

Ferrolì



Omnia M 3.2

Reversible heat pumps for outdoor installation with DC inverter compressor

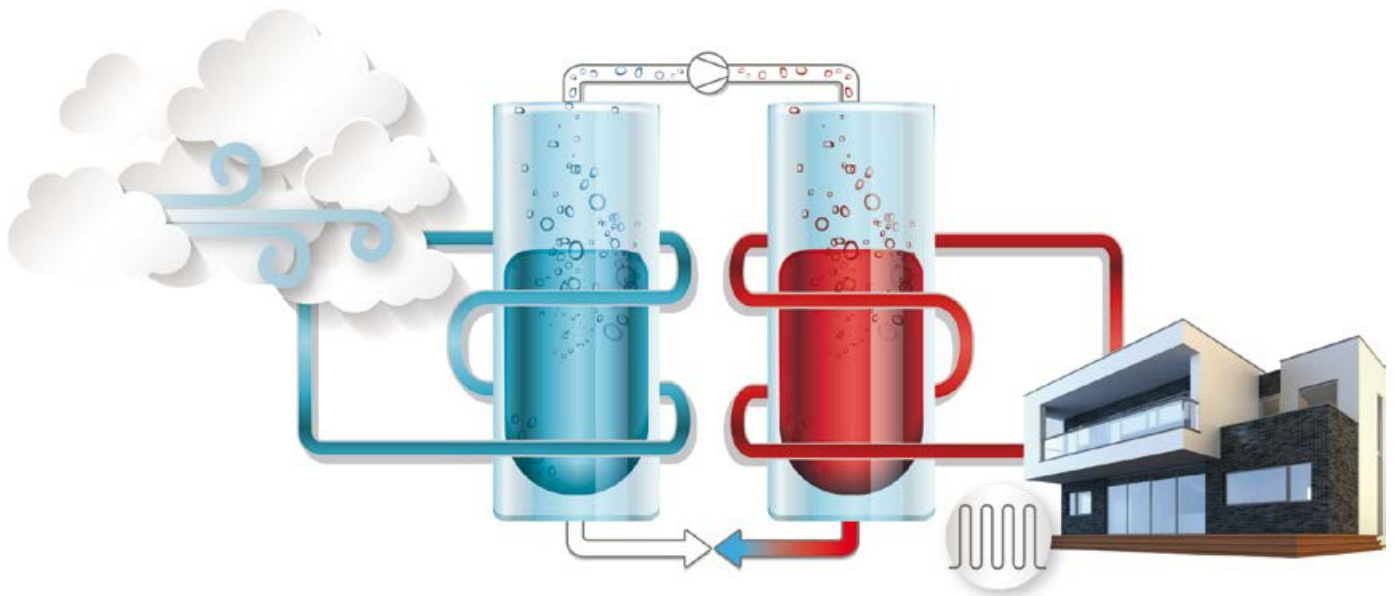


AEROTHERMAL ENERGY

The benefits provided by this technology

Aerothermy is the energy of the future. Ferroli aerothermal heat pumps implement a clean technology capable of achieving up to 79% of the energy supplied for home comfort from the outside air. Ferroli aerothermal heat pumps are designed to provide cooling in summer, heating in winter and/or domestic hot water throughout the year.

These latest generation heat pumps with inverter technology and using ecological gas, such as R32, do not produce heat from fuel combustion but simply with minimal energy consumption, using the energy of the air and transferring it inside the home.



CLASS A++: GREATER EFFICIENCY

The OMNIA M 3.2 single block range has an A++ energy class for the production of water at 55°C and A+++ for the production of water at 35°C.

COMPACT OUTDOOR UNIT: MORE SPACE AVAILABLE

Thanks to a compact and small sized unit being used, especially for the more powerful models, OMNIA M 3.2 can be easily placed outside the house (terrace, roof, etc.), thereby ensuring more space is available indoors.

QUICK AND SIMPLE INSTALLATION

Being a single-block unit, installation costs and times are significantly reduced. The interconnection of the coolant between the units is not required (the entire coolant circuit is contained in the appliance); setting up a connection to supply the fuel (gas or oil) or creating a duct to eject combustion gas is also not required. Furthermore, the device includes all the hydraulic parts required for a correct and quick connection to the hydraulic heating and DHW system.

