huber

high precision thermoregulation

Product News 2015

Dynamic Temperature Control Systems • Chillers • Baths & Circulators • Accessories

New Products at ACHEMA

Circulators and Chillers with new MPC® controller

NEW

NEW at the ACHEMA 2015: New „MPC®“ controller with modern OLED display, USB interface and Pt100 sensor connection

The heating and cooling circulators and chillers with MPC controller offer excellent value for money. These devices are easy to use but still offer all necessary functions for most everyday temperature control applications. MPC devices provide environmental benefits in addition to being commercially the right choice: All chillers work as a standard with environmentally friendly, natural refrigerants.

The new MPC controller features a clean design and modern technology. The new OLED display makes operation easier and more intuitive. All important information is displayed in simple text. Also new are the front panel connections for USB, RS232 and PT100 external sensors. The connections are always easily accessible because of their new position at the top of the controller. The Pt100 sensor connection enables measuring the temperature in an external application and the display shows the measured temperature value. The newly added USB port allows an even more flexible data transfer, e.g. for remote access and measurement data recording.

The new MPC® controller is standardly equipped with a large OLED display and connections for RS232, USB and Pt100 measuring sensor

Two MPC® versions: for chillers (left) and circulators (right)

Expected to be available: Q1/2016

...with OLED display, USB and Pt100

Advantages

- ✔ Large, bright OLED display
- ✔ Front-panel connections for RS232 and USB
- ✔ Ergonomic design
- ✔ Simple 3-key operation
- ✔ Plain-text display for menu settings

Expected to be available: Q1/2016

Unistats® „P“ with stronger PRESSURE PUMP

NEW

NEW at the ACHEMA 2015: New Unistats® with high pressure pumps for applications with large pressure drops

Since 1980, Unistats are the leading technological solution for efficient thermoregulation in process engineering. The Unistat principle ensures maximum process reliability and process stability and guarantees reproducible temperature control results. Unistat pumps are purposefully designed so that a maximum circulation creates an as turbulent flow as possible, a large heat transfer coefficient (alpha value) and therefore a highly efficient heat transfer at the heat exchangers (evaporator and heater). The permissible system pressure is less than 1 bar in glass reactors and in about 80% of all practical applications. Unistat pumps first and foremost generate circulation volume rather than circulation pressure and usually require significantly less (pump) motor power. The pump characteristic is flatter unlike in pressure optimized and often magnetically coupled pumps with strong motor power.

Significantly fewer applications have narrow cross sections by design and therefore high pressure drops. They therefore also allow (and require) higher pump pressures. Circulating pumps with a high discharge pressure are sensible in such cases – but in such cases only. This does not require controlling and a reduction of the circulation pressure as these systems require the best possible circulation volume for an optimum heat transfer too. Typical applications are found in Flow-Through chemistry and in the Semicon industry.

We have expanded our Unistat series for these applications with new models, which are equipped with particularly strong pumps. The new Unistats with the added „P“ (for pressure) have circulating pumps with high pressure.

The cooling capacity data of Unistats are always provided at full pump speed. Often, this is not the case for other brands. That's why cooling capacity data require closer inspection: The cooling machines must compensate more heat from the pump when the pump runs at full capacity. Between 200 and 900 watts less cooling capacity are available for the temperature control process if the cooling capacity data are not specified for the full pump capacity – and the end temperatures will no longer be achieved.

Tip: Proper selection of the circulating pump

Note the „small print“: Devices with a high pressure capacity have a decisive disadvantage: At full power, the pump generates a considerable amount of specific heat. This additional heat energy reduces the available cooling capacity. Cooling capacity data must be stated, according to DIN 12876, at the highest pump level. Conclusion: As a user, you should make sure that you purchase a cooling machine that always provides the cooling capacity required for your application. You can rely on the information in our publications – Unistats have NO loss of power at full pump capacity (pressure).

