

## Technical specifications

### Specifications

#### Indoor units

#### All in one type

Model	HMA60-S	HMA100-S
<b>General conditions</b>		
Power source	230V AC / 400V 3NAC 50 Hz	
Max current (A)	45 for 230V single-phase / 20 for 400V three-phase	
Recommended fuse (A)	50 for 230V single-phase / 25 for 400V three-phase	
Wire size	6 × 10 mm <sup>2</sup>	
Power source deviation (%)	-15 – +10	
Power factor	0.99	
Pipe size refrigerant (ref)	Gas piping: OD12.7, liquid: OD6.35 (1/2"; 1/4")	Gas piping: OD15.88, liquid: OD9.52 (5/8"; 3/8")
<b>Indoor unit (split type, hydrounit)</b>		
Immersion heater	Max 9 kW (4.5kW for single phase 230V)	
Capacity steps heater	3 (1.5, 3.0, 4.5kW) for single-phase 230V , 3 (3,6,9 kW) for three-phase 400V	
Circulating pump	Wilo Yonos Para	
Pump control sanitary hot water	Variable	
Pump capacity, max head	76 kPa (external)	
Pump capacity, max flow	4 m <sup>3</sup> /h	
Pump power	5 – 75W	
Pump efficiency, max	EEI≤0.21	
Heat exchanger	2 HP Plate type Alfa Laval, ACH-18-52H	3.5 HP Plate type Alfa Laval, ACH-30EQ-80H
Heat exchanger size	0.9 m <sup>2</sup>	1.8 m <sup>2</sup>
Pressure transmitter	0 – 4.6 MPa, deviation ±3%	
Water strainer system	0.6 mm <sup>2</sup>	
Filter drier refrigeration system	Bi-flow 083	
Emergency thermostat	5 – 77 °C	
Thermal cut-off	98 (-8) °C	
Motor valves	2 × 3-way, ball type	
Actuator	230V 50 Hz, 8s/60°	
Safety relief valve system	0.3 MPa	
Manometer gauge	0 – 0.4 MPa	
Expansion vessel	10 ℓ	
IP grade	IP21	
Volume total	180 ℓ ±5%	
Volume coil	4.8 ℓ	
Area coil	1.6 m <sup>2</sup>	
Material coil	Steel untreated S235JR	
Material tank	Enamelled steel S235JR 3.0 mm	
Cabinet	Top/side/front bottom	EN10130 DC01
	Back	DX51D+Z275

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Model		HMA60-S	HMA100-S
Material	Top/side/front bottom	Steel 0.7 mm	
	Back	Galvanized steel 275 g/m <sup>2</sup>	
Color (powder coated 1 layer)	Top/side/front bottom	RAL9016, shine 50, white	
	Back	Untreated	
Isolation heat exchanger		Armaflex	
Isolation tank		PUR	
Stand by heat loss		61.25 W EN12897	
Design pressure tank		1.0 MPa (10 bar)	
Design pressure coil		1.6 MPa (16 bar)	
Design pressure refrigerant system		4.5 MPa	
Water quality sanitary hot water		<EU directive nr 98/83/EF	
Max operating temperature tank		80 °C	
Operating ambient temperature indoor unit		+5 – +35°C, max RH 95%	
Connection water system		compression fitting 22 mm	
Connection sanitary hot water		compression fitting 22 mm	
Height, (adjustment)		1715 + (20 – 40 mm)	
Width		600 mm	
Depth		610 mm	
Weight netto		160 kg	164 kg
Weight incl pallet incl packing		166 kg	170 kg
Weight packaging: Wood		1.1 kg	
Weight packaging: EPS		0.2 kg	
Weight packaging: Card board		3.7 kg	
Weight packaging: Plastics		0.4 kg	
Weight packaging: Metal		0.7 kg	
Packaging volume /dim		0.89 m <sup>3</sup> (1900 × 670 × 700 mm)	
Electrical connection		230V AC/400V 3NAC 50 Hz	
Wire size		6 × 10 mm <sup>2</sup>	
Part number MHIAE		MCD001A014	MCD001A015
<b>Enclosed</b>			
		1 x Safety kit with safety valve, manometer and automatic air vent already insulated for cooling	
		1 x Strap for single phase connection	
		Outdoor sensor	
		Indoor sensor	
		3 x Current sensor	
		Shut off valve, Strainer	

<b>Indoor unit RC-HY controller</b>	
<b>Electrical data</b>	
Supply Voltage	230V 50Hz
Rated value for impulse voltage	4 kV
<b>Option connections</b>	
Max number of air/water heat pumps	8
Max number of sensors	8
Max number of charge pumps with internal accessory cards	2
Max number of charge pumps with external accessory cards	8
Max number of outputs for additional heat step	3
<b>Miscellaneous</b>	
Area of operation	- 25 – 70 °C
Internet Connection function*	Included
Language	English, Swedish, German, French, Spanish, Finnish, Lithuanian, Czech, Polish, Dutch, Norwegian, Danish, Estonian, Latvian, Russian, Italian, Hungarian, Slovenian, Turkish, Croatian, Romanian, Icelandic

\*Function is provided by myUpTech AB., which monitors operation data and control unit through internet.

