R@CKCOOLAIR

3 to 75 kW

MEDIUM AND HIGH-DENSITY UNITS

The R@CKCOOLAIR series is a cooling solution for rack servers with a small or medium-sized surface area in computer rooms.

They are the perfect solution to extend the existing installation without the need for a raised floor.

The unit is positioned next to the heat source, guaranteeing an efficient and immediate reaction to the variation in dissipation in the servers.

STANDARD

- Flow switch
- Complete accessibility
- High-pressure fans with backward-curved blades
- Hydrophilic treatment on the coil
- Two stainless steel condensate drip trays
- Hydraulic connections from the top or bottom
- Powder-coated sheet steel structure
- Footprint: 300 x 1,200 mm or 600 x 1,200 mm only
- Fully insulated panels
- Two- or three-way water valve, with modulation through 0-10 V signal
- Programmable control with LCD display
- Control of two separate zones (top and bottom of the unit)
- Different air flow configurations
- Flow modulation in accordance with the cooling capacity for greater energy savings
- Internal condensation control for air-condensed units (fan speed control) with automatic dedicated switch
- LAN connection for up to 8 units
- 4 alarms with potential-free contacts

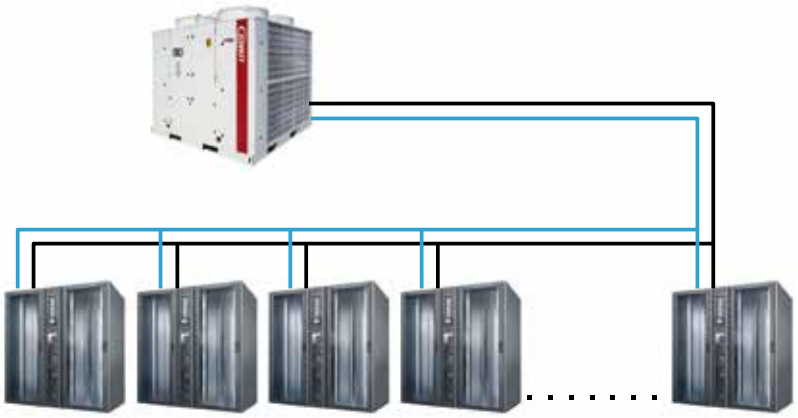
OPTIONS AND ACCESSORIES

- Humidification and dehumidification
- Clogged filter sensors
- Water, leak and smoke sensors
- Additional temperature and humidity sensors
- Condensate water pump
- Flow meter indicating current cooling capacity
- Integral IT rack
- Automatic flow control with display
- Serial cards for protocols: Carel / Modbus / LonWorks / Trend
- PCOWEB hardware: Ethernet card for protocols: BACnet / SNMP
- DATAWEB software: Ethernet card for web connectivity

RHC UNITS

Water-condensed with high-performance coil and modulating valve.

- Greater cooling capacity (W/m²) thanks to a larger heat exchange surface area.
- Precise temperature control (PID control).
- Offers the option to increase the temperature of the return air, therefore increasing the average water temperature (while maintaining a stable cooling capacity). This results in a maximum EER for the chiller and extends the operating range in free-cooling.

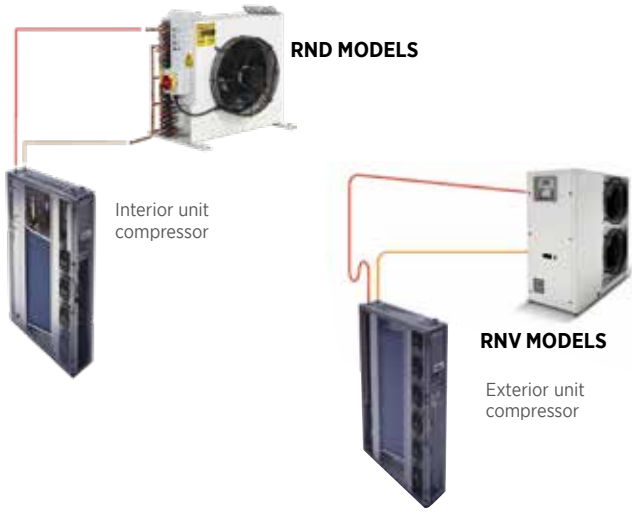


RND MOTOR EVAPORATOR / RNV MOTOR CONDENSER UNITS

Both with variable speed compressors

- Precise temperature control (PID control)
- Reduced energy consumption at partial load
- Avoids electrical peaks and mechanical stresses on the compressor in on/off cycles
- Extends the scope of application

This is the solution for small and medium-sized installations where no cold water production system is available or if water is not permitted to pass through the data centre. The distance between the indoor and outdoor units allows simple and economical installation.



VENTILATION

The positioning of the R@CKCOOLAIR unit next to the heat source minimises the ventilation consumption needed to cover the pressure drops of distribution through a raised floor. Using fans with backward-curved blades guarantees maximum flow stability. EC fan option enable to modulate the air volume.

Its integrated microprocessors manage the air flow together with the cold water valve (in RHC units) or the compressor frequency (in RND/RNV units), significantly reducing consumption. Furthermore, it is available with the “automatic air flow control” option, which maintains a constant flow in the event of variable pressure in the system, or the “Delta P control” option for control using the pressure difference in the cold aisle.