IDEAL COMBINATION WITH LOW TEMPERATURE SYSTEMS

The OMNIA M 3.2 range can be easily installed in combination with low temperature systems (fan coils, radiators, underfloor heating)

to achieve maximum energy efficiency and maximum comfort at home.

EASILY INTEGRATED WITH AN EXISTING BOILER

OMNIA M 3.2 can be combined and integrated with any boiler in the system. The control of the device, based on the outdoor temperature and the operating conditions required, optimises the production of heat for heating and DHW, using the device with the best efficiency.

HOT WATER PRODUCTION AT 65°C WITH LOW OUTDOOR TEMPERATURES

The OMNIA M 3.2 range is able to supply hot water at 60°C with outdoor temperatures down to -15°C and at 40°C with outdoor temperatures down to -25°C, without any type of support/ accessory. With cold but positive temperatures (from +5°C) OMNIA M 3.2 can produce hot water up to 65°C.

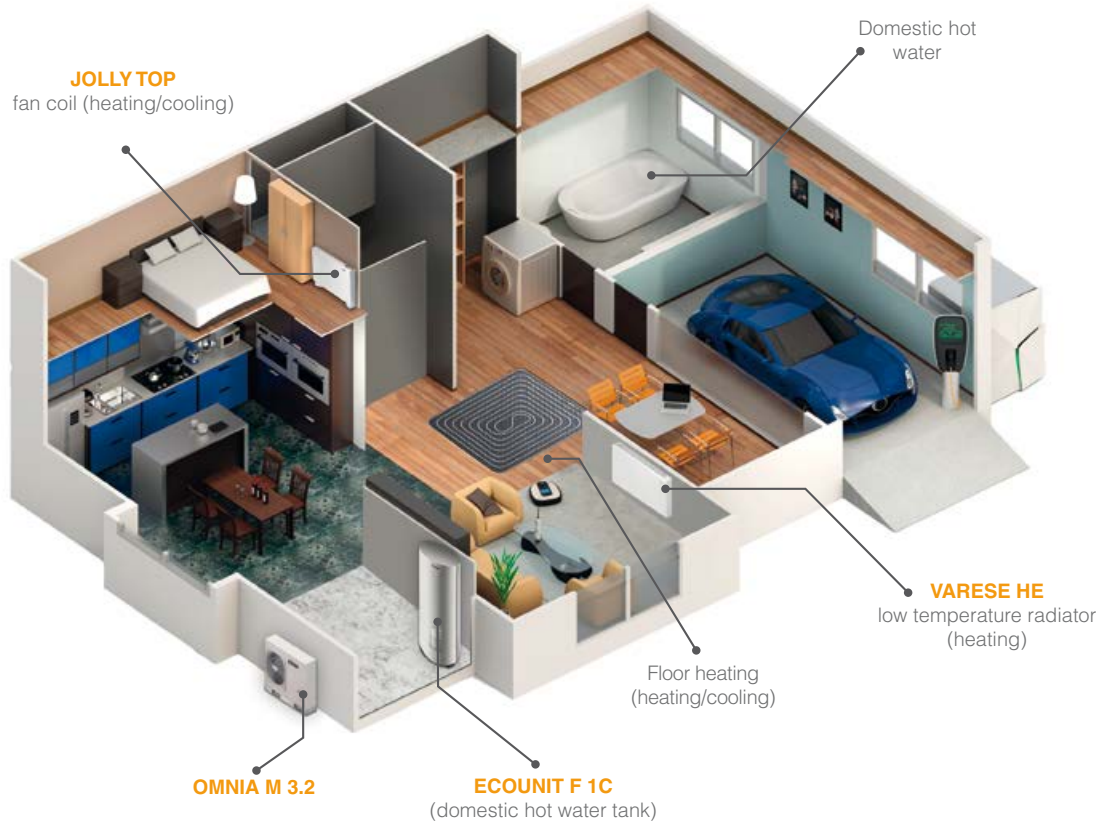
PROTECTION AGAINST FREEZING OF HYDRAULIC COMPONENTS WITHOUT THE NEED TO ADD GLYCOL.

In case of detection of low outdoor temperatures, the circulation pump and the electric antifreeze heater of the plate heat exchanger are activated, thus preventing the hydraulic components from freezing. There is therefore no need to add glycol to the system.



