General catalogue 2018/2019

50
1968–2018

Inspired by **temperature**

High precision temperature control solutions
for research and industry

huber

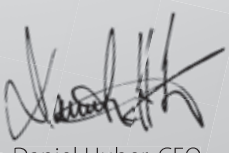
The tango factory in Offenburg

Welcome to Huber

High-precision temperature control solutions – inspired by temperature, driven by customer needs

Since 1968 we have been developing and producing high-precision temperature control systems for research and production in diverse industries and market sectors. Worldwide, our products ensure accurate control and reproducible temperatures in the range -125 to 425°C. Our product programme offers environmentally-friendly solutions with systems manufactured using natural refrigerants and recyclable materials.
Our customers all over the world report increased productivity and efficiencies as a result of the many innovations that are the basis of our technological lead.

The Unistat technology, which leads in thermodynamics and accuracy, was and remains a revolution in temperature control technology. We are proud to be recognised as a benchmark and a technology leader. We aim to continue to be your leading supplier of environmentally-friendly temperature control technology.
We do not need to be the biggest supplier, but we do want to be the best.



Daniel Huber, CEO

Content

Unistat – the original:
high precision temperature control
since 1989

Our mission

High precision temperature control technology to make your work easier: that is our mission.

Our temperature control technology makes work in research and industry easier and more efficient. This is our mission and our products and services follow this concept.

Our products have proved themselves through experience and are recognised as technology leaders in the field of Temperature Control in experimental, research facilities and industrial production processes. A typical application is process temperature control in the chemical and pharmaceutical industry.

In other industries, our temperature control units are used to carry out material and stress tests, temperature-dependent testing of food and beverage, cosmetic products and building materials and the simulation of environmental conditions and ageing processes.

Please do not hesitate to contact us if you need an individual temperature control solution. We would be happy to advise you personally and show you suitable solutions or completed reference projects.

Our services

We develop, build and supply temperature control solutions from -125 to +425 °C for applications in all industries. Our products are used in countless market sectors and diverse applications where temperature control is a key part of the process.

Advance with innovation

Our awards from Top 100 as "Innovator of the Year" and as "Craft enterprise of the Year" emphasise that we are one of the most innovative medium-sized companies in Germany.

Customer specific solutions

Our expertise and abilities facilitate the design and build of special and customised units to address challenging applications. We have successfully implemented custom projects in numerous industrial sectors. Our customers appreciate our flexibility and strength in innovation.

Committed to the environment

With our "Environment plus" project, we have comitted ourselves to an intensive effort to develop even more environmentally-friendly, energy-efficient and resource-saving refrigeration technology.

- IQ/OQ documentation
- User training
- Technical on-site service
- Rental equipment
- Maintenance contracts
- Certifications / Calibration

Unistats are quickly and easily filled and put into operation – thanks to their automatic functions for venting and degassing

Results can be documented via USB or LAN

Remote control made easy with the detachable controller

Our discipline: Temperature control

Unistats are predestined for demanding temperature control applications in all industries

Unistats embody responsive performance and fast dynamics for demanding applications. Our engineers recognise that process reliability is a primary concern in research and production.

When you need the certainty that your temperature-dependent laboratory and production processes will run as intended and without compromise at any time, Unistats give you that reassuring feeling of being on the safe side.

Unistats are circulators without a bath. This principle reduces the masses to be temperature-controlled enabling dramatically faster temperature changes. Unistats have a very small mass themselves which contributes to the extremely dynamic cooling and heating speeds of several hundred Kelvin per hour. For externally closed systems, an expansion vessel allows for temperature related changes in volume of the circulating fluid. For externally open applications, the expansion vessel can be easily closed off. This allows the Unistat to be placed above or below the application without "flow-back".

The Unistat system combines the possibilities of effective thermodynamics and intelligent microelectronics, making it a highly efficient alternative to open bath temperature control technology. In addition, modern pump technology and optimised circulation keep flow rates to a maximum leading to significantly improved heat transfer at the object under control.

Because it has proven itself to be such a powerful concept, the Unistat principle has not changed significantly since 1989 .

Predictable and reproducible results and unrivalled rates of change in the course of temperature control result in a significantly improved performance leading to a rapid return on investment, further reinforced by minimised operating costs made possible by the Unistat principle.

Unistats improve performance and dynamics: compact dimensions, great performance!

Environmentally-friendly and resource-efficient

Our customers were the first to have the option to purchase environmentally friendly refrigeration systems capable of temperature control down to -125 °C. As the prohibition of CFCs came into force, there were already thousands of environmentally friendly Huber machines in operation. As a result whilst other manufactures were working to catch up in producing CFC free systems, we were able to concentrate on reducing energy requirements.

Since the founding of the company, our focus has always been on the environment. One of the first corporate goals was the development of alternatives to cooling with fresh water widespread at that time. Another measure was the voluntary phasing out of CFC/HCFC refrigerants long before a statutory regulation.

We are pioneers in the temperature control industry when it comes to using environmentally-friendly hydrocarbons as refrigerants. Today almost all models in our product range are available with natural refrigerants – often as standard at no extra charge.

Our premises also show that we take environmental protection seriously. The "Tango factory" is an energy-saving marvel, with special heat insulation measures and concrete core activation we have significantly reduced CO2 emissions.
Consisting of a solid concrete structure, triple glazed windows, a thick insulation layer and around 40 km of plastic pipes in floors, ceilings and walls it is a gigantic heat exchanger with minimal energy requirements. In production we recover the heat created during product testing, a photovoltaic system generates electricity ecologically, a ground water cooling system saves water and the entire premises are illuminated with power-saving LED technology.

In 2013 we successfully participated in the "ECOfit" programme in the state of Baden-Württemberg and implemented/initiated different environmental measures. In 2016 we introduced an energy management system based on EN16247 that identified energy saving potentials even better and so were able to derive appropriate measures and further improvements. In 2016 we were awarded the environmental award for companies from the state of Baden-Württemberg.

