

RWE Ka - Kc

WATER COOLED CHILLERS WITH HOUSING AND SCROLL COMPRESSOR

COOLING CAPACITY FROM 6 to 89 kW 1 COOLING CIRCUIT

RWE 181 Ka + MV



Above picture is only indicative and is not binding.



The water cooled chillers of **RWE Kc / RWE Ka series** are designed for indoor installation and are particularly suitable for small and medium sized air conditioning systems, in residential and commercial applications. For this reason, they are made of a housing in painted steel plate. They are all available with 1 refrigerant circuit. Thanks to their compact dimensions and to the several options available, these units are particularly easy to install in small spaces. They are completely assembled and tested in the factory and supplied with refrigerant and non-freezing oil charge. Therefore, once on site, the units only need to be positioned and electrically and hydraulically connected.

The following versions are available:

- **RWE Ka** with R134a ecological refrigerant charge
- **RWE Kc** with R410A ecological refrigerant charge

Operation limits (standard units):

EVAPORATOR (OUT): from 5 to 15°C

CONDENSER (OUT): from 30 to 55°C

MAIN COMPONENTS

Strong and compact **frame**, with a housing made of galvanized and RAL 7035

painted steel plate. The front and the access panels to the electrical board are easy to be opened. The main components are installed inside the housing, which can be isolated with standard soundproofing material (option CL) or with bituminous rubber soundproofing material (option CM). When required, the hydraulic kit (buffer tank and hydraulic kit) is installed into an additional section at the bottom of the unit, so not change the overall dimensions.

High-efficiency scroll **compressor** (EER 3.37 under ARI conditions), with low sound level, internal heat protection, installed on rubber vibration dampers, supplied with crankcase heater when necessary. Higher capacity units are equipped with two scroll compressors in tandem.

Weld-brazed plate **evaporator and condenser** in AISI 316 stainless steel, with pipes and patented manifold so to reach a high heat exchange coefficient. Its design allows a uniform water distribution, compatibly with pressure drops. The exchanger is provided with close-cell insulating material.

Cooling circuit composed of thermostatic expansion valve, dehydrating filter, sight glass, safety device, antifreeze thermostat, high and low pressure switches.

Electric board in compliance with CE norms, contained in a suitable partition

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protected by the hinged internal safety panel, provided with protection fuses and safety transformer. In case of hydraulic kit on board, the electrical control of the pump group is provided.

Unit management **microprocessor** installed on the external panel, easily accessible, complete with compressors hour counter.

ACCESSORIES

- AE Electrical power supply different from standard:** Mainly, 230V three-phase, 460V three-phase. Frequency 50/60 Hz.
- CL Soundproofing insulation with standard material:** Insulation of the compressor housing by means of soundproofing material.
- CM Soundproofing insulation with bituminous rubber material:** Insulation of the compressor housing by means of bituminous rubber coated material.
- CS Compressors inrush counter:** Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors.
- HG Hot gas by-pass:** Mechanical device for modulating cooling capacity, preventing frequent compressor' stops.
- IH RS 485 serial interface:** Electronic card to be connected to microprocessor, to allow communication between the units and a Carel supervision system. It is possible to fully control the unit remotely. For connection to other supervision systems, the protocol of the controlled parameters is available on request.
- IM Seawood packing:** Fumigated seawood case and protection bag with hygroscopic salts, suitable for long sea transports.
- MF Phase monitor:** Electronic device controlling the correct sequence and/or the eventual lack of one of the 3 phases, switching off the unit if necessary.
- MT High and low pressure gauges** for measuring circuit pressure.
- MV Buffer tank** of suitable capacity complete with expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves.
- P1 Single pump group:** Chilled water pump group composed of single pump, expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, electrical control of the pump. The pump is of 2 pole centrifugal packaged type.
- P1H Higher available pressure pump group:** Chilled water higher available pressure pump group composed of single pump, expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, electrical control of the pump. The pump is of 2 pole centrifugal packaged type.
- PA Rubber-type vibration dampers:** Bell-shaped vibration dampers supports for insulating the unit (supplied in kit), made of base and bell in galvanized steel and natural rubber mixture.
- PF Safety water flow switch:** Installed on evaporator, it switches off the unit in case of lack of water flow rate through the evaporator.
- PQ Remote display:** Remote terminal, allowing to display the temperature and humidity values detected by probes, the alarm digital inputs, the outputs and the remote ON/OFF of the unit, to change and program of the parameters, the sound signal and the display of the present alarms.
- RA Anti-freeze heater on evaporator:** Electrical heater installed on the evaporator, in order to prevent freezing and provided with thermostat.
- RL Compressors overload relays:** Electromechanical protection devices against compressor's overload with displayed alarm.

