

Industrial continuous flow coolers  
RKV\_DK

**DELTA THERM**

INDUSTRIAL COOLING AND HEATING



# Industrial cooling and heating.

**Partner of the industry for over 50 years.**

Since 1971 **DELTATHERM®** has belonged to **Hirmer GmbH**, a family business with its headquarters in Much near Cologne, one of the leading German manufacturers of cooling and temperature control systems.

Thanks to our broadly diversified product portfolio, we can react individually to the specific requirements of our customers from a wide range of industries. We manufacture chillers, heat exchanger systems, temperature control units, heaters as well as cooling systems and cooling components – from individual units to series production. In close cooperation with our customers, our engineers meet every challenge and develop customised solutions and individual designs.

An expanding worldwide network of service partners supports our factory customer service in 60 countries on six continents. We always have 95% of all replacement parts in stock, ready for dispatch within 24 hours. Quality, process safety, ease of maintenance and user-friendliness are our top priorities.

The safety of your production plants and of the production process are, to a large extent, dependent upon how well and how reliably your processes are temperature-controlled or cooled.

At **DELTATHERM®**, qualified specialists - from trained tradespeople to master craftsmen and engineers - ensure the optimal mixture of planning, project engineering, diligent manufacturing methods and thorough quality control.

Thanks to an in-house planning and design department, software development, control system construction, including an on-premises paint shop, we cover almost the entire vertical range of manufacture for cooling and temperature control units.

Purchased components such as pumps, valves, relays etc. are acquired from market-leading or renowned manufacturers.

All devices and systems are subject to a comprehensive functional test before dispatch. Because we are fully aware of what a plant standstill and the resulting production downtimes can cost our customers, we offer:

- Global plant service
- Service hotline to our experts, in German and English
- All standard components in stock and available globally in the shortest time by express mail
- Replacement part availability > 95%
- An expanding worldwide network of service partners with locations on 6 continents – in Europe, North America, South America, Africa, Asia and Australia
- Online service, through which we can check and maintain your systems
- Ensuring the productivity of your **DELTATHERM®** machines

■ Made  
■ in  
■ Germany

# RKV\_DK series

## Compact cooling units and cooling systems for medium capacities.

This model series was developed on the basis of comprehensive research and many years of practical experience by DELTATHERM® and further improved upon. Through a series of measures cooling capacity, efficiency and operational reliability were further improved and in this way a trend-setting continuous flow cooler generation was designed.

The DELTATHERM® industrial cooling systems of the RKV\_DK series consist of the following components: cold water circuit, medium circuit and electrical technology, completely fitted in one housing. The cooling of the circulation medium is carried out by a heat exchanger, which is known as the evaporator.

The DELTATHERM® industrial coolers, which are ready for connection and have been tested by our in-house performance testing equipment are already completely equipped in the basic version. For customer-specific requirements a comprehensive option package is available, with which we are able to fulfil all of our customers' technically feasible wishes.

## The functional principle

### The cooling circuit

The cold fluid circuit is mainly made of a compressor, an air-cooled condenser, expansion valve and evaporator. In accordance with the process requirements, also radial condensers (for the air duct connection), split condensers (outer/inner unit) and a water-cooled condenser version are offered. We only use CFC-free coolants such as e.g. R134a and R407C. All cooling components are made by renowned brand manufacturers and guarantee reliability, long service life and global availability. The entire cooling circuit is designed for the optimal and economic function of the industrial continuous flow cooler and corresponds to the most recent standards of the CE directive and of DIN EN 378.

### The electronics circuit

The entire electronics is designed for the optimal functioning of the industrial cooler and corresponds to the latest standards of the CE directive and of DIN EN 60204. In all models of the RKV\_DK series, the precise temperature control is carried out by a microprocessor-controlled digital temperature controller. All RKV\_DK industrial continuous flow coolers are suitable for indoor installation and can optionally also be installed outside.

### The medium circuit

The components of the medium circuit are as standard made from stainless material and completely fitted in the stable industrial housing. The complete medium circuit is fitted in the device with a complete pipework as well as a diffusion-proof and highly efficient insulation. Optionally available with circulation pump, pump manometer, pump overflow valve for pump protection. The medium circuit (piping, evaporator and pumps) is designed for a defined flow volume and pressure. Different pumps are available for special requests (more pressure and/or higher flow volume). Circulation media other than water (e.g. oil) are, of course, also feasible.

