OMICRON

COD. 020190B02

Air/water/water heat pump with independent production of sanitary hot water, equipped with axial fans and scroll compressors

37 ÷ 261 kW

OMICRON

Omicron is a multifunction unit for two-pipe hydronic air conditioning installations designed to provide chilled water for summer cooling, hot water for winter heating on the same hydraulic circuit and, on an independent circuit, domestic hot water from a dedicated exchanger all year round.

Unit frame
In galvanised sheet steel with baked-on epoxy polyester powder coating (colour RAL 5014).
Removable panelling with internal cladding in sound insulating matting.
Compressors
Hermetic scroll compressors connected in tandem on each refrigerant circuit. Equipped with crankcase heater, thermal protection, liquid line sight glass and oil equalisation line.
Refrigerant circuit
Each refrigerant circuit includes: suction line separator, liquid receiver, 4-way reversing valve, solenoid valves on the liquid line, solenoid valves for management of exchangers, liquid line shut-off valve, charge connection, liquid line sight glass, filter dryer, thermostatic expansion valves, safety valve, automatic reset high and low pressure switches with limited thresholds . All models are equipped with pressure transducers that enable pressure values to be transmitted for read-out on the controller display.
User appliance side exchanger
Stainless steel 316 AISI brazed plate condenser/evaporator, thermally insulated with closed cell expanded material. The evaporator is equipped with a low freeze protection probe and mechanical flow switch.
External side exchanger
Condenser / evaporator composed of a high efficiency coil made of copper tubes and aluminium fins with metal protection grille.
Domestic hot water side exchanger
Stainless steel 316 AISI brazed plate condenser, thermally insulated with closed cell expanded material.
Defrost function
High efficiency reverse cycle defrost function in accordance with patented Blue Box logic no. 1335232 to optimise operation and duration.
Fans
Axial fans, with bell mouth and safety grille, directly coupled to 6-pole three-phase motors with thermal protection. Pressure switch condensing/evaporating control by means of a speed regulator provided as part of the standard equipment.
Electrical Panel
With main power switch, power and control circuits protection, compressor contactors and fan contactors. Remote microprocessor controlled unit with function display mode. Power supply [V/ph/Hz]: 400/3~/50 ±5%.
Testing
Units are factory-tested and supplied with refrigerant charge and oil.

HYDRAULIC MODULE OPTIONS

This option can't be on the domestic hot water side.

OMICRON/ST 2PS
In addition to the components of OMICRON, this model is equipped with an insulated storage tank, two water pumps (one on stand-by with automatic changeover), expansion tank, check valves and gate valves.
OMICRON/ST 1PS
With respect to OMICRON/ST 2PS, this model is equipped with a single water pump.
OMICRON/ST 2P
With respect to OMICRON/ST 2PS, this unit is not equipped with the storage tank or expansion tank.
OMICRON/ST S
With respect to OMICRON/ST 2PS, this unit is not equipped with water pumps.
OMICRON/ST 1P
With respect to OMICRON/ST 2PS, this unit is not equipped with the storage tank or expansion tank and has a single water pump.

ACCESSORY VERSIONS

OMICRON/LN
Low noise unit: acoustic insulation of the compressor compartment with sound absorbing matting (and interposed layer of high acoustic impedance material on the sides of the compartment).
OMICRON/SLN
Super low noise unit: in addition to the components of Omicron/LN, this unit features an oversized condenser coil and reduced speed fans.
OMICRON 4T
Unit prearranged for use with four-pipe hydronic air conditioning installations designed to provide chilled water for summer cooling and hot water for winter heating simultaneously (recovery) or independently, on two dedicated exchangers and all year round.

MAIN ACCESSORIES

- Variable set point
- RS485 serial interface supporting Carel, Modbus, Echelon and Bacnet protocols; combinable also with Johnson and Trend supervision
- Power factor correction cos Ø ≥ 0,9;
- Condensing coil treated with anti-corrosion paint
- Pressure gauges (as part of the standard equipment, 4-compressor units enable pressure reading also from the controller)
- Anti-freeze heater for evaporator (for /ST units also on the tank and pipelines)
- Remote user terminal panel (in addition to the on-board terminal)
- Non-standard "RAL" paint colours.

