

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

5,5 ÷ 18 kW



FACTOTUM

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

Load-bearing frame, in galvanised sheet steel with baked-on epoxy polyester powder coating (colour RAL 7032) and threaded fasteners in stainless steel. The condenser coils are equipped with metal mesh filter.

Compressor

Hermetic type orbital scroll compressors designed to operate also with high compression ratios, a typical operating condition of heat pumps; equipped with an oil level sight glass and thermal protection by means of Klixon internal thermal cut-out.

Refrigerant circuit

Comprises: 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, electronic thermostatic 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.

Hydraulic circuit

Complete with pump on the main circuit, delivery/suction gate valves, storage tank, expansion tank, relief valve, automatic bleed valve, mechanical flow switch.

User appliance side exchanger

Coaxial evaporator / condenser immersed in the storage tank, thermally insulated with closed cell expanded material. The evaporator is equipped with a low freeze protection probe.

External side exchanger

Condenser / evaporator comprising a high efficiency coil made of copper tubes and aluminium fins.

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. VI2003A227 to optimise operation and duration.

Fans

Axial fans, with low-noise sickle shaped blade, conveyor 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 supplied as standard.

Electrical Panel

With main power switch, power and control circuits protection, compressor contactors and fan contactors. Microprocessor controlled unit with main function display. Power supply [V/ph/Hz]: 230/1~/50 ±5% for models 21 and 41, 400/3~/50 ±5% for models 51 and 81.

Testing

Units are factory-tested and supplied with refrigerant charge and oil.

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 $\cos \phi \geq 0,9$
- Mobile text message system for management of service calls
- Coils with special anticorrosion treatment
- Remote user terminal (in addition to one on board unit)
- Non-standard «RAL» paint colours.

FACTOTUM

Unit size		21	41	51	81
Nominal cooling capacity (*)	kW	5,5	10,0	13,0	18,3
Nominal heating capacity (**)	kW	7,6	12,5	15,5	22,5
Nominal domestic hot water heating power (***)	kW	7,6	12,6	17,0	24,4
Compressor					
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	1/1
Cooling power input (*)	kW	2,05	3,31	4,10	6,20
Heating power input (**)	kW	2,1	3,5	4,3	6,2
Domestic hot water production power input (***)	Kw	2,2	3,7	4,4	6,7
Capacity steps	%	100	100	100	100
Fans					
Air flow	m³/s	0,35	0,77	0,77	1,12
No. x installed power	n° x kW	1 x 0,14	2 x 0,14	2 x 0,14	3 x 0,14
Evaporator characteristics / user appliance side hydraulic module					
Water flow rate	l/h	941	1711	2236	3143
Available static pressure	kPa	80	148	124	131
Storage tank capacity	l	30	70	70	100
Expansion vessel	l	2	5	5	7
Noise level (****)	dB(A)	56,1	58,3	58,3	60,1
Power supply	V/ph/Hz	230/1~/50	230/1~/50	400/3N~/50	400/3N~/50
Dimensions and weight					
Width	mm	1217	1517	1517	1750
Depth	mm	548	548	548	1017
Height	mm	950	1277	1277	1260
Operating weight	kg	201	284	312	520

(*) Ambient air temperature 35 °C; evaporator inlet/outlet water temperature 12-7°C.

(**) Ambient air temperature 8°C BS, 70% RH; 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