740	2580	2580	1080	2580	3240	
	230 V/1/50 Hz	A Total	3,8	3,8	3,8	4,7	5,6	7,6	7,6	7,6	11,2	11,2	4,7	11,2	14,1
		A Total	-	-	-	-	-	-	-	-	-	-	-	-	-
3C-A -E Standard electric defrost	Coil + Drain pan	Nb	3 + 1	3 + 1	4 + 1	4 + 1	4 + 1	3 + 1	3 + 1	4 + 1	3 + 1	3 + 1	8 + 1	4 + 1	3 + 1
		W Total	1160	1160	1450	1800	2150	2320	2320	2900	3440	3440	3240	4300	4320
	230 V/1/50 Hz	A Total	5,1	5,1	6,3	7,8	9,3	10,1	10,1	12,6	15,0	15,0	14,1	-	-
		A Total	-	-	-	-	-	-	-	-	-	-	-	6,2	6,2
Dimensions	Length	mm	672	672	672	772	872	1072	1072	1072	1567	1567	1011	1567	1867
	Width	mm	484	484	484	484	484	484	484	484	484	610	484	484	
	Height	mm	428	428	428	428	428	428	428	428	428	428	635	428	428
Connections (5) R404A	Inlet	Ø OD	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	
	Outlet	Ø OD	5/8"	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	
Net weight	kg	18	19	19	21	23	28	29	30	39	41	39	43	46	

(1) Standard conditions: SC2 : 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K SC3 : -18°C (air inlet temp.) / -25°C (evaporating temp.) / DT1 = 7K SC4 / -25°C (air inlet temp.) / -31°C (evaporating temp.) / DT1 = 6K (2) Residual air speed: 0.25 m/s, certain models air throw based on 3ph connection in Delta. (3) Setting of overload protection levels. For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the chamber temperature is attained. (4) Electric defrost option. (5) OD : Male connector - ODF: Female to receive a tube of the same diameter. (6) Specific coil - Operating pressure 60 bar - Tube diameter to define the order. (7) Glycol water: Fluid: Percentage of glycol = 30% - Fluid inlet temperature = -8°C - Fluid outlet temperature = -4°C - Air: Inlet dry temp. = +2°C - Relative humidity = 85% Other conditions: please contact us. 8) Model 4165, capacity shown based on 3ph delta connection.



3C-A 2/2 - 6mm



Capacity 4166 3444 3445 4263 3455 3545 4264 4266 4364 4366 4386 4466

SC2 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)												
R134a	7,0	7,6	8,6	9,3	9,9	10,9	11,2	14,3	16,9	21,6	26,2	28,6
R449A	7,9	8,5	9,8	9,8	11,4	12,6	12,2	16,0	18,6	24,3	29,5	32,0
R452A	8,0	8,7	9,9	10,1	11,3	12,5	12,8	16,3	19,3	24,7	29,9	32,7
R404A (1)	7,7	8,4	9,5	10,2	10,8	12,0	12,3	15,7	18,6	23,7	28,7	31,4
W (7)	8,5	8,0	9,7	7,9	11,3	11,9	12,3	15,8	16,1	22,2	26,3	27,8
SC3 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)												
R449A	5,4	6,0	7,2	6,8	8,1	8,8	8,4	11,2	12,8	17,0	20,7	22,1
R452A	5,9	6,5	7,6	7,5	8,6	9,3	9,4	12,1	14,2	18,4	22,1	23,9
R404A (1)	5,7	6,3	7,4	7,6	8,2	8,9	9,0	11,7	13,7	17,7	21,3	23,1
SC4 (0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K)												
R449A	4,2	4,7	5,7	5,3	6,5	6,9	6,5	8,8	9,9	13,5	16,2	17,2
R452A	4,6	5,1	6,1	5,9	6,8	7,3	7,3	9,5	11,1	14,4	17,3	18,6
R404A (1)	4,5	5,0	5,9	5,9	6,6	7,1	7,1	9,2	10,8	14,1	16,9	18,1

		4166	3444	3445	4263	3455	3545	4264	4266	4364	4366	4386	4466	
Surface	m ²	19,1	22,7	28,3	19,1	35,4	35,4	25,5	38,2	38,2	57,4	76,5	76,5	
Circuit volume	dm ³	4,4	5,2	6,5	4,4	8,1	8,1	5,8	8,7	8,7	13,1	17,4	17,4	
Air flow	m ³ /h	5290	5880	5540	12300	6060	6920	11690	10580	17540	15870	17780	21160	
Air throw (2)	m	25	23	22	33	24	25	32	31	36	34	36	37	
Fan 1320 r.p.m.	Nb	1	4	4	2	4	5	2	2	3	3	3	4	
	Ø	450	300	300	450	300	300	450	450	450	450	450	450	
	230 V/1/50-60 Hz	W max	-	288	288	-	288	360	-	-	-	-	-	-
		A max (3)	-	1,28	1,28	-	1,28	1,60	-	-	-	-	-	-
	400 V/3/50 Hz	W max	500	-	-	1000	-	-	1000	1000	1500	1500	1500	2000
		A max (3)	1,00	-	-	2,00	-	-	2,00	2,00	3,00	3,00	3,00	4,00
3C-A -R Electric defrost E1K (4)	Nb	3	3	3	3	3	3	3	3	3	3	3	3	
	W Total	1080	3450	3450	2160	4320	4320	2160	2160	3240	3240	3960	3960	
	230 V/1/50 Hz	A Total	4,7	15,0	15,0	9,4	-	-	9,4	9,4	14,1	14,1	-	-
		A Total	-	-	-	-	6,2	6,2	-	-	-	-	5,7	5,7
	Coil + Drain pan	Nb	8 + 1	3 + 1	4 + 1	5 + 1	4 + 1	4 + 1	8 + 1	8 + 1	8 + 1	8 + 1	8 + 1	8 + 1
		W Total	3240	4600	5750	4320	7200	7200	6480	6480	9720	9720	11880	11880
230 V/1/50 Hz	A Total	14,1	-	-	-	-	-	-	-	-	-	-	-	
	A Total	-	6,6	8,3	6,3	10,4	10,4	9,4	9,4	14,0	14,0	17,1	17,1	
Dimensions	Length	mm	1011	1967	1967	1611	2673	2673	1611	1611	2211	2211	2811	2811
	Width	mm	610	484	484	610	484	484	610	610	610	610	610	610
	Height	mm	635	428	428	635	428	428	635	635	635	635	635	635
Connections (5) R404A	Inlet	Ø OD	7/8"	5/8"	7/8"	7/8"	7/8"	7/8"	1"1/8	1"1/8	1"1/8	1"1/8	1"3/8	1"3/8
	Outlet	Ø OD	7/8"	7/8"	1"1/8	1"3/8	1"3/8	1"3/8	1"3/8	1"3/8	1"5/8	1"5/8	2"1/8	2"1/8
Net weight	kg	41	52	55	56	62	66	59	65	81	90	108	117	

(1) Standard conditions: SC2 : 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K SC3 : -18°C (air inlet temp.) / -25°C (evaporating temp.) / DT1 = 7K SC4 / -25°C (air inlet temp.) / -31°C (evaporating temp.) / DT1 = 6K (2) Residual air speed: 0.25 m/s, certain models air throw based on 3ph connection in Delta. (3) Setting of overload protection levels. For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the chamber temperature is attained. (4) Electric defrost option. (5) OD : Male connector - ODF: Female to receive a tube of the same diameter. (6) Specific coil - Operating pressure 60 bar - Tube diameter to define the order. (7) Glycol water: Fluid: Percentage of glycol = 30% - Fluid inlet temperature = -8°C - Fluid outlet temperature = -4°C - Air: Inlet dry temp. = +2°C - Relative humidity = 85% Other conditions: please contact us. 8) Models 4264, 4265, 4266, 4364, 4366, 4386 & 4466, capacities shown based on 3ph delta connection.



GTA / GTA-W

Dual-discharge industrial unit cooler

HFC

GLYCOL



15 > 82kW

* Operating pressure 50 bar

- **GTA** - Direct expansion industrial range / **GTA-W** - Glycol water industrial range
- The GTA range meet the workplace comfort requirements for laboratories, meat cutting rooms, air locks, etc...
- Exceptionally low noise levels with the EC motor models.
- The low air flow speed guarantees comfort as well as accurate control of both temperature & hygrometry for the 8P models.
- The 2-speed electric fans guarantee appropriate noise levels and ventilation.



Casing

- The GTA (-W) casing is made of white pre-painted galvanized steel.
- On the GTA (-W), each removable drain pan (in 1 or 2 sections depending on the models) are fixed or hinged (BCS option).
- The condensate is evacuated via 2 large dimension drain pipes.
- GTA (-W) models are foreseen with end covers.
- GTA (-W) are delivered on a wooden base.
- GTA (-W) are delivered in their mounting position and designed for installation flush to the ceiling.

Ventilation

- The GTA (-W) unit cooler range is equipped with fans Ø 630 mm, 400 V/3/50 Hz,
- IP 54, class F, with incorporated thermal overload protection, 2 speeds depending on models: 4P = 1330 rpm - 6/8P = 890 / 690 rpm.
- Fan guards are compliant with safety standards.

Coil

- The GTA range is equipped with two new coil configurations optimized for direct expansion and glycol water applications.
- The highly-efficient and compact standard finned coils of the GTA (-W) range are composed of aluminium fins with a spacing of 4.23 or 6.35 mm.

Installation Advantages

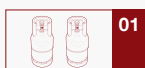
- The GTA (-W) are equipped with easily removable doors thus providing easy access to electrical and coolant connections.
- The GTA are supplied in assembly position.
- Possibility of supplying a connection kit (option EGK) for the glycol water model to render installation easier.

Service Advantages

- For all work on the GTA (-W), access to the drain pans does not require removal of the recovery vessel and the fan units are mounted on an articulated panel rendering maintenance work easier.