Advantages

- ✔ Stronger pump for selected models NEW
- ✔ Maximum process safety
- ✔ Reproducible results of thermoregulation
- ✔ Fastest heating and cooling rates
- ✔ Large temperature range without fluid change
- ✔ Proven functionality for process industries and process engineering
- ✔ E-grade „Professional“ as standard

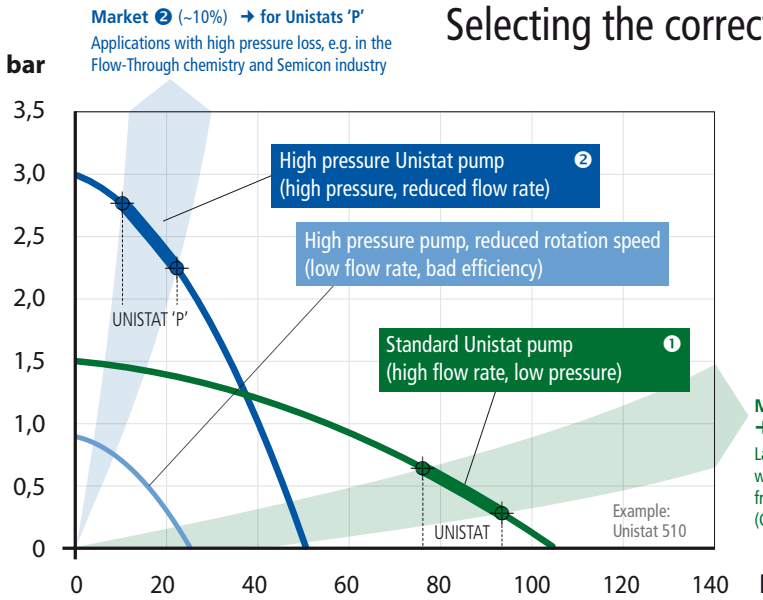
Expected to be available: Q3/2015

… for applications with high pressure drops, e.g. in the Flow-Through chemistry and in the Semicon industry

| Unistat® P505w |

| Unistat® P810w |

Selecting the correct pump!



| Unistat® P404 |

The new Unistats® „P" with high pressure pumps are suitable for applications requiring high pressure (→ Market 2).

We continue to recommend our proven Unistats® with standard circulating pumps for all other applications (→ Market 1).

Model	Working Temperature Range (°C)	Pump max. (l/min)	Pump max. (bar)	Heating Power (kW)	Cooling Power (kW) at (°C) * 0	-20	-40	-60	-80	Dimensions W x D x H (mm)
Unistat® P404	-45...250	50	**3,0**	3,5	1,0	0,5	0,05	–	–	460 x 554 x 660
Unistat® P505w	-51...250	50	**3,0**	6,0	5,0	2,2	0,3	–	–	460 x 554 x 1453
Unistat® P527w	-55...250	90	**5,5**	12,0	12,0	6,0	2,0	–	–	540 x 704 x 1491
Unistat® P634w	-60...250	90	**5,5**	24,0	25,0	23,0	16,0	–	–	950 x 1005 x 1650
Unistat® P810w	-85...250	50	**3,0**	3,4	1,5	1,4	1,3	1,1	0,3	460 x 604 x 1465
Unistat® P904w	-90...250	50	**3,0**	6,0	4,1	4,1	3,7	2,0	0,3	540 x 654 x 1650

* Cooling capacity information is provided at maximum pump capacity according to DIN 12876

Expected to be available: Q3/2015

Unichiller® (Desktop units) with PILOT ONE®

NEW

NEW at the ACHEMA 2015: Expaned Unichiller® range with powerful new models with MPC® and desktop models with Pilot ONE®

Unichillers are available with cooling capacities from 0,3 to 100 kW and are suitable for laboratory and industrial applications. The chillers achieve high efficiencies, high flow rates and a constant temperatures. The use of chillers reduces the water consumption in many applications, protecting the environment and reducing operating costs. We have expanded the circulating cooler range with new models for Achema 2015.

