

HWA1-A 0140÷0285

HWA1-A/H 0140÷0285*

Air cooled liquid chiller and reversable heat pump for outdoor installation

40 kW÷85 kW

Air cooled liquid chillers and reversible heat pumps, with scroll compressors, axial fans with inverter control (except cooling only version), high performances plate heat exchanger, circulating pump, connectable with Hi-Touch remote controller.

Models widely used for replacing old units or to be installed on new systems.



(*) Eurovent certified product range



Technical Features

- Hot-galvanised thick sheet metal frame.
- Scroll ermetic 3-phase compressor complete with integral protection module.
- Axial fan type AC, which allows condensation control up to 0°C.
- Microchannel aluminium condensation coil (cooling only) and Louve with splitted circuits (heat pump version).
- Evaporator.
- Frontal electrical panel.
- Microprocessor with overheating control logic program.
- Refrigerant circuit manufactured according to the UNI EN 13134 directive.
- High and low pressure transducers, with values that can be shown on the display.
- Water circuit in copper tubing.
- Standard equipped with control and protection devices.

Fitted accessories

C	Ducted version	KA1	Anti-frost heater on plate exchanger
CM	Modbus interface RS485 activation	PS	Single circulating pump with high pump head
DSFR	Sequence control device, phase failure + Minimum and Maximum voltage relay	SL	Standard silencing
EC	EC inverter fan, modulating up to -15°C air (standard on 0285 cooling only and 0273, 0285 heat pump)	SSL	Super silencing with EC fan and condensing control down to -15 °C
GI	Internal hardware extension module	TR1	Micro-channel coil with Aero surface treatment (for cooling only version HWA1-A)
IM	Magnethermic switch for compressors and fans	TR2	Cu / Al coil with Silver Line anti-corrosion treatment
KA	Plate heat exchanger + basament electrical heaters (for HWA1-A/H heat pump versions)		

Loose accessories

AG	Rubber shock absorbers	i-CR	Remote wall controller
Hi-TV415	Hi-touch controller	FY	Y-strainer

Versions

HWA1-A	Cooling only	HWA1-A/BT	Cooling only for low temperature water production
HWA1-A/H	Air cooled water chiller and reversibile heat pump	HWA1-A/C	Ductable version

Structure

With support frame, hot galvanized sheet, painted with polyurethane powder enamels at 180 ° C to ensure the best weather resistance.

Compressors

Three-phase hermetic compressors installed on rubber anti-vibrations, complete with integral protection modules with PT100 drowned in engine windings.

Fan

Special profile axial, directly connected to the external rotor motor with IP54 degree of protection, complete with overtemperature protection of the motor and grill.

Outdoor Heat Exchanger

For cooling only units, microcanal aluminum heat exchanger that guarantees:

- No galvanic corrosion (100% aluminum)
- Reduction of refrigerant charge (up to 70%)
- Long life even in very aggressive environments
- ΔP lower air side (up to 30%)
- Good refrigerant distribution thanks to the special 3-step design.

For the heat pump version: Aluminum finned pack changers with pitch type louver wedges and copper plated tubes with split circuits for maximum evaporative efficiency and undercooling circuit to increase refrigeration capacity.

Plant side Heat Exchanger

Plate type, stainless steel plates AISI 304, braided type.

Electric panel

Includes: General disconnecter with door lock, fuses, fan and pump compressor remote sensors, electronic board for the management of all Analogic Input and Output, Digital Input and Output.

Control System (Microprocessor)

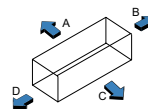
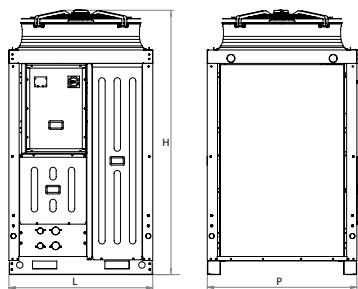
The units are equipped with a microprocessor that adopts a logic program and regulates the overheating through an electronic thermostatic valve monitored by the pressure transducer signals and temperature sensors. The CPU also manages the following functions: water temperature control, antifreeze protection, high and low pressure protection, compressor timing adjustment, alarm management and alarm, operating LEDs. On request, the microprocessor can be connected to a BMS remote control system.