GTA⁽¹⁾ -W⁽²⁾ 36⁽³⁾ R⁽⁵⁾-6D⁽⁷⁾

1. GTA: Direct expansion unit cooler
2. W: Glycol water unit cooler
3. Model
4. Fin spacing: 4 = 4.23mm - 7 = 6.35mm
5. Fin spacing: R = 4.23mm - L = 6.35mm
6. 4P=1,500rpm 6P=1,000rpm 8P=750rpm
7. 4D = Delta connection - 1,330rpm
6D = Delta connection - 890rpm
6Y = Star connection - 690rpm



01



02



02



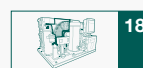
02



03



03



18



19



GTA - R 4D/6D/6Y - 4.23mm

1330/890/690rpm



Direct expansion		Electrical Connection Type	24	26	28	34	36	38	44	46	48	
R134a	DT = 8K - SC2	4D	28.0	35.6	36.9	41.2	52.6	55.7	56.5	71.6	74.9	
		6D	24.7	28.1	31.6	36.5	45.2	47.6	49.8	56.5	63.9	
		6Y	21.3	23.8	26.2	31.7	37.8	39.3	42.9	48.1	52.7	
R449A	DTM = 8K - SC2	4D	31.6	41.2	42.7	47.0	60.8	64.5	63.7	82.8	86.6	
		6D	27.9	32.5	36.6	41.7	52.3	55.1	56.3	65.4	73.9	
		6Y	24.4	27.5	30.3	36.6	43.8	45.5	49.1	55.6	61.0	
R404A (1)	DT1 = 8K - SC2	4D	30.8	39.1	40.6	45.3	57.8	61.2	62.1	78.7	82.3	
		6D	27.1	30.8	34.7	40.1	49.7	52.3	54.7	62.1	70.2	
		6Y	23.4	26.2	28.8	34.8	41.6	43.2	47.1	52.8	57.9	
Surface			130	195	260	195	292	390	260	390	520	
Circuit volume			25,1	37,7	50,3	37,7	56,6	75,4	50,3	75,4	100,5	
Air flow		4D	22680	21660	20750	34020	32480	31130	45360	43310	41500	
		6D	17770	16780	15920	26650	25180	23880	35540	33570	31840	
		6Y	13700	12750	11930	20540	19130	17900	27390	25510	23860	
Glycol Water												
W (9)	DT = 8K	4D	22,5	39,4	-	49,1	41,3	-	62,4	77,9	-	
		6D	19,8	28,8	-	40,8	37,5	-	49,1	47,7	-	
		6Y	18,1	24,4	-	26	45,3	-	32,2	60,1	-	
Surface			164	246	-	246	369	-	328	492	-	
Circuit volume			32,1	48,2	-	48,2	72,2	-	64,2	96,3	-	
Air flow		4D	22470	21400	-	33700	32100	-	44930	42800	-	
		6D	17640	16640	-	26460	24960	-	35280	33280	-	
		6Y	13650	12710	-	20470	19070	-	27290	25430	-	
Glycol Water												
Fan * Ø 630 mm 400V/3/50Hz	Air throw (2)	4D	2x17	2x15	2x14	2x17	2x15	2x14	2x17	2x15	2x14	
		6D	2x12	2x11	2x10	2x12	2x11	2x10	2x12	2x11	2x10	
		6Y	2x10	2x9	2x8	2x10	2x9	2x8	2x10	2x9	2x8	
Acoustic Lw = Lp +30 dB(A)	Lp 4m (3)	4D	57	57	57	59	59	59	60	60	60	
		6D	48	48	48	50	50	50	51	51	51	
		6Y	41	41	41	43	43	43	44	44	44	
Electric defrost E1U (4)	Coil 400 V/3/50 Hz		12	12	12	12	12	12	12	12	12	
			9000	9000	9000	13800	13800	13800	18000	18000	18000	
			13	13	13	20	20	20	26	26	26	
Electric defrost ELU+EEK (4)	Coil + drain pan 400 V/3/50 Hz		12+6	12+6	12+6	12+6	12+6	12+6	12+6	12+6	12+6	
			13500	13500	13500	20700	20700	20700	27000	27000	27000	
			19,5	19,5	19,5	30	30	30	39	39	39	
ECK kit or EEK kit	Coil 400 V/3/50 Hz		6	6	6	6	6	6	6	6	6	
			4500	4500	4500	6900	6900	6900	9000	9000	9000	
			6,5	6,5	6,5	10	10	10	13	13	13	
	Nb max. kit		1	1	2	1	1	2	1	1	2	
			1	1	1	1	1	1	1	1	1	
Connections R404A	Inlet	4D	1"1/8	1"3/8	1"3/8	1"3/8	1"5/8	1"5/8	1"5/8	2x1"3/8	2x1"3/8	
		6D/Y	1"1/8	1"1/8	1"3/8	1"3/8	1"5/8	1"5/8	1"5/8	1"5/8	2x1"3/8	
	Outlet	4D	1"5/8	1"5/8	1"5/8	2"1/8	2"1/8	2"1/8	2"1/8	2"5/8	2"5/8	
		6D/Y	1"3/8	1"5/8	1"5/8	2"1/8	2"1/8	2"1/8	2"1/8	2"1/8	2"5/8	
	Net weight			260	292	316	349	395	433	457	506	549

* Ø : 1250 W max - 2,48 A max (5) - 6D : 600 W max - 1,20 A max (5) - 6Y : 400 W max - 0,68 A max (5). (1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Residual air speed: 0.25 m/s, in compliance with standard. (3) Average sound pressure level in dB(A) measured at 4 m, at fan height, in direct line of sight on a reflective surface, given for information only. (4) Optional electric defrost kit. (5) Setting of overload protection levels. (6) Distributor: Male to be brazed. (7) ODF = Female to receive a tube of the same diameter.





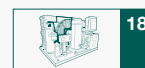
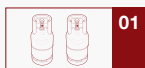
GTA - L 4D/6D/6Y - 6.35mm

1330/890/690rpm



Direct expansion		Electrical	24	26	28	34	36	38	44	46	48
R134a	DT = 8K - SC2	4D	22.8	30.1	33.3	33.8	44.8	50.4	45.8	60.5	67.3
		6D	20.3	24.8	29.0	30.2	37.4	43.6	40.8	50.0	58.3
		6Y	17.7	21.5	24.5	26.5	32.3	36.7	35.6	43.3	49.1
R449A	DTM = 8K - SC2	4D	25.0	33.7	38.6	37.5	50.6	58.4	50.3	67.8	77.8
		6D	22.4	28.7	33.5	33.7	43.2	50.4	45.1	57.9	67.5
		6Y	19.7	24.9	28.3	29.6	37.4	42.5	39.7	50.1	56.8
R404A (1)	DT1 = 8K - SC2	4D	25.0	33.1	36.6	37.2	49.2	55.4	50.4	66.5	73.9
		6D	22.3	27.2	31.8	33.2	41.0	47.9	44.8	55.0	64.1
		6Y	19.5	23.6	26.9	29.1	35.5	40.3	39.2	47.5	54.0
Surface			89	134	179	134	201	268	179	268	357
Circuit volume			25,1	37,7	50,3	37,7	56,6	75,4	50,3	75,4	100,5
Air flow		4D	23260	22410	21650	34890	33610	32480	46520	44810	43310
		6D	18300	17510	16780	27440	26270	25180	36590	35020	33570
		6Y	14210	13450	12750	21320	20180	19130	28420	26900	25510
Glycol Water											
W (9)	DT = 8K	4D	18,1	26	-	26,2	52,3	-	32,2	69,6	-
		6D	16,7	23,6	-	34,9	42,8	-	30	56,8	-
		6Y	15,3	21,2	-	28,8	30,9	-	40,3	39,4	-
Surface			112	168	-	168	252	-	224	336	-
Circuit volume			32,1	48,2	-	48,2	72,2	-	64,2	96,3	-
Air flow		4D	23100	22220	-	34660	33330	-	46210	44440	-
		6D	18210	17410	-	27320	26120	-	36430	34820	-
		6Y	14180	13430	-	21280	20150	-	28370	26860	-
Glycol Water											
Fan * Ø 630 mm 400V/3/50Hz	Air throw (2)	4D	2x18	2x16	2x15	2x18	2x16	2x15	2x18	2x16	2x15
		6D	2x13	2x12	2x11	2x13	2x12	2x11	2x13	2x12	2x11
		6Y	2x11	2x10	2x9	2x11	2x10	2x9	2x11	2x10	2x9
Acoustic Lw = Lp +30 dB(A)	Lp 4m (3)	4D	57	57	57	59	59	59	60	60	60
		6D	48	48	48	50	50	50	51	51	51
		6Y	41	41	41	43	43	43	44	44	44
Electric defrost E1U (4)	Coil 400 V/3/50 Hz		12	12	12	12	12	12	12	12	12
			9000	9000	9000	13800	13800	13800	18000	18000	18000
			13	13	13	20	20	20	26	26	26
Electric defrost ELU+EEK (4)	Coil + drain pan 400 V/3/50 Hz		12+6	12+6	12+6	12+6	12+6	12+6	12+6	12+6	12+6
			13500	13500	13500	20700	20700	20700	27000	27000	27000
			19,5	19,5	19,5	30	30	30	39	39	39
ECK kit or EEK kit	Coil 400 V/3/50 Hz		6	6	6	6	6	6	6	6	6
			4500	4500	4500	6900	6900	6900	9000	9000	9000
			6,5	6,5	6,5	10	10	10	13	13	13
Nb max. kit			1	1	2	1	1	2	1	1	2
			1	1	1	1	1	1	1	1	1
Connections R404A	Inlet	4D	1"1/8	1"3/8	1"3/8	1"3/8	1"5/8	1"5/8	1"5/8	2x1"3/8	2x1"3/8
		6D/Y	1"1/8	1"1/8	1"3/8	1"3/8	1"3/8	1"5/8	1"5/8	1"5/8	2x1"3/8
	Outlet	4D	1"5/8	1"5/8	1"5/8	2"1/8	2"1/8	2"1/8	2"1/8	2"5/8	2"5/8
		6D/Y	1"3/8	1"3/8	1"3/8	1"5/8	1"5/8	2"1/8	2"1/8	2"1/8	2"5/8
Net weight			260	292	316	349	395	433	457	506	549

(9) Glycol water - Capacity indicated for information only under the following conditions: **Fluid:** Percentage of glycol = 30 % Fluid inlet temperature = - 8°C Fluid outlet temperature = - 4°C. **Air:** Inlet dry temperature = + 2°C Relative humidity = 85 % Limitation of head loss at 10 m WC maximum. **Other conditions:** Possible optimization of exchanger circuiting according to the operating level. System head loss taken into account, percentage of glycol,... (please contact us for details). **Connection kit available:** 1 kit for horizontal connection (please consult us). 4 connection kits (please consult us): steel weld-on sleeve, steel screw-on sleeve, steel weld-on sleeve, steel screw-on sleeve



UNIT COOLERS



3C-A



GTA



NW



NC



NK

FRIGA-BOHN



CCT



NEOSTAR

CONDENSERS

NK Cubic Cooler

Industrial unit cooler

HFC

GLYCOL



7 > 130kW

* Operating pressure NKT 40 bar - NKH 50 bar

- The NK range is designed for industrial refrigeration, conservation or deep-freezing applications.
- NK version T (large heat-exchange surface): Adapted to humidity-sensitive products & Reduced number of daily defrost cycles offering a reduction in electrical power consumption.
- NK version H (high efficiency): Adapted to the storage of packed products.
- Wide range of options for specific industrial applications (pressure sleeve, defrost...)
- 4 fin spacing distances: 4,23 - 6,35 - 9 - 12 mm.
- 2 fan diameters for air throw adapted to the application.
- Two-speed fans as standard.



NKH⁽¹⁾ 3x6⁽²⁾ D⁽³⁾ B2⁽⁴⁾ R⁽⁵⁾

1. Fin type: T = Large exchange surface - H = High-efficiency fin
2. Number of fans: 6 = Ø 630 mm - 8 = Ø 800 mm
3. Motor connection: D = Delta - Y = Star
4. Module
5. Fin spacing: R=4.23mm - L/C=6.35mm - S=9mm - T=12mm

Casing

- The casing is made of pre-painted, galvanized steel offering a high resistance to corrosion and impact damage.
- An internal aluminium drain pan limits the effects of condensation under the main drain pan during the defrost process.
- The NK unit coolers are delivered in mounting position in reinforced crates (ECB option).