SYSTEM DIAGRAM WITH OMNIA M 3.2

Aerothermal energy according to Ferroli philosophy



SINGLE-BLOCK HEAT PUMP OMNIA M 3.2

Incorporates all hydraulic components inside it. The water pipes enter from this unit instead of the coolant lines, which significantly facilitates and simplifies installation.

ECOUNIT F 1C TANK

This tank for storing and supplying domestic hot water helps save even more energy. The configuration, the components used (high quality enamelled steel), the position of the various components, all contribute to optimising energy efficiency. Through a heat exchanger, the heat pump connects to this tank and heats the water with thermal energy drawn from outdoor air. Thanks to the 200/500 litre capacity, it is able to supply enough hot water for a medium/large family, with minimal energy costs. The Ferroli range also offers other specific storage tanks for operation with the heat pump in combination with both solar thermal systems and boilers

JOLLY TOP FAN COIL

High efficiency, silent and compact centrifugal fan coil and DC brushless motor, with an elegant design that ensures its integration in any type of decor.

LOW TEMPERATURE VARESE RADIATOR

Varese HE low temperature radiators offer high efficiency combined with low temperature systems such as aerothermal energy. They are 3 times faster than traditional radiators and up to 6 times faster than underfloor heating. This enables energy savings up to 20%.

Their design and small size allow them to be perfectly integrated into any interior design style. They are built with 100% recyclable materials.



OMNIA M 3.2: A HEAT PUMP WITH SILENT EFFICIENCY... AND ECOLOGICAL



MOD.			4	6	8	10	12	14	16	12T	14T	16T
Efficiency class with heating	low temperature (produced water 35°C)	our	191	195	205	204	189	185	181	189	185	182
		Class	A+++									
	medium temperature (produced water 55°C)	our	129	138	131	136	135	135	133	135	135	133
		Class	A+++									
SCOP	low temperature (produced water 35°C)	W/W	4.85	4.95	5.21	5.19	4.81	4.72	4.62	4.81	4.72	4.62
	medium temperature (produced water 55°C)	W/W	3.31	3.52	3.36	3.49	3.45	3.47	3.41	3.45	3.47	3.41
SEER	produced water 7°C	W/W	4.99	5.34	5.83	5.98	4.89	4.86	4.69	4.86	4.83	4.67
	produced water 18°C	W/W	7.77	8.21	8.95	8.78	7.10	6.90	6.75	7.04	6.85	6.71

Note: Efficiency class calculated according to European regulation 811/2013. The values refer to units without any optional features or accessories.



CHARACTERISTICS

This series of air-water heat pumps with ecological R32 gas with low environmental impact, meets the needs of winter and summer air-conditioning of small and medium power residential and commercial installations.

All the units are suitable for outdoor installation and being able to produce water up to 65°C they can be used in radiant systems, fan coils, radiators and for the indirect production of domestic hot water (DHW) via an outdoor boiler.

The units are characterised by the use of a DC inverter compressor that modulates the supplied power and come complete with a hydronic kit composed of all the essential components for quick and safe installation.

The units are characterised by high energy efficiency and reduced sound levels allowing them to be used as a single generator for the system or integrated with other energy sources such as additional electric heaters or boiler.

All units are supplied as per standard with a DHW storage tank water temperature probe (mounted by installer) and with an outdoor air temperature probe (already installed on the unit), to achieve climatic control in heating and cooling.

All units are carefully built and individually tested in factory.

Installation only requires electrical and hydraulic connections. In a system, it is possible to connect a maximum of 6 units in cascade; one of them will be the "MASTER" unit, whereas the others will be "SLAVE" units.

COOLING CIRCUIT

This is contained inside the unit to facilitate maintenance operations, it is equipped with a **COMPRESSOR** with twin rotary DC INVERTER motor to guarantee greater dynamic balancing and reduce vibrations. It is positioned on rubber anti-vibration supports and wrapped in a double layer of sound-absorbing material to reduce noise. The compressor is also equipped with a crankcase oil heater. The circuit is completed with **BRAZE-WELDED STAINLESS STEEL PLATE HEAT EXCHANGER** complete with anti-frost heating element, axial **FANS** with brushless DC motor complete with accident prevention safety grilles, finned coil with anti-corrosion treatment made of copper tubes and aluminium fins. All units are equipped with variable fan speed control which allows operation at low outdoor temperatures in cooling and high outdoor temperatures in heating.