- SN Main switch:** Manual switch of lock-door type, switching off the unit.
- VB Brine version:** Unit suitable for working with evaporator outlet water temperatures lower than 0°C. A 20 mm evaporator insulation will be provided.
- VP Pressostatic valve:** It is placed on condenser and controls the water flow rate according to the unit condensing pressure.
- VS Solenoid valve:** Electromagnetic solenoid valve on each cooling circuit to prevent refrigerant migrations and consequent flooding of compressors.

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Technical data sheet - RWE 151-601 Ka

RWE		151 Ka	181 Ka	211 Ka	271 Ka	311 Ka	351 Ka	421 Ka	521 Ka	601 Ka
Cooling capacity										
Cooling capacity 1)	kW	13,6	16,4	19,0	25,0	28,2	32,2	38,7	48,2	55,0
Absorbed power	kW	3,2	3,8	4,4	5,8	6,6	7,6	8,9	11,7	13,7
Heating capacity	kW	16,8	20,2	23,4	30,8	34,8	39,8	47,6	59,9	68,7
EER		4,27	4,30	4,33	4,31	4,27	4,24	4,35	4,12	4,01
Scroll compressors										
Quantity	n	1	1	1	1	1	2	2	2	2
Standard steps capacity	n	1	1	1	1	1	2	2	2	2
Circuits	n	1	1	1	1	1	1	1	1	1
Nominal absorbed current	A	8,7	9,7	11,1	13,7	15,4	19,4	22,3	27,5	30,9
Maximum absorbed current	A	17	20	22	27	32	40	44	54	64
Inrush current	A	99	123	127	167	198	143	149	194	230
Brazed plate evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Circuits	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	2,3	2,8	3,3	4,3	4,8	5,5	6,6	8,3	9,4
Water flow rate	l/s	0,64	0,78	0,92	1,19	1,33	1,53	1,83	2,31	2,61
Pressure drop	kPa	21	33	34	26	22	17	18	27	23
Brazed plate condenser										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	3,1	3,7	4,0	5,7	6,4	7,3	8,7	11,0	11,0
Water flow rate	l/s	0,86	1,03	1,12	1,58	1,78	2,03	2,42	3,06	3,05
Pressure drop	kPa	53	47	49	63	53	24	20	19	25
Pumps										
Available pressure with P1	kPa	72	87	75	71	110	111	110	96	92
Motor power with P1	kW	0,55	0,55	0,55	0,55	0,75	0,55	0,55	0,55	0,55
Available pressure with P1H	kPa	103	118	107	104	152	164	165	152	150
Motor power with P1H	kW	0,75	0,75	0,75	0,75	1,1	0,75	0,75	0,75	0,75
Buffer tank water volume	l	80	80	80	80	80	110	110	110	110
Sound pressure level										
Sound pressure level 2)	dB(A)	56	57	57	58	58	59	59	60	60
Dimensions										
Length	mm	800	800	800	800	800	1.600	1.600	1.600	1.600
Length with MV included	mm	800	800	800	800	800	1.600	1.600	1.600	1.600
Width	mm	500	500	500	500	500	750	750	750	750
Width with MV included	mm	500	500	500	500	500	750	750	750	750
Height	mm	960	960	960	960	960	960	960	960	960
Height with MV included	mm	1.430	1.430	1.430	1.430	1.430	1.340	1.340	1.340	1.340
Transport weight 3)	kg	175	185	193	212	227	315	312	368	389
Weight with empty MV included	kg	225	235	243	262	277	475	472	528	549
Refrigerant charge for each circuit	kg	2	2	2	2	2	3	3	4	4
Power supply										
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T + N								

NOTES

- 1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C.
- 2) Measured at 1 m in open field (ISO 3746).
- 3) Oil and refrigerant charge included.