Ventilation

- The external rotor fans are equipped with fan guards compliant with safety standards.
- 2 fan types are used for the NK range:
 - Ø 630 mm 4/6 pole (1500/1000 rpm)
 - Ø 800 mm 6/8 pole (870/630 rpm).
- The motors are of the three-phase type, 400V, 50Hz, IP54, class F.
- Selection of a unit cooler with various fan number/diameter combinations offering the dimensional and air throw characteristics best adapted to the size of the cold room.

Coil

- The finned coils of the NK range are designed with aluminium fins spaced at 4,23 - 6,35 - 9 or 12 mm, crimped onto copper tubes.
- Two types of fins are available depending on the application:
 - High-efficiency H type fins for an economical solution. This type of fin is particularly suitable for the storage of packed products. The reduced size of the heat-exchanger also enables fast defrosting.
 - T type fins with a large heat-exchanger surface. This type of fin limits dehydration of products. It also saves energy by reducing the number of defrost cycles per day;
- The coils are supplied via optimized R404A diaphragm distributor(s).
- For all other refrigerants, please contact us and specify when ordering.

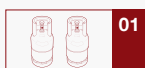
Defrost

NKH ... C, NKH ... S, NKT ... C, NKT ... S, and NKT ... T

- The shielded electric heating elements are inserted in sleeves located in the finned coil, 2 or 3 heating elements are placed under the intermediate drain pan.
- This facility enables homogenous heat distribution for fast and efficient defrosting.
- The heaters are factory connected to a 400V/3 power supply on a terminal block in a junction box.
- Total gas defrost (HGT) or partial (HG1) available as optional extra.

NKH ... R, NKH ... L, and NKT ... L

- Light electric defrost (E1U) and „low temperature“ electric defrost (ELU) models available as optional extra.
- The light electric defrost (E1K) is also available in kit form.
- A water defrost (DAE) option is available for room temperature equal to or greater than +4° C. In this case the unit cooler depth is increased by 40 mm.
- Maximum water flow-rate with NK:
 - 1 fan = 5 m³/h. - 2 fans = 10 m³/h.
 - 3 fans = 15 m³/h. - 4 fans = 20 m³/h.





NKH...R - 4.23mm

H = High efficiency fin



NKH-R	Capacity			Coil		Ventilation				Electric defrost						Connections		Net weight kg			
	DT 8K - SC2 (1)			Surface m ²	Circuit volume dm ³	Nb x Ø mm	Air flow m ³ /h	Air throw (2) Std m	Acoustic Lp 4m (4) dB(A)	E1U (5) 400 V/3/50 Hz		ELU (5) 400 V/3/50 Hz		Kit ECK (6) 400 V/3/50 Hz		R404A					
	R134a	R449A	R404A							No.	W	A	No.	W	A	No.	W		A	Inlet Ø D	Outlet Ø
	kW	kW	kW																		
1x6Y B1	15,5	17,3	17,0	74	14	1x630	10270	33	51	6	6900	10	6	6900	10	-	-	-	7/8"	1"5/8	160
1x6D B1	17,8	18,0	19,5	74	14	1x630	12770	43	59	6	6900	10	6	6900	10	-	-	-	7/8"	1"5/8	160
1x6Y B2	19,1	22,1	21,0	111	22	1x630	9480	30	51	7	10350	14,9	9	10350	14,9	3	3450	5	1"1/8	1"5/8	180
1x6Y B3	20,4	23,6	22,4	149	29	1x630	8830	29	51	10	13800	19,9	12	13800	19,9	3	3450	5	1"1/8	1"5/8	200
1x6D B2	22,3	25,5	24,5	111	22	1x630	11580	40	59	7	10350	14,9	9	10350	14,9	3	3450	5	1"1/8	1"5/8	180
1x8Y C1	23,5	23,9	25,9	124	24	1x800	15260	31	42	6	9000	13	6	9000	13	-	-	-	1"3/8	2"1/8	240
1x6D B3	24,0	27,8	26,4	149	29	1x630	10670	38	59	10	13800	19,9	12	13800	19,9	3	3450	5	1"1/8	1"5/8	200
1x8Y C2	27,5	27,9	30,3	186	36	1x800	14220	29	42	7	9000	13	9	13500	19,5	3	4500	6,5	1"3/8	2"1/8	270
1x8D C1	27,7	28,1	30,4	124	24	1x800	20260	43	48	6	9000	13	6	9000	13	-	-	-	1"3/8	2"1/8	240
2x6Y B1	31,0	34,6	34,1	149	29	2x630	20530	36	54	6	13200	19,1	6	13200	19,1	-	-	-	1"3/8	2"1/8	270
1x8D C2	33,6	34,0	36,9	186	36	1x800	19130	40	48	7	9000	13	9	13500	19,5	3	4500	6,5	1"3/8	2"1/8	270
2x6D B1	35,9	39,9	39,5	149	29	2x630	25540	44	62	6	13200	19,1	6	13200	19,1	-	-	-	1"3/8	2"1/8	270
2x6Y B2	37,3	43,1	41,0	223	43	2x630	18970	32	54	7	19800	28,6	9	19800	28,6	3	6600	9,5	1"3/8	2"1/8	300
2x6Y B3	41,4	47,9	45,5	297	58	2x630	17650	30	54	10	26400	38,1	12	26400	38,1	3	6600	9,5	1"5/8	2"1/8	340
2x6D B2	43,4	50,2	47,7	223	43	2x630	23160	42	62	7	19800	28,6	9	19800	28,6	3	6600	9,5	1"3/8	2"1/8	300
3x6Y B1	47,1	52,6	51,7	223	43	3x630	30800	38	56	6	19500	28,1	6	19500	28,1	-	-	-	1"5/8	2"1/8	370
2x8Y C1	47,5	48,1	52,1	248	48	2x800	30520	32	45	6	17400	25,1	6	17400	25,1	-	-	-	1"5/8	2"5/8	420
2x6D B3	48,7	56,3	53,5	297	58	2x630	21340	39	62	10	26400	38,1	12	26400	38,1	3	6600	9,5	1"5/8	2"1/8	340
3x6D B1	54,1	60,1	59,5	223	43	3x630	38310	50	64	6	19500	28,1	6	19500	28,1	-	-	-	1"5/8	2"1/8	370
2x8Y C2	54,2	54,9	59,6	371	72	2x800	28440	30	45	7	17400	25,1	9	26100	37,7	3	8700	12,6	1"5/8	2"5/8	480
2x8D C1	55,8	56,6	61,3	248	48	2x800	40530	44	51	6	17400	25,1	6	17400	25,1	-	-	-	1"5/8	2"5/8	420
3x6Y B2	58,2	67,4	64,0	334	65	3x630	28450	36	56	7	19500	28,1	9	29250	42,2	3	9750	14,1	2x1"3/8	2x2"1/8	430
4x6Y B1	59,9	68,4	65,8	297	58	4x630	41070	44	57	6	25800	37,2	6	25800	37,2	-	-	-	1"5/8	2"5/8	480
3x6Y B3	60,8	70,4	66,8	445	86	3x630	26480	33	56	10	29250	42,2	12	39000	56,3	3	9750	14,1	1"5/8	2"5/8	490
3x8Y C1	63,1	64,0	69,3	371	72	3x800	45780	37	47	6	25800	37,2	6	25800	37,2	-	-	-	1"5/8	2"5/8	570
2x8D C2	66,1	67,0	72,6	371	72	2x800	38260	41	51	7	17400	25,1	9	26100	37,7	3	8700	12,6	1"5/8	2"5/8	480
3x6D B2	67,7	77,9	74,4	334	65	3x630	34750	47	64	7	19500	28,1	9	29250	42,2	3	9750	14,1	2x1"3/8	2x2"1/8	430
3x6D B3	71,6	82,8	78,6	445	86	3x630	32010	44	64	10	29250	42,2	12	39000	56,3	3	9750	14,1	1"5/8	2"5/8	490
4x6D B1	72,5	78,3	79,7	297	58	4x630	51080	55	65	6	25800	37,2	6	25800	37,2	-	-	-	2x1"5/8	2x2"1/8	480
3x8D C1	74,2	75,2	81,6	371	72	3x800	60790	50	53	6	25800	37,2	6	25800	37,2	-	-	-	1"5/8	2"5/8	570
4x6Y B2	74,5	86,2	81,9	445	86	4x630	37930	40	57	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"3/8	2x2"1/8	550
3x8Y C2	80,2	81,3	88,1	557	108	3x800	42650	34	47	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"5/8	2x2"1/8	670
4x6Y B3	82,6	95,6	90,8	594	115	4x630	35310	37	57	10	38700	55,9	12	51600	74,5	3	12900	18,6	2x1"5/8	2x2"1/8	630
4x6D B2	86,7	100,3	95,2	445	86	4x630	46330	52	65	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"3/8	2x2"1/8	550
4x8Y C2	94,9	96,2	104,3	742	144	4x800	56870	38	48	7	34200	49,4	9	51300	74	3	17100	24,7	2x1"5/8	2x2"5/8	840
4x8Y C1	95,2	96,5	104,6	495	96	4x800	61040	41	48	6	34200	49,4	6	34200	49,4	-	-	-	2x1"5/8	2x2"5/8	740
4x6D B3	97,2	112,5	106,8	594	115	4x630	42680	49	65	10	38700	55,9	12	51600	74,5	3	12900	18,6	2x1"5/8	2x2"1/8	630
3x8D C2	97,8	99,1	107,5	557	108	3x800	57390	47	53	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"5/8	2x2"1/8	670
4x8D C1	112,0	113,5	123,0	495	96	4x800	81060	56	54	6	34200	49,4	6	34200	49,4	-	-	-	2x1"5/8	2x2"5/8	740
4x8D C2	115,7	117,3	127,2	742	144	4x800	76520	52	54	7	34200	49,4	9	51300	74	3	17100	24,7	2x1"5/8	2x2"5/8	840

* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)
 * Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.
 (3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height, in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels.
 For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.