HYDRAULIC CIRCUIT

Contained inside the unit to facilitate maintenance operations, it is fitted as standard with a low consumption **CIRCULATOR** with brushless DC motor, water flow switch, automatic air vent, water pressure gauge, expansion vessel, safety valve, Y water filter (mounted by installer). The plate heat exchanger and all the hydraulic circuit pipes are thermally insulated to prevent condensation and reduce heat loss.



ACCESSORIES

> ELECTRIC BOOSTER

Suitable for indoor installation, it consists of an electric power resistor (3 kW for single-phase models and 45 kW for three-phase units) inserted inside a painted metal sheet box and complete with electrical command and control panel.

> RUBBER VIBRATION DAMPERS

> INERTIAL TANK

horizontal 60 L



THE CONTROL SYSTEM

Operating principle

The general control system monitors all the functions of the inverter system and correct compressor operation. It also incorporates regulation algorithms with predefined climatic curves that can be selected by the customer, the management of a DHW circuit, the setting of time slots for noise reduction at night, alarm signalling, pump block prevention and integration with outdoor heat generators.

The user interface consists of a remote wired controller that manages:



> MANAGING 2 SEPARATE ZONES (DIRECT + MIXED)

The unit can control the pumps of both zones and for the additional mixed, the mixing valve and water delivery temperature probe.

> MANAGING THE PHOTOVOLTAIC AND “SMART GRID”

The control of a photovoltaic system and the “smart grid” function is guaranteed by 2 digital inputs on the PCB with specific operating logics.

> HEATING AND COOLING SYSTEM

If the unit is running in heating or cooling mode, it works by modulating the compressor frequency to maintain the temperature of the produced water at the established setpoint value.

> DOMESTIC HOT WATER (DHW) PRODUCTION

The unit starts in heating mode to maintain the temperature of a DHW storage tank at the established setpoint value. A 3-way diverter valve (not supplied) and a temperature probe (supplied) are required to be inserted in a pit of the DHW tank.

> ADDITIONAL ENERGY SOURCES

(boiler or electric heating element) These sources can be started in Integration or replacement of the heat pump during operation in heating or for DHW production and if the heat pump does not work.

> MANAGING SEVERAL UNITS IN CASCADE

Possibility of controlling up to 6 units in cascade (1 Master + 5 Slave) even with different powers with a single controller connected to the Master (dedicated to DHW production). If one “Slave” malfunctions, the others can function regularly.

> DHW STORAGE TANK ELECTRICAL HEATER

IT IS possible to manage a reserve and/or integrating electric heating element and for the anti-legionella function.

> FAST DHW

This function can be started manually to prioritise DHW by bringing the DHW storage tank to the setpoint in the quickest

possible amount of time.

> ANTI-LEGIONELLA FUNCTION

Weekly anti-legionella cycles can be set. The heat pump must be integrated with DHW storage tank or boiler electrical heater.

> SILENCED MODE

2 silence levels are possible and when on, according to a programmed schedule, it reduces the maximum frequency of the compressor and the fan speed, to reduce the noise generated, possibly at night, and the power absorbed by the unit.

> ON/OFF

The unit can be switched on and off by an external contact. It can be managed from the controller keyboard.

> HOT/COLD

The unit can be started and stopped in cooling or heating mode by 2 external contacts (e.g. the thermostat for the zone that manages the request for heating and cooling / remote switch).

> ECO

Possibility of defining time slots in heating and cooling mode and relative setpoints for ECO modes.

> WEEKLY SCHEDULE PROGRAMMING

This makes it possible to set a different schedule for each day of the week defining the mode and work setpoint for each time slot (COOLING/HEATING/DHW).

> ANTI-FROST PROTECTION

Guaranteed down to -20°C outdoor air temperature thanks to the heat pump itself working in hot mode, to the electric anti-frost heating element (as per standard) and the electric booster (if installed).