Unichiller with „Pilot ONE®“ controller
Unichillers with Pilot ONE control units are the first choice for demanding applications. These models are equipped with a 5.7” touch screen and additionally provide advanced features such as digital 5-point calibration, Pt100 control sensor connection, autostart, calendar and clock functions as well as RS232, USB and LAN interfaces. Analogue connections, a potential-free contact and RS485 and Profibus can be retrofitted. We have added new compact desktop models to our product range which include all Pilot ONE features.

Advantages

- ✔ Expanded range: NEW Powerful yet budget-friendly MPC models with cooling capacities of up to 20 kW
- ✔ Expanded range: NEW Compact desktop models with Pilot ONE features
- ✔ High efficiency, constant temperatures
- ✔ Powerful circulating pumps
- ✔ Rugged stainless steel construction
- ✔ Optional with heater up to +100 °C

Immediately available

Unichiller® (Tower units) with **MPC®**

NEW

Unichiller with „MPC®“ controller
Unichillers with the competitively priced MPC controller are recommended for standard applications. We have purposefully expanded the range with powerful units. These models have high cooling capacities and are, due to the MPC controller, particularly budget-friendly. The devices have a solid basic features with modern OLED display and connectors for RS232, USB and Pt100 sensors.

Expected to be available: Q1/2016

The new E-grade®
„EXPLORE“

NEW

NEW at the ACHEMA 2015: The new E-grade® „Explore“ turns your Unistat® into a process engineering development tool

The new E-grade „Explore“ for Unistats is more than just another function package. E-grade „Explore“ visualizes useful information about temperature, heating / cooling capacity and pump capacity in the system directly on the touch panel.

E-grade „Explore“ is a further development of the Unistat technology and utilizes the outstanding features of Unistats to display important process and performance data directly on the device display. Relevant measurements can also be processed via the digital interfaces.

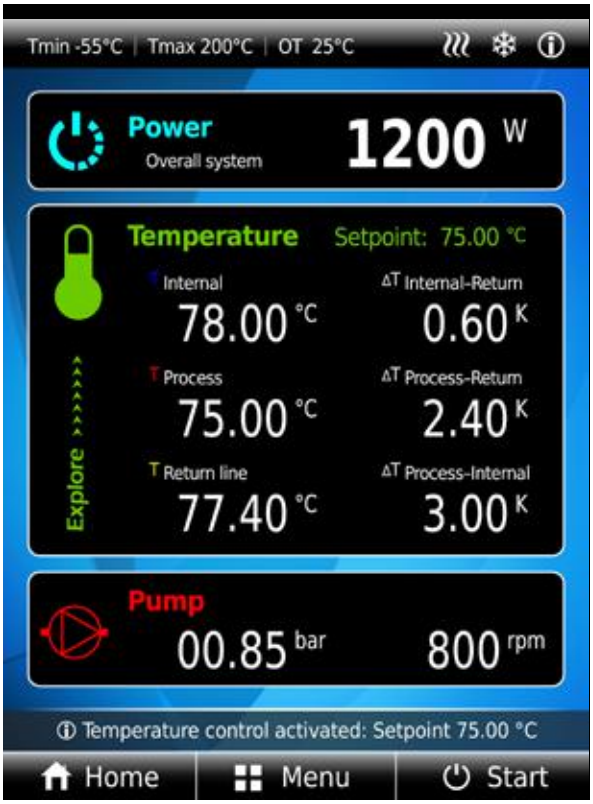
E-grade „Explore“ turns a Unistat temperature control unit into a process technology and process engineering development tool. The advantage is obvious: You get information and measuring data on the process that was previously accessible only with the help of expensive additional hardware (e.g. reaction calorimeter).

Examples of applications for E-grade® „Explore“

- Process development and optimization
- Estimation of heat balances and termination criteria
- Use tests of base materials
- Advanced data collection for scale-up experiments
- Reaction calorimetry

Expected to be available: Q3/2015

… for process development and calorimetric experiments



E-grade® „Explore“ adds an additional main screen to Pilot ONE® to display the most important process data. Measurement data can also be retrieved via interfaces.

