

SMART 2 HP

Packaged air/water reversible heat pumps for outdoor installation.

Cooling Capacity: 5 ÷ 46 kW

Heating Capacity: 6 ÷ 56 kW



Scroll compressor

Axial fans

EER up to 2,62

COP up to 3,35

ESEER up to 3,18



SMART 2 HP: Air / water reversible heat pumps
for outdoor installation, equipped with scroll compressor and axial fans
Cooling Capacity: $5 \div 46 \text{ kW}$
Heating Capacity: $6 \div 56 \text{ kW}$



SMART 2 HP



MAIN FEATURES

- Air / water reversible heat pump
- 18 models available, for a wide selection opportunity.
- Average step of 10kW.
- EER up to 2,62.
- COP up to 3,35.
- ESEER up to 3,18.
- 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.
- Up to A+ Class. ErP 2015.

OUTDOOR INSTALLATION

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

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: $-8 \div 18^{\circ}\text{C}$
Ambient temperature: $-10 \div 46^{\circ}\text{C}$

WORKING LIMITS IN HEATING MODE

Hot water outlet temperature: $25 \div 50^{\circ}\text{C}$
Ambient temperature: $-7 \div 20^{\circ}\text{C}$

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.
- Anti-condensate tray for model T40 and T49.
- 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.

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 2 HP	M6	M7	M9	M11	T6	T7	T9	T11	T13	T15
733 - Water pump	•	•	•	•	•	•	•	•	•	•
764 - Water tank	•	•	•	•	•	•	•	•	•	•
765 - Pipes water tank (kit)	•	•	•	•	•	•	•	•	•	•
117 - Low water temperature set	•	•	•	•	•	•	•	•	•	•
1004 - Condensate collecting tray	-	-	-	-	-	-	-	-	-	-
250 - Coils protection nets (kit)	-	-	-	-	-	-	-	-	-	-
1003 - Water mesh filter (kit)	•	•	•	•	•	•	•	•	•	•
171 - Rubber antivibration holders (kit)	•	•	•	•	•	•	•	•	•	•
920 - Remote control kit	•	•	•	•	•	•	•	•	•	•
923 - RC-Com MBUS/JBUS Serial board	-	-	-	-	-	-	-	-	-	-

SMART 2 HP	T19	T22	T26	T33	T40	T49
733 - Water pump	•	•	•	•	•	•
764 - Water tank	•	•	•	•	-	-
765 - Pipes water tank (kit)	•	•	•	•	-	-
117 - Low water temperature set	•	•	•	•	•	•
1004 - Condensate collecting tray	•	•	•	•	-	-
250 - Coils protection nets (kit)	•	•	•	•	•	•
1003 - Water mesh filter (kit)	•	•	•	•	•	•
171 - Rubber antivibration holders (kit)	•	•	•	•	•	•
920 - Remote control kit	•	•	•	•	-	-
923 - RC-Com MBUS/JBUS Serial board	-	-	-	-	•	•

• available accessory; - not available accessory

TECHNICAL DATA SMART 2 HP

SMART 2 HP		M6	M7	M9	M11	T6	T7	T9	T11
Seasonal energy efficiency class (*) 		A	A	A	A	A	A+	A	A
Summer working mode - Cooling capacity (1) kW		4,8	5,9	7,3	9,6	4,8	6,0	7,4	10,0
Unit power input	kW	1,8	2,3	3,2	3,6	1,8	2,2	2,9	3,7
Plant exchanger water flow rate	m³/h	0,8	1,0	1,3	1,6	0,8	1,0	1,3	1,7
Plant exchanger pressure drop	kPa	7	8	8	18	7	9	8	18
Winter working mode - Thermal capacity (2) kW		6,7	8,3	10,4	12,8	6,7	8,2	9,9	13,2
Unit power input	kW	2,3	2,9	3,6	4,5	2,3	2,8	3,3	4,6
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1
Axial fans AC	n.	1	1	1	2	1	1	1	2
Total air flow	m³/h	3000	3400	3400	6450	3000	3400	3400	6450
Air circuits	n.	1	1	1	1	1	1	1	1
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Total refrigerant charge (optional excluded)	kg	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
Power supply	V/Ph/Hz	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	16,6	19,6	23,6	27,6	6,1	6,6	8,6	10,6
Unit starting current (LRA)	A	61,6	82,6	97,6	131,3	32,6	35,6	48,6	65,3
EER (1)	kW/kW	2,40	2,37	2,15	2,44	2,44	2,54	2,38	2,44
COP (2)	kW/kW	2,95	2,87	2,94	2,89	2,95	3,00	3,01	2,90
ESEER		2,89	2,92	2,70	2,86	3,00	3,14	2,88	2,94
Sound power level [Lw] (3)	dB(A)	66	66	66	69	66	66	66	69
Average sound pressure level [Lpm] (4)	dB(A)	52	52	52	54	52	52	52	54
Net weight	kg	95	110	115	140	95	110	115	140
Hydraulic connections									
Evaporator IN/OUT – ISO 228/1 – G	Ø	1"	1"	1"	1 1/4"	1"	1"	1"	1 1/4"

