



PC Series chillers for  
industrial applications



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**RIEDEL**<sup>®</sup>  
PRECISION IN COOLING

# Reliable cooling for top performance and efficiency in industrial applications.

## Let's talk about your objectives.

### **From mass production to small batches**

Cooling is a crucial part of production. It is responsible for ensuring appropriate temperatures for the tool, workpiece and the machine itself. The timings and service lives for the entire production process depend on the degree to which the cooling system provides ideal operating temperatures. If everything is sufficiently cooled, the production process runs like clockwork.

### **Standard chiller or OEM solution**

**RIEDEL** standard chillers are perfect for these tasks. They offer a wide performance range, offering reliable cooling for individual machines through to an entire production line. There are two series to choose from, with refrigeration capacities ranging from 1 to 226 kW. These standard models are easily modified to meet specific customer requirements to ensure your production system receives precisely the level of performance required.

**RIEDEL** also offers new developments for OEM units. Whether you need space-saving ideas or specific technical parameters – our engineers work together with customers to develop a customized cooling solution capable of cooling the machine at the relevant points and ensuring maximum performance.

**RIEDEL** applies its entire wealth of development expertise to tackling extreme and challenging operating conditions. All chillers adapted to specific customer requirements undergo thorough testing in our on-site laboratories and environmental chambers.

Our test conditions can simulate extreme ambient temperatures and various levels of high air humidity – precisely tuned to reflect the exact environmental conditions the equipment will face in its subsequent operation. As life cycle costs (LCC) are a key consideration in modern production businesses, we seek to achieve optimum energy efficiency in all of our developments.

**RIEDEL** has been producing its devices in Germany for over 40 years. Aspects essential to quality such as precision, dependability and reliable delivery are firmly embedded in our work philosophy. These values are what make **RIEDEL** a professional partner and preferred supplier all over the world. Our cooling devices are now used all over the globe; this has allowed us to build up an immense wealth of experience that we apply to each and every request.

As a company within the international GLEN DIMPLEX Group, we are able to care for our customers quickly and effectively no matter where they are in the world. We can draw on a network of contacts, experiences and references, a highly innovative research and development group and last, but not least, a cost-efficient production environment with the highest quality standards. Our on-site presence demonstrates time and again our ability to offer our customers high performance. We can also offer them much, much more.



# RIEDEL PC series

## Refrigeration capacity of 1 to 7 kW



### Options available: 1 to 7 kW refrigeration capacity

- Flow rate monitor
- Overflow valve to ensure minimum flow
- Plastic tubing
- Insulation for pump, water tubing and suction refrigeration line at a water outlet temperature of  $< 12^{\circ}\text{C}$
- VA evaporator (Ni soldered) for deionized water
- Digital display (actual coolant temperature)
- Power regulation by hot gas bypass valve for high temperature accuracy of up to  $\pm 1\text{ K}$  by microprocessor controlled temperature controller with digital setpoint and actual value display
- Remote control, floating or switching voltage
- Floating group fault messaging
- Paintwork (RAL color) as per customer request
- Castors
- Dust filter (accessory)
- Check valve / solenoid valve (accessory)

### Standard 1 to 7 kW version Specs

- Compact casing, powder-coated RAL 7035 / 5010; easy to service as all components can be accessed
- For indoor installation, degree of protection = IP 44
- Fully hermetic compressor with built-in motor protection
- CFC-free R134a refrigerant and also R407C (PC51/69)
- Evaporator as plate heat exchanger in VA, Cu soldered with cold insulation
- Prescribed monitoring and safety equipment in refrigerant circuit
- Thermostatic expansion valve with MOP to restrict evaporation pressure
- Air-cooled liquefier with axial fan (quiet and maintenance-free)
- Air circuit with front intake, blows upwards
- One-way air filter in air intake
- Copper piping in coolant circuit, stainless steel coolant circulation pump
- Insulated stainless steel tank with level switch for monitoring (plastic on PC12/19)
- Filling and draining port with level indicator
- Temperature accuracy in coolant outlet of up to  $\pm 1\text{ K}$
- Brine limit protection control
- Operating switch with light/main switch