The process at a glance:

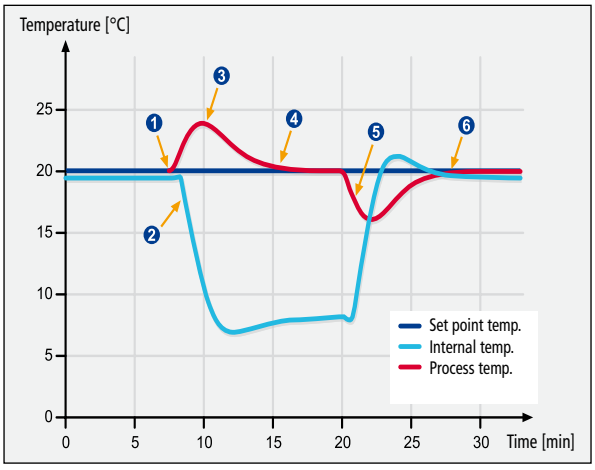
Performance:
Current heating or cooling capacity of the system

Temperature values:
Setpoint, internal, process, return

Temperature differences:
ΔT internal return, ΔT process return, ΔT process internal

Circulation pump:
Pressure / speed (depending on model)

E-grade® „Explore“ enables targeted process optimisation for process scale-up (example graphic: controlled exothermic reaction) based on set point, actual values, temperature differences and heating / cooling capacity data.



Advantages

- ✔ Access to critical process data directly from the Unistat
- ✔ No additional hardware required
- ✔ Display of process data directly on the device display of Pilot ONE
- ✔ Transmission, recording and visualisation via data interfaces (USB, LAN, RS232, etc.)

Note:
E-grade „Explore“ is only available for Unistats!

Expected to be available: Q3/2015

NEW CASE STUDIES

Case study with 60 liter AGI Asahi reactor

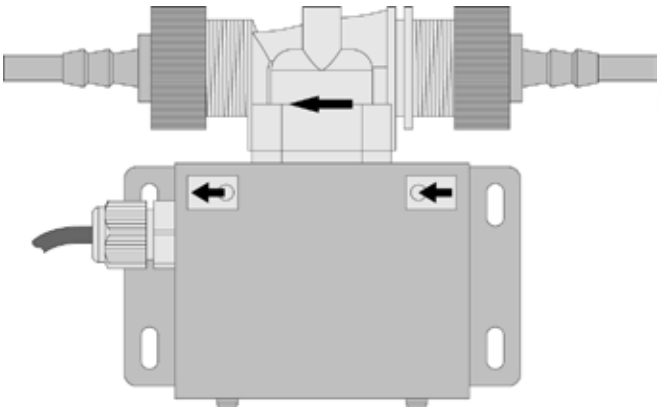
New case studies with the Unistats 510w and 912w are available on our website. Both Unistats have been operated on an AGI ASAHI 60 liter glass reactor. The case studies show heating and cooling curves, control behavior and the lowest achievable temperature. The results demonstrate the efficiency of Unistats and the excellent insulation of the reactor system. For example, the Unistat 510w cools the reactor contents to -50 °C, i.e. down to the lower end of the specified working temperature range.

This and more than 200 other case studies are available on:
www.huber-online.com/casestudies

NEW Case studies!

COOLING WATER VALVE

The new cooling water control valve is designed for use on circulators with Pilot ONE controller. The cooling water control valve regulates the cooling water consumption to the required volume. For this purpose, Pilot ONE controls the cooling water control valve to allow only the amount of cooling water through the cooling coil, which is required for the temperature control task at hand.



NEW

Advantages

- ✔ Permissible temperature range: -20 °C ... +80 °C
- ✔ Max. permissible differential pressure: 6 bar
- ✔ Protection class: IP20
- ✔ Cooling circuit connection: Hose barb NW6/NW8
- ✔ Connection length: 1.8 m

The control valve is suitable for the cooling coils #30554 for CC-104A to CC-118A and #30564 for CC-208B to 225B, CC-K12 to K25 as well as for all cooling coils with connection NW6/8. The valve is not suitable for MPC circulators.

