

Temperature-control systems



INDUSTRIAL COOLING AND HEATING



Industrial cooling and heating.

Partner of the industry for over 40 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. In three plants, 120 employees produce and distribute about 10,000 chillers, temperature control units, heating and cooling equipment and cooling components per year. All plants are located in the greater Cologne area. **DELTATHERM®** has a plant of its own for manufacturing casings and cabinets. We also have our own software development and build our own control electronics. Working closely together with our customers, our engineers are happy to develop special solutions and individual designs. 120 service partners support our plant customer service in 60 countries on 6 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. Our planning and construction department, the building of our own control electronics and software development as well as our own plant for metal working all ensure that we have almost the entire vertical range of manufacture for temperature control units in-house. 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%
- More than 120 service partners with locations on 6 continents – in Europe, North America, South America, Africa, Asia and Australia
- 24-hour online service, through which we can check and maintain your systems
- Ensuring the productivity of your **DELTATHERM®** machines

■ Made
■ in
■ Germany



„We focus on only one thing: customer satisfaction. We achieve satisfaction through our high product quality, 24-hour 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 40 years.“

Sascha and Mario Hirmer
Managing Directors



TM-W (water) series

Standard temperature-control devices for universal use up to 160°C.

The **DELTATHERM**[®] temperature control units of series **TM-W** are specially designed for the particular requirements that ensure permanent availability for operation at high temperatures and pressures. The specific heating surface loading of the electric heating is designed so that at normal thermal flow no damage can occur due to overheating at the heaters.

An integrated fill level monitor ensures that in the event of media content that is too low, an alarm message is issued that is shown in the display of the regulator and switches off the temperature control unit. Furthermore, the devices are also protected by many more safety devices - during construction, process safety is always paramount. **DELTATHERM**[®] temperature control units of series **TM-W** are highly reliable for processes, maintenance-friendly and very well operable.

TM-W versions

- Special devices with heat performance up to 360 kW
- Open circuit (devices up to 90 °C), with or without tank
- Hermetically sealed circuit, with or without tank
- Without leakage stop
- With leakage stop (vacuum system)
- With leakage stop (pump reversal)
- Steel sheet, painted housing
- Stainless steel housing
- Individual device on rollers
- Built-in version (dimensions and design following consultation)
- One-circuit or multi-circuit version
- Control via inbuilt regulators or process-controlled

The **DELTATHERM**[®] temperature-control units have a multitude of options that are as variable as all of our products. Options are redundant pumps, emergency cooling, special voltage and much more (see previous page).

Due to the wide range of versions of our products the images only represent a few examples. The actual devices can differ substantially.

Standard types	Medium	Temperature	Heating capacity	Cooling	Special characteristics
TM-W-90/dir	Water	10–90 °C	4–90 kW	Direct	Directly cooled temperature-control unit
TM-W-90	Water	10–90 °C	4–90 kW	0–135 kW*	Closed or open system
TM-W-90VA	Water	10–90 °C	4–9 kW	0–135 kW*	Housing VA, control box IP65
TM-W-160	Water	10–160 °C	4–90 kW	0–135 kW*	Magnetic drive pump, standard

TM-W-90, TM-W-90/dir

		TM-W-90-4/k-40 TM-W-90-9/k-40 TM-W-90-18/k-40	TM-W-90-27/k-80 TM-W-90-36/k-80	TM-W-90-45/k-200 TM-W-90-54/k-200 TM-W-90-72/k-200 TM-W-90-90/k-200
Temperature range	°C	10–90		
Temperature medium		Water		
Heating capacity	kW	4; 9; 18	27; 36	45; 54; 72; 90
Pump capacity	l/h	2,400	4,800	12,000
Pump pressure	bar	3		
Tank	l	Yes	Optional	
Cooling, dt = 65 °C Flow/return ¹ k = 0 k = 15 k = 45 k = 90 k = 135 K = dir	kW Inches -	--- 15 kW – 1/2/1/2 45 kW – 3/4/3/4 90 kW – 1/1 135 kW – 1/1 Directly cooled		
Connections medium	Inches	1/1	1.25/1	2/1
Length x width x height	mm	680 x 270 x 565	945 x 400 x 850	1,400 x 400 x 1,200

¹Only for indirectly cooled types; for series TM-W-90/dir this information is not specified.