### Short specification of the standard equipment

- Compact device tested by us in-house, in test run lasting several hours
- Compact interior housing for inside installation
- Device standing on wheels (RKV 1.5 - RKV 10.5)
- Device standing on tracks (RKV 11.5 - RKV 18.5)
- Painted in RAL 7012
- Air-cooled condenser with copper pipes and aluminium lamellae, extremely efficient
- Axial fan, extremely low-noise and maintenance-free with contact protection
- CFC-free coolant
- Hermetic compressor, 100% suction-gas cooled
- Evaporator as plate heat exchanger or optionally as pipe coil heat exchanger
- Thermostatic expansion valve for coolant injection
- High and low-pressure switch
- Piping of the medium circuit made from stainless material (iron-free)
- Digital controller with target and actual value display
- Switching and control elements completely wired
- External on/off switching
- Potential-free collective fault indicator
- Automatic power adjustment
- CE-compliant
- Cooling technology designed according to EN 378 part 2
- Electronics designed according to EN 60204
- RoHS and REACH-compliant

### Available options

- Outdoor installation
- Air filter mat
- Radial fans
- Split design
- Water-cooled condenser
- Low-noise design
- Cold fluid outlet temperature < +8 °C
- Temperature stability ± 0,5 K/ 0,1 K/ 0,02 K (0 - 100%)
- Medium temperatures up to 40 °C
- Refrigeration gauge for high and low-pressure side
- Overflow valve
- Fixed bypass
- Multi-circuit system
- Heat recovery
- Flow monitor with analog or digital signal
- Medium filter
- Gate valves in flow and return
- Heating for temperature control
- Pump made from bronze or stainless steel
- Pump switch-off
- Air filter mat monitoring
- Wire marking
- Continuously variable speed regulation of the fans
- Heavy-duty connector (e.g. Harting)
- 24 V AC/DC control voltage
- Special voltages and frequencies (50/60 Hz)
- Limit temperature monitoring
- Differential temperature control
- External temperature sensor
- Cabinet heating, cabinet fan
- Bus connection, e.g. profibus DP
- Individual fault indicators (in the plain text display or as bit technology)
- RAL special color

### Continuous flow cooler with optional pump for water / emulsion up to 8% and oil up to 32cSt

Series Type RKV_DK	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	
Cooling performance at medium inflow	kW																		
+10 °C	6,4	7,6	9,0	11,0	13,9	18,0	22,0	25,0	29,0	33,0	37,0	43,0	50,0	58,0	68,0	75,0	87,0	102,0	
+15 °C	7,8	9,2	10,9	13,0	16,5	22,0	27,0	30,0	35,0	40,0	45,0	51,0	60,0	71,0	82,0	91,0	105,0	120,0	
+20 °C	9,3	11,0	13,0	16,0	19,7	26,0	32,0	36,0	42,0	48,0	55,0	62,0	72,0	84,0	98,0	108,0	126,0	147,0	
Compressor drive	kW																		
Air capacity	m³/h																		
Number of fans	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	
req. flow rate for water	l/min																		
req. flow rate for emulsion min. 8%	l/min																		
req. flow rate for oil	l/min																		
Pressure loss in flow cooler approx.	bar																		
Connection capacity	kW																		
Particle size max.*	µm																		
Water connections	DN																		
Dimensions about																			
Width	mm																		
Length	mm																		
Height	mm																		
Empty weight: about	kg																		

Medium temperature range: from +8 °C to +25 °C (other ranges on request)

Type of cooling: air-cooled using axial fan (water-cooled or using radial fan on request)

Electrical connection: 3x400 V PE 50 Hz (other voltages and frequencies on request)

Designed ambient temperature: +32 °C (higher and lower temperatures on request)

Range of application of the industrial cooler: from +8 °C to +42 °C ambient temperature (higher and lower temperatures on request)

Circulation medium: Drinking water / emulsion up to 8% / oil up to 32cSt (sulphur-free) with a spread of approx. 5 K between medium inlet and outlet (other ranges on request).

\* depending on degree of pollution



*„We focus on only one thing: customer satisfaction. We achieve satisfaction through our high product quality, permanently available service and the highest level of flexibility, through which we find individual solutions for all requirements. And we live out this claim - every day, for over 50 years.“*

Sascha and Mario Hirmer  
Managing Directors

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## Further products from our product range



Industrial series cooling towers  
with open or closed circuits from  
80 to 18,000 kW cooling capacity



Dry and hybrid coolers for water, oil  
or emulsion from 0.5 to 15,000 kW  
cooling capacity



Rack chillers in the power range from  
0.15 to 3 kW cooling capacity; as  
heat exchanger up to 10 kW



Industrial cooling machines for water,  
oil and emulsion from 0.2 to 5,000 kW  
cooling capacity



Temperature control systems for water  
up to 160 °C and oil up to 350 °C



Immersion chillers for water, oil  
and emulsion from 1.7 to 115 kW  
cooling capacity

Technical modifications and errors reserved.