Cooling water control valve #10312

MINICHILLER® up to +80 °C

NEW

We have further improved our Minichillers! All Minichillers are now suitable for working temperatures of up to +80 °C. The extended temperature range provides the advantage that the device can now be used for applications requiring active cooling at high operating temperatures or for applications with a high return temperature.

+80 °C

The temperature range extension makes Minichillers universally usable as an inexpensive and environmentally friendly cooling solution for many laboratory applications. The investment pays itself off after a short time because of the low purchase price.

Advantages

- ✔ NEW: Working temp. up to +80 °C NEW
- ✔ Environmentally friendly, natural refrigerant
- ✔ Level indicator, easy filling / emptying
- ✔ High efficiency, cost saving

Available from Q1/2016:

- ✔ NEW: OLED display and USB interface NEW
- ✔ NEW: Pt100 sensor connection NEW

Immediately available

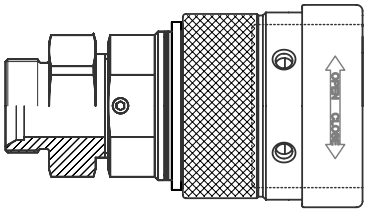
QUICK COUPLINGS

NEW

Temperature control units using current technology are usually connected to the application (e.g. reactor) with insulated hose lines. The separation points are usually equipped with metal-sealing glands. The quick couplings available on the market are usually neither suitable for the temperature range nor for the broad range of temperature control media. High pressure drops often result in a poor performance of the overall system. Another problem is disconnecting the temperature control unit from the application – so far, the circulator always had to be emptied. We therefore have developed new quick couplings that meet the special requirements in the thermoregulation technology and safely prevent the escape of temperature control media when disconnecting.

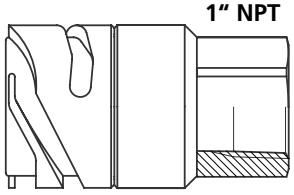
Technical specifications:

- Media temperature: -90 °C to +230 °C
- Cv value: 14
- Operating pressure: max. 25 bar @ 20 °C
- Leakage rate: < 0,4 ml per decoupling cycle
- Pressure drop Δp (with water):
  at 40 l/min: 0,04 bar
  at 100 l/min: 0,25 bar
- Media-holding parts made of stainless steel 1.4404/1.4571
- Sealing materials made of special compound, PTFE
- Permissible media: Huber thermal fluids (other thermal fluids after examination, if required)

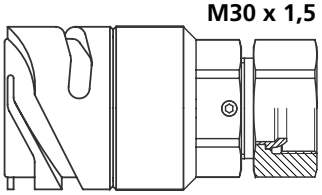


The new quick couplings allow the safe separation of the application (e.g. reactor) from the temperature control unit – without draining!