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Technical data sheet - RWE 61-901 Kc

RWE		61 Kc	111 Kc	161 Kc	191 Kc	221 Kc	271 Kc	311 Kc	391 Kc	461 Kc	521 Kc	601 Kc	771 Kc	901 Kc	
Cooling capacity															
Cooling capacity 1)	kW	5,7	10,6	15,4	18,6	21,7	26,5	30,3	38,6	45,6	51,9	58,9	76,7	89,8	
Absorbed power	kW	1,1	2,0	3,0	3,7	4,9	5,7	6,5	8,6	10,0	11,5	13,7	17,3	20,1	
Heating capacity															
Heating capacity	kW	6,8	12,6	18,4	22,2	26,6	32,2	36,8	47,2	55,6	63,4	72,6	94,0	109,9	
EER		5,06	5,41	5,18	5,04	4,44	4,65	4,66	4,49	4,56	4,51	4,30	4,43	4,47	
Scroll compressors															
Quantity	n	1	1	1	1	1	1	1	1	1	2	2	2	2	
Standard steps capacity	n	1	1	1	1	1	1	1	1	1	2	2	2	2	
Circuits	n	1	1	1	1	1	1	1	1	1	1	1	1	1	
Nominal absorbed current	A	6,7	12,0	6,7	7,0	10,5	11,6	13,3	15,1	18,5	23,2	26,7	30,3	37,0	
Maximum absorbed current	A	11	23	11	13	17	20	22	27	32	40	44	54	64	
Inrush current	A	47	100	66	72	99	123	127	167	198	143	149	194	230	
Brazed plate evaporator															
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	
Circuits	n	1	1	1	1	1	1	1	1	1	1	1	1	1	
Water flow rate	m ³ /h	1,0	1,8	2,6	3,2	3,7	4,5	5,2	6,6	7,8	8,9	10,1	13,2	15,4	
Water flow rate	l/s	0,28	0,50	0,75	0,89	1,03	1,25	1,44	1,83	2,17	2,47	2,81	3,67	4,28	
Pressure drop	kPa	24	30	25	38	46	52	53	55	76	24	27	25	25	
Brazed plate condenser															
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	
Water flow rate	m ³ /h	1,2	2,2	3,2	3,9	4,6	5,6	6,4	8,2	9,6	11	12,6	16,3	19,1	
Water flow rate	l/s	0,33	0,61	0,89	1,08	1,28	1,56	1,78	2,28	2,67	3,06	12,60	16,30	19,10	
Pressure drop	kPa	23	70	56	80	65	40	18	45	42	23	22	27	29	
Pumps															
Available pressure with P1	kPa	66	44	64	80	64	70	93	83	85	104	98	74	57	
Motor power with P1	kW	0,18	0,18	0,55	0,55	0,55	0,55	0,75	0,75	0,75	0,55	0,55	0,55	0,55	
Available pressure with P1H	kPa	86	71	99	114	96	99	134	123	130	159	156	139	120	
Motor power with P1H	kW	0,18	0,18	0,75	0,75	0,75	0,75	1,1	1,1	1,1	0,75	0,75	0,75	0,75	
Buffer tank water volume	l	80	80	80	80	80	80	80	80	80	110	110	110	110	
Sound pressure level															
Sound pressure level 2)	dB(A)	57	58	58	59	59	60	60	61	61	62	62	63	63	
Dimensions															
Length	mm	800	800	800	800	800	800	800	800	800	1.600	1.600	1.600	1.600	
Length with MV included	mm	800	800	800	800	800	800	800	800	800	1.600	1.600	1.600	1.600	
Width	mm	500	500	500	500	500	500	500	500	500	750	750	750	750	
Width with MV included	mm	500	500	500	500	500	500	500	500	500	750	750	750	750	
Height	mm	960	960	960	960	960	960	960	960	960	960	960	960	960	
Height with MV included	mm	1.430	1.430	1.430	1.430	1.430	1.430	1.430	1.430	1.430	1.340	1.340	1.340	1.340	
Transport weight 3)	kg	117	126	139	143	185	199	202	219	237	336	342	399	425	
Weight with empty MV included	kg	167	176	189	193	235	249	252	269	287	496	502	559	585	
Refrigerant charge for each circuit	kg	2	3	3	3	5	5	6	6	8	12	13	17	20	
Power supply															
Power supply	V / ph / Hz	230V/50 Hz / 1Ph + N + T							400V / 50 Hz / 3 Ph + T + N						
NOTES															
1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C.															
2) Measured at 1 m in open field (ISO 3746).															
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