> CONTROLLING THE UNIT REMOTELY VIA THE APP

(Available for iOS and Android)

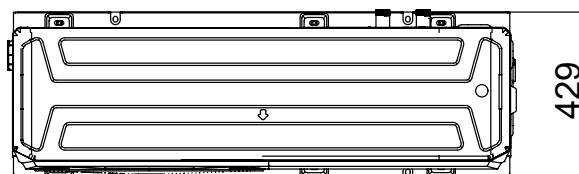
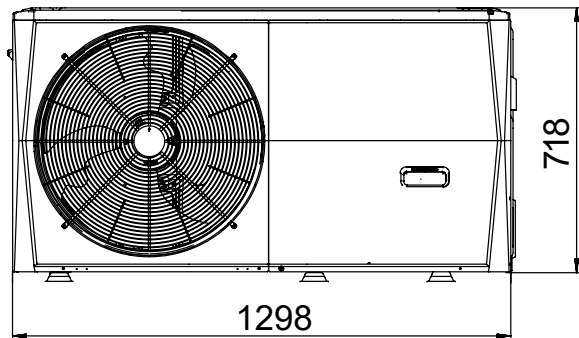
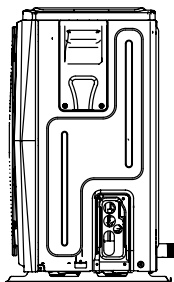


TECHNICAL DATA

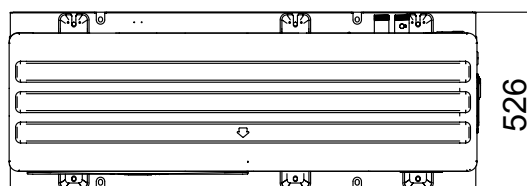
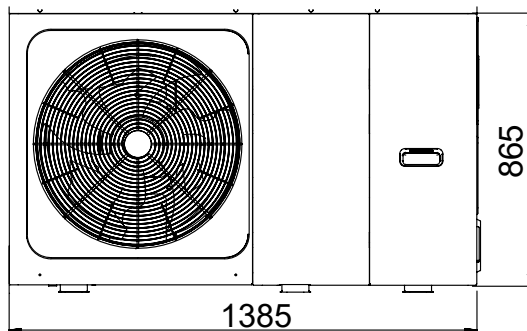
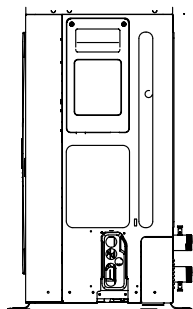
Overall dimensions

BASE UNIT OVERALL DIMENSIONS

mod. 4 - 6



mod. 8 - 10 - 12 - 12T - 14 - 14T - 16 - 16T



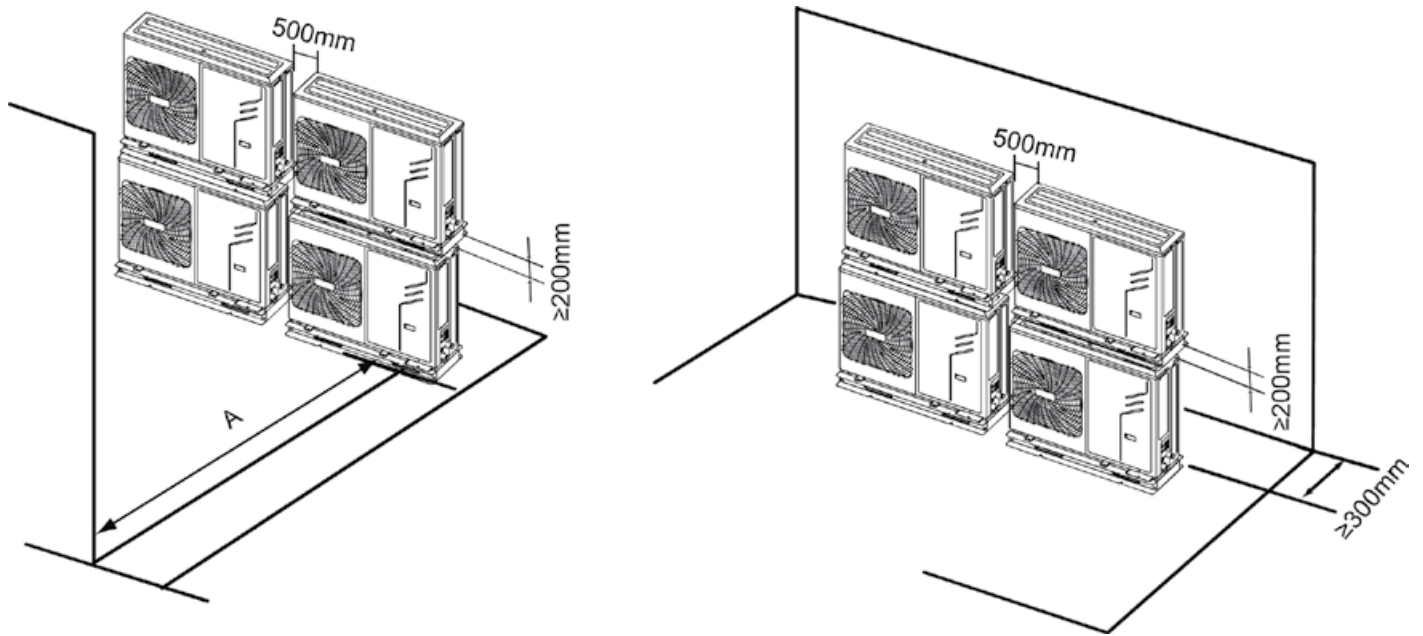
MODEL	4	6	8	10	12	14	16	12T	14T	16T
Packaging (WxHxD)	1384x890x526						1470x1040x565			
Weight Net \ Gross (kg)	86 / 109		105 / 132		129 / 155		144 / 172			