1“ NPT



M30 x 1,5



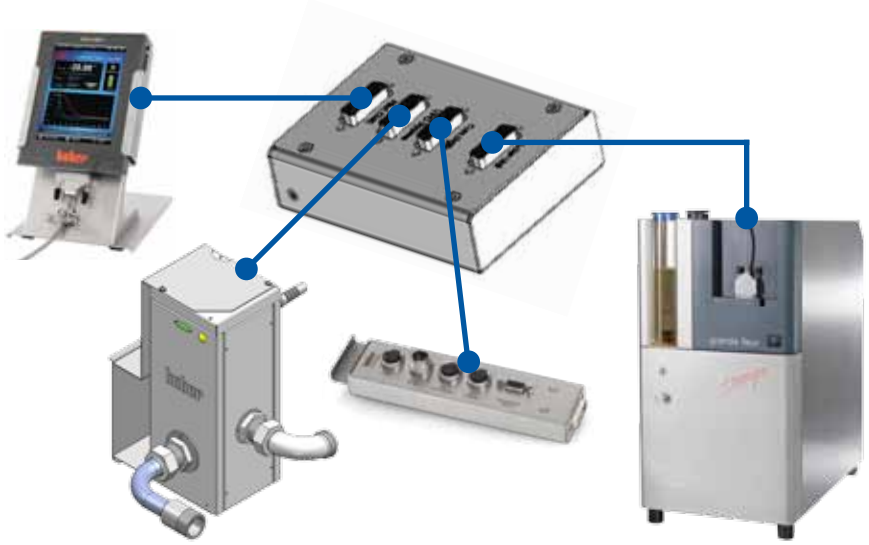
Advantages

- ✔ Optimum flow, low pressure loss, good heat transfer
- ✔ High-quality, durable sealing compounds for safe operation
- ✔ All components are made of stainless steel
- ✔ The free rotation prevents hose torsion
- ✔ Possible installation in bulkhead, e.g. to connect to a glass reactor
- ✔ Minimum axial coupling forces required due to a bayonet locking device
- ✔ Low leakage rate during disconnection
- ✔ Smooth surfaces in the valve area allows cleaning easy
- ✔ Worn parts can be replaced (e.g. main seal)
- ✔ Optional equipment on request:
  - ATEX approval for Zone 2, II 2G IIC Tx
  - Dust and insulation caps for both coupling halves
  - Acceptance test certificate according to DIN EN 10204-2.1, -2.2 or -3.1

Expected to be available: 07/2015

CAN SWITCH for remote operation

The new CAN switch facilitates remote operation or outdoor installation of Huber temperature control units. The CAN switch operates as a router for the connecting of Pilot ONE, ComG@te, bypass, etc.



NEW

Advantages

- ✔ Function as a router
- ✔ For remote operation or outdoor installation
- ✔ Simple cabling and installation

CAN Switch #10243

TRAINING, MAINTENANCE, IQ/OQ

User training
Our user training imparts expert knowledge of temperature control systems and their application in practice. You will receive numerous professional tips, allowing you to get the most out of your unit. The scope and content of the training courses is tailored to the participants' needs and knowledge level.

Documentation
We can provide a comprehensive IQ/OQ documentation for many models for the qualification of your Huber temperature control solution required by quality management or validation systems.

Maintenance contracts
Regular inspection and maintenance of your circulator is the best protection against downtime, supports trouble-free operation and preserves value and also ensures control accuracy and efficiency.

NEW

Advantages

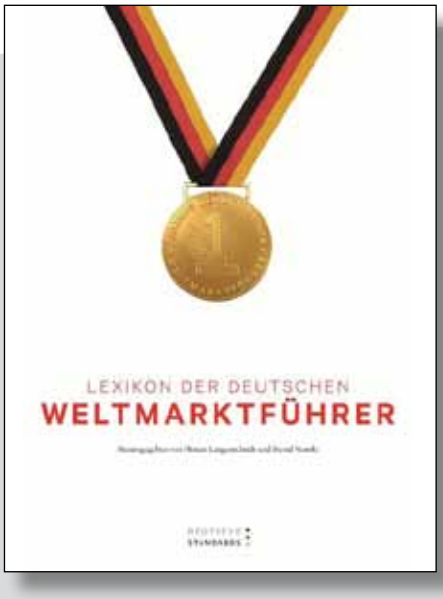
- ✔ Get the most out of your temperature control system
- ✔ Free user training
- ✔ Best value preservation and service life
- ✔ Avoid downtime
- ✔ Save time with documentation

Accessories novelties and services

huber

NEWS

WHAT ELSE IS NEW?



World Market Leader Lexicon

The new edition of the „Lexicon of German World Market Leaders" was presented at this year's annual congress "Summit of World Market Leaders". Publisher Dr. Florian Langenscheidt and Prof. Dr. Bernd Venohr have selected those companies, which are among the top 3 companies in their respective sector in the world.