TM-W-160

		TM-W-160-4/k-40 TM-W-160-9/k-40 TM-W-160-18/k-40	TM-W-160-27/k-80 TM-W-160-36/k-80	TM-W-160-45/k-200 TM-W-160-54/k-200 TM-W-160-72/k-200 TM-W-160-90/k-200
Temperature range	°C	10–160		
Temperature control medium		Water		
Heating performance	kW	4; 9; 18	27; 36	45; 54; 72; 90
Pump performance	l/h	2,400	4,800	12,000
Pump pressure	bar	3		
Expansion tank	l	2		10
Cooling, dt = 65 °C Flow/return k = 0 k = 15 k = 45 k = 90 k = 135	kW Inches -	--- 15 kW – 1/2/1/2 45 kW – 3/4/3/4 90 kW – 1/1 135 kW – 1/1		
Connections medium	Inches	1/1	1.25/1	2/1
Length x width x height	mm	945 x 400 x 850	1,400 x 400 x 1,200	1,400 x 400 x 1,200

*Dependent on cooler type 15 kW, 45 kW, 90 kW or 135 kW (at a temperature difference of 65 °C) or without cooler.



TM-O series (heat-transfer oil)

Standard temperature-control devices for universal use up to 300 °C.

The **DELTATHERM**[®] temperature control units of series TM-O-180 (up to 180°C medium temperature) and TM-O-300 (up to 300 °C medium temperature) are specially designed for the particular requirements that ensure permanent availability for operation at partially very high temperatures of heat-transfer oils. The specific heating surface loading of the electric heaters is designed so that at normal flow no thermal decomposition of the heat-transfer oil can take place. An integrated fill level monitor ensures that in the event of the fill level being too low, an alarm message is issued that is shown in the display of the regulator and the temperature control unit.

The devices of the **DELTATHERM**[®] series TM-O-180 and TM-O-300, which are atmospherically open, have circuits with overflow tanks, whereby oxidative damage by the oxygen is largely avoided. **DELTATHERM**[®] temperature control devices of series **TM-O** are highly reliable for processes, maintenance-friendly and very easy to operate.

TM-O varieties

- Special devices with heating capacity up to 360 kW
- Open circuit, with or without tank
- Hermetically sealed circuit, with or without tank
- With mould draining (vacuum system)
- With mould draining (pump reversal)
- Individual device with and without rollers
- Recessed version (dimensions and design following consultation)
- One-circuit or multi-circuit version
- Control via inbuilt regulators or process-controlled

The **DELTATHERM**[®] temperature-control units have a multitude of options that are as variable as all of our products. Options are redundant pumps, emergency cooling, special voltage and much more (see previous page).

Due to the wide range of versions of our products the images only represent a few examples. The actual devices can differ substantially.

Standard types	Medium	Temperature	Heating capacity	Cooling	Special characteristics
TM-O-180	Delta oil	40–180 °C	4–90 kW	0–135 kW*	Optional vapour shock-free version
TM-O-300	Delta oil	40–300 °C	4–90 kW	0–135 kW*	Optional vapour shock-free version

TM-O-180

		TM-O-180-4/k-40 TM-O-180-9/k-40 TM-O-180-18/k-40	TM-O-180-27/k-80 TM-O-180-36/k-80	TM-O-180-45/k-200 TM-O-180-54/k-200 TM-O-180-72/k-200 TM-O-180-90/k-200
Temperature range	°C	40–180		
Temperature medium		Oil		
Heating capacity	kW	4; 9; 18	27; 36	45; 54; 72; 90
Pump capacity, max.	l/h	2,400	4,800	12,000
Pump pressure, max.	bar	3		
Expansion tank	l	10	60	
Cooling, dt = 65 °C Flow/return k = 0 k = 15 k = 45 k = 90 k = 135	kW Inches -	--- 15 kW – 1/2/1/2 45 kW – 3/4/3/4 90 kW – 1/1 135 kW – 1/1		
Connections medium	Inches	1/1	1.25/1	2/1
Length x Width x Height	mm	1,400 x 400 x 1,200	1,500 x 1,050 x 1,780	2,200 x 1,050 x 1,780