Missions “Environment plus”

1982
First intelligent cooling circulator with cooling power adjustment and water cooled refrigeration with water saving energy management.

1993
First to convert to non CFC refrigerants.
7 years before the legal phase out.

1994
First to convert to non H-CFC refrigerants.
6 years before the legal phase out.

2006
Cooling circulators with the option “natural refrigerant“ in accordance with the regulations of the global green house policy of F. Hoffmann-La Roche AG.

2009
Environmental friendly cooling with CO2 refrigeration machines in accordance with the guidelines regarding the global green house policy of F. Hoffman-La Roche AG.

2010
Process heat coupling: Unistats are combined with already available primary energy sources such as steam, cooling brine or liquid Nitrogen.

2014
Certification according to the ECOfit programme of Baden-Württemberg for industrial environmental protection.

2016
Introduction of the energy management system based on EN 16247 to recognize the saving possibilities. We were honoured with the Environmental Award of Baden-Württemberg.

With our mission “Environment plus” we are an ecological pioneer in industry.

History and milestones

In 2018 we will happily celebrate the 50-year anniversary of Peter Huber Kältemaschinenbau. The anniversary year is devoted entirely to the founder and visionary Peter Huber. His innovation in refrigeration technology and the continuous development of the products have always shaped the company's future!

1968

Peter Huber Kältemaschinenbau was founded in 1968 by **Mr. Peter Huber**. As a "remote student" he taught himself refrigeration technology and did it so thoroughly well that he became the second Master in refrigeration plant construction in southern Germany. In the industry he was quickly called the **"Kältepapst"** (Pope of Refrigeration).

1976

Market introduction of the **Ministat®**, the smallest cooling circulator in the world and the **Variostat®**.

1980

Introduction of **Plug & Play** technology. The first replaceable controllers for all laboratory thermostats.

1984

Foundation of the Peter Huber Kältemaschinenbau GmbH.
The five children of Peter Huber become shareholders.

1986

Presentation of the **Dr.-Rudolf-Eberle Innovation Award** of the state of Baden Württemberg for the development of the **Rotostat®** a workplace for rotary evaporators.

With innovations to the future

1989

Starting signal for the **Unistat Tango®**. The Unistat technology unites thermodynamics and micro-electronics and thus revolutionised the entire industry.

1994

Foundation of the Tango Club. In Switzerland, the legendary **"Tango Club"** for active exchange of views is founded by 40 users of this revolutionary technology.

It takes two to tango

1998

Construction of the **Tango factory** at the new location in the industrial area of Offenburg-Elgersweier.

2005

Tango® Nuevo
The advancement of the successful Unistat Tango sets new standards with "TAC" (True Adaptive Control) to continually and automatically tune the PID control parameters.

2009

Petite Fleur®
The "small Tango" extends the Unistat range downwards and now enables a professional scale-up.

2009

Foundation of Huber India based in Bangalore.

2010

Huber Swiss GmbH is founded at Möhlin in Switzerland.

2012

New controller generation **Pilot ONE®** with trendsetting technology and state-of-the-art operating function.

2014

The international orientation of the company is strengthened with the foundation of Huber USA.

2016

Conversion to a stock company. Daniel, Joachim and Bärbel Huber and Beatrice Geiler are appointed Directors. Peter Huber takes over the chairmanship of the supervisory board.

2017

Acquisition of the company Van der Heijden Labortechnik and foundation of Huber UK & Ireland.

> We do not need to be the biggest, we want to be the best.
>
> Daniel Huber

Innovations and awards

We would like to measure ourselves against the best and continuously improve our performance – corporate competitions help us achieve this.

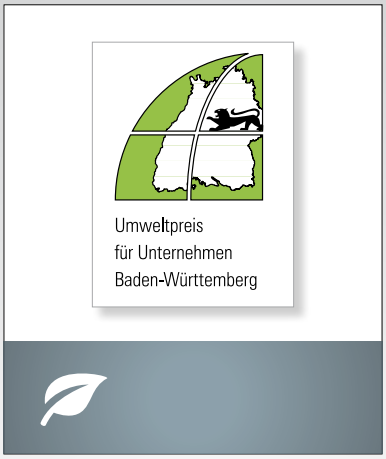
"Innovator of the Year", a grand award of medium-sized enterprises, "Trade Business of the Year", "Top Employer", the "Environmental Award of the state of Baden-Württemberg" and an inclusion in the "Lexicon of German World Market Leaders": these are the most recent successes we have won in various competitions.

Every competition has its own focus: Innovation at Top 100 and economic development, creation of jobs and social commitment for the Grand award for medium-sized enterprises. At the "Top Job" it is about the quality and attractiveness as employer and for the "Lexicon of German World Market Leaders" a technological pioneer role is required.

Therefore, our successes make one thing clear: We have a proven track record in all business areas with above-average performance – and we are proud of it!

Trade

The craft company of the year 2015. Another great award and motivation for our team.



Environmental award

For companies in the state of Baden-Württemberg in the trade category for exemplary environmental policy.

World market leader

Included for the first time as specialist for high-precision temperature control technology in the "Lexicon of German Global Market Leaders".

Award for medium-sized enterprices

Award winner at the "Grand award for medium-sized enterprises" 2016. Awarded as finalist in 2015.

Top employer

Repeated award in 2017. The employees enjoy a comfortable and agreeable working environment and satisfying work.

Top 100 Innovator

Awarded for the 5th time as one of the most innovative enterprises among German medium-sized enterprises.