## Refrigeration capacity of 15 to 226 kW

### Options available: 15 to 226 kW refrigeration capacity

- Outdoor installation
- Liquefier protection screen, air filter mat
- Air filter mat monitoring
- Radial fans
- Continuously variable speed control for fans
- Reduced noise
- Overflow valve
- Fixed bypass
- Cold pressure gauge
- Coolant outlet temperature  $< +8^{\circ}\text{C}$
- flow monitors
- Dirt filter
- Isolation valves (check valves / solenoid valves)
- Pressure-free external tank filling
- Automatic water refill
- Tank heating for temperature control
- Pump switch-off
- Stainless steel water circuit, or PVC for deionized water
- Flow rate monitoring
- Guide value monitoring
- Two-circuit system
- Water-cooled design
- Heat recovery (systems)
- Remote control 24 V AC/DC
- Special voltages and frequencies
- Digital thermometer
- Limit value monitoring
- Differential temperature regulation
- Control cabinet heating, control cabinet fan
- Bus connection
- Individual fault display

Technical data										
PC		12	19	31	41	51	69	51	69	
Net refrigeration capacity <sup>1)</sup>	kW	1.2	1.9	3.1	4.1	5.1	6.9	4.6	6.4	
Free pump pressure	bar	3.8	3.7	2.9/3.8 <sup>6)</sup>	2.2/3.3 <sup>6)</sup>	3.6	3.3	3.6	3.3	
Refrigerant	Type	R134a						R407C		
Nominal volume flow	m <sup>3</sup> /h	0.30		0.69	0.96		1.44	0.96	1.44	
Minimum volume flow	m <sup>3</sup> /h	0.15		0.35	0.48		0.72	0.48	0.72	
Air volume flow <sup>2)</sup>	m <sup>3</sup> /h	1,500		2,400	2,000	3,500		3,500		
Voltage supply	V/Hz	230 V	230 V/50 Hz or				-		-	
		50 – 60 Hz	230 V/60 Hz				-		-	
		-		400 V/50 Hz or 460 V/60 Hz				400 V/50 Hz or 460 V/60 Hz		
Power consumption <sup>2)</sup> , without pump	kW	0.7	1.3	1.3	1.5	1.8	2.5	1.3	1.5	
Operating range, ambient temperatures	°C	+15 to +45						+15 to +40		
Operating range, coolant outlet temperature	°C	+10 to +25						+12 to +20		
Setpoint tolerance	K	±2 / ±1 <sup>3)</sup>						±2 / ±1 <sup>3)</sup>		
Coolant connections	Rp	1/2" internal				3/4" internal		3/4" internal		
Tank volume	l	20		25		50		50		
Sound pressure level <sup>5)</sup>	dB(A)	60		62		61		61		
Weight (net)	kg	75		80	85	140	145	135	140	
Dimensions	width x height <sup>4)</sup> x depth	445 x 717 x 708		640 x 835 x 708		770 x 1,045 x 810		770 x 1,045 x 810		

1) Refrigeration capacity without pump power loss, coolant outlet temperature +15°C, ambient temperature +32°C, coolant nominal volume flow, all data relates to 50 Hz operation 2) See 1.) for operating conditions 3) With power regulation 4) With adjustable feet  
5) Half sound field without reflection, 5 m distance, operator side, see 1.) for operating conditions 6) At 400 V/3/PE

### Specs in brief: standard 15 to 226 kW version

- Compact casing for indoor installation, zinc-plated and powder-coated
- Air-cooled liquefier for CFC-free R134a, R407C and R404A refrigerant
- Crescent-shape axial fan(s), extremely quiet and maintenance-free
- Pressure-controlled fans
- Fully hermetic compressor, 100 % suction gas cooled
- Evaporator as plate heat exchanger
- Thermostatic expansion valve
- High and low-pressure control
- Water circuit with tank and pump, in accordance with specific application requirements
- Corrosion-resistant fixed piping in water circuit made from copper or plastic, plus stainless-steel pumps
- Switches and controls completely wired
- Remote control and group fault messaging
- Microprocessor-controlled temperature controller with digital setpoint/actual value display
- Automatic power regulation



