Technical specifications

Specifications

Indoor units

All in one type

Model	HMA60-W	HMA100-W
General conditions		
Power source	400V 3NAC 50Hz / 230V 1AC 50 Hz	
Max. operating current (A)	20 (400V) / 29 (230V)	20 (400V) / 36 (230V)
Recommended fuse (A)	25 (400V) / 32 (230V)	25 (400V) / 40 (230V)
Wire size (Power source)	5 x 2.5mm² (400V) / 3 x 10mm² (230V)	
Wire size (Power source and communication cable to outdoor unit)	Min. 5 x 2.5 mm² (PE, L, N, signal, signal)	
Power source deviation (%)	-15 – +10	
Power factor	0.99	
Pipe size refrigerant (ref) Gas	OD12.7 (1/2")	OD15.88 (5/8")
Pipe size refrigerant (ref) Liquid	OD6.35 (1/4")	OD9.52 (3/8")
Flare connection	OD6.35 (9.1mm); OD9.52 (13.2mm); OD12.7 (16.6mm); OD15.88 (19.7mm)	
Indoor unit (split type, hydro-unit)		
Immersion heater	Max. 9 kW (6kW for single-phase 230V)	
Capacity steps heater	3 (3,6,9kW) for three-phase 400V 3 (1.5, 3, 6kW) for single-phase 230V	
Pump model	Wilo-Para G 15/75	
Pump control	Variable	
Pump capacity, max. head	76 kPa (external)	
Pump capacity, max. flow	4 m^3/h	
Pump power	5 – 75W	
Pump efficiency, max.	EEI≤0.21	
Heat exchanger	ACH18-52H-F	ACH-30EQ-80H-F
Heat exchanger size	–0.9 m^2	–1.8 m^2
Pressure transmitter	0 – 4.6 MPa, deviation ±3%	
Water strainer system	0.6 mm^2	
Filter drier refrigeration system	Bi-flow 083	
Emergency thermostat	5 – 65 °C	
Thermal cut-off	92 (-6) °C or 98 (-8) °C	
Motor valve on hydraulic circuit	2 x 3-way, ball type	
Actuator	230V 50Hz	
Safety relief valve system	0.3 MPa	
Manometer gauge	0 – 0.4 MPa	
Expansion vessel	10L	
Expansion vessel, Factory precharge	0.5 +/- 0.15bar	
IP Grade	IP21	
Volume total	180L ±5%	
Volume coil	4.8L	
Area coil	1.6m^2	
Material coil	Steel untreated S235JR	
Material tank	Enamelled steel S235JR 3.0 mm	

Model		HMA60-W	HMA100-W
Cabinet	Top/side/ front bottom	EN10130 DC01	
	Back	DX51D+Z275	
Material	Top/side/ front bottom	Steel 0.7mm	
	Back	Galvanized steel 275g/m^2	
Color (powder coated 1 layer)	Top/side/ front bottom	RAL9016, white	
	Back	Untreated	
Isolation heat exchanger		Synthetic rubber (+110 / -50°C)	
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 22mm	
Connection sanitary hot water		Compression fitting 22mm	
Sound power level L WA indoors		35dB	
Type of refrigerant (outdoor unit)		R32 or R410A	
Minimal system temperature in cooling mode		7°C	
Design pressure on product (heating system)		0.3 MPa	
Height, (adjustment)		1715mm +(20 – 40mm)	
Width		600mm	
Depth		610mm	
Weight net/gross		155 kg / 168 kg	165 kg / 178 kg
Weight packaging: Wood		7.5 kg	
Weight packaging: EPS		0.2 kg	
Weight packaging: cardboard		4.2 kg	
Weight packaging: Plastics		0.4 kg	
Weight packaging: Metal		0.7 kg	
Packaging volume /dimensions		0.88 m^3 (1894 x 670 x 690mm)	
Part number MHI AE		MCD001A021	MCD001A022
Enclosed			
			Flare Nut, reducing, 1/4" tube x 3/8" flare
		1 x Safety kit with safety valve, manometer and automatic air vent; insulated	
		1 x Strap for single-phase connection	
		1 x Outdoor sensor	
		1 x Indoor sensor	
		3 x Current sensor	
		Shut off valve with strainer	
		2 × Temperature sensor L=1450	

Model	HMA60-W	HMA100-W
Miscellaneous		
Ambient area of operation (outdoor unit)	- 20 — +43°C	
Internet connection function	(Straight, cat.5e UTP) RJ45 plug	
Language	English (en), Swedish (sv), German (de), French (fr), Spanish (es), Finnish (fi), Lithuanian (Lt), Czech (cz), Polish (pl), Dutch (nl), Danish (da), Estonian (et), Latvian (lv), Russian (ru), Italian (lt), Slovenian (sl), Greek (gr), Romanian (ro), Portuguese (pt)	