AIR CONFIGURATION

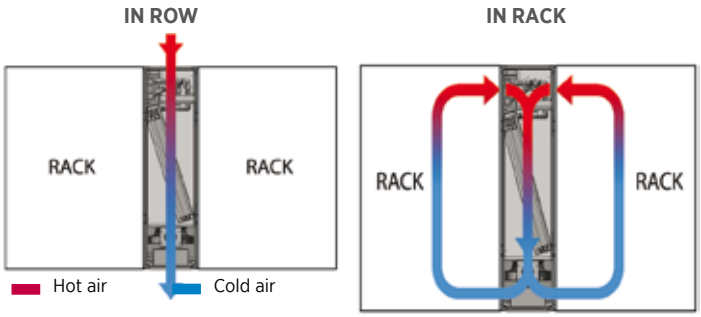
Because no duct system or raised floor is required, RHC units make installation simple.

- Humidification and dehumidification
- Heat input by resistors, water coil or hot gas coil
- Different filtration levels
- Condensation control
- Different communication protocols
- Low noise level

Available in different air configurations to adapt to modern data centres with retrofit systems or extend existing rooms.

IN ROW (horizontal flow)
Perfect for cold/hot aisle applications

IN RACK (left-to-right recirculation)
For applications with individual spot cooling



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MEDIUM AND HIGH-DENSITY UNITS

RHC / Interior rack water chiller unit

R@CKCOOLAIR RHC		0200			0250			0450			0510		
Indoor temperature operating conditions	°C	24 °C	30 °C	35 °C	24 °C	30 °C	35 °C	24 °C	30 °C	35 °C	34 °C	30 °C	35 °C
Indoor relative humidity operating conditions	%	50 %	35 %	26 %	50 %	35 %	26 %	50 %	35 %	26 %	50 %	35 %	26 %
Total cooling capacity	kW	12,7	20,1	26,2	17,6	27,7	35,4	30,4	46,2	59,1	36,1	57	72,8
Sensitive cooling capacity	kW	12,7	20,1	26,2	17,6	27,7	35,4	30,4	46,2	59,1	36,1	57	72,8
Power absorbed by the fan	kW	0,4			0,7			1,2			1,4		
Voltage		230 V/1 Ph/50 Hz						400 V/3 Ph/50 Hz					
Water flow	l/h	2176	3459	4511	3023	4769	6083	5236	7945	10155	6202	9807	12519
Air flow	m^3/h	4000			5300			9000			11000		
Dimensions (Length x Width x Depth)	mm	300 x 2000 x 1200						600 x 2000 x 1200					

RND / DX (direct expansion) Unit inverter compressor evaporator

R@CKCOOLAIR RND		0100			0260			0400			0450		
Indoor temperature operating conditions	°C	24 °C	30 °C	35 °C	24 °C	30 °C	35 °C	24 °C	30 °C	35 °C	34 °C	30 °C	35 °C
Indoor relative humidity operating conditions	%	50 %	35 %	26 %	50 %	35 %	26 %	50 %	35 %	26 %	50 %	35 %	26 %
Compressor frequency	Hz	30	70	120	30	70	120	30	70	120	30	70	120
Total cooling capacity	kW	2,4	7,2	11,9	5,2	19,6	28,3	8,2	31,3	43,3	14,9	37,1	49,0
Sensitive heat ratio		1											
Absorbed power of the compressor	kW	0,6	1,5	3,4	0,8	4,1	7,3	1,3	7,0	12,5	2,2	6,5	14,9
Absorbed current of the compressor	A	2,8	7,3	16,4	1,3	6,6	11,7	2,1	11,2	20,1	3,6	13,7	23,4
Evaporator air flow	m^3/h	700	1600	2700	2500	4075	5000	4500	7335	9000	4500	7335	9000
Power absorbed by the fan	kW	0,05	0,11	0,2	0,1	0,2	0,6	0,2	0,7	2,0	0,4	0,7	1,2
Voltage		230 V/1 Ph/50 Hz			400 V/3 Ph/50 Hz								
Compressor type		1 x EC motor compressor Dual Rotary						1 x EC motor compressor Scroll					
Dimensions (Length x Width x Depth)	mm	300 x 2000 x 1200			600 x 2000 x 1200			600 x 2000 x 1200					

RNV / DX (direct expansion) Unit remote evaporator-condenser with inverter compressor

R@CKCOOLAIR RNV		0140			0240			0330		
Capacity ratio	%	Min	50%	Max	Min	50%	Max	Min	50%	Max
Inlet air conditions 30 - 35%r.h. Condensing temperature 45°C										
Total cooling capacity	kW	3,7	8,9	13,3	8	17,6	24,6	11,5	24,8	34,6
SHR		1,0	1,0	1,0	1,0	1,0	1,0	1,0	0,9	0,9
EER of the refrigerant cycle		5,3	5,7	4,6	5,5	4,6	3,2	4,6	4,3	3,1
Inlet air conditions 35 - 30%r.h. Condensing temperature 45°C										
Total cooling capacity	kW	3,7	9,2	14,9	8,8	19,6	28,3	12,7	26,7	38,6
SHR		1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	0,9
EER of the refrigerant cycle		5,3	5,5	4,8	6,1	5,2	4,2	5,6	4,5	3,8
Evaporator airflow rate	m3/h	1550	2325	3100	2650	3975	5300	2650	3975	5300
Total power input	kW	0,8	1,9	3,4	1,6	4,2	7,6	2,5	6,3	11,1
Total current input	A	3,8	9,0	16,8	3,1	7,9	14,7	4,5	11,4	20,3
Electric power supply	V / - / Hz	230 / 1 / 50								
Dimensions of indoor unit (L x H x D)	mm	300 x 2000 x 1200								
Dimensions of outdoor unit (L x H x D)	mm	1250 x 882 x 460			1565 x 1275 x 605			1965 x 1322 x 950