Petite Fleur, Grande Fleur and Tango for the research laboratory

Unistats for process technology

Unistats for industry

Dynamic temperature control

-125 °C ... +425 °C

Unistats are predestined for demanding temperature control applications in all industries

Unistats embody responsive performance and fast dynamics for demanding applications

Unistat® – The Original

Unistats cannot be compared with conventional temperature control technology. Thermodynamically, there is no better solution.

The introduction of the Unistat technology in 1989 has initiated a revolution in fluid temperature control. Unistats are the ideal solution when it comes to fast and highly precise temperature control of externally connected applications. Compared to traditional circulation thermostats, Unistats impress with extremely fast temperature changes over and broad temperature ranges without liquid change.

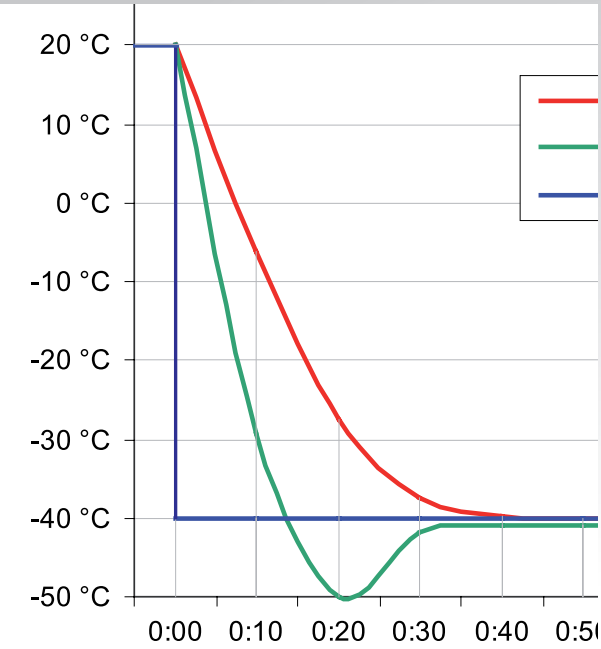
Unistats were developed for demanding applications in the Chemical and Pharmaceutical industries such as the temperature control of reactors, autoclaves, miniplant/pilot systems, reactor blocks and calorimeters. They are now equally at home providing temperature control solutions across the industrial spectrum. You can select from over 70 models with cooling capacities from 0,48 to 130 kW. Unistats provide consistently stable process conditions at any time.

Dynamic temperature control systems

- Responsive thermodynamics for fast control behaviour for chemical processes
- Extremely fast heating and cooling rate due to small internal volumes
- Broad working temperature ranges without liquid change and long life
- Process stability and reproducible results at any time for solid research work
- Intelligent TAC function continually monitors performance and automatically tunes the PID parameters for optimum control
- Wide range of models with covering different temperature ranges and cooling capacities of up to 130 kW for laboratory and production

Unistats®

Functions and features in detail



True Adaptive Control

Compared to most automatic PID controllers, True Adaptive Control (TAC) even goes one step further. TAC analyses the control loop over the entire temperature range and creates a multidimensional model of the temperature control system.

The temperature controller's PID parameters are continually updated to give the best control parameters. This enables the controller to always achieve the shortest "time to temperature" with minimal over/undershoot. If required, the PID controller parameters can also be adjusted manually.

Pressure Control VPC

Variable Pressure Control (VPC) reliably protects glass reactors against damage caused by excessive pressure. The risk of rupture of expensive glass apparatus is avoided. Changes in viscosity of the heat transfer fluid (HTF) during heating and cooling are automatically compensated for by VPC.

Some Unistats have a speed-controlled pump with soft start that regulate the pressure via an integrated pressure sensor. Unistats with a constant speed pump motor can control the pressure with an optional "VPC-Bypass".

Programming

The integrated programmer with linear ramp function allows the implementation of individual temperature set-points or more complex temperature requirements with up to 100 programme steps. Either temperature-stable or time-stable, optional with additional actions such as the control of a floating contact, analogue output, temperature control mode etc.

Maximum flow

The minimisation of internal pressure losses along with the large pump connections improve the flow. This results in higher flow rates and a significant optimisation of the heat transmission for increased dependability and an even faster reaction time to control the process. M16x1 adapter are included for table models.

Interfaces

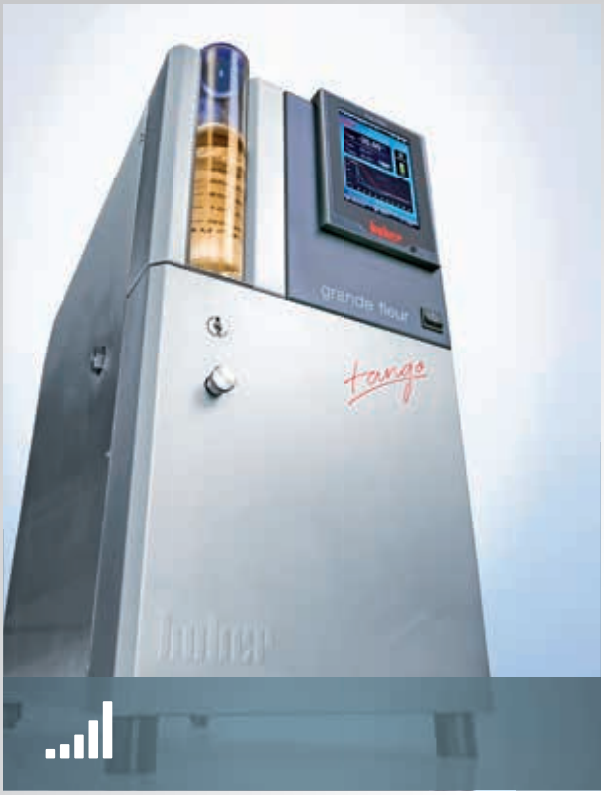
As standard, Unistats have RS232, USB Host, USB Device and LAN connections. Measurement data can be saved directly on a USB stick. A PC or notebook can be connected via USB, RS232 or LAN interfaces.