TECHNICAL DATA

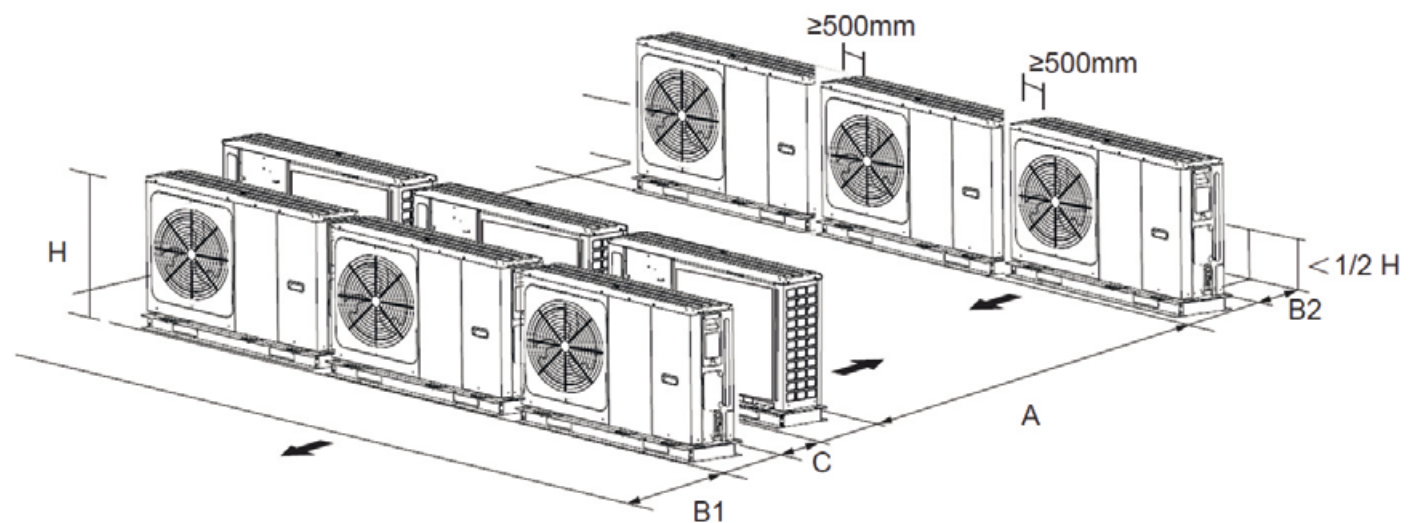
Minimum operating spaces

MINIMUM OPERATING SPACES



MODEL	4	6	8	10	12	12T	14-14T	16-16T
A (mm)	≥ 1000			≥ 1500				

INSTALLING SEVERAL UNITS IN LATERAL ROW CONNECTION (used on a roof, etc.)