Refrigerant circuit

The refrigerant circuit was built according to the UNI EN 13134 standard for welding procedures. The refrigerant used is R410A. The basic refrigerant circuit includes: electronic expansion valve, liquid separator, liquid receiver, maintenance and control valves, pressure regulator according to PED regulation, pressure transducers for precise setting of evaporation and condensing pressures, High capacity drier filter. In addition to the heat pump versions: the 4-way switch valve, the VEE capacity extension solenoid valve and 4 switching valves to allow installation of any heat recuperators.

Hydraulic circuit

The copper pipe circuit includes: service valve and flow switch, antifreeze sensor installed on the water supply pipe to the plant, safety valve, drain cock, air vent valve and pressure gauge.



Dimensions		0140	0147	0260	0273	0285
L	mm	1125	1125	1125	1125	1125
P	mm	1170	1170	1170	1170	1170
H	mm	2040	2040	2070	2070	2070

Minimum clearances		0140	0147	0260	0273	0285
A Frontal Panel	mm	800	800	800	800	800
D	mm	800	800	800	800	800
B	mm	200	200	800	800	800
C	mm	600	600	600	600	600

HWA1-A		0140	0147	0260	0273	0285
Cooling						
Cooling capacity (1)	kW	39,7	46,8	60,8	73,3	86,5
Power input (1)	kW	12,5	15,1	19,3	24,8	29,3
EER (1)	W/W	3,16	3,11	3,16	2,95	2,96
Cooling capacity (2)	kW	54,4	63,5	81,9	99,4	116,3
Power input (2)	kW	14,3	17,0	21,9	28,0	33,3
EER (2)	W/W	3,80	3,74	3,75	3,55	3,50
SEER (3)	W/W	3,80	3,80	4,05	3,98	4,14
Cooling capacity (8)	kW	22,7	27,0	36,2	42,9	51,1
Power input (8)	kW	11,4	13,5	16,9	22,1	25,7
EER (8)	W/W	1,99	2,01	2,14	1,94	1,99
Water flow (1)	L/s	1,90	2,24	2,92	3,51	4,14
Pressure drop (1)	kPa	54,08	51,68	56,79	46,43	50,41
Compressor						
Type		Scroll	Scroll	Scroll	Scroll	Scroll
Compressors	n°	1	1	2	2	2
Refrigerant circuits	n°	1	1	1	1	1
Refrigerant charge (4)	kg	7,8	7,8	12,8	13,4	14,6
Fan						
Nominal air flow Y/Δ	m³/s	4,04/5,32	3,88/5,23	4,15/5,44	4,86/6,01	7,4
Hydraulic circuit						
Max pressure hydronic kit	bar	6	6	6	6	6
Water connections	inch	2"	2"	2"	2"	2"
Min. water volume (5)	L	330	380	260	380	490
Sound level						
Sound power (6)	dB(A)	81	81	82	83	84
Sound pressure (7)	dB(A)	49,3	49,3	50,3	51,3	52,3
Electrical data						
Power supply		400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz
Max. power input	kW	17,0	21,5	28,0	35,0	43,0
Max. current input	A	28,0	38,0	45,0	56,0	71,0
Weight						
Gross weight	kg	365	375	470	495	510
Operation weight	kg	350	360	455	480	495

Operating conditions:

- (1) Internal exchanger water temp.=12/7 ° C, air entering the external heat exchanger 35° C.
- (2) Internal exchanger water temp.=23/18 ° C, air entering the external heat exchanger 35° C.
- (3) Internal exchanger water reference temperature = 12/7 ° C.
- (4) Indicative data and subject to change. For the correct data, always refer to the technical label on the unit.
- (5) The calculated value of minimum volume of water at the plant does not consider the volume of water contained in the internal exchanger (evaporator). With low external air temperature applications or low average loads required, the minimum volume of water to the system is obtained by doubling the indicated value.

(6) Condition (3); value determined on the basis of measurements carried out in accordance with the UNI EN ISO 9614-2 standard, in compliance with the requirements of the Eurovent certification.

(7) Value calculated from the sound power level using ISO 3744: 2010, referred to 10 m distance from the unit.

(8) Cooling version BT: outdoor air temperature 35 ° C, internal exchanger water temperature = -3 / -8 ° C. Fluid treated with 35% ethylene glycol.