We have been included in this lexicon for the first time as a specialist for high-precision temperature control technology. The decisive factor was the development of our Unistat technology. CEO Daniel Huber says: „Our Unistats are considered the technologically leading solution for efficient temperature control. Unistats allow extremely rapid temperature changes and a wide temperature range without having to change fluids. Unistats are the only system on the market that allow a professional scale-up from research laboratory to production plant under the same conditions and without interrupting operation. This gives process engineers the best possible process safety and reproducibility."

Successful landing on a comet

Huber thermoregulation technology was involved in the development of the space probe Philae. A high-vacuum climatic chamber was built at the Physics Institute of the University of Bern that required fast alternating and very low temperatures for various tests.Unistat temperature control systems have been used for thermoregulation.Huber customer Hanspeter Eichelberger (formerly Renggli AG) was responsible for the implementation of the climatic chamber. After the successful landing on the comet more then ten years later, he is proud of the work done and says: „Most of the tests and temperature simulations for the space probe Philae were realised in the climatic chambers of the University of Bern. Although we only played a small part in this great experiment, I am nevertheless thrilled to know that it continues in outer space – and that is also due to the innovative ability and the cooling machines of Huber. I am proud to have been involved in this important project!"

Unistats® with water glycol

Did you know that many Unistats can be operated with water glycol? The models Petite Fleur and Grande Fleur (-35 °C to +95 °C) and the models Unistat Tango w/wl, 405/w, 410/w, 425/w, 430/w, 510/w, 520/w, 527w, 530w, 610/w, 615, 620/w, 625/w, 630/w, 635/w and 640/w (-30 °C to +95 °C) are approved for the direct operation with water glycol.

Flow rate measurement and flow rate control

We offer various accessories for the measurement and control of flow rates, including flowmeters for the temperature control circuit. The measured flow rate is then displayed on the display of the temperature control unit, which can also be retrieved via the digital interfaces (USB, RS232, LAN and optional RS485, Profibus). The flow rate can also be regulated in conjunction with an optional VPC bypass.

Energy-efficient and environmentally friendly

We have used natural refrigerants for over 20 years, which makes us pioneers in environmentally friendly thermoregulation. The innovative design of our devices makes it also possible to equip large Unistats, Unichillers and circulators with environmentally friendly refrigerants. The lower energy and cooling water consumption, the long service life and the high recyclability give our products an excellent eco-performance.

US branch opened

We have established a new branch in the USA. Under the name of „Huber USA Inc." the new US affiliate will directly serve end users and dealers in the United States, Canada and Mexico. Huber USA is located in Cary, NC close to the Raleigh-Durham International Airport. This allows Huber to provide their customers more directly with advice and support.

Preview: Catalogue 2016/17 available soon

Our new Thermoregulation Technology Catalogue 2016/2017 is expected to be available from autumn this year. The catalogue will present the entire product range from -125 °C to +425 °C, including the new products presented at ACHEMA. You can request the free printed version for using the web form or by calling +49-781-9603-0 or read online and download as PDF.

Reliable, environmentally friendly and best value for money:

Thermoregulation from Huber

Quality
Made in Germany

Best value
for money

Unique
Plug & Play

Case studies for
performance comparison

Proven
technology

Worldwide
Sales & Services

DIN

Accurate information
according to DIN 12876

Safe investment
due to E-grade function

Maximum safety for
operator and application

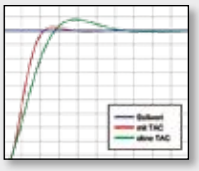
Environmentally friendly
with natural refrigerant

Connections for
USB and network

Models for all
applications

Time saving heat-up
and cool-down times

Easy-to-use
operation



State-of-the-art technology
guarantees highest precision

Free-of-charge
warranty extension

Peter Huber Kältemaschinenbau GmbH
Werner-von-Siemens-Strasse 1
D-77656 Offenburg / Germany

Telephone +49 781 9603-0 • Fax +49 781 57211
info@huber-online.com • www.huber-online.com

Sales	**+49 781 9603-123**
Technical Service	**+49 781 9603-244**
Order Processing	**+49 781 9603-109**

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