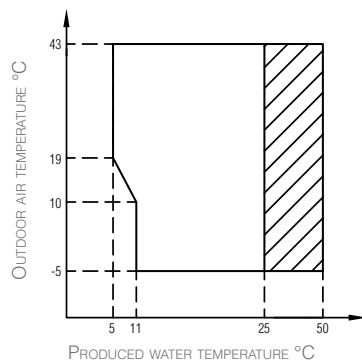
MODEL		A	B1	B2	C
4/6 kW	mm	≥ 2500	≥ 1000	≥ 300	≥ 600
8/10/12/14/16 kW	mm	≥ 3000	≥ 1500		




TECHNICAL DATA

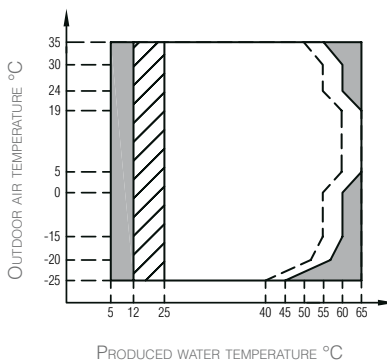
Operating limits


COOLING MODE





 Operating range with heat pump with possible limitation and protection

HEATING MODE

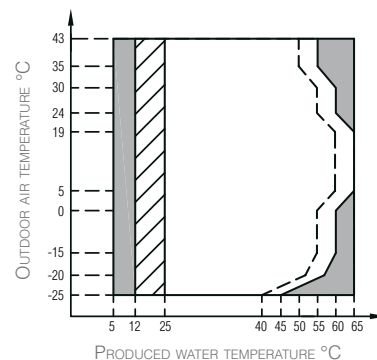



 Operating range with heat pump with possible limitation and protection


 If the IBH (electrical heater) / AHS (boiler) setting is valid, only IBH / AHS is activated.
If the IBH / AHS setting is not valid, only the heat pump is activated


 Maximum inlet water temperature line for heat pump operation

DHW MODE



 Operating range with heat pump with possible limitation and protection

 If the IBH (electrical heater) / AHS (boiler) setting is valid, only IBH / AHS is activated.
If the IBH / AHS setting is not valid, only the heat pump is activated

 Maximum inlet water temperature line for heat pump operation

NOTE ON DHW MODE:

produced water temperature means the water temperature produced by the unit and not the DHW temperature available to the user, which is a function of this parameter and of the surface of the coil of the DHW tank.



TECHNICAL DATA

Summary tables

GENERAL DATA			4	6	8	10	12	14	16	12T	14T	16T	
Electric power supply	V-ph-Hz		220/240-1-50						380/415-3-50				
Type of compressor	-		Twin Rotary DC										
No. of compressors / No. of cooling circuits	no.		1/1										
Type of heat exchanger on system side / source side	-		brazed stainless steel plates / finned coil										
Type and number of fans	no.		axial DC / 1										
Expansion vessel volume	l		2			5							
Water safety valve calibration	bar		3										
Hydraulic connections	"		1			1"1/4							
Minimum system water content	l		15						25				
Minimum coil surface for DHW storage tank (minimum/recommended)	enamelled	m ²	1.4 / 2.5			1.75 / 4.0							
	steel	m ²	1.7 / 3.0			2.5 / 5.6							
Type of coolant	type		R32										
GWP	kg-CO ₂ eq.		675										
Refrigerant charge	kg		1.4			1.75							
	t-CO ₂ eq.		0.95			1.18							
Type of control	-		with remote wire										
SWL - Sound power level in heating*	A7W35	dB(A)	55	58	59	60	65	65	69	65	65	69	
	Max	dB(A)	60	61	61	62	65	65	69	65	65	69	
	Sil. 1 / Sil. 2	dB(A)	56 / 53	56 / 53	57 / 55	58 / 55	62 / 56	62 / 56	63 / 56	62 / 56	62 / 56	63 / 56	
SWL - Sound power level in cooling*	A35W18	dB(A)	56	58	60	60	64	64	69	64	64	69	
	Max	dB(A)	60	61	61	62	65	65	69	65	65	69	
	Sil. 1 / Sil. 2	dB(A)	55 / 52	57 / 54	57 / 54	58 / 54	62 / 56	62 / 56	63 / 56	62 / 56	62 / 56	63 / 56	
Maximum absorbed current	A		12	14	16	17	25	26	27	10	11	12	

*: SWL = Sound power levels, referring to 1x10-12 W with unit operating in conditions:

A7W35 = source : air in 7°CDB 6°C b.u. / system : water in 30°C out 35°C.

A35W18 = source : air in 35°CDB / system : water in 23°C out 18°C

Max = in maximum conditions in heating / cooling mode

Sil. 1 = if silenced level 1 is active in heating / cooling mode

Sil. 2 = if silenced level 2 is active in heating / cooling mode

The Total sound power level in dB(A) is measured in accordance with standard ISO 9614.