# PC-Series Refrigeration capacity of 15 to 75 kW

Technical data										
PC (50 Hz)		161	201	251	321	401	501	631	801	
Net refrigeration capacity <sup>1)</sup>	kW	15.8	19.6	25.6	31.1	37.6	49.0	62.8	73.0	
Power consumption <sup>2)</sup> , with 3 bar pump	kW	6.9	8.4	10.3	12.3	14.8	17.9	24.1	27.3	
Refrigerant	Type	R407C								
Operating range, ambient temperatures	°C	+5 to +40								
Operating range, coolant outlet temperature	°C	+12 to +20								
Setpoint tolerance	K	±2 / ±1 / ±0.5 <sup>4)</sup>						±2 / ±1 / ±0.5		
Weight (net)	kg	300	320	390	460	600	650	750	800	
Net refrigeration capacity <sup>1)</sup>	kW	16.7	20.9	24.4	32.2	43.0	50.2	65.4	74.2	
Power consumption <sup>2)</sup> , with 3 bar pump	kW	7.6	9.1	11.1	13.5	18.4	20.6	26.5	29.9	
Refrigerant	Type	R134a								
Operating range, ambient temperatures	°C	+5 to +47			+5 to +50					
Operating range, coolant outlet temperature	°C	+8 to +25								
Setpoint tolerance	K	±2 / ±1 / ±0.5 <sup>4)</sup>				±2 / ±1 / ±0.5				
Weight (net)	kg	300	330	440	480	670	710	780	850	
Tank volume	l	125		200		300		200/400		
Available pump pressure	bar	3/5								
Nominal volume flow	m³/h	2.2	2.9	3.6	4.5	5.6	7.0	9.0	11.0	
Minimum volume flow	m³/h	1.3	1.7	2.2	2.7	3.4	4.2	5.4	6.6	
Air volume flow <sup>2)</sup>	m³/h	7,150	6,650	13,100	11,700	15,000	14,700	21,900	21,300	
Sound pressure level <sup>3)</sup>	dB(A)	59		62		63		65		
Voltage supply	V/Hz	3 x 400 V/50 Hz								
Coolant connections	Rp	1" internal		1 1/4" internal		1 1/2" internal		2" internal		
Dimensions width x height x depth	mm	1,186 x 1,755 x 874		1,541 x 1,755 x 874		1,872 x 2,005 x 874		2,220 x 2,005 x 874		

  

PC (60 Hz)										
PC (60 Hz)		161	201	251	321	401	501	631	801	
Net refrigeration capacity <sup>1)</sup>	kW	14.6	19.2	24.2	29.8	39.7	46.8	59.8	77.5	
Power consumption <sup>2)</sup> , with 3 bar pump	kW	7.9	8.4	11.8	13.1	16.0	18.2	23.0	29.0	
Refrigerant	Type	R407C								
Operating range, ambient temperatures	°C	+5 to +40								
Operating range, coolant outlet temperature	°C	+12 to +20								
Setpoint tolerance	K	±2 / ±1 / ±0.5 <sup>4)</sup>						±2 / ±1 / ±0.5		
Weight (net)	kg	300	320	390	460	600	650	750	800	
Net refrigeration capacity <sup>1)</sup>	kW	16.8	20.6	26.6	30.6	40.2	52.7	62.1	79.2	
Power consumption <sup>2)</sup> , with 3 bar pump	kW	8.2	9.2	12.5	13.8	17.6	22.3	26.2	32.2	
Refrigerant	Type	R134a								
Operating range, ambient temperatures	°C	+5 to +47			+5 to +50					
Operating range, coolant outlet temperature	°C	+8 to +25								
Setpoint tolerance	K	±2 / ±1 / ±0.5 <sup>4)</sup>							±2 / ±1 / ±0.5	
Weight (net)	kg	300	330	440	480	670	710	780	850	
Tank volume	l	125		200		300		400	200/400	
Available pump pressure	bar	3/5								
Nominal volume flow	m³/h	2.2	2.9	3.6	4.5	5.6	7.0	9.0	11.0	
Minimum volume flow	m³/h	1.3	1.7	2.2	2.7	3.4	4.2	5.4	6.6	
Air volume flow <sup>2)</sup>	m³/h	8,200	7,550	13,500		17,200	16,900	25,500	24,200	
Sound pressure level <sup>3)</sup>	dB(A)	62		65		66		68		
Voltage supply	V/Hz	3x460 V/60 Hz								
Coolant connections	Rp	1" internal		1 1/4" internal		1 1/2" internal		2" internal		
Dimensions width x height x depth	mm	1,186 x 1,755 x 874		1,541 x 1,755 x 874		1,872 x 2,005 x 874		2,220 x 2,005 x 874		

1) Refrigeration capacity without pump power loss, ambient temperature +32 °C, coolant outlet temperature +20 °C, coolant nominal volume flow, all data relates to 400/3/50 Hz/PE operation or 460/3/60 Hz/PE operation 2) See 1 for operating conditions / 3) Half sound field without reflection, 5 m distance, operator side, see 1.) for operating conditions / 4) Special specifications required