E-grade® Explore

The optional E-grade "Explore" turns your Unistat into a development tool for process and chemical engineering. With the E-grade, viewing and/or recording further information on temperature, heating/cooling capacity and pump capacity in the system is possible. Typical applications are process development and scale-up trials.

Unistats®

Functions and features in detail



Performance and dynamics

Unistats combine effective thermodynamics and intelligent microelectronics. The introduction of the Unistat technology in 1989 represented the birth of a complex alternative to the known temperature control technology. Unistats are circulators without a bath. For externally closed systems, an expansion vessel allows for and contains thermally induced changes in volume of the circulating fluid. The expansion vessel can be simply isolated when the temperature control of an application where the application is an open bath allowing the Unistat to be placed above or below the application without "flow-back".
This principle reduces the masses to be temperature-controlled enabling dramatically faster temperature changes. Unistats have a very small mass themselves which contributes to the extremely dynamic cooling and heating speeds of several hundred Kelvin per hour. For a comparison of dynamics, let's look at the cooling performance density [watt/litre] according to DIN 12876.

High safety

Unistats have many features for handling temperature control applications remotely and safely during continuous operation. Over-temperature, setpoint and alarm limits can be adjusted according to the conditions of the application. The temperature and pressure sensors can be calibrated and the microprocessor controller monitors the operating status. VPC (Variable Pressure Control) monitors the maximum pressure in the fluid loop. Passive components ensure a extraordinarily high level of reliability.

In case of emergency, Unistats can be electrically isolated. For critical processes Unistats offer emergency cooling.

"Process safety over-temperature protection": This unique user-activated feature disables the heater while initiating 100 % cooling should an over-temperature condition be caused by a thermal runaway in the process.

Scale-up for professionals

Unistats can thermally control small quantities just as well as production quantities. Models with cooling capacities of 0,7 to 130 kW permit flexible scale-up in research, kilo-laboratory, mini-plant, pilot plant and in production. Unistats rise to the challenge of scale-up because their performance is uniformly good from smallest to largest units and the user interface is common to all units.

Explosion protection (ATEX)

If Unistats are to be operated in connection with explosion-proof systems, there are two alternatives: Using the ATEX-compliant remote control, the Unistat is set up outside the explosion zone. Alternatively, the Unistat can be installed inside a pressurised, enclosed Ex px cabinet (available from us as part of a complete solution) and set-up within the explosion zone.

Low operating costs

The focus is always on the temperature control task when working with Unistats. Excellent heat transfer, reproducible results and very high temperature change speeds result in an significantly improved return on investment. The longevity of the thermal fluid and the low consumption values for cooling water and energy also ensure low operating costs.

Save space

The space requirements of Unistats are really low. The volume cooling capacity [W/dm³] according to DIN 12876 permits a comparison and describes the relationship of the cooling capacity to the housing volume.

Unistats®

Functions and features in detail

Process optimisation made easy

The E-grade "Explore" turns a Unistat into a development tool for process and chemical engineering. This E-grade is an advanced development of the previous Unistat abilities and uses the equipment features of the Unistats to represent important process and performance data on the device display/ output via interfaces.
E-grade "Explore" provides temperature, HTF pressure and (with an optional Flow Sensor) HTF flow rates. When a Flow Sensor is used, Flow Rates can also be controlled. This measurement and control of various parameters and the display of process data makes this E-grade ideally suited for the development and optimisation of processes, the determination of heat balances and abort criteria, use tests of raw materials and for the advance data collection for scale-up trials.

Measure and control flow

Measurement and control of the flow rate is easily possible with Unistats. For this we offer different measuring devices for installation in the fluid circuit. The heat transfer fluid (HTF) flow rate can be displayed directly on the temperature control unit and can be requested and/or displayed through the digital interfaces. (USB, RS232, LAN and, optionally, RS485, Profibus) It is also possible to regulate flow rate using flow sensor.

A Unichiller or Unistat equipped with an integrated VPC byass or external VPC bypass as an accessory is required.
The flow measurement devices can be used to complete basic tasks, such as determining kinetic/dynamic features of reaction syntheses and crystallisation, inspections of heat quantities and scale-up testing.

OPC-UA compatible

The -UA (OPC Unified Architecture) communication protocol describes data semantically and thus enables data exchange between automation systems without having to programme a driver for this purpose. Using the E-grade OPC-UA, Huber temperature control unit can communicate with Pilot ONE via the modern OPC-UA protocol.

More pump pressure

For most applications the circulation is paramount for good heat transfer. Some applications, however, have narrow cross-sections due to their design and high pressure drops and therefore require more pump pressure. The Unistat "P" models are designed especially for applications e.g. in the flow-through chemistry and semicon-industry.

Quickly coupled

For frequent changes of applications at the temperature control unit we recommend our quick couplings. The quick couplings meet the special requirements in temperature control technology and reliably prevent the leaking of temperature liquid. The quick couplings ensure only minor pressure losses and thus ensure good performance of the overall system.

Record data

Process data can be saved directly on a USB stick. The storage is carried out at a time interval of 5 seconds as universally usable CSV file, which can easily be evaluated with e.g. Microsoft Excel® and processed further. Also new is the storage and loading of temperature control programmes to a USB stick.

Unistats®

Controller features at a glance

As standard, Unistats® are equipped with the intuitive icon-driven Pilot ONE® controller with E-grade® "Professional".

Plug & Play technology
The modular controller concept permits easy service and the use of the controller as remote control.

Everything at a glance
Using the Pilot ONE, all data can be accessed on a screen so that all process temperatures can be seen at a glance.

Interfaces
As standard, the Pilot ONE is equipped with RS232, USB Device, USB Host, Ethernet and a Pt100 external sensor connection.