PERFORMANCE DATA				4	6	8	10	12	14	16	12T	14T	16T
A7W35*	Heat output	nom	kW	4.20	6.35	8.40	10.0	12.1	14.5	15.9	12.1	14.5	15.9
	Absorbed power	nom	kW	0.82	1.28	1.63	2.02	2.44	3.15	3.53	2.44	3.15	3.53
	COP		W/W	5.10	4.95	5.15	4.95	4.95	4.60	4.50	4.95	4.60	4.50
	Water flow rate		l/h	722	1092	14445	1720	2081	2494	2735	2081	2494	2735
	Useful static pressure		kPa	85	84	79	71	61	46	40	61	46	40
A7W45	Heat output	nom	kW	4.30	6.30	8.30	10.0	12.3	14.1	16.0	12.3	14.1	16.0
	Absorbed power	nom	kW	1.13	1.70	2.16	2.67	3.32	3.92	4.57	3.32	3.92	4.57
	COP		W/W	3.80	3.70	3.85	3.75	3.70	3.60	3.50	3.70	3.60	3.50
	Water flow rate		l/h	740	1084	1428	1720	2116	2425	2752	2116	2425	2752
	Useful static pressure		kPa	85	84	79	71	60	47	40	60	47	40
A7W55	Heat output	nom	kW	4.40	6.00	7.50	9.50	11.9	13.8	16.0	11.9	13.8	16.0
	Absorbed power	nom	kW	1.49	2.03	2.36	3.06	3.90	4.68	5.61	3.90	4.68	5.61
	COP		W/W	2.95	2.95	3.18	3.10	3.05	2.95	2.85	3.05	2.95	2.85
	Water flow rate		l/h	473	645	806	1021	1279	1484	1720	1279	1484	1720
	Useful static pressure		kPa	85	85	85	84	84	80	71	84	80	71
A35W18*	Cooling capacity	nom	kW	4.50	6.50	8.30	9.90	12.0	12.9	13.6	12.0	12.9	13.6
	Absorbed power	nom	kW	0.82	1.35	1.64	2.18	3.04	3.49	3.77	3.04	3.49	3.77
	EER		W/W	5.50	4.80	5.05	4.55	3.95	3.70	3.61	3.95	3.70	3.61
	Water flow rate		l/h	774	1118	1428	1703	2064	2219	2339	2064	2219	2339
	Useful static pressure		kPa	85	84	79	71	61	56	52	61	56	52
A35W7	Cooling capacity	nom	kW	4.70	6.50	7.45	8.20	11.5	12.4	14.0	11.5	12.4	14.0
	Absorbed power	nom	kW	1.36	2.17	2.22	2.52	4.18	4.96	5.60	4.18	4.96	5.60
	EER		W/W	3.45	3.00	3.35	3.25	2.75	2.50	2.50	2.75	2.50	2.50
	Water flow rate		l/h	808	1118	1281	1410	1978	2133	2408	1978	2133	2408
	Useful static pressure		kPa	85	84	81	79	63	60	49	63	60	49

The values refer to units without any optional features or accessories. Data declared according to EN 14511: EER (Energy Efficiency Ratio) = ratio of cooling capacity in relation to absorbed power COP (Coefficient Of Performance) = ratio of heat output in relation to absorbed power A7W35 = source : air in 7°CDB. 6°CWB / system : water in 30°C out 35°C A7W45 = source : air in 7°CDB. 6°CWB / system : water in 40°C out 45°C A7W55 = source : air in 7°CDB. 6°CWB / system : water in 47°C out 55°C A35W18 = source : air in 35°CDB / system : water in 23°C out 18°C A35W7 = source : air in 35°CDB / system : water in 12°C out 7°C

NOTE: Efficiency class calculated according to European regulation 811/2013. The values refer to units without any optional features or accessories. * Useful performance values for the purposes of the declaration to access the intended incentives.



NOTES

Lined area for notes, consisting of multiple horizontal dotted lines.



NOTICE FOR SALES AGENTS:

With a view to constantly improve its production range and customer satisfaction levels, the Company hereby specifies that aesthetic and/or dimensional features, specifications and accessories may be subject to changes.

Please place the utmost care to ensure all technical and/or sales documents (lists, catalogues, brochures, etc.) provided to the final Customer are updated according to the latest edition.

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