SMART 2 HP		T13	T15	T19	T22	T26	T33	T40	T49
Seasonal energy efficiency class (*) 		A	A	A	A	A	A	A	A
Summer working mode - Cooling capacity (1) kW		11,1	13,0	15,9	18,4	22,3	27,1	31,8	39,4
Unit power input	kW	4,2	4,7	6,0	7,4	8,0	10,8	12,2	15,7
Plant exchanger water flow rate	m³/h	1,9	2,2	2,7	3,2	3,8	4,7	6,3	7,9
Plant exchanger pressure drop	kPa	19	18	21	20	24	24	49	25
Winter working mode - Thermal capacity (2) kW		14,6	17,1	21,2	24,4	29,4	35,5	41,6	51,6
Unit power input	kW	4,8	5,7	6,8	7,8	9,5	11,3	13,9	17,7
Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Quantity	n.	1	1	1	1	1	1	1	1
Capacity steps	n.	1	1	1	1	1	1	1	1
Axial fans AC	n.	2	2	2	2	3	3	2	2
Total air flow	m³/h	6000	6350	6800	6800	10200	10200	16000	19000
Air circuits	n.	1	1	1	1	1	1	1	1
Refrigerant		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	9,3	10,3
Gas circuits	n.	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
Max unit operating current (FLA)	A	12,4	15,6	16,8	18,8	22,2	31,6	39,6	45,6
Unit starting current (LRA)	A	65,3	75,3	102,3	129,3	140,9	141,9	183,4	235,4
EER (1)	kW/kW	2,44	2,55	2,47	2,34	2,60	2,37	2,33	2,30
COP (2)	kW/kW	3,08	3,04	3,15	3,15	3,14	3,19	3,06	3,01
ESEER		2,78	3,00	2,89	2,77	3,05	2,83	3,99	3,84
Sound power level [Lw] (3)	dB(A)	69	69	74	74	76	76	81	85
Average sound pressure level [Lpm] (4)	dB(A)	54	54	59	59	60	60	65	69
Net weight	kg	160	170	265	270	340	345	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. Referred to chiller water temperature 12/7°C; 35°C ambient temperature.

2. Referred to hot water temperature 40/45°C; 7°C ambient temperature.

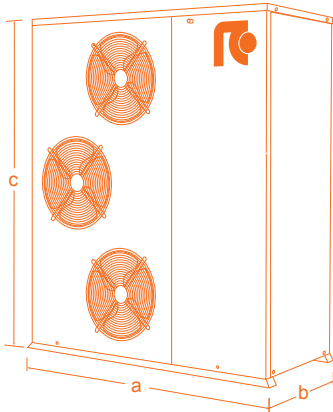
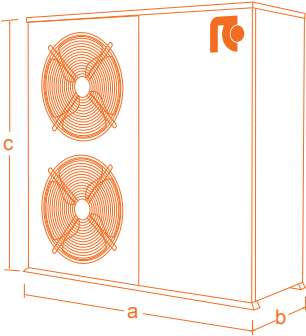
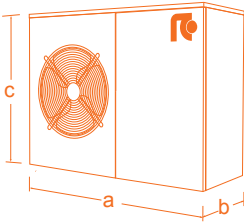
3. Sound power level [Lw] according to ISO EN 9614 – 2.

4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.

(*)  Seasonal energy efficiency class according to energy label directive 2010/30/EU and EU regulation 811/2013.

DIMENSIONS (mm)

SMART 2 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





for a greener tomorrow

Eco-Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



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