Integrated programme function
An integrated Programme Function that allows for a linear and non-linear ramp function for up to 100 programme steps as standard.

5,7" touch screen
The operation of the Pilot ONE is easy and intuitive in 13 languages using the large colour touch display.

Record process data
Units with Pilot ONE permit the direct recording of process data on a connected USB disc.

[1] For units with integrated over-temperature protection
[2] For models with variable-speed pump or an external bypass

	Function/Feature	Pilot ONE E-grade "Professional" in the scope of delivery with Unistats	Pilot ONE E-grade "Explore" Cat.No. 10495
Thermoregulation	Controller parameter tuning	TAC (True Adaptive Control)	
	Calibration program for control sensor (Internal, Process)	5-Point	
	Monitoring (Level protection, Over temperature protection[1])	✓✓	✓✓
	Adjustable limit alarms	✓✓	✓✓
	VPC (Variable Pressure Control)[2]	✓✓	✓✓
	Venting program	✓✓	✓✓
	Compressor automatic control	✓✓	✓✓
	Set point limits	✓✓	✓✓
	Programmer	10 programmes / max. 100 steps	
	Ramp function	linear, non-linear	
	Temperature control mode (Internal, Process)	✓✓	✓✓
	Maximum heating / cooling power adjustable	✓✓	✓✓
Display and Operation	Temperature display	5,7" touch screen	
	Display mode	graphic, numeric	
	Display resolution	0,1 °C / 0,01 °C	
	Graphic display of temperature curves	Window, full screen, scalable	
	Calendar, Date, Time	✓✓	✓✓
	Languages menu navigation: DE, EN, FR, IT, ES, PT, CZ, PL, RU, CN, JP, KO, TR	✓✓	✓✓
	Temperature format (°C / °F / K)	✓✓	✓✓
	Display mode (screen) switch by swiping	✓✓	✓✓
	Favourites menu	✓✓	✓✓
	User menues (Administrator level)	✓✓	✓✓
	2. set point	✓✓	✓✓
Connections	Digital interface RS232	✓✓	✓✓
	USB interface	✓✓	✓✓
	Ethernet RJ45 interface	✓✓	✓✓
	Pt100 control probe connection (external control)	✓✓	✓✓
	External control signal / ECS STANDBY[3]	✓✓	✓✓
	Programmable volt-free contact / ALARM[3]	✓✓	✓✓
	AIF (analog interface) 0/4-20 mA or 0-10 V[4]	✓✓	✓✓
	Digital interface RS485[4]	✓✓	✓✓
Various	Alarm signal optical / acoustic	✓✓	✓✓
	AutoStart (Mains failure automatic)	✓✓	✓✓
	Plug & Play technology	✓✓	✓✓
	Technical glossary	✓✓	✓✓
	Remote control / Data visualisation via Spy Software	✓✓	✓✓
	E-grade Evaluation versions available (30 days)	✓✓	✓✓
	Service data recorder (flight recorder)	✓✓	✓✓
	Saving/loading of temperature control programs	✓✓	✓✓
	Process data logging direct to USB stick	✓✓	✓✓
	Calendar start	✓✓	✓✓
Process data	Display of process data directly on the device display		✓✓
	Query of process data via interfaces		✓✓
	Current heating and cooling capacity of the system		✓✓
	Temperature setpoint, internal, process, return		✓✓
	Temperature differences ΔT internal, process, return		✓✓
	Pump output pressure / speed (depending on model)		✓✓

[3] Standard on Unistats, otherwise via optional Com.G@te or POKO/ECS Interface
[4] Via optional Com.G@te

Unistats®

▸ Petite Fleur®, Grande Fleur® and Tango®

The entry level in the world of Unistats. The compact dimensions and excellent thermodynamics make the Petite Fleur, Grande Fleur and Tango ideal for precise temperature control of research reactors.

Down to -45 °C
Working temperature

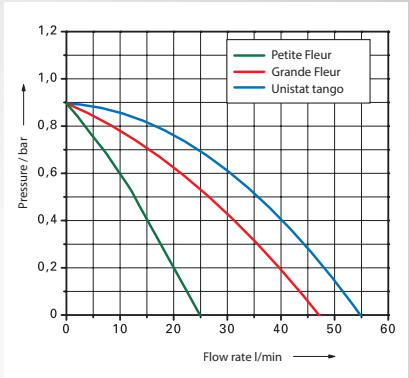
Up to 0,7 kW
Cooling power

Up to 55 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unistat tango

Petite Fleur, Grande Fleur



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C) 200	20	0	-20	-30	Dimensions W x D x H (mm)	Cat.No.	G
Petite Fleur	-40...200	25	0,9	1,5	0,48	0,48	0,45	0,27	0,16	260 x 450 x 504	1030.0001.01	3
Petite Fleur w	-40...200	25	0,9	1,5	0,48	0,48	0,45	0,27	0,16	260 x 450 x 504	1030.0003.01	3
Petite Fleur-eo	-40...200	25	0,9	1,5	0,48	0,48	0,45	0,27	0,16	260 x 450 x 504	1030.0004.01	3
Grande Fleur	-40...200	47	0,9	1,5	0,60	0,60	0,60	0,35	0,20	295 x 530 x 570	1041.0001.01	3
Grande Fleur w	-40...200	47	0,9	1,5	0,60	0,60	0,60	0,35	0,20	295 x 530 x 570	1041.0007.01	3
Grande Fleur-eo	-40...200	47	0,9	1,5	0,60	0,60	0,60	0,35	0,20	295 x 530 x 570	1041.0004.01	3
Grande Fleur w-eo	-40...200	47	0,9	1,5	0,60	0,60	0,60	0,35	0,20	295 x 530 x 570	1041.0010.01	3
Unistat tango*	-45...250	55	0,9[1]	1,5/3,0	0,70	0,70	0,70	0,40	0,40	426 x 270 x 631	1000.0016.01	3
Unistat tango w	-45...250	55	0,9[1]	1,5/3,0	0,70	0,70	0,70	0,40	0,40	426 x 270 x 631	1000.0021.01	3
Unistat tango wl*	-45...250	55	0,9[1]	1,5/3,0	0,70	0,70	0,70	0,40	0,40	426 x 270 x 631	1000.0017.01	3

* Options on request: natural refrigerant

[1] integrated VPC pressure control

w = water-cooled | eo = externally open | wl = air-/water-cooled

all technical data from page 134

Series 400

The Unistats of the series 400 are ideal for applications in process and chemical engineering, such as temperature control of reactors, autoclaves, miniplant/pilot systems, reactor blocks and calorimeters.