Related Items:





NKT...L - 6.35mm

T = Large heat exchange surface



NKT...L	Capacity			Coil		Ventilation				Electric defrost						Connections		Net weight			
	DT 8K - SC2 (1)			Surface	Circuit volume	Nb x Ø	Air flow	Air throw (2) Std	Acoustic Lp 4m (4)	E1U (5) 400 V/3/50 Hz		ELU (5) 400 V/3/50 Hz		Kit ECK (6) 400 V/3/50 Hz		R404A					
	R134a	R449A	R404A							No.	W	A	No.	W	A	No.	W		A	Inlet	Outlet
kW	kW	kW	m ²	dm ³	mm	m ³ /h	m	dB(A)	W	A	W	A	W	A	Ø D	Ø	kg				
1x6Y B2	14,2	15,0	15,6	96	27	1x630	10600	34	51	6	6900	10	9	10350	14,9	3	3450	5	5/8"	1 3/8"	180
1x6D B2	16,3	17,1	17,9	96	27	1x630	13330	45	59	6	6900	10	9	10350	14,9	3	3450	5	5/8"	1 3/8"	180
1x6Y B3	16,8	18,3	18,5	128	36	1x630	10120	33	51	10	10350	19,1	12	13800	19,9	3	3450	5	7/8"	1 5/8"	200
1x6Y B4	18,5	20,6	20,3	160	45	1x630	9680	32	51	13	13800	19,9	15	17250	24,9	3	3450	5	1 1/8"	1 5/8"	220
1x6D B3	19,5	20,9	21,5	128	36	1x630	12610	43	59	10	10350	19,1	12	13800	19,9	3	3450	5	7/8"	1 5/8"	200
1x8Y C2	20,9	22,7	23,0	154	44	1x800	14740	33	42	6	9000	13	9	13500	19,5	3	4500	6,5	7/8"	1 5/8"	270
1x6D B4	21,8	23,8	23,9	160	45	1x630	11940	42	59	13	13800	19,9	15	17250	24,9	3	3450	5	1 1/8"	1 5/8"	220
1x8Y C3	24,2	26,8	26,6	205	58	1x800	13940	31	42	10	13500	19,1	12	18000	26	3	4500	6,5	1 1/8"	2 1/8"	300
1x8D C2	24,6	26,5	27,1	154	44	1x800	19580	45	48	6	9000	13	9	13500	19,5	3	4500	6,5	7/8"	1 5/8"	270
2x6Y B2	28,7	31,2	31,6	192	54	2x630	21200	35	54	6	13200	19,1	9	19800	28,6	3	6600	9,5	1 1/8"	2 1/8"	310
1x8D C3	29,2	31,7	32,1	205	58	1x800	18690	43	48	10	13500	19,1	12	18000	26	3	4500	6,5	1 1/8"	2 1/8"	300
2x6D B2	32,7	35,2	35,9	192	54	2x630	26660	46	62	6	13200	19,1	9	19800	28,6	3	6600	9,5	1 1/8"	2 1/8"	310
2x6Y B3	34,0	37,0	37,4	256	73	2x630	20230	34	54	10	19800	28,6	12	26400	38,1	3	6600	9,5	1 3/8"	2 1/8"	350
2x6Y B4	37,5	41,8	41,2	320	91	2x630	19350	33	54	13	26400	38,1	15	33000	47,6	3	6600	9,5	1 5/8"	2 1/8"	390
2x6D B3	39,5	42,6	43,4	256	73	2x630	25220	45	62	10	19800	28,6	12	26400	38,1	3	6600	9,5	1 3/8"	2 1/8"	350
2x8Y C2	42,6	46,0	46,9	308	87	2x800	29470	34	45	6	17400	25,1	9	26100	37,7	3	8700	12,6	1 3/8"	2 1/8"	480
3x6Y B2	42,9	46,6	47,2	288	82	3x630	31800	40	56	6	19500	28,1	9	29250	42,2	3	9750	14,1	1 3/8"	2 1/8"	440
2x6D B4	44,1	48,6	48,5	320	91	2x630	23880	43	62	13	26400	38,1	15	33000	47,6	3	6600	9,5	1 5/8"	2 1/8"	390
2x8Y C3	48,9	54,2	53,7	410	116	2x800	27880	32	45	10	26100	37,7	12	34800	50,2	3	8700	12,6	1 5/8"	2 5/8"	540
3x6D B2	49,3	53,2	54,2	288	82	3x630	39990	52	64	6	19500	28,1	9	29250	42,2	3	9750	14,1	1 3/8"	2 1/8"	440
2x8D C2	50,2	53,5	55,1	308	87	2x800	39170	46	51	6	17400	25,1	9	26100	37,7	3	8700	12,6	1 3/8"	2 1/8"	480
3x6Y B3	50,9	56,6	55,9	385	109	3x630	30350	39	56	10	29250	42,2	12	39000	56,3	3	9750	14,1	1 5/8"	2 5/8"	500
3x6Y B4	55,0	62,5	60,4	481	136	3x630	29030	37	56	13	39000	56,3	15	48750	70,4	3	9750	14,1	1 5/8"	2 5/8"	550
4x6Y B2	57,3	62,3	63,0	385	109	4x630	42390	44	57	6	25800	37,2	9	38700	55,9	3	12900	18,6	1 5/8"	2 5/8"	560
2x8D C3	58,9	64,2	64,7	410	116	2x800	37380	44	51	10	26100	37,7	12	34800	50,2	3	8700	12,6	1 5/8"	2 5/8"	540
3x6D B3	59,2	65,1	65,0	385	109	3x630	37830	51	64	10	29250	42,2	12	39000	56,3	3	9750	14,1	1 5/8"	2 5/8"	500
3x8Y C2	63,8	69,7	70,1	461	130	3x800	44210	39	47	6	25800	37,2	9	38700	55,9	3	12900	18,6	1 5/8"	2 5/8"	680
3x6D B4	64,7	72,8	71,0	481	136	3x630	35820	49	64	13	39000	56,3	15	48750	70,4	3	9750	14,1	1 5/8"	2 5/8"	550
4x6D B2	65,9	71,0	72,4	385	109	4x630	53320	58	65	6	25800	37,2	9	38700	55,9	3	12900	18,6	1 5/8"	2 5/8"	560
4x6Y B3	67,0	74,9	73,7	513	145	4x630	40470	43	57	10	38700	55,9	12	51600	74,5	3	12900	18,6	1 5/8"	2 5/8"	640
3x8Y C3	73,3	81,9	80,5	615	174	3x800	41810	37	47	10	38700	55,9	12	51600	74,5	3	12900	18,6	1 5/8"	2 5/8"	770
4x6Y B4	73,4	83,6	80,7	641	181	4x630	38710	41	57	13	51600	74,5	15	64500	93,1	3	12900	18,6	1 5/8"	2 5/8"	720
3x8D C2	75,0	81,1	82,4	461	130	3x800	58750	53	53	6	25800	37,2	9	38700	55,9	3	12900	18,6	1 5/8"	2 5/8"	680
4x6D B3	77,9	86,0	85,7	513	145	4x630	50440	56	65	10	38700	55,9	12	51600	74,5	3	12900	18,6	1 5/8"	2 5/8"	640
4x8Y C2	85,1	92,0	93,5	615	174	4x800	58940	43	48	6	34200	49,4	9	51300	74	3	17100	18,6	2x1 3/8"	2x2 1/8"	870
4x6D B4	86,4	97,1	94,9	641	181	4x630	47770	54	65	13	51600	74,5	15	64500	93,1	3	12900	18,6	1 5/8"	2 5/8"	720
3x8D C3	88,3	97,6	97,0	615	174	3x800	56070	50	53	10	38700	55,9	12	51600	74,5	3	12900	18,6	1 5/8"	2 5/8"	770
4x8Y C3	97,6	108,6	107,2	820	232	4x800	55750	41	48	10	51300	74	12	68400	98,7	3	17100	24,7	2x1 5/8"	2x2 5/8"	990
4x8D C2	100,1	106,9	110,0	615	174	4x800	78330	59	54	6	34200	49,4	9	51300	74	3	17100	18,6	2x1 3/8"	2x2 1/8"	870
4x8D C3	117,6	128,5	129,2	820	232	4x800	74760	56	54	10	51300	74	12	68400	98,7	3	17100	24,7	2x1 5/8"	2x2 5/8"	990

* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)

* Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.
 (3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height, in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels.
 For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.





