

SMART HP: Air / water reversible heat pumps
for outdoor installation, equipped with scroll compressor and axial fans
Cooling Capacity: **4,5 ÷ 46,2 kW**
Heating Capacity: **5,9 ÷ 56,0 kW**



smart hp

rcgroupairconditioning



MAIN FEATURES

- Air / water reversible heat pump
- 18 models available, for a wide selection opportunity.
- Average step of 10kW.
- EER up to 2,75.
- COP up to 3,63.
- ESEER up to 3,40.
- Scroll compressor.
- R410A Refrigerant charge.
- Single air circuit.
- Plate type heat exchanger.
- Axial fans AC.
- Single air circuit.
- Suitable for outdoor installation.

MAIN BENEFITS

- High COP and ESEER.
- Availability of pumping groups..
- Easily of maintenance.
- Eurovent Certification.

OUTDOOR INSTALLATION

The machines are made with weather resistant materials and suitable for outdoor installation.

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: -8÷18°C
Ambient temperature: -10÷46°C

WORKING LIMITS IN HEATING MODE

Hot water outlet temperature: 25÷50°C
Ambient temperature: -7÷20°C

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSORS

- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Terminal box with IP54 enclosure class.
- Rubber supports.

PLANT HEAT EXCHANGER

- Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel:
- Anticondensate insulation made of neoprene.
- Temperature sensors on water inlet and outlet.
- Differential water pressure switch for water flow control.
- Antifreeze heater.

AIR/GAS HEAT EXCHANGER

- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Frame in galvanized steel.

FANS SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- External rotor AC type electric motor with stepless variable speed for condensing pressure control.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

- Reversing valve for refrigerant circuit inversion.
- Double thermostatic expansion valve.
- Liquid receiver.
- Check valve.
- Sight glass.
- Filter dryer on liquid line.
- Safety valve on high and low pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- R410A refrigerant charge.

HYDRAULIC ASSEMBLY

- 3 speed water pump from model M5 to model T15, both included.
- Single speed water pump from model T19 to model T49, both included.
- Expansion tank.
- Safety valve.
- Manual filling assembly.
- Pressure gauge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:

- Main switch with door lock safety from model T19 included.
- Contactors for compressor..
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply: 230/1/50 for M models
- Power supply: 400/3/50+N for T models

CONTROL SYSTEM

- Microprocessor control. The system includes:
 - Display for the visualization of the alarm codes, set values and temperature values.
 - Dynamic set point.
 - Compressor running hour meter.
 - Contact for general alarm remotization.
 - "Low Temperature" set for operation with chilled water production up to -10°C.
 - Menu with protection password.

OPTIONAL ACCESSORIES

SMART HP	M5	M6	M7	M9	M11	T6	T7	T9	T11	T13	T15
1004 - Condensate collecting pan	-	-	-	-	-	-	-	-	-	-	-
1003 - Water mesh filter (kit)	•	•	•	•	•	•	•	•	•	•	•
764 - Water tank	•	•	•	•	•	•	•	•	•	•	•
765 - Pipes water tank (kit)	•	•	•	•	•	•	•	•	•	•	•
117 - Low water temperature set	•	•	•	•	•	•	•	•	•	•	•
171 - Rubber antivibration holders (kit)	•	•	•	•	•	•	•	•	•	•	•
250 - Coils protection nets (kit)	-	-	-	-	-	-	-	-	-	-	-
920 - Remote control kit	•	•	•	•	•	•	•	•	•	•	•
924 - Serial board RS485 (kit)	-	-	-	-	-	-	-	-	-	-	-
889 - Master plant SEQUENCER	•	•	•	•	•	•	•	•	•	•	•
962 - Kit modem GSM	•	•	•	•	•	•	•	•	•	•	•
957 - Plantwatch without modem	•	•	•	•	•	•	•	•	•	•	•
930 - Remote graphic terminal kit	•	•	•	•	•	•	•	•	•	•	•

SMART HP	T19	T22	T26	T33	T35	T40	T49
1004 - Condensate collecting pan	•	•	•	•	-	-	-
1003 - Water mesh filter (kit)	•	•	•	•	•	•	•
764 - Water tank	•	•	•	•	-	-	-
765 - Pipes water tank (kit)	•	•	•	•	-	-	-
117 - Low water temperature set	•	•	•	•	•	•	•
171 - Rubber antivibration holders (kit)	•	•	•	•	•	•	•
250 - Coils protection nets (kit)	•	•	•	•	•	•	•
920 - Remote control kit	•	•	•	•	•	•	•
924 - Serial board RS485 (kit)	-	-	-	-	•	•	•
889 - Master plant SEQUENCER	•	•	•	•	•	•	•
962 - Kit modem GSM	•	•	•	•	•	•	•
957 - Plantwatch without modem	•	•	•	•	•	•	•
930 - Remote graphic terminal kit	•	•	•	•	•	•	•