Down to -45 °C
Working temperature

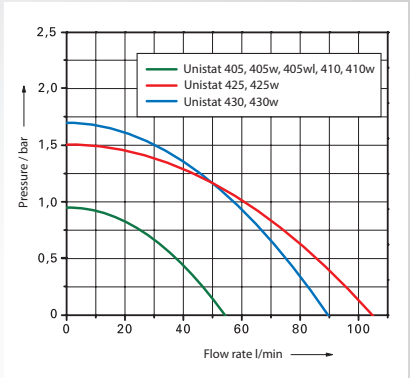
Up to 3,5 kW
Cooling power

Up to 105 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unistat 430w

Unistat 425



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C) 250	100	0	-20	-40	Dimensions W x D x H (mm)	Cat.No.	G
Unistat 405	-45...250	55	0,9[1]	1,5/3,0	1,00	1,00	1,00	0,60	0,15	426 x 307 x 631	1002.0021.01	3
Unistat 405w	-45...250	55	0,9[1]	1,5/3,0	1,30	1,30	1,30	0,70	0,15	426 x 307 x 631	1002.0022.01	3
Unistat 405wl	-45...250	55	0,9[1]	3,0	0,9	0,9	0,9	0,6	0,15	426 x 327 x 631	1002.0050.01	3
Unistat 410	-45...250	55	0,9[1]	3,0	1,70	2,50	1,50	0,80	0,20	460 x 554 x 1200	1031.0010.01	3
Unistat 410w	-45...250	55	0,9[1]	1,5/3,0	1,70	2,50	1,50	0,80	0,20	425 x 360 x 636	1031.0005.01	3
Unistat 425	-40...250	105	1,5[2]	2,0	2,00	2,00	2,50	1,80	0,20	460 x 554 x 1453	1005.0057.01	35
Unistat 425w	-40...250	105	1,5[2]	2,0	2,80	2,80	2,50	1,90	0,20	460 x 554 x 1453	1005.0058.01	35
Unistat 430	-40...250	90	1,7[2]	4,0	3,50	3,50	3,50	2,20	0,30	460 x 554 x 1453	1005.0059.01	35
Unistat 430w	-40...250	90	1,7[2]	4,0	3,50	3,50	3,50	2,20	0,30	460 x 554 x 1453	1005.0060.01	35

Options on request: natural refrigerant, Flat build models [1] integrated VPC pressure control [2] VPC pressure control via optional bypass

w = water-cooled | wl = air-/water-cooled

all technical data from page 134

Unistats®

Series 500

Unistats of model 500 series with cooling capacities up to 21 kW are ideally suited for temperature control applications in process and chemical engineering as well as for demanding material testing and temperature simulations in different industry sectors.

Down to -55 °C
Working temperature

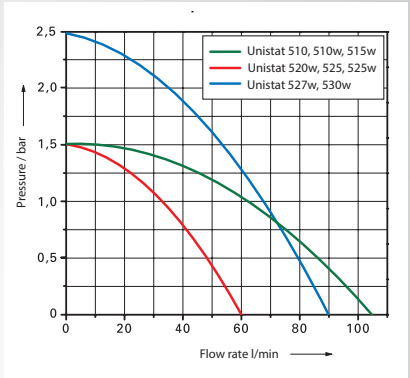
Up to 21 kW
Cooling power

Up to 105 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unistat 510

Unistat 520w



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C) 250	100	0	-20	-40	Dimensions B x T x H (mm)	Cat.No.	G
Unistat 510	-50...250	105	1,5[2]	6,0	5,3	5,3	5,3	2,8	0,9	1100 x 755 x 1370	1005.0082.01	35
Unistat 510w	-50...250	105	1,5[2]	6,0	5,3	5,3	5,3	2,8	0,9	460 x 554 x 1453	1005.0061.01	35
Unistat 515w	-55...250	105	1,5[2]	6,0	7,0	7,0	5,3	2,8	0,9	460 x 554 x 1453	1032.0006.01	4
Unistat 520w	-55...250	60	1,5[2]	6,0	6,0	6,0	6,0	4,2	1,5	540 x 604 x 1332	1006.0020.01	4
Unistat 525	-55...250	60	1,5[2]	6,0	10,0	10,0	7,0	4,2	1,5	1290 x 736 x 1596	1033.0015.01	4
Unistat 525w	-55...250	60	1,5[2]	6,0	10,0	10,0	7,0	4,2	1,5	540 x 604 x 1332	1033.0008.01	4
Unistat 527w	-55...250	90	2,5[2]	6,0	7,0	12,0	12,0	6,0	2,0	540 x 704 x 1491	1034.0014.01	4
Unistat 530w	-55...250	90	2,5[2]	12,0	7,0	21,0	16,0	9,0	3,0	540 x 704 x 1491	1034.0015.01	4

Options on request: natural refrigerant, Flat build models [1] integrated VPC pressure control [2] VPC pressure control via optional bypass

w = water-cooled

all technical data from page 134

Series 600

The Unistats of 600 series are our most powerful devices and offer very high cooling capacities of up to 130 kW. These devices are the first choice for applications with high cooling requirements for temperatures down to -60 °C.