NKH...L - 6.35mm

H = High efficiency fin



NKH...L	Capacity			Coil		Ventilation				Electric defrost						Connections		Net weight kg			
	DT 8K - SC2 (1)			Surface m ²	Circuit volume dm ³	Nb x Ø mm	Air flow m ³ /h	Air throw (2) Std m	Acoustic Lp 4m (4) dB(A)	E1U (5) 400 V/3/50 Hz		ELU (5) 400 V/3/50 Hz		Kit ECK (6) 400 V/3/50 Hz		R404A					
	R134a	R449A	R404A							No.	No.	No.	Inlet	Outlet							
	kW	kW	kW	W	A	W	A	W	A	Ø D	Ø										
1x6Y B1	13,8	15,0	15,1	51	14	1x630	10720	34	51	6	6900	10	6	6900	10	-	-	-	7/8"	1"3/8	160
1x6D B1	15,8	17,1	17,4	51	14	1x630	13450	45	59	6	6900	10	6	6900	10	-	-	-	7/8"	1"3/8	160
1x6Y B2	17,4	19,5	19,1	77	22	1x630	10070	32	51	7	6900	10	9	10350	14,9	3	3450	5	1"1/8	1"5/8	180
1x6Y B3	19,4	22,5	21,3	102	29	1x630	9490	30	51	10	10350	14,9	12	13800	19,9	3	3450	5	1"1/8	1"5/8	190
1x6D B2	20,5	22,8	22,5	77	22	1x630	12460	42	59	7	6900	10	9	10350	14,9	3	3450	5	1"1/8	1"5/8	180
1x8Y C1	20,8	22,7	22,9	85	24	1x800	15830	33	42	6	9000	13	6	9000	13	-	-	-	1"3/8	1"5/8	230
1x6D B3	23,1	26,8	25,4	102	29	1x630	11600	40	59	10	10350	14,9	12	13800	19,9	3	3450	5	1"1/8	1"5/8	190
1x8D C1	24,8	26,8	27,3	85	24	1x800	20870	45	48	6	9000	13	6	9000	13	-	-	-	1"3/8	1"5/8	230
1x8Y C2	25,7	29,1	28,2	128	36	1x800	14990	31	42	7	9000	13	9	13500	19,5	3	4500	6,5	1"3/8	2"1/8	260
2x6Y B1	28,0	30,7	30,8	102	29	2x630	21440	37	54	6	13200	19,1	6	13200	19,1	-	-	-	1"3/8	2"1/8	260
1x8D C2	31,3	35,0	34,4	128	36	1x800	19970	43	48	7	9000	13	9	13500	19,5	3	4500	6,5	1"3/8	2"1/8	260
2x6D B1	32,1	34,8	35,3	102	29	2x630	26910	46	62	6	13200	19,1	6	13200	19,1	-	-	-	1"3/8	2"1/8	260
2x6Y B2	34,2	39,1	37,6	153	43	2x630	20140	33	54	7	13200	19,1	9	19800	28,6	3	6600	9,5	1"3/8	2"1/8	290
2x6Y B3	39,0	45,1	42,8	204	58	2x630	18990	32	54	10	19800	28,6	12	26400	38,1	3	6600	9,5	1"5/8	2"1/8	330
2x6D B2	40,2	45,5	44,2	153	43	2x630	24930	44	62	7	13200	19,1	9	19800	28,6	3	6600	9,5	1"3/8	2"1/8	290
2x8Y C1	41,8	47,6	45,9	170	48	2x800	31660	34	45	6	17400	25,1	6	17400	25,1	-	-	-	1"3/8	2"1/8	400
3x6Y B1	42,0	46,0	46,1	153	43	3x630	32160	40	56	6	19500	28,1	6	19500	28,1	-	-	-	1"5/8	2"1/8	360
2x6D B3	46,4	53,7	51,0	204	58	2x630	23200	42	62	10	19800	28,6	12	26400	38,1	3	6600	9,5	1"5/8	2"1/8	330
3x6D B1	48,3	52,4	53,0	153	43	3x630	40360	52	64	6	19500	28,1	6	19500	28,1	-	-	-	1"5/8	2"1/8	360
2x8D C1	49,7	53,7	54,6	170	48	2x800	41740	46	51	6	17400	25,1	6	17400	25,1	-	-	-	1"5/8	2"1/8	400
2x8Y C2	50,8	58,4	55,9	255	72	2x800	29980	31	45	7	17400	25,1	9	26100	37,7	3	8700	12,6	1"5/8	2"5/8	460
3x6Y B2	52,9	59,4	58,1	230	65	3x630	30200	37	56	7	19500	28,1	9	29250	42,2	3	9750	14,1	2x1"3/8	2x2"1/8	410
4x6Y B1	54,9	61,4	60,4	204	58	4x630	42880	46	57	6	25800	37,2	6	25800	37,2	-	-	-	1"5/8	2"5/8	470
3x8Y C1	56,2	63,0	61,8	255	72	3x800	47490	39	47	6	25800	37,2	6	25800	37,2	-	-	-	1"5/8	2"5/8	550
3x6Y B3	57,9	67,0	63,7	306	86	3x630	28480	36	56	10	29250	42,2	12	39000	56,3	3	9750	14,1	1"5/8	2"5/8	460
2x8D C2	62,0	70,3	68,1	255	72	2x800	39940	43	51	7	17400	25,1	9	26100	37,7	3	8700	12,6	1"5/8	2"5/8	460
3x6D B2	62,2	69,2	68,4	230	65	3x630	37390	49	64	7	19500	28,1	9	29250	42,2	3	9750	14,1	2x1"3/8	2x2"1/8	410
4x6D B1	64,2	68,1	70,6	204	58	4x630	53820	58	65	6	25800	37,2	6	25800	37,2	-	-	-	2x1"5/8	2x2"1/8	470
3x8D C1	67,0	74,5	73,6	255	72	3x800	62620	53	53	6	25800	37,2	6	25800	37,2	-	-	-	1"5/8	2"5/8	550
4x6Y B2	68,5	78,5	75,3	306	86	4x630	40270	42	57	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"3/8	2x2"1/8	530
3x6D B3	69,0	79,8	75,8	306	86	3x630	34800	47	64	10	29250	42,2	12	39000	56,3	3	9750	14,1	1"5/8	2"5/8	460
3x8Y C2	75,1	86,6	82,6	383	108	3x800	44960	37	47	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"5/8	2x2"1/8	650
4x6Y B3	78,3	90,6	86,0	409	115	4x630	37980	40	57	10	38700	55,9	12	51600	74,5	3	12900	18,6	2x1"5/8	2x2"1/8	600
4x6D B2	80,6	91,4	88,6	306	86	4x630	49860	55	65	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"3/8	2x2"1/8	530
4x8Y C1	83,8	91,6	92,1	340	96	4x800	63320	43	48	6	34200	49,4	6	34200	49,4	-	-	-	2x1"5/8	2x2"1/8	720
4x8Y C2	89,3	103,3	98,1	511	144	4x800	59950	40	48	7	34200	49,4	9	51300	74	3	17100	24,7	2x1"5/8	2x2"1/8	800
3x8D C2	91,6	104,3	100,7	383	108	3x800	59900	50	53	7	25800	37,2	9	38700	55,9	3	12900	18,6	2x1"5/8	2x2"1/8	650
4x6D B3	93,2	107,8	102,4	409	115	4x630	46390	52	65	10	38700	55,9	12	51600	74,5	3	12900	18,6	2x1"5/8	2x2"1/8	600
4x8D C1	99,8	108,0	109,7	340	96	4x800	83490	59	54	6	34200	49,4	6	34200	49,4	-	-	-	2x1"5/8	2x2"1/8	720
4x8D C2	108,9	126,0	119,7	511	144	4x800	79870	55	54	7	34200	49,4	9	51300	74	3	17100	24,7	2x1"5/8	2x2"1/8	800

* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)
 * Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.
 (3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height, in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels.
 For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.

Related Items:





NKT...C - 6.35mm

T = Large heat exchange surface



NKT ... C	Capacity		Capacity		Coil			Ventilation			Electric defrost			Connections		Net weight
	DT 7K - SC3 (1)		DT 6K - SC4 (1)		Surface	Circuit volume	Nb x Ø	Air flow	Air throw (2) Std	Acoustic Lp 4m (4)	E1U (5) 400 V/3/50 Hz		R404A			
	R449A	R404A	R449A	R404A							No.	W	A	Ø D	Ø	
1x6Y B2 C	10.1	7.6	11.2	8.6	96	27	1x630	10600	34	51	9	10350	14.9	5/8"	1"3/8	200
1x6D B2 C	11.4	8.6	12.9	9.9	96	27	1x630	13330	45	59	9	10350	14.9	5/8"	1"3/8	200
1x6Y B3 C	12.4	9.5	13.4	10.5	128	36	1x630	10120	33	51	12	13800	19.9	7/8"	1"5/8	220
1x6Y B4 C	14.1	10.9	15.0	11.8	160	45	1x630	9680	32	51	15	17250	24.9	1"1/8	2"1/8	240
1x6D B3 C	14.2	10.7	15.6	12.1	128	36	1x630	12610	43	59	12	13800	19.9	7/8"	1"5/8	220
1x8Y C2 C	14.9	11.3	16.8	13.1	154	44	1x800	14740	33	42	9	13500	19.5	1"1/8	2"1/8	290
1x6D B4 C	16.4	12.5	17.7	13.7	160	45	1x630	11940	42	59	15	17250	24.9	1"1/8	2"1/8	240
1x8Y C3 C	18.3	14.1	19.5	15.3	205	58	1x800	13940	31	42	12	18000	26	1"1/8	2"1/8	330
1x8D C2 C	17.1	12.8	19.8	15.2	154	44	1x800	19580	45	48	9	13500	19.5	1"1/8	2"1/8	290
2x6Y B2 C	21.0	15.9	23.3	18.0	192	54	2x630	21200	35	54	9	19800	28.6	1"1/8	2"1/8	340
1x8D C3 C	21.6	16.4	23.5	18.2	205	58	1x800	18690	43	48	12	18000	26	1"1/8	2"1/8	330
2x6D B2 C	23.4	17.6	26.3	20.2	192	54	2x630	26660	46	62	9	19800	28.6	1"1/8	2"1/8	340
2x6Y B3 C	25.3	19.5	27.4	21.4	256	73	2x630	20230	34	54	12	26400	38.1	1"3/8	2"5/8	390
2x6Y B4 C	29.0	22.5	30.6	24.0	320	91	2x630	19350	33	54	15	33000	47.6	1"5/8	2"5/8	430
2x6D B3 C	29.0	22.1	31.8	24.7	256	73	2x630	25220	45	62	12	26400	38.1	1"3/8	2"5/8	390
2x8Y C2 C	31.2	23.8	34.0	26.5	308	87	2x800	29470	34	45	9	26100	37.7	1"3/8	2"5/8	520
3x6Y B2 C	30.9	23.6	34.7	26.9	288	82	3x630	31800	40	56	9	29250	42.2	1"5/8	2"5/8	490
2x6D B4 C	33.6	25.7	36.0	28.0	320	91	2x630	23880	43	62	15	33000	47.6	1"5/8	2"5/8	430
2x8Y C3 C	37.3	28.9	39.6	31.0	410	116	2x800	27880	32	45	12	34800	50.2	1"5/8	2"5/8	580
3x6D B2 C	35.1	26.5	39.8	30.7	288	82	3x630	39990	52	64	9	29250	42.2	1"5/8	2"5/8	490
2x8D C2 C	36.1	27.2	40.0	30.8	308	87	2x800	39170	46	51	9	26100	37.7	1"3/8	2"5/8	520
3x6Y B3 C	37.6	29.0	40.9	31.9	385	109	3x630	30350	39	56	12	39000	56.3	1"5/8	2"5/8	550
3x6Y B4 C	43.9	34.0	45.4	35.6	481	136	3x630	29030	37	56	15	48750	70.4	1"5/8	2"5/8	620
4x6Y B2 C	40.8	30.9	46.2	35.8	385	109	4x630	42390	44	57	9	38700	55.9	1"5/8	2"5/8	630
3x6D B3 C	42.9	32.9	47.5	36.9	385	109	3x630	37830	51	64	12	39000	56.3	1"5/8	2"5/8	550
2x8D C3 C	44.0	33.7	47.7	37.1	410	116	2x800	37380	44	51	12	34800	50.2	1"5/8	2"5/8	580
3x8Y C2 C	45.7	34.7	51.4	40.0	461	130	3x800	44210	39	47	9	38700	55.9	2x1"3/8	2x2"1/8	740
4x6D B2 C	46.0	35.0	53.1	40.9	385	109	4x630	53320	58	65	9	38700	55.9	1"5/8	2"5/8	630
3x6D B4 C	50.9	39.1	53.4	41.6	481	136	3x630	35820	49	64	15	48750	70.4	1"5/8	2"5/8	620
4x6Y B3 C	49.7	38.3	55.1	43.0	513	145	4x630	40470	43	57	12	51600	74.5	2x1"5/8	2x2"5/8	720
3x8Y C3 C	56.1	43.5	58.8	46.1	615	174	3x800	41810	37	47	12	51600	74.5	1"5/8	3"1/8	840
4x6Y B4 C	57.3	44.5	59.1	46.3	641	181	4x630	38710	41	57	15	64500	93.1	1"5/8	3"1/8	800
3x8D C2 C	52.6	40.1	60.4	46.7	461	130	3x800	58750	53	53	9	38700	55.9	2x1"3/8	2x2"1/8	740
4x6D B3 C	57.1	43.3	64.0	49.7	513	145	4x630	50440	56	65	12	51600	74.5	2x1"5/8	2x2"5/8	720
4x8Y C2 C	63.3	48.7	68.9	53.7	615	174	4x800	58940	43	48	9	51300	74	2x1"3/8	2x2"5/8	940
4x6D B4 C	66.6	50.8	69.5	53.9	641	181	4x630	47770	54	65	15	64500	93.1	1"5/8	3"1/8	800
3x8D C3 C	66.4	50.8	70.9	55.0	615	174	3x800	56070	50	53	12	51600	74.5	1"5/8	3"1/8	840
4x8Y C3 C	74.9	58.2	79.3	62.3	820	232	4x800	55750	41	48	12	68400	98.7	2x1"5/8	2x2"5/8	1080
4x8D C2 C	73.3	55.8	81.1	62.6	615	174	4x800	78330	59	54	9	51300	74	2x1"3/8	2x2"5/8	940
4x8D C3 C	88.6	68.1	95.6	74.5	820	232	4x800	74760	56	54	12	68400	98.7	2x1"5/8	2x2"5/8	1080

* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)

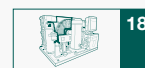
* Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.