**Technical specifications**

Outdoor model			FDCW100VNX-A
Power source			1 phase 230V 50Hz
Heating nominal capacity	condition 1	kW	9.0 (3.5 – 11.0)
	condition 2	kW	9.2 (3.5 – 10.0)
Heating power consumption	condition 1	kW	2.62
	condition 2	kW	2.15
COP	condition 1		3.44
	condition 2		4.28
Cooling nominal capacity	condition 1	kW	8.0 (3.0 – 9.0)
	condition 2	kW	11.0 (3.3 – 12.0)
Cooling power consumption	condition 1	kW	2.85
	condition 2	kW	3.04
EER	condition 1		2.81
	condition 2		3.62
Operation range (Outdoor temperature)		Heating	-20 – 43
		Cooling	15 – 43
Operation range (Water temperature)		Heating	25 – 58 (65 with immersion heater)
		Cooling	7 – 25
System water flow		ℓ/s	0.12 – 0.57
Min system water flow at 100% circulation pump speed		ℓ/s	0.24
Max current			23
Recommended fuse rating		A	30
Starting current		A	5
Deviation, incoming supply		A	-15 – +10%
Max refrigerant pipe length		m	30
Max height difference between IU and OU		m	7
Height		mm	845
Width		mm	970
Depth		mm	370 (+80 with foot rail)
Weight		kg	81
Color			Stucco White
Sound Power level *1		dB(A)	64.5
Sound Power level (silent mode)		dB(A)	62
Sound Pressure level *2		dB(A)	50
Sound Pressure level (silent mode)		dB(A)	47
Air flow		m <sup>3</sup> /min	73
Type of compressor			RMT5126MDE2
Refrigerant oil		liter	0.9 M-MA68
Heat exchanger			straight fin & inner grooved tubing
Refrigerant control			EEV
Defrost control			Reversing cycle
Fan			Propeller fan x 1
Fan motor		W	86 x 1
Shock & vibration absorber			Rubber sleeve (for compressor)
Electric heater (crankcase / base)		W	20 / 120
Safety equipment			Internal thermostat for fan motor
Power and signal line from indoor unit			3 cores 5.5mm <sup>2</sup> + 2 cores 1.5mm <sup>2</sup>
Refrigerant			R410A
Refrigerant volume (pipe length without additional charge)		kg (m)	2.9 (15)
Dimensions, refrigerant pipe		mm (inch)	Gas pipe: OD 15.88 (5/8") Liquid pipe: OD 9.52 (3/8")
Refrigerant pipe connections			Flare

**Test conditions**

		Water temperature	Ambient temperature
Heating	condition 1	45°C out / 40°Cin	7°CDB / 6°CWB
	condition 2	35°Cout / 30°Cin	
Cooling	condition 1	7°Cout / 12°Cin	35°CDB
	condition 2	18°Cout / 23°Cin	

\*1: Test condition for sound power level

Temperature condition: Heating condition 2

\*2: Test condition for sound pressure level

FDCW60VNX-A

Calculated from sound power level

FDCW71,100,140,VNX-A

Temperature condition: Heating condition 2

Mike position 1m away in front of outdoor unit at the height of 1m

### Installation requirements

Indoor unit	HMA60-S HSB60-W	HMA100-S HSB100-W	HMA100-S HSB100-W	HSB140
Outdoor unit	FDCW60VNX-A	FDCW71VNX-A	FDCW100VNX-A	FDCW140VNX-A
Max pressure, climate system	0.25MPa (2.5Bar)			
Max temperature, climate system	65°C			
Max temperature in indoor unit	65°C			
Max temperature from external heat source	65°C			
Max supply temperature with compressor	58°C			
Min supply temperature cooling	7°C			
Max supply temperature cooling	25°C			
Min volume, climate system without underfloor cooling application	50 l	50 l	80 l	150 l
Min volume, climate system with underfloor cooling application	80 l	80 l	100 l	150 l
Max flow, climate system	0.29 l/s	0.38 l/s	0.57 l/s	0.79 l/s
Min flow, climate system	0.12 l/s	0.19 l/s	0.29 l/s	0.39 l/s
Nominal system flow heating ( $\Delta T=5K$ )	0.29 l/s (6kW,7/45°C)	0.38 l/s (8kW,7/45°C)	0.43 l/s (9kW,7/45°C)	0.79 l/s (16.5kW,7/45°C)
Nominal system flow cooling ( $\Delta T=5K$ )	0.28 l/s (5.8kW,35/7°C)	0.34 l/s (7.1kW,35/7°C)	0.38 l/s (8kW,35/7°C)	0.56 l/s (11.8kW,35/7°C)

External circulation pump must be used when the pressure drop in the system is greater than the available external pressure. In such case, a bypass line with non-return valve must be installed.

Use an overflow valve if system flow cannot be guaranteed.