Down to -60 °C
Working temperature

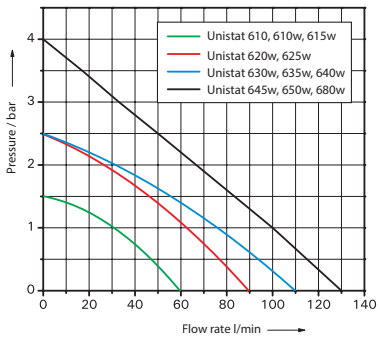
Up to 130 kW
Cooling power

Up to 130 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unistat 610w

Unistat 630w



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C) 200	0	-20	-40	-60	Dimensions W x D x H (mm)	Cat.No.	G
Unistat 610	-60...200	60	1,5[2]	6,0	7,0	7,0	6,4	3,3	0,8	1290 x 735 x 1600	1007.0040.01	4
Unistat 610w	-60...200	60	1,5[2]	6,0	7,0	7,0	6,4	3,3	0,8	630 x 704 x 1520	1007.0031.01	4
Unistat 615w	-60...200	60	1,5[2]	12,0	9,5	9,5	8,0	4,8	1,2	630 x 704 x 1520	1007.0032.01	4
Unistat 620w	-60...200	90	2,5[2]	12,0	12,0	12,0	12,0	6,5	1,8	730 x 804 x 1520	1008.0040.01	4
Unistat 625w	-60...200	90	2,5[2]	12,0	16,0	16,0	15,0	7,4	2,2	730 x 804 x 1520	1008.0041.01	4
Unistat 630w	-60...200	110	2,5[2]	24,0	22,0	21,0	20,0	14,0	5,0	950 x 1005 x 1650	1009.0021.01	5
Unistat 635w	-60...200	110	2,5[2]	24,0	27,0	27,0	25,0	18,0	6,0	950 x 1005 x 1650	1009.0022.01	5
Unistat 640w	-60...200	110	2,5[2]	30,0	32,0	35,0	30,0	18,0	6,0	950 x 1005 x 1650	1010.0007.01	5
Unistat 645w	-60...200	130	4,0[2]	36,0	45,0	45,0	42,0	22,0	7,0	1830 x 1200 x 1830	1011.0006.01	5
Unistat 650w	-60...200	130	4,0[2]	48,0	65,0	65,0	56,0	30,0	11,0	1830 x 1200 x 1830	1012.0005.01	5
Unistat 680w	-60...200	130	4,0[2]	96,0	130,0	130,0	80,0	60,0	20,0	4500 x 2000 x 2000	1013.0003.01	5

Options on request: natural refrigerant, Flat build models, additional heating capacity, air cooled units

[2] VPC pressure control via optional bypass

w = water-cooled

all technical data from page 134

Unistats®

Series 700 / 800

Unistats of the 700 and 800 series are characterised by low-end working temperatures down to -85 °C with compact dimensions. These devices are suited mainly for temperature applications with moderate cooling capacity requirements.

Down to -85 °C
Working temperature

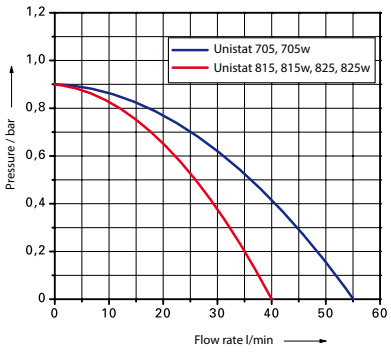
Up to 2,4 kW
Cooling power

Up to 55 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unistat 825

Unistat 705w



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C) 250	0	-20	-40	-80	Dimensions W x D x H (mm)	Cat.No.	G
Unistat 705	-75...250	55	0,9[1]	1,5 / 3,0	0,6	0,65	0,6	0,6	-	425 x 400 x 720	1001.0041.01	3
Unistat 705w	-75...250	55	0,9[1]	1,5 / 3,0	0,6	0,65	0,6	0,6	-	425 x 400 x 720	1001.0042.01	3
Unistat 815	-85...250	40	0,9[1]	2,0	1,3	1,5	1,5	1,4	0,2	460 x 604 x 1465	1014.0049.01	35
Unistat 815w	-85...250	40	0,9[1]	2,0	1,5	1,5	1,5	1,4	0,2	460 x 604 x 1465	1014.0050.01	35
Unistat 825	-85...250	40	0,9[1]	3,0	2,3	2,2	2,0	2,0	0,3	460 x 604 x 1465	1014.0051.01	4
Unistat 825w	-85...250	40	0,9[1]	3,0	2,3	2,4	2,4	2,4	0,3	460 x 604 x 1465	1014.0052.01	4

Options on request: natural refrigerant

[1] integrated VPC pressure control

w = water-cooled

all technical data from page 134

Series 900 / 1000

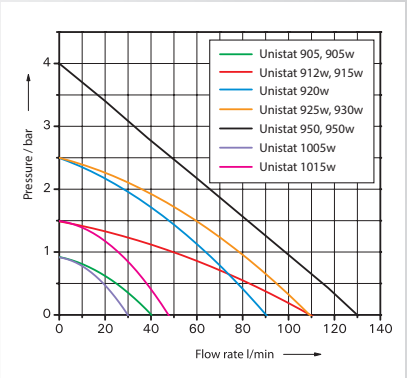
The Unistats of 900 and 1000 series are optimised for low temperature applications down to -120 °C. These devices are suited for temperature syntheses as well as material tests and temperature simulations with very low temperatures.