(3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height,

in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels.

For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.





NKH...C - 6.35mm

H = High efficiency fin



NKH ... C	Capacity		Capacity		Coil		Ventilation			Electric defrost		Connections		Net weight kg		
	DT 7K - SC3 (1)		DT 6K - SC4 (1)		Surface m ²	Circuit volume dm ³	Nb x Ø mm	Air flow m ³ /h	Air throw (2) Std m	Acoustic Lp 4m (4) dB(A)	E1U (5) 400 V/3/50 Hz		R404A			
	R449A kW	R404A kW	R449A kW	R404A kW							No.	W	A		Inlet Ø D	Outlet Ø
1x6Y B1 C	10.6	8.3	11.3	8.9	51	14	1x630	10720	34	51	6	6900	10	7/8"	1"5/8	170
1x6D B1 C	12.0	9.4	12.9	10.2	51	14	1x630	13450	45	59	6	6900	10	7/8"	1"5/8	170
1x6Y B2 C	14.0	11.1	14.5	11.5	77	22	1x630	10070	32	51	9	10350	14.9	1"1/8	2"1/8	190
1x6Y B3 C	16.7	13.4	16.7	13.4	102	29	1x630	9490	30	51	12	13800	19.9	1"3/8	2"1/8	210
1x6D B2 C	16.2	12.8	17.0	13.5	77	22	1x630	12460	42	59	9	10350	14.9	1"1/8	2"1/8	190
1x8Y C1 C	16.3	13.0	17.3	13.9	85	24	1x800	15830	33	42	6	9000	13	1"3/8	2"1/8	250
1x6D B3 C	19.5	15.6	19.9	15.9	102	29	1x630	11600	40	59	12	13800	19.9	1"3/8	2"1/8	210
1x8D C1 C	19.1	15.1	20.6	16.4	85	24	1x800	20870	45	48	6	9000	13	1"3/8	2"1/8	250
1x8Y C2 C	21.0	16.8	21.3	17.1	128	36	1x800	14990	31	42	9	13500	19.5	1"3/8	2"1/8	280
2x6Y B1 C	21.9	17.3	23.2	18.4	102	29	2x630	21440	37	54	6	13200	19.1	1"3/8	2"1/8	290
1x8D C2 C	25.0	19.8	26.0	20.6	128	36	1x800	19970	43	48	9	13500	19.5	1"3/8	2"1/8	280
2x6D B1 C	24.5	19.3	26.3	20.8	102	29	2x630	26910	46	62	6	13200	19.1	1"3/8	2"1/8	290
2x6Y B2 C	28.8	23.1	29.8	23.8	153	43	2x630	20140	36	54	9	19800	28.6	1"5/8	2"1/8	320
2x6Y B3 C	33.7	27.3	33.8	27.2	204	58	2x630	18990	32	54	12	26400	38.1	1"5/8	2"5/8	360
3x6Y B1 C	32.5	25.8	34.4	27.4	153	43	3x630	32160	40	56	6	19500	28.1	1"5/8	2"5/8	410
2x6D B2 C	33.1	26.2	34.5	27.4	153	43	2x630	24930	44	62	9	19800	28.6	1"5/8	2"5/8	320
2x8Y C1 C	33.0	26.3	35.0	28.0	170	48	2x800	31660	34	45	6	17400	25.1	1"5/8	2"5/8	440
2x8Y C2 C	37.3	29.7	37.8	30.1	255	72	2x800	29980	31	45	9	26100	37.7	1"5/8	2"5/8	500
3x6D B1 C	37.0	29.1	39.6	31.3	153	43	3x630	40360	52	64	6	19500	28.1	1"5/8	2"5/8	410
2x6D B3 C	39.7	31.7	40.2	32.2	204	58	2x630	23200	42	62	12	26400	38.1	1"5/8	2"5/8	360
2x8D C1 C	38.8	30.8	41.7	33.2	170	48	2x800	41740	46	51	6	17400	25.1	1"5/8	2"5/8	440
3x6Y B2 C	42.9	34.5	44.2	35.4	230	65	3x630	30200	37	56	9	29250	42.2	2x1"3/8	2x2"1/8	460
3x8Y C1 C	42.9	33.5	44.5	35.1	255	72	3x800	47490	39	47	6	25800	37.2	1"5/8	2"5/8	600
2x8D C2 C	44.8	35.1	46.1	36.3	255	72	2x800	39940	43	51	9	26100	37.7	1"5/8	2"5/8	500
4x6Y B1 C	43.2	34.4	46.8	37.4	204	58	4x630	42880	44	57	6	25800	37.2	2x1"5/8	2x2"1/8	520
3x6Y B3 C	50.9	41.0	50.8	40.9	306	86	3x630	28480	36	56	12	39000	56.3	2x1"5/8	2x2"1/8	520
3x6D B2 C	49.9	39.7	52.0	41.4	230	65	3x630	37390	49	64	9	29250	42.2	2x1"3/8	2x2"1/8	460
3x8D C1 C	50.3	39.0	52.9	41.4	255	72	3x800	62620	53	53	6	25800	37.2	1"5/8	2"5/8	600
4x6D B1 C	48.9	38.8	53.8	42.8	204	58	4x630	53820	58	65	6	25800	37.2	2x1"5/8	2x2"1/8	520
3x8Y C2 C	55.4	44.2	56.2	44.7	383	108	3x800	44960	37	47	9	38700	55.9	2x1"5/8	2x2"5/8	700
4x6Y B3 C	60.3	47.5	59.0	46.9	409	115	4x630	37980	40	57	12	51600	74.5	2x1"5/8	2x2"5/8	670
3x6D B3 C	59.9	47.9	60.5	48.4	306	86	3x630	34800	47	64	12	39000	56.3	2x1"5/8	2x2"1/8	520
3x8D C2 C	67.3	52.1	68.5	53.9	383	108	3x800	59900	50	53	9	38700	55.9	2x1"5/8	2x2"5/8	700
4x8Y C1 C	66.2	52.9	70.2	56.2	340	96	4x800	63320	43	48	6	34200	49.4	2x1"5/8	2x2"5/8	780
4x6D B3 C	70.1	55.5	70.2	55.6	409	115	4x630	46390	52	65	12	51600	74.5	2x1"5/8	2x2"5/8	670
4x8D C1 C	77.9	61.9	83.6	66.6	340	96	4x800	83490	59	54	6	34200	49.4	2x1"5/8	2x2"5/8	780

* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)
 * Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.
 (3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height,
 in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels.
 For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.



Technical Data



NKT...S - 9.00mm

T = Large heat exchange surface



NKT ... S	Capacity		Capacity		Coil		Ventilation			Electric defrost			Connections		Net weight kg	
	DT 7K - SC3 (1)		DT 6K - SC4 (1)		Circuit volume m ²	dm ³	Nb x Ø mm	Air flow m ³ /h	Air throw (2) Std m	Acoustic Lp 4m (4) dB(A)	E1U (5) 400 V/3/50 Hz		R404A			
	R449A kW	R404A kW	R449A kW	R404A kW							No.	W	A	Inlet Ø D		Outlet Ø
1x6Y B2	9.6	7.2	10.8	8.2	70	27	1x630	10920	35	51	9	10350	14.9	5/8"	1"3/8	190
1x6D B2	10.8	8.0	12.3	9.3	70	27	1x630	13780	46	59	9	10350	14.9	5/8"	1"3/8	190
1x6Y B3	12.0	9.0	13.2	10.1	93	36	1x630	10510	33	51	12	13800	19.9	7/8"	1"5/8	220
1x6Y B4	13.7	10.4	14.8	11.4	117	45	1x630	10130	32	51	15	17250	24.9	1"1/8	2"1/8	240
1x6D B3	13.5	10.1	15.0	11.4	93	36	1x630	13200	44	59	12	13800	19.9	7/8"	1"5/8	220
1x8Y C2	14.1	10.5	16.1	12.3	112	44	1x800	15280	34	42	9	13500	19.5	1"1/8	2"1/8	280
1x6D B4	15.8	11.9	17.2	13.2	117	45	1x630	12630	42	59	15	17250	24.9	1"1/8	2"1/8	240
1x8D C2	16.1	12.1	18.7	14.3	112	44	1x800	20190	46	48	9	13500	19.5	1"1/8	2"1/8	280
1x8Y C3	17.8	13.5	19.2	14.8	149	58	1x800	14590	32	42	12	18000	26	1"1/8	2"1/8	320
2x6Y B2	19.6	14.8	22.0	16.9	140	54	2x630	21840	36	54	9	19800	28.6	1"1/8	2"1/8	330
1x8D C3	20.6	15.5	22.6	17.4	149	58	1x800	19420	44	48	12	18000	26	1"1/8	2"1/8	320
2x6D B2	22.2	16.6	25.1	19.1	140	54	2x630	27570	47	62	9	19800	28.6	1"1/8	2"1/8	330
2x6Y B3	24.6	18.5	26.9	20.6	187	73	2x630	21030	35	54	12	26400	38.1	1"3/8	2"1/8	370
2x6Y B4	28.1	21.4	30.1	23.2	233	91	2x630	20270	34	54	15	33000	47.6	1"5/8	2"5/8	410
2x6D B3	27.6	20.9	30.6	23.4	187	73	2x630	26410	46	62	12	26400	38.1	1"3/8	2"1/8	370
2x8Y C2	28.8	21.5	32.7	25.0	224	87	2x800	30560	34	45	9	26100	37.7	1"5/8	2"5/8	500
3x6Y B2	29.5	22.2	33.4	25.5	210	82	3x630	32750	41	56	9	29250	42.2	1"5/8	2"5/8	470
2x6D B4	32.3	24.4	35.0	26.9	233	91	2x630	25270	45	62	15	33000	47.6	1"5/8	2"5/8	410
3x6D B2	33.3	24.9	38.0	29.0	210	82	3x630	41350	54	64	9	29250	42.2	1"5/8	2"5/8	470
2x8D C2	32.8	24.8	38.0	29.1	224	87	2x800	40390	47	51	9	26100	37.7	1"5/8	2"5/8	500
2x8Y C3	36.3	27.6	39.0	30.0	299	116	2x800	29190	33	45	12	34800	50.2	1"5/8	2"5/8	560
3x6Y B3	36.4	27.7	40.1	30.8	280	109	3x630	31540	40	56	12	39000	56.3	1"5/8	2"5/8	530
4x6Y B2	39.0	29.1	44.4	33.9	280	109	4x630	43670	45	57	9	38700	55.9	1"5/8	2"5/8	610
3x6Y B4	41.5	31.5	44.4	34.3	350	136	3x630	30400	39	56	15	48750	70.4	1"5/8	2"5/8	590
3x6D B3	41.0	30.9	45.6	35.0	280	109	3x630	39610	52	64	12	39000	56.3	1"5/8	2"5/8	530
2x8D C3	41.9	31.9	45.9	35.3	299	116	2x800	38840	45	51	12	34800	50.2	1"5/8	2"5/8	560
3x8Y C2	43.4	32.5	49.2	37.7	336	130	3x800	45840	39	47	9	38700	55.9	2x1"3/8	2x2"1/8	710
4x6D B2	43.6	32.8	50.5	38.6	280	109	4x630	55140	59	65	9	38700	55.9	1"5/8	2"5/8	610
3x6D B4	47.4	36.2	51.7	39.9	350	136	3x630	37900	51	64	15	48750	70.4	1"5/8	2"5/8	590
4x6Y B3	48.2	36.5	53.9	41.3	373	145	4x630	42050	43	57	12	51600	74.5	2x1"5/8	2x2"1/8	690
3x8D C2	49.5	37.4	57.2	43.8	336	130	3x800	60580	54	53	9	38700	55.9	2x1"3/8	2x2"1/8	710
3x8Y C3	52.9	39.9	58.3	44.9	448	174	3x800	43780	38	47	12	51600	74.5	2x1"5/8	2x2"5/8	800
4x6Y B4	55.7	41.9	60.7	46.2	467	181	4x630	40540	43	57	15	64500	93.1	2x1"5/8	2x2"5/8	770
4x6D B3	54.2	40.6	61.2	47.0	373	145	4x630	52820	57	65	12	51600	74.5	2x1"5/8	2x2"1/8	690
4x8Y C2	60.5	45.7	66.5	50.9	448	174	4x800	61120	44	48	9	51300	74	2x1"3/8	2x2"5/8	910
3x8D C3	60.9	46.3	68.6	52.8	448	174	3x800	58270	52	53	12	51600	74.5	2x1"5/8	2x2"5/8	800
4x6D B4	63.5	47.7	70.5	53.7	467	181	4x630	50540	56	65	15	64500	93.1	2x1"5/8	2x2"5/8	770
4x8D C2	69.6	52.3	77.3	59.2	448	174	4x800	80770	60	54	9	51300	74	2x1"3/8	2x2"5/8	910
4x8Y C3	73.5	56.0	78.7	60.6	597	232	4x800	58370	42	48	12	68400	98.7	2x1"5/8	2x2"5/8	1030
4x8D C3	84.9	64.6	92.6	71.3	597	232	4x800	77690	58	54	12	68400	98.7	2x1"5/8	2x2"5/8	1030

* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)
 * Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.
 (3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height,
 in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels.
 For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.





NKH...S - 9.00mm

H = High efficiency fin



NKH... S	Capacity		Capacity		Coil		Ventilation				Electric defrost			Connections		Net weight
	DT 7K - SC3 (1)		DT 6K - SC4 (1)		R449A	R404A	Circuit volume	Nb x Ø	Air flow	Air throw (2) Std	Acoustic Lp 4m (4)	E1U (5) 400 V/3/50 Hz		R404A		
	R449A	R404A	R449A	R404A								Nc	W	A	Ø D	
	kW	kW	kW	kW	m ²	dm ³	mm	m ³ /h	m	dB(A)						kg
1x6Y B1 S	9.2	7.1	9.9	7.7	37	14	1x630	11000	35	51	6	6900	10	7/8"	1"5/8	170
1x6D B1 S	10.2	7.9	11.1	8.6	37	14	1x630	13860	46	59	6	6900	10	7/8"	1"5/8	170
1x6Y B2 S	12.4	9.7	13.0	10.2	56	22	1x630	10450	33	51	9	10350	14.9	1"1/8	1"5/8	190
1x6D B2 S	14.1	11.0	14.9	11.7	56	22	1x630	13050	44	59	9	10350	14.9	1"1/8	1"5/8	190
1x8Y C1 S	14.0	11.0	15.0	11.8	62	24	1x800	16180	34	42	6	9000	13	1"3/8	2"1/8	250
1x6Y B3 S	15.1	11.9	15.3	12.1	75	29	1x630	9950	32	51	12	13800	19.9	1"1/8	2"1/8	210
1x8D C1 S	16.1	8.1	17.5	8.8	62	24	1x800	21230	47	48	6	9000	13	1"3/8	2"1/8	250
1x6D B3 S	17.3	13.7	17.8	14.1	75	29	1x630	12280	42	59	12	13800	19.9	1"1/8	2"1/8	210
1x8Y C2 S	18.8	14.8	19.5	15.3	94	36	1x800	15470	32	42	9	13500	19.5	1"3/8	2"1/8	280
2x6Y B1 S	18.5	14.5	19.7	15.5	75	29	2x630	22010	38	54	6	13200	19.1	1"3/8	2"1/8	280
2x6D B1 S	20.8	16.2	22.4	17.6	75	29	2x630	27720	47	62	6	13200	19.1	1"3/8	2"1/8	280
1x8D C2 S	21.9	17.2	22.9	18.0	94	36	1x800	20490	44	48	9	13500	19.5	1"3/8	2"1/8	280
2x6Y B2 S	25.0	19.8	26.1	20.7	112	43	2x630	20900	37	54	9	19800	28.6	1"3/8	2"1/8	320
3x6Y B1 S	28.2	22.1	30.1	23.6	112	43	3x630	33010	41	56	6	19500	28.1	1"5/8	2"5/8	400
2x6D B2 S	28.7	22.5	30.2	23.8	112	43	2x630	26100	45	62	9	19800	28.6	1"5/8	2"5/8	320
2x8Y C1 S	28.3	22.3	30.3	23.9	125	48	2x800	32350	35	45	6	17400	25.1	1"5/8	2"5/8	430
2x6Y B3 S	30.6	24.3	31.0	24.6	150	58	2x630	19890	33	54	12	26400	38.1	1"5/8	2"5/8	360
3x6D B1 S	31.4	24.5	33.8	26.5	112	43	3x630	41580	54	64	6	19500	28.1	1"5/8	2"5/8	400
2x8Y C2 S	33.9	26.2	34.7	26.7	187	72	2x800	30950	33	45	9	26100	37.7	1"5/8	2"5/8	480
2x8D C1 S	32.6	16.4	35.3	17.7	125	48	2x800	42460	48	51	6	17400	25.1	1"5/8	2"5/8	430
2x6D B3 S	35.1	27.8	36.1	28.6	150	58	2x630	24560	44	62	12	26400	38.1	1"5/8	2"5/8	360
4x6Y B1 S	36.1	27.9	38.1	29.6	150	58	4x630	44020	47	57	6	25800	37.2	1"5/8	2"5/8	510
3x8Y C1 S	37.5	28.6	39.4	30.1	187	72	3x800	48530	40	47	6	25800	37.2	1"5/8	2"5/8	590
3x6Y B2 S	38.0	30.0	39.6	31.2	169	65	3x630	31350	39	56	9	29250	42.2	2x1"1/8	2x2"1/8	450
2x8D C2 S	39.4	30.3	40.9	31.5	187	72	2x800	40990	45	51	9	26100	37.7	1"5/8	2"5/8	480
4x6D B1 S	40.9	32.1	45.2	35.6	150	58	4x630	55450	59	65	6	25800	37.2	2x1"3/8	2x2"1/8	510
3x6D B2 S	43.3	34.0	45.5	35.8	169	65	3x630	39150	51	64	9	29250	42.2	2x1"1/8	2x2"1/8	450
3x8D C1 S	43.3	21.9	45.8	22.3	187	72	3x800	63700	55	53	6	25800	37.2	1"5/8	2"5/8	590
4x6Y B2 S	44.9	34.1	46.0	35.2	225	86	4x630	41800	43	57	9	38700	55.9	2x1"3/8	2x2"1/8	570
3x6Y B3 S	46.2	36.7	46.8	37.0	225	86	3x630	29840	37	56	12	39000	56.3	2x1"3/8	2x2"1/8	510
3x8Y C2 S	50.3	38.8	51.5	39.6	281	108	3x800	46420	38	47	9	38700	55.9	2x1"5/8	2x2"1/8	670
4x6D B2 S	50.9	38.8	52.8	40.5	225	86	4x630	52200	57	65	9	38700	55.9	2x1"3/8	2x2"1/8	570
3x6D B3 S	52.9	42.0	54.4	43.1	225	86	3x630	36840	49	64	12	39000	56.3	2x1"3/8	2x2"1/8	510
4x6Y B3 S	54.9	42.2	54.8	42.3	300	115	4x630	39790	42	57	12	51600	74.5	2x1"3/8	2x2"5/8	640
3x8D C2 S	58.6	44.9	60.6	46.6	281	108	3x800	61480	52	53	9	38700	55.9	2x1"5/8	2x2"1/8	670
4x8Y C1 S	57.1	44.9	60.9	48.1	250	96	4x800	64700	45	48	6	34200	49.4	2x1"5/8	2x2"5/8	770
4x6D B3 S	62.8	48.5	63.8	49.2	300	115	4x630	49120	55	65	12	51600	74.5	2x1"3/8	2x2"5/8	640
4x8Y C2 S	64.6	48.4	64.8	49.1	375	144	4x800	61890	42	48	9	51300	74	2x1"5/8	2x2"5/8	860
4x8D C1 S	65.7	33.1	70.9	35.6	250	96	4x800	84930	61	54	6	34200	49.4	2x1"5/8	2x2"5/8	770
4x8D C2 S	75.1	56.8	76.2	57.8	375	144	4x800	81970	58	54	9	51300	74	2x1"5/8	2x2"5/8	860

* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)
 * Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.
 (3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height, in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels.
 For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.