TM-O-300

		TM-O-300-4/k-40 TM-O-300-9/k-40 TM-O-300-18/k-40	TM-O-300-27/k-80 TM-O-300-36/k-80	TM-O-300-45/k-200 TM-O-300-54/k-200 TM-O-300-72/k-200 TM-O-300-90/k-200
Temperature range	°C	40–300 (40–350)		
Temperature-control medium		Oil		
Heating capacity	kW	4; 9; 18	27; 36	45; 54; 72; 90
Pump capacity, max.	l/h	2,400	4,800	12,000
Pump pressure, max.	bar	3		
Expansion tank	l	10	60	
Cooling, dt = 65 °C Flow/return k = 0 k = 15 k = 45 k = 90 k = 135	kW Inches -	--- 15 kW – 1/2/1/2 45 kW – 3/4/3/4 90 kW – 1/1 135 kW – 1/1		
Connections medium	DN/PN	DN 25/PN 16	DN 32/PN 16	DN 50/PN 16
Length x Width x Height	mm	1,400 x 400 x 1,200	1,500 x 1,050 x 1,780	2,200 x 1,050 x 1,780

*Dependent on cooler type 15 kW, 45 kW, 90 kW or 135 kW (at a temperature difference of 65 °C) or without cooler.



Steam-heated temperature control units of series TM-D for various areas of application.

TM-DW: These units are available as open as well as closed systems. The temperature control medium is water.

The cooling capacities correspond to those of series TM-W. The heating takes place through the available steam systems. The automatic filling is part of the standard scope, as well as fill level monitoring and leakage protection.

A leakage prevention function is optionally offered.

TM-DO: The temperature-control medium of this unit is oil. The cooling capacities correspond to those of series TM-O. The heating takes place through the available steam systems.

Serie TM-D	Medium	Temperatur	Heizleistung	Kühlung	Besondere Merkmale
TM-DW	Water	10–160 °C	Dep. on requirement	(In)direct/indirect	Steam-heated
TM-DO	Delta oil	40–300 °C	Dep. on requirement	(In)direct/Indirect	Steam-heated

Aufgrund des großen Variantenreichtums unserer Produkte stellen die Bilder lediglich einige wenige Beispiele dar. Die tatsächlichen Geräte können stark abweichen.



Heating and cooling units of series TM-HKG temperature range from $-80\text{ }^{\circ}\text{C}$ to $+300\text{ }^{\circ}\text{C}$.

The comprehensive DELTATHERM® programme for heating and cooling units as well as the comprehensive experience of our engineers guarantee the optimal solution for your heating and cooling tasks.

Production processes are becoming more and more complex every day and the pressure on costs is rising relentlessly. Not only the investment costs, but also the operating costs must be examined during a system design, in order to keep the production costs as low as possible. Therefore DELTATHERM®'s heating units and temperature-control units are individually customised to customer requirements.

The heating and cooling systems are normally used in the chemical or pharmaceutical industry. The integrated control system that is specially customised to the different temperature-control activities monitors and regulates the entire heating/cooling circuit and communicates with superordinate process control systems through high-performance interfaces. This makes the process-related documentation easier and thereby corresponds to the industry's quality demands, which are always increasing.

TM-HKG series	Medium	Heating circuit	Cooling circuit	Special characteristics
TM-HKG	Water or Delta oil	$+10$ to $+300\text{ }^{\circ}\text{C}$ 4 to 100 kW	$+10$ to $-80\text{ }^{\circ}\text{C}$ 4 to 125 kW	Electrically or steam-heated

Supplies



DELTATHERM® data logger

for water temperature-control systems – non-falsifiable, tamper-proof recording of temperature, flow and pressure in the temperature range from 0 °C to +150 °C.

