

SMART: Air cooled liquid chillers
for outdoor installation, equipped with scroll compressor and axial fans
Cooling Capacity: **4,9 ÷ 46,2 kW**



smart

rcgroupairconditioning



MAIN FEATURES

- Air cooled liquid chiller.
- 18 models available, for a wide selection opportunity.
- Average step of 10kW.
- EER up to 3,33.
- ESEER up to 4,10.
- 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 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



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.

EVAPORATOR

- 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.

CONDENSING COIL

- 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

- Thermostatic expansion 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 -8°C.
 - Menu with protection password.

OPTIONAL ACCESSORIES

SMART	M5	M6	M7	M9	M11	T6	T7	T9	T11	T13	T15
Condensate collection pan	-	-	-	-	-	-	-	-	-	-	-
1003 - Water mesh filter (kit)	•	•	•	•	•	•	•	•	•	•	•
733 - Additional water pump	-	-	-	-	•	-	-	-	•	•	•
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	•	•	•	•	•	•	•	•	•	•	•
923 - RC-Com MBUS/JBUS Serial board	-	-	-	-	-	-	-	-	-	-	-
889 - Master plant SEQUENCER	•	•	•	•	•	•	•	•	•	•	•
962 - Kit modem GSM	•	•	•	•	•	•	•	•	•	•	•
957 - Plantwatch without modem	•	•	•	•	•	•	•	•	•	•	•
930 - Remote graphic terminal kit	•	•	•	•	•	•	•	•	•	•	•

MODEL	T19	T22	T26	T33	T35	T40	T49
Condensate collection pan	•	•	•	•	-	-	-
1003 - Water mesh filter (kit)	•	•	•	•	•	•	•
733 - Additional water pump	-	-	-	-	-	-	-
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	•	•	•	•	•	•	•
923 - RC-Com MBUS/JBUS Serial board	-	-	-	-	•	•	•
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

SMART		M5	M6	M7	M9	M11	T6	T7	T9	T11	
STANDARD	Cooling capacity (1)	kW	4,9	5,6	6,8	8,7	10,3	5,6	6,9	9,1	11,5
	Unit power input	kW	2,1	2,1	2,6	3,3	4,0	2,1	2,6	3,3	4,4
	Evaporator water flow rate	m³/h	0,9	1,0	1,2	1,5	1,8	1,0	1,2	1,6	2,0
	Evaporator pressure drop	kPa	22	22	31	36	27	22	31	35	31
	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	m³/h	2400	3500	3500	4200	6800	3500	3500	4200	6800
	Air circuits	n.	1	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	1,4	1,7	2,7	2,4	2,4	1,7	2,7	2,4	2,4
	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	17,9	17,9	20,9	24,9	32,9	7,4	7,9	9,9	12,9
	Unit starting current (LRA)	A	59,0	62,0	83,0	98,0	132,0	33,0	36,0	49,0	66,0
	EER (1)	kW/kW	2,34	2,63	2,65	2,63	2,55	2,64	2,67	2,75	2,59
	ESEER		2,87	3,36	3,38	3,25	3,19	3,38	3,40	3,40	3,28
	Sound power level [Lw] (2)	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] (3)	dB(A)	50,1	55,1	55,1	55,1	58,0	55,1	55,1	55,1	58,0
	Net weight	kg	80	85	100	105	125	85	100	105	125
	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"
	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	--	--	--	--	--	--	--	--	--
OPT	Additional 3-speed water pump	kW	--	--	--	--	0,22	--	--	0,22	
	Water tank - volume	l	30	30	30	30	30	30	30	30	

SMART		T13	T15	T19	T22	T26	T33	T35	T40	T49	
STANDARD	Cooling capacity (1)	kW	13,3	15,4	18,2	20,6	29,2	31,0	32,5	37,2	46,2
	Unit power input	kW	4,8	5,8	7,2	8,5	8,8	12,4	11,7	14,2	18,0
	Evaporator water flow rate	m³/h	2,3	2,6	3,1	3,5	5,0	5,3	5,6	6,4	7,9
	Evaporator pressure drop	kPa	41	34	40	40	45	43	37	37	39
	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	m³/h	6800	6400	7000	7000	10500	10500	14000	16000	19000
	Air circuits	n.	1	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	3,3	3,8	4,2	4,8	5,9	6,0	6,9	7,2	7,9
	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	14,7	17,9	21,8	26,8	28,7	33,7	36,4	43,4	50,4
	Unit starting current (LRA)	A	66,0	76,0	97,0	113,0	120,9	142,9	145,6	179,6	230,6
	EER (1)	kW/kW	2,76	2,67	2,52	2,43	3,33	2,51	2,77	2,62	2,56
	ESEER		3,37	3,31	3,11	3,03	4,10	3,15	3,42	3,19	3,16
	Sound power level [Lw] (2)	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] (3)	dB(A)	58,0	58,2	63,0	63,1	62,1	62,1	64,3	65,1	69,1
	Net weight	kg	145	155	245	250	320	325	335	340	420
	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"
	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
OPT	Additional 3-speed water pump	kW	0,22	0,22	--	--	--	--	--	--	
	Water tank - volume	l	30	30	60	60	60	60	--	--	

1. Referred to chilled water temperature 12/7°C and 35°C ambient air temperature according to Eurovent standard
2. Sound power level [Lw] according to ISO EN 9614 – 2.
3. Average sound pressure level [Lp_m] 1m far according to ISO EN 3744.

DIMENSIONS (mm)

SMART		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