OMICRON

Unit size		3.2	4.2	5.2	6.2	7.2	8.2	9.2	10.2
Nominal cooling capacity (*)	kW	37,1	44,7	51,4	60,3	67,5	77,6	91,6	102,4
Nominal heating capacity (**)	kW	36,4	44,8	51,9	60,0	68,1	78,7	92,7	106,6
Nominal domestic hot water heating power (***)	kW	42,4	52,2	60,3	69,7	79,2	91,7	107,7	124,4
Compressor									
Quantity/Refrigerant circuits	n°	2/1	2/1	2/1	2/1	2/1	2/1	2/1	2/1
Cooling power input (*)	kW	12,3	14,8	17,5	19,7	22,7	26,6	31,3	37,6
Heating power input(**)	kW	12,7	15,9	18,4	20,9	23,4	27,5	32,1	36,7
Domestic hot water production power input (***)	kW	12,4	15,6	17,9	22,0	24,6	28,9	34,1	38,7
Capacity steps	%	50-100	50-100	50-100	50-100	50-100	50-100	50-100	50-100
Fans									
Air flow	m³/s	4,472	4,472	4,472	4,528	4,528	4,389	6,833	6,833
No. x installed power	n° x kW	2 x 0,6	2 x 0,6	2 x 0,6	2 x 0,6	2 x 0,6	2 x 0,6	3 x 0,6	3 x 0,6
Evaporator characteristics									
Pressure drop	kPa	57,2	55,4	45,9	51,4	43,7	45,4	47,9	44,8
Characteristics of user appliance side hydraulic module									
Water flow rate	l/s	1,771	2,134	2,453	2,883	3,225	3,708	4,374	4,892
Available static pressure versione ST 2PS	kPa	129	106	94	146	141	118	121	100
Storage tank capacity	l	200	200	200	200	200	200	450	450
Expansion vessel	l	18	18	18	18	18	18	18	18
Noise level (****)									
Basic unit	dB(A)	65,7	66,0	66,1	66,8	67,0	67,7	68,7	68,9
LN version	dB(A)	62,9	63,1	63,3	63,9	64,0	65,9	66,3	66,8
SLN version	dB(A)	59,9	60,4	60,8	61,5	61,8	63,7	64,0	64,7
Power supply	Vph/Hz	400/3N~/50	400/3N~/50	400/3N~/50	400/3N~/50	400/3N~/50	400/3N~/50	400/3N~/50	400/3N~/50
Dimensions and weight									
Width	mm	2233	2233	2233	2233	2233	2233	3234	3234
Depth	mm	1043	1043	1043	1043	1043	1043	1144	1144
Height	mm	1740	1740	1740	1740	1740	1740	1740	1740
Operating weight	kg	655	671	699	751	775	830	1095	1184

Unit size		12.2	13.2	14.4	16.4	18.4	20.4	24.4	26.4
Nominal cooling capacity (*)	kW	117,9	126,6	137,0	157,6	185,8	211,0	235,8	260,7
Nominal heating capacity (**)	kW	119,5	132,4	136,2	157,3	185,3	213,3	239,1	264,9
Nominal domestic hot water heating power (***)	kW	139,6	154,4	158,1	182,3	215,7	248,1	277,7	307,5
Compressor									
Quantity/Refrigerant circuits	n°	2/1	2/1	4/2	4/2	4/2	4/2	4/2	4/2
Cooling power input (*)	kW	40,0	45,9	44,4	52,0	61,2	72,0	80,0	88,1
Heating power input(**)	kW	40,5	44,4	46,8	55,0	64,2	73,3	81,1	88,8
Domestic hot water production power input (***)	kW	43,4	47,3	49,1	57,7	68,2	77,1	86,6	94,3
Capacity steps	%	50-100	50-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100
Fans									
Air flow	m³/s	6,600	6,583	11,267	11,267	16,375	16,417	19,389	18,500
No. x installed power	n x kW	3 x 0,6	3 x 0,6	2 x 2,0	2 x 2,0	3 x 2,0	3 x 2,0	4 x 2,0	4 x 2,0
Evaporator characteristics									
Pressure drop	kPa	50,7	43,2	51,8	55,8	62	63,8	71,1	70,6
Characteristics of user appliance side hydraulic module									
Water flow rate	l/s	5,634	6,050	6,546	7,529	8,879	10,082	11,268	12,454
Available static pressure versione ST 2PS	kPa	111	106	92	117	126	87	78	122
Storage tank capacity	l	450	450	340	340	700	700	700	700
Expansion vessel	l	18	18	18	18	18	18	18	18
Noise level (****)									
Basic unit	dB(A)	69,1	69,2	69,3	71,9	72,3	73,0	73,9	74,0
LN version	dB(A)	66,3	66,6	67,3	70,1	70,4	70,8	71,7	71,8
SLN version	dB(A)	64,3	64,6	64,9	67,9	67,8	68,4	69,4	69,6
Power supply	V/ph/Hz	400/3N~/50	400/3N~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Dimensions and weight									
Width	mm	3234	3234	3234	3234	4234	4234	4234	4234
Depth	mm	1144	1144	1119	1119	1119	1119	1119	1119
Height	mm	1740	1740	2380	2380	2380	2380	2380	2380
Operating weight	kg	1261	1301	1546	1622	2079	2258	2404	2559

(*) Ambient air temperature 35 °C; evaporator inlet/outlet water temperature 12-7°C.
(**) Ambient air temperature 8°C BS, 70% UR; condenser inlet/outlet water temperature 40-45°C.
(***) Ambient air temperature 15 °C DB, 70% RH; condenser water inlet-outlet temperature 40-45 °C.
(****) Sound pressure levels measured in free field conditions at distance of 1 m from the unit, according to ISO 3746.

This datasheet gives the characteristic data of the basic and standard versions of the series; for details refer to the specific documentation