N.B. The performance data are indicative and could be subject to change. In addition, the performances declared in apex (1), (2), and (8) refer to the instantaneous power according to EN 14511. The declared data stated in the apex (6) is determined according to the UNI EN 14825.

HWA1-A/H		0140	0147	0260	0273	0285
Cooling						
Cooling capacity (1)	kW	38,6	45,6	58,6	71,2	80,2
Power input (1)	kW	13,0	15,7	19,9	24,6	29,2
EER (1)	W/W	2,97	2,91	2,94	2,90	2,75
Cooling capacity (2)	kW	51,8	60,6	77,7	94,1	106,4
Power input (2)	kW	14,7	17,6	22,6	28,0	33,3
EER (2)	W/W	3,53	3,43	3,43	3,37	3,20
SEER (5)	W/W	3,82	3,8	3,94	3,98	4,07
Water flow (1)	L/s	1,86	2,20	2,83	3,41	3,84
Pressure drop (1)	kPa	55,8	56,6	61,5	63,7	66,6
Heating						
Heating capacity (3)	kW	43,5	48,2	64,1	80,9	88,7
Power input (3)	kW	10,7	12,3	15,6	20,0	22,7
COP (3)	W/W	4,05	3,92	4,10	4,05	3,90
Heating capacity (4)	kW	42,1	47,8	63,0	74,9	84,6
Power input (4)	kW	12,8	14,8	18,8	23,3	28,5
COP (4)	W/W	3,28	3,23	3,35	3,22	2,97
SCOP (6)	W/W	3,49	3,34	3,85	3,84	3,70
Water flow (4)	l/s	2,02	2,30	3,03	3,60	4,07
Use side heat exchanger load losses (4)	kPa	84,4	81,6	84,1	81,5	84,1
Energy efficiency (Water 35°C)		A+	A+	A++	A++	A+
Compressor						
Type		Scroll	Scroll	Scroll	Scroll	Scroll
Compressors	n°	1	1	2	2	2
Refrigerant circuits	n°	1	1	1	1	1
Refrigerant charge (7)	kg	9,98	9,98	14	15,25	15,6
Fan						
Nominal air flow	m ³ /s	4,3	5,3	6,3	6,9	7,4
Hydraulic circuit						
Max pressure hydronic kit	bar	6	6	6	6	6
Water connections	inch	2"	2"	2"	2"	2"
Min. water volume (8)	L	330	380	260	380	490
Sound level						
Sound power (9)	dB(A)	84	85	89	88	88
Sound pressure (10)	dB(A)	52,3	53,3	56,3	56,3	56,3
Electrical data						
Power supply		400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz
Max. power input	kW	17,0	21,5	28,0	35,0	43,0
Max. current input	A	28,0	38,0	45,0	56,0	71,0
Weight						
Gross weight	kg	400	420	520	545	555
Operation weight	kg	390	410	505	530	540

Data referred to the following condition:

(1) Cooling: outdoor air temperature 35°C; water temperature inlet/outlet 12/7°C.

(2) Cooling: outdoor air temperature 35°C; water temperature inlet/outlet 23/18°C.

(3) Heating: outdoor air temperature 7°C d.b. 6°C w.b.; water temperature inlet/outlet 30/35°C.

(4) Heating: outdoor air temperature 7°C d.b. 6°C w.b.; water temperature inlet/outlet 40/45°C.

(5) Internal exchanger water reference temperature = 12/7 ° C.

(6) Heating: average climatic conditions; T_{biv} = -7 ° C; Water Temp in/out 30/35 ° C.

(7) Indicative data and subject to change. For the correct data, always refer to the technical label on the unit.

(8) The calculated value of minimum volume of water at the plant does not consider the volume of water contained in the internal exchanger (evaporator). With low external air temperature applications or low average loads required, the minimum volume of water to the system is obtained by doubling the indicated value.

(9) Condition (3); value determined on the basis of measurements carried out in accordance with the UNI EN ISO 9614-2 standard, in compliance with the requirements of the Eurovent certification.

(10) Value calculated from the sound power level using ISO 3744: 2010, referred to 10 m distance from the unit.

N.B. The performance data are indicative and could be subject to change. In addition, the performances declared in apex (1), (2), and (8) refer to the instantaneous power according to EN 14511. The declared data stated in the apex (6) is determined according to the UNI EN 14825.