Outdoor units

Adapted to **RoHS** directive

Model				FDCW60VNX-W
Indoor unit heat exchanger				ACH18-52H-F
Power source				1 phase 230V 50Hz
Heating nominal capacity	condition 1		kW	2.70 (2.70 — 8.00)
	condition 2	High capacity	kW	5.08 (0.90 — 7.60)
		Low capacity	kW	2.64
Heating power consumption	condition 1		kW	0.88
	condition 2	High capacity	kW	0.99
		Low capacity	kW	0.49
COP	condition 1			3.06
	condition 2	High capacity		5.16
		Low capacity		5.42
Cooling nominal capacity	condition 1		kW	5.31 (0.60 — 6.30)
	condition 2		kW	7.54 (1.20 — 7.80)
Cooling power consumption	condition 1		kW	1.95
	condition 2		kW	2.11
EER	condition 1			2.73
	condition 2			3.57
Operation range (Outdoor air temperature)		Heating	°C	-20 — 43
		Cooling	°C	15 — 43
Operation range (Water temperature)		Heating	°C	25 — 58 (65 with immersion heater)
		Cooling	°C	7 — 25
System water flow			L/s	0.09 — 0.29
Min. system water flow at 100% circulation pump speed			L/s	0.19
Max. current			A	15
Recommended fuse rating			A	20
Starting current			A	5
Deviation, incoming supply				-15 — +10%
Max. refrigerant pipe length			m	30
Max. height difference between IU and OU			m	20
Outdoor unit	Height		mm	640
	Width		mm	800
	Depth		mm	290
	Weight		kg	46
	Color			Stucco white
	IP grade			IPX4
	Sound power level*1		dB(A)	52
	Sound power level (Silent mode)		dB(A)	56
	Sound power level (Max.)		dB(A)	65
	Sound pressure level		dB(A)	44
	Air flow (Cooling/Heating)		m^3/min	41.5/39.0
	Type of compressor			RMT5113SWE11 (Twin rotary type)
	Starting method			Direct line start
	Refrigerant oil		liter	0.45 M-MB75
	Heat exchanger			M shape fin & inner grooved tubing
	Ref control			Capillary tube+EEV
	Defrost control			Reversing cycle
	Fan			Propeller fan x 1
	Fan motor		W	34 x 1
	Shock & vibration absorber			Rubber sleeve (for compressor)
	Electric heater (crankcase/base)		W	-/110
	Safety equipment			Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection
	Power and signal line from indoor unit			3 cores 2.0mm^2 + 2 cores 1.5mm^2
	Refrigerant			R32
	Refrigerant volume (pipe length without additional charge)		kg (m)	1.30 (15)
	Additional refrigerant charge		kg/m	0.02
	Dimensions, refrigerant pipe		mm (inch)	Gas pipe: OD 12.7 (1/2"), Liquid pipe: OD 6.35 (1/4")
	Refrigerant pipe connections			Flare
	Drain			Hole size: ϕ20 × 5 pcs.
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Part number MHIAE			PCA003F147

Test conditions

		Water temperature	Outdoor air temperature
Heating	condition 1	45°Cout / 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, Low capacity
*2: Test condition for sound pressure level
Mike position 1m away in front of outdoor unit at the height of 1m

Installation requirements

Indoor unit	HMA60-W	HMA100-W
Outdoor unit	**FDCW60VNX-W**	**FDCW71VNX-W**
Highest recommended supply / return temperature	55/45°C	
Max. pressure, climate system	0.3MPa (3.0 bar)	
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	60°C
Min. supply temperature cooling	7°C	
Max.supply temperature cooling	25°C	
Min. volume, climate system without under floor cooling application	50L	80L
Min. volume, climate system with under floor cooling application	50L	80L
Max. flow, climate system	0.29L/s	0.38L/s
Min. flow, climate system	0.09L/s	0.19L/s
Nominal system flow heating (△T=5K)	0.29L/s (6kW, 7/45°C)	0.38L/s (8kW, 7/45°C)
Nominal system flow cooling (△T=5K)	0.29L/s (6kW, 35/7°C)	0.34L/s (7.1kW, 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.

Indoor unit	HMS60-W	HMS100-W
Outdoor unit	**FDCW60VNX-W**	**FDCW71VNX-W**
Highest recommended supply / return temperature	55/45°C	
Max. pressure, climate system	0.3MPa (3.0bar)	
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	60°C
Min. supply temperature cooling	7°C	
Max. supply temperature cooling	25°C	
Min. volume, climate system without under floor cooling application	50L	80L
Min. volume, climate system with under floor cooling application	50L	80L
Max. flow, climate system	0.29L/s	0.38L/s
Min. flow, climate system	0.09L/s	0.19L/s
Nominal system flow heating (△T=5K)	0.29L/s (6kW, 7/45°C)	0.38L/s (8kW, 7/45°C)
Nominal system flow cooling (△T=5K)	0.29L/s (6kW, 35/7°C)	0.34L/s (7.1kW, 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.