Technical Data



NKT...T - 12.00mm

T = Large heat exchange surface



NKT ... T	Capacity		Capacity		Coil		Ventilation			Electric defrost			Connections		Net weight kg	
	DT 7K - SC3 (1)		DT 6K - SC4 (1)		Surface m ²	Circuit volume dm ³	Nb x Ø mm	Air flow m ³ /h	Air throw (2) Std m	Acoustic Lp 4m (4) dB(A)	E1U (5) 400 V/3/50 Hz		R404A			
	R449A kW	R404A kW	R449A kW	R404A kW							No.	W	A	Inlet Ø D		Outlet Ø
1x6Y B2	12.3	9.5	9.4	7.2	54	27	1x630	11120	35	51	9	10350	14.9	5/8"	1"3/8	190
1x6D B2	13.8	10.6	10.6	8.1	54	27	1x630	14050	46	59	9	10350	14.9	5/8"	1"3/8	190
1x6Y B3	15.0	11.6	11.6	8.9	72	36	1x630	10760	34	51	12	13800	19.9	7/8"	1"5/8	210
1x6D B3	17.1	13.2	13.1	10.1	72	36	1x630	13570	45	59	12	13800	19.9	7/8"	1"5/8	210
1x6Y B4	17.3	13.3	13.3	10.2	91	45	1x630	10430	33	51	15	17250	24.9	1"1/8	2"1/8	230
1x8Y C2	18.0	13.9	13.8	10.6	87	44	1x800	15620	34	42	9	13500	19.5	1"1/8	2"1/8	280
1x6D B4	19.8	15.3	15.3	11.8	91	45	1x630	13080	43	59	15	17250	24.9	1"1/8	2"1/8	230
1x8D C2	21.0	16.1	16.1	12.4	87	44	1x800	20580	47	48	9	13500	19.5	1"1/8	2"1/8	280
1x8Y C3	22.1	17.0	17.0	13.1	116	58	1x800	15020	33	42	12	18000	26	1"1/8	2"1/8	310
2x6Y B2	24.8	19.1	19.1	14.7	109	54	2x630	22230	36	54	9	19800	28.6	1"1/8	2"1/8	320
1x8D C3	26.0	20.0	20.0	15.4	116	58	1x800	19900	45	48	12	18000	26	1"1/8	2"1/8	310
2x6D B2	28.1	21.6	21.6	16.6	109	54	2x630	28110	48	62	9	19800	28.6	1"1/8	2"1/8	320
2x6Y B3	30.6	23.5	23.6	18.1	145	73	2x630	21530	36	54	12	26400	38.1	1"3/8	2"1/8	360
2x6D B3	34.8	26.8	26.8	20.6	145	73	2x630	27140	47	62	12	26400	38.1	1"3/8	2"1/8	360
2x6Y B4	35.1	27.0	27.1	20.9	181	91	2x630	20860	34	54	15	33000	47.6	1"5/8	2"5/8	400
2x8Y C2	37.0	28.5	28.4	21.9	174	87	2x800	31250	35	45	9	26100	37.7	1"3/8	2"5/8	490
3x6Y B2	37.7	29.0	28.9	22.3	163	82	3x630	33350	41	56	9	29250	42.2	1"5/8	2"5/8	460
2x6D B4	40.3	31.0	31.2	24.0	181	91	2x630	26160	45	62	15	33000	47.6	1"5/8	2"5/8	400
3x6D B2	42.3	32.6	32.5	25.0	163	82	3x630	42160	54	64	9	29250	42.2	1"5/8	2"5/8	460
2x8D C2	43.0	33.1	33.1	25.4	174	87	2x800	41150	48	51	9	26100	37.7	1"3/8	2"5/8	490
2x8Y C3	44.7	34.4	34.6	26.6	232	116	2x800	30030	34	45	12	34800	50.2	1"5/8	2"5/8	550
3x6Y B3	45.5	35.0	35.0	27.0	217	109	3x630	32290	40	56	12	39000	56.3	1"5/8	2"5/8	520
4x6Y B2	49.9	38.4	38.3	29.4	217	109	4x630	44460	46	57	9	38700	55.9	1"5/8	2"5/8	600
3x6D B3	51.7	39.7	39.8	30.6	217	109	3x630	40700	53	64	12	39000	56.3	1"5/8	2"5/8	520
2x8D C3	52.6	40.5	40.7	31.3	232	116	2x800	39790	46	51	12	34800	50.2	1"5/8	2"5/8	550
3x6Y B4	52.6	40.5	40.6	31.2	272	136	3x630	31290	39	56	15	48750	70.4	1"5/8	2"5/8	580
3x8Y C2	55.3	42.6	42.5	32.7	261	130	3x800	46870	40	47	9	38700	55.9	1"5/8	2"5/8	700
4x6D B2	56.1	43.2	43.0	33.1	217	109	4x630	56210	60	65	9	38700	55.9	1"5/8	2"5/8	600
3x6D B4	60.5	46.5	46.7	35.9	272	136	3x630	39240	51	64	15	48750	70.4	1"5/8	2"5/8	580
4x6Y B3	60.7	46.7	46.9	36.0	290	145	4x630	43050	44	57	12	51600	74.5	2x1"5/8	2x2"1/8	670
3x8D C2	64.4	49.5	49.4	38.0	261	130	3x800	61730	55	53	9	38700	55.9	1"5/8	2"5/8	700
3x8Y C3	67.1	51.6	51.7	39.8	348	174	3x800	45050	39	47	12	51600	74.5	1"5/8	3"1/8	790
4x6Y B4	68.7	52.9	53.0	40.8	362	181	4x630	41710	43	57	15	64500	93.1	1"5/8	3"1/8	750
4x6D B3	69.0	53.1	53.2	41.0	290	145	4x630	54270	58	65	12	51600	74.5	2x1"5/8	2x2"1/8	670
4x8Y C2	74.1	57.0	57.0	43.9	348	174	4x800	62500	45	48	9	51300	74	2x1"3/8	2x2"5/8	890
3x8D C3	78.9	60.7	60.9	46.8	348	174	3x800	59690	53	53	12	51600	74.5	1"5/8	3"1/8	790
4x6D B4	79.0	60.8	60.9	46.8	362	181	4x630	52310	57	65	15	64500	93.1	1"5/8	3"1/8	750
4x8D C2	86.2	66.3	66.3	51.0	348	174	4x800	82300	61	54	9	51300	74	2x1"3/8	2x2"5/8	890
4x8Y C3	89.7	69.0	69.3	53.3	464	232	4x800	60060	43	48	12	68400	98.7	2x1"5/8	2x2"5/8	1010
4x8D C3	105.5	81.1	81.5	62.7	464	232	4x800	79590	59	54	12	68400	98.7	2x1"5/8	2x2"5/8	1010

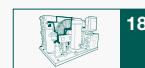
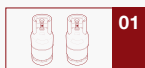
* Ø 630 mm : 400 V/3/50 Hz - Δ = 1500 rpm - 1900 W max - 3,2 A max - Y = 1000 rpm - 1350 W max - 2,2 A max (7)

* Ø 800 mm : 400 V/3/50 Hz - Δ = 870 rpm - 1900 W max - 3,9 A max - Y = 630 rpm - 1100 W max - 2 A max (7)

(1) Standard conditions: SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K (2) Operating pressure 50 bar - Tube diameter to define the order.

(3) Residual air speed: 0.25 m/s - Air throw with VPA option = Standard +15 m (4) Lp = Average sound pressure level in dB(A) measured at 4 m, at fan height,

in direct line of sight on a reflective surface, given for information only. Lw = Lp +30 dB(A) (5) Electric defrost options. (6) Electric defrost kit. (7) Setting of overload protection levels. For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the room temperature is attained.





Our parent company, Beijer Ref, own production facilities throughout the world manufacturing a wide range of packs, chillers, pumping stations and outdoor packaged solutions. In partnership with Friga-Bohn Industrial Evaporators and Condensers we have the solution for **all** Heavy Commercial applications.

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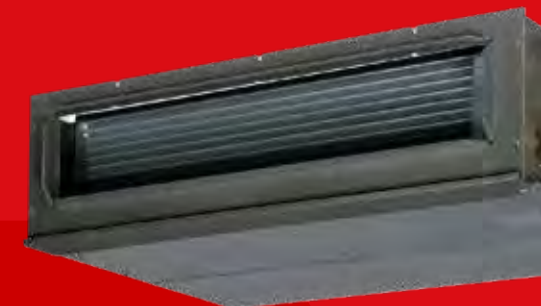
MHI Multi-splits allow you to mix and match up to 6 indoors with one outdoor, different style, different duty. Total flexibility at a great price!

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Conversion Charts

Standard / US Customary Units To Si / Metric Units

LENGTH		
1 Inch (in)	=	25.4 Millimeters (mm)
1 Foot (ft)	=	0.305 Meters (m)
1 Yard (yd)	=	0.914 Meters (m)
1 Mile (mi)	=	1.61 Kilometers (km)

AREA		
1 Square Inch (in ²)	=	645.2 Square Millimeters (mm ²)
1 Square Foot (ft ²)	=	0.093 Square Meter (m ²)
1 Square Yard (yd ²)	=	0.836 Square Meter (m ²)
1 Acre (ac)	=	0.405 Hectares (ha)
1 Square Mile (mi ²)	=	2.59 Square Kilometers (km ²)

VOLUME		
1 Fluid Ounce (fl oz)	=	29.57 Milliliters (mL)
1 Gallon (gal)	=	3.785 Liters (L)
1 Cubic Feet (ft ³)	=	0.028 Cubic Meters (m ³)
1 Cubic Yards (yd ³)	=	0.765 Cubic Meters (m ³)

MASS		
1 Ounce (oz)	=	28.35 Grams (g)
1 Pound (lb)	=	0.454 Kilograms (kg)
1 Short Ton (2000 lb) Mg	=	0.907 Metric Ton (T)

ENERGY		
1 Kilowatt-Hour (kWh)	=	3.6 million Joules
1 Kilowatt (kw)	=	1000 Watts (W)
1 BTU	=	252 Cal
1 BTU	=	1.055 kJ

POWER		
1 Horsepower (hp)	=	745.7 Watts (W)

Copper Pipe Connections

Inches (in)	Millimeters (mm)
3/16	4.76
5/16	8
1/4	6
3/8	10
1/2	13
5/8	16
3/4	19
7/8	22
1.1/8	29
1.3/8	35
1.5/8	41
2.1/8	54
2.5/8	67
3.1/8	79
3.5/8	92
4.1/8	105

Si / Metric Units to Standard / US Customary Units

LENGTH		
1 Millimeter (mm)	=	0.039 Inch (in)
1 Meter (m)	=	3.28 Feet (ft)
1 Meter (m)	=	1.09 Yard (yd)
1 Kilometer (km)	=	0.621 Mile (mi)

AREA		
1 Square Millimeter (mm ²)	=	0.0016 Square Inches (in ²)
1 Square Meter (m ²)	=	10.764 Square Feet (ft ²)
1 Square Meter (m ²)	=	1.195 Square Yard (yd ²)
1 Hectare (ha)	=	2.47 Acres (ac)
1 Square Kilometer (km ²)	=	0.386 Square Miles (mi ²)

VOLUME		
1 Milliliter (mL)	=	0.034 Fluid Ounces (fl oz)
1 Liter (L)	=	0.264 Gallons (gal)
1 Cubic Meter (m ³)	=	35.314 Cubic Feet (ft ³)
1 Cubic Meter (m ³)	=	1.307 Cubic Yards (yd ³)

MASS		
1 Gram (g)	=	0.035 Ounces (oz)
1 Kilogram (kg)	=	2.205 Pounds (lb)
1 Metric Ton (T)	=	1.103 Short Ton Mg

ENERGY		
1 Joule	=	2.777778 ⁻¹⁰ -7 Kilowatt-Hour (kWh)
1 Watts (W)	=	0.001 Kilowatt (kw)
1 Cal	=	0.0039 BTU
1 kJ	=	0.94 BTU

POWER		
1 Watt (W)	=	0.0013 Horsepower (hp)

Temperature

TEMPERATURE		
Fahrenheit (oF)	=	Celsius (oC)
(F-32) x (5/9)	OR	(F-32) ÷ 1.8

Force & Pressure or Stress

FORCE & PRESSURE OR STRESS		
1 Bar	=	14.5 Psi
1 Bar	=	1.0197 Kg/cm
1 PSI	=	0.069 Bar
1 PSI	=	0.0703 Kg/cm
1 Kg/cm	=	0.9807 Bar
1 Kg/cm	=	14.22 Psi

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