• available accessory; - not available accessory

TECHNICAL DATA SMART HP

SMART HP		M5	M6	M7	M9	M11	T6	T7	T9	T11
Summer working mode - Cooling capacity (1) kW		4,5	5,5	6,8	8,4	10,9	5,7	6,7	8,7	11,1
Unit power input	kW	2,3	2,1	2,6	3,3	4,6	2,1	2,6	3,3	4,4
Plant exchanger water flow rate	m ³ /h	0,8	0,9	1,2	1,4	1,9	1,0	1,1	1,5	1,9
Plant exchanger pressure drop	kPa	25	26	38	35	32	26	38	35	31
Winter working mode - Thermal capacity (2) kW		5,9	7,0	8,5	10,7	13,3	6,9	8,4	10,5	13,8
Unit power input	kW	2,4	2,1	2,6	3,4	4,6	2,1	2,6	3,2	4,3
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1	1
Axial fans AC	n.	1	1	1	1	2	1	1	1	2
Total air flow	m ³ /h	2400	3500	3500	4200	6800	3500	3500	4200	6800
Air circuits	n.	1	1	1	1	1	1	1	1	1
Pumping group										
3-speed water pump	kW	0,22	0,22	0,22	0,22	0,22	0,22	0,22	0,22	0,22
Single speed water pump	kW	--	--	--	--	--	--	--	--	--
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Total refrigerant charge (optional excluded)	kg	1,5	1,8	2,9	3,0	3,0	1,8	2,9	3,0	3,0
Gas circuits	n.	1	1	1	1	1	1	1	1	1
Power supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max unit operating current (FLA)	A	17,0	17,0	20,0	24,0	32,0	6,5	7,0	9,0	12,0
Unit starting current (LRA)	A	59,9	62,0	83,0	101,8	135,8	36,8	40,8	49,0	66,0
EER (1)	kW/kW	1,97	2,56	2,62	2,56	2,36	2,63	2,57	2,65	2,51
COP (2)	kW/kW	2,79	3,06	3,14	3,31	3,04	3,01	3,13	3,23	3,56
ESEER		2,43	3,25	3,32	3,17	2,88	3,33	3,25	3,27	3,18
Sound power level [Lw] (3)	dB(A)	64,0	68,9	69,5	69,5	72,8	68,9	69,5	69,5	72,8
Average sound pressure level [Lpm] (4)	dB(A)	50,1	55,1	55,1	55,1	58,0	55,1	55,1	55,1	58,0
Net weight	kg	90	95	110	115	140	95	110	115	140
Hydraulic connections										
Evaporator IN/OUT – ISO 228/1 – G	Ø	3/4"	3/4"	3/4"	3/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
OPT Additional 3-speed water pump	kW	--	--	--	--	0,22	--	--	--	0,22
Water tank - volume	l	30	30	30	30	30	30	30	30	30

SMART HP		T13	T15	T19	T22	T26	T33	T35	T40	T49
Summer working mode - Cooling capacity (1) kW		12,9	14,9	18,7	20,1	24,5	31,5	32,0	36,6	46,2
Unit power input	kW	4,8	5,7	7,1	8,4	9,2	12,3	11,6	14,0	17,9
Plant exchanger water flow rate	m ³ /h	2,2	2,6	3,2	3,5	4,2	5,4	5,5	6,3	7,9
Plant exchanger pressure drop	kPa	35	34	40	40	45	43	38	39	41
Winter working mode - Thermal capacity (2) kW		15,6	18,1	23,0	24,8	30,0	38,9	38,4	44,3	56,0
Unit power input	kW	4,7	5,6	7,1	8,3	9,1	12,1	11,3	13,9	17,7
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1	1
Axial fans AC	n.	2	2	2	2	3	3	2	2	2
Total air flow	m ³ /h	6800	6400	7000	7000	10500	10500	14000	16000	19000
Air circuits	n.	1	1	1	1	1	1	1	1	1
Pumping group										
3-speed water pump	kW	0,22	0,22	--	--	--	--	--	--	--
Single speed water pump	kW	--	--	0,55	0,55	0,55	0,55	0,55	0,55	0,75
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Total refrigerant charge (optional excluded)	kg	4,0	4,6	6,3	7,0	8,6	8,7	8,9	9,3	10,3
Gas circuits	n.	1	1	1	1	1	1	1	1	1
Power supply	V/Ph/Hz	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Max unit operating current (FLA)	A	13,8	17,0	18,0	23,0	24,9	29,9	32,6	39,6	45,6
Unit starting current (LRA)	A	66,0	76,0	100,8	116,8	124,7	146,7	149,4	183,4	235,4
EER - Eurovent standard (1)	kW/kW	2,70	2,61	2,62	2,38	2,66	2,57	2,75	2,61	2,58
COP - Eurovent standard (2)	kW/kW	3,26	3,35	3,47	3,32	3,41	3,63	3,4	3,35	3,31
ESEER		3,31	3,24	3,22	2,98	3,31	3,22	3,40	3,18	3,17
Sound power level [Lw] (3)	dB(A)	72,8	73,3	78,5	78,6	77,5	77,5	80,4	81,3	85,5
Average sound pressure level [Lpm] (4)	dB(A)	58,0	58,2	63,0	63,1	62,1	62,1	64,3	65,1	69,1
Net weight	kg	160	170	265	270	340	345	355	360	440
Hydraulic connections										
Evaporator IN/OUT – ISO 228/1 – G	Ø	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"
OPT Additional 3-speed water pump	kW	0,22	0,22	--	--	--	--	--	--	--
Water tank - volume	l	30	30	60	60	60	60	--	--	--

1. Referred to chiller water temperature 12/7°C; 35°C ambient temperature according to Eurovent standard.
2. Referred to hot water temperature 40/45°C; 7°C ambient temperature according to Eurovent standard.
3. Sound power level [Lw] according to ISO EN 9614 – 2.
4. Average sound pressure level [Lp_m] 1m far according to ISO EN 3744.

DIMENSIONS (mm)

SMART HP		M5	M6	M7	M9	M11	T6	T7	T9	T11	T13	T15	T19	T22	T26	T33	T35	T40	T49
a	mm	900	900	900	900	900	900	900	900	900	900	900	1450	1450	1450	1450	1508	1508	1758
b	mm	370	370	370	370	370	370	370	370	370	370	420	550	550	550	550	613	613	613
c	mm	640	640	940	940	1240	640	940	940	1240	1240	1390	1200	1200	1700	1700	1700	1700	1700