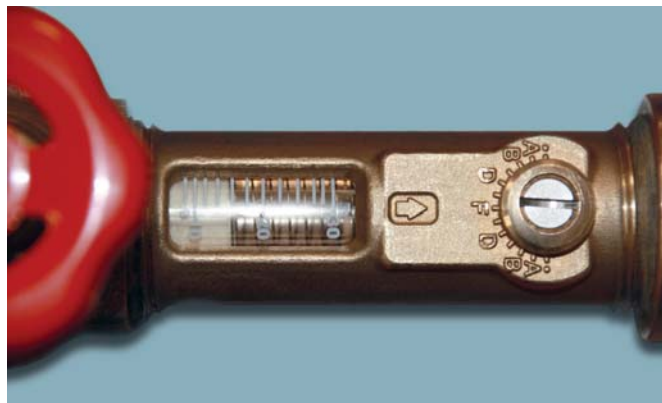
The DELTATHERM® data logger represents a new generation of paperless recorders that are characterised by their modular design for the acquisition of measurement data (3 to 18 measurement inputs can be implemented internally), through an innovative operating concept and through their high standard of security in relation to access control and tamper-proofness of the stored data.

In the DELTATHERM® data loggers, data can be visualised as measured value curves, as a bar graph or alphanumerically in process pictures. Efficient PC programs are available for the evaluation of archived data and for the configuration of the DELTATHERM® data logger.



DELTATHERM® decalcifying and cleaning device for temperature control circuits.

Designed for operation with diluted citric acid or ascorbic acid, the device is able to clean every closed circuit. It is ideal for decalcifying pipes, water heaters and heat exchangers. The device is equipped with a flow switching valve; through this, lime residues can be attacked from both sides. Standard pump performance 2 m³/h, 4 bar max., tank contents 20 l. Further features on request.

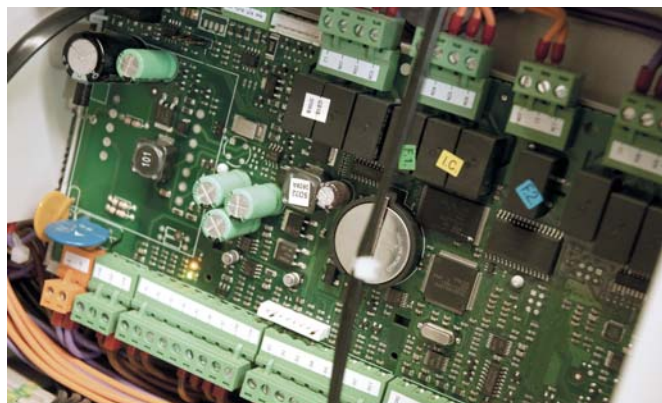


DELTATHERM® manifold

DELTATHERM® offers different kinds of manifolds, as standard.

Example: 6-fold water manifold, with one balancing valve per circuit, gunmetal/brass version

- Water inlet 1 1/4" IG (for 80 l/min)
- 6 water outlets with gate valve and balancing valve in 1/2" IG
- Balancing valve has a flow display (mechanical) and can easily be set via a screw.
- Flowrate range per circuit 4–15 l/min
- Pressure max. 10 bar



DELTATHERM® interfaces

- Interfaces to processing machines made by Arburg, Battenfeld, Engel, DEMAG, Krauss-Maffei and many others
- Digital interfaces: Profibus, CAN-Bus, MOD-Bus, Ethernet, Profinet, Devicenet, Euromap and others
- Analog interfaces: analog 0–10 V, analog 4–20 mA and others

Further DELTATHERM® accessories for temperature-control units

Please also ask us about remote controls, PC connections, external temperature sensors, pressure and flow controls, hoses and couplings, special designs etc.

DELTATHERM® Hirmer GmbH

Gewerbegebiet Bövingen 122 · 53804 Much · Germany
Tel. +49 (0)2245 6107-0 · Fax +49 (0)2245 6107-10

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 capacity range
from 0.2 to 5 kW cooling capacity



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

Technical modifications and errors reserved.