# PC-Series Refrigeration capacity of 90 to 226 kW

Technical data								
PC (50 Hz)		1001	1121	1401	1601	1801	2001	2241
Net refrigeration capacity <sup>1)</sup>	kW	94.3	107.0	141.0	159.0	183.0	207.0	226.0
Power consumption <sup>2)</sup> , with 3 bar pump	kW	35.2	40.8	51.5	59.9	68.2	79.4	86.9
Refrigerant	Type	R407C						
Operating range, ambient temperatures	°C	+5 to +38			+5 to +36			
Operating range, coolant outlet temperature	°C	+12 to +20						
Setpoint tolerance	K	±2 / ±1 / ±0.5			±2 / ±1 / ±0.75			
Weight (net)	kg	1,060	1,160	1,420	1,550	1,780	1,910	2,400
Net refrigeration capacity <sup>1)</sup>	kW	96.9	110.0	132.0	148.0	-	-	-
Power consumption <sup>2)</sup> , with 3 bar pump	kW	39.2	44.3	52.0	58.8	-	-	-
Refrigerant	Type	R134a						
Operating range, ambient temperatures	°C	+5 to +50			-	-	-	-
Operating range, coolant outlet temperature	°C	+8 to +25			-	-	-	-
Setpoint tolerance	K	±2 / ±1 / ±0.5		±2 / ±1 / ±0.75		-	-	-
Weight (net)	kg	1,160	1,260	1,510	1,650	-	-	-
Tank volume	l	300/400/600		400/600/800		600/800		
Available pump pressure	bar	3/5						
Nominal volume flow	m³/h	14.0	16.0	20.0	23.0	28.0	32.0	35.0
Minimum volume flow	m³/h	8.4	9.6	12.0	13.8	16.8	19.2	21.0
Air volume flow <sup>2)</sup>	m³/h	31,600	30,800	38,750	38,000	46,800	45,300	51,200
Sound pressure level <sup>3)</sup>	dB(A)	65		66		67		68
Voltage supply	V/Hz	3 x 400 V/50 Hz						
Coolant connections	Rp/DN	2 1/2" internal		DN65/PN10 loose flange		DN80/PN10 loose flange		
Dimensions width x height x depth	mm	2,930 x 2,070 x 1,285		3,630 x 2,070 x 1,285		4,330 x 2,070 x 1,285		5,042 x 2,070 x 1,285

  

PC (60 Hz)		1001	1121	1401	1601	1801	2001	2241
Net refrigeration capacity <sup>1)</sup>	kW	93.3	115.0	134.0	170.0	192.0	222.0	243.0
Power consumption <sup>2)</sup> , with 3 bar pump	kW	37.3	44.3	52.6	63.0	78.8	85.7	93.8
Refrigerant	Type	R407C						
Operating range, ambient temperatures	°C	+5 to +38			+5 to +36			
Operating range, coolant outlet temperature	°C	+12 to +20						
Setpoint tolerance	K	±2 / ±1 / ±0.5			±2 / ±1 / ±0.75			
Weight (net)	kg	1,060	1,160	1,420	1,550	1,780	1,910	2,400
Net refrigeration capacity <sup>1)</sup>	kW	91.2	118.0	137.0	159.0	-	-	-
Power consumption <sup>2)</sup> , with 3 bar pump	kW	40.3	49.4	57.0	64.0	-	-	-
Refrigerant	Type	R134a						
Operating range, ambient temperatures	°C	+5 to +50			-	-	-	-
Operating range, coolant outlet temperature	°C	+8 to +25			-	-	-	-
Setpoint tolerance	K	±2 / ±1 / ±0.5		±2 / ±1 / ±0.75		±2 / ±1 / ±0.5		-
Weight (net)	kg	1,160	1,260	1,510	1,650	-	-	-
Tank volume	l	300/400/600		400/600/800		600/800		
Available pump pressure	bar	3/5						
Nominal volume flow	m³/h	14.0	16.0	20.0	23.0	28.0	32.0	35.0
Minimum volume flow	m³/h	8.4	9.6	12.0	13.8	16.8	19.2	21.0
Air volume flow <sup>2)</sup>	m³/h	36,800	36,000	45,500	44,250	54,600	53,000	58,900
Sound pressure level <sup>3)</sup>	dB(A)	68		69		70		71
Voltage supply	V/Hz	3x460 V/60 Hz						
Coolant connections	Rp/DN	2 1/2" internal		DN65/PN10 loose flange		DN80/PN10 loose flange		
Dimensions width x height x depth	mm	2,930 x 2,070 x 1,285		3,630 x 2,070 x 1,285		4,330 x 2,070 x 1,285		5,042 x 2,070 x 1,285

1) Refrigeration capacity without pump power loss, ambient temperature +32 °C, coolant outlet temperature +20 °C, coolant nominal volume flow, all data relates to 400/3/50 Hz/PE operation or 460/3/60 Hz/PE operation 2) See 1) for operating conditions / 3) Half sound field without reflection, 5 m distance, operator side, see 1.) for operating conditions