Down to -120 °C
Working temperature

Up to 36 kW
Cooling power

Up to 130 l/min
Pump capacity

Pilot ONE
Touch screen controller



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C) 250	100	0	-60	-80	Dimensions W x D x H (mm)	Cat.No.	G
Unistat 905	-90...250	40	0,9[1]	6,0	4,0	3,8	3,6	2,2	0,7	540x654x1500	1035.0011.01	4
Unistat 905w	-90...250	40	0,9[1]	6,0	4,5	4,5	4,5	2,5	0,7	540x654x1500	1035.0012.01	4
Unistat 912w	-90...250	110	1,5[2]	6,0	7,0	7,0	7,0	3,5	0,9	630x704x1565	1016.0027.01	4
Unistat 915w	-90...250	110	1,5[2]	6,0	11,0	11,0	11,0	4,0	1,1	630x704x1565	1036.0006.01	4
Unistat 920w	-90...200	90	2,5[2]	12,0	–	11,0	11,0	8,0	2,0	950x1205x1650	1017.0025.01	4
Unistat 925w	-90...200	110	2,5[2]	12,0	–	16,0	16,0	13,5	3,5	950x1205x1650	1017.0026.01	4
Unistat 930w	-90...200	110	2,5[2]	24,0	–	19,0	20,0	15,0	5,0	950x1205x1650	1017.0027.01	5
Unistat 950	-90...200	130	4,0[2]	36,0	–	30,0	30,0	24,0	10,0	3315x1485x3040	1018.0008.01	5
Unistat 950w	-90...200	130	4,0[2]	36,0	–	36,0	36,0	25,0	10,0	2630x1300x1930	1018.0009.01	5
Unistat 1005w	-120...100	30	0,9[2]	2,0	–	1,5	1,5	1,4	1,4	700x804x1520	1019.0009.01	4
Unistat 1015w	-120...100	44	1,5[2]	4,0	–	2,5	2,5	2,5	2,0	950x1205x1650	1020.0010.01	5

Options on request: natural refrigerant [1] integrated VPC pressure control [2] VPC pressure control via optional bypass

w = water-cooled

all technical data from page 134

Unistats® high temperature

▸ Series T300 / T400

Unistats of the T300 and T400 series control temperatures in a highly precise and space-saving manner up to + 425 °C. They set the standard for safety, ease of use and temperature control speed.

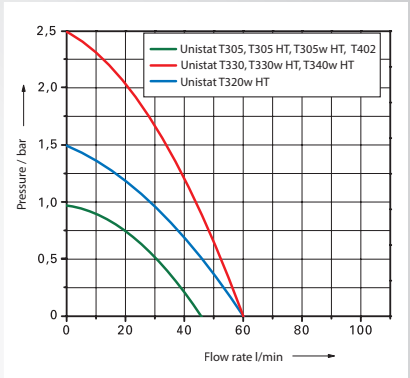
HT models are equipped with stepper motor controlled water cooling.

Up to +425 °C
Temperature range

Up to 48 kW
Heating power

Up to 60 l/min
Pump capacity

Pilot ONE
Touch screen controller



Pump curve
according to DIN 12876 with water at 20 °C

Model	Temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C) 400	300	200	100	Dimensions W x D x H (mm)	Cat.No.	G
Unistat T305	65...300	45	0,9[1]	3,0/6,0	–	–	–	–	425 x 250 x 631	1003.0021.01	3
Unistat T305 HT	65...300[3]	45	0,9[1]	3,0/6,0	–	3,2	2,3	0,6	425 x 250 x 631	1003.0020.01	3
Unistat T305w HT	(15) 65...300	45	0,9[1]	3,0/6,0	–	10,0	10,0	10,0	425 x 250 x 631	1003.0017.01	3
Unistat T320w HT	(15) 65...300	60	1,5[2]	12,0	–	10,0	10,0	6,0	460 x 554 x 1330	1004.0019.01	35
Unistat T330	65...300	60	2,5[2]	24,0	–	–	–	–	460 x 554 x 1330	1004.0031.01	35
Unistat T330w HT	(15) 65...300	60	2,5[2]	24,0	–	10,0	10,0	6,0	460 x 554 x 1330	1004.0025.01	35
Unistat T340w HT	(15) 65...300	60	2,5[2]	48,0	–	10,0	10,0	6,0	600 x 704 x 1520	1024.0007.01	35
Unistat T402	80...425	45	0,9[2]	3,0/6,0	–	–	–	–	505 x 400 x 765	1038.0003.01	3

[1] Integrated VPC pressure control [2] VPC pressure control via optional bypass [3] lowest working temperature 15 K above ambient temperature

w = water-cooled | HT = controlled cooling

all technical data from page 134

Series TR400

Unistats of the TR400 series impress with a compact and space-saving round design. Thanks to the minimised internal volume short heat-up times can be realised. A direct contact of the hot thermal fluid with the atmosphere is avoided protecting the thermal fluid. These devices are ideally suited for high-temperature applications such as double-walled reaction vessels, pilot plants and for high-temperature distillation.

HT models are equipped with controlled cooling with stepper motor controled water cooling.

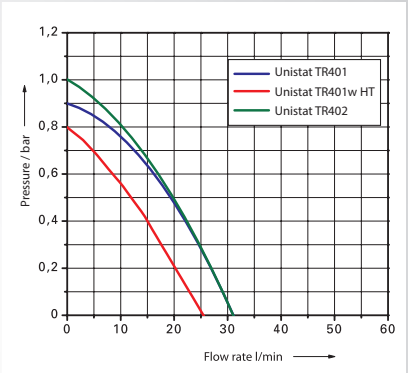
Up to +425 °C
Temperature range

Up to 10 kW
Cooling power

Up to 31 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unistat TR401



Pump curve
according to DIN 12876 with water at 20 °C

Model	Temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Colling power (kW) at (°C) 400	300	200	100	Dimensions W x D x H (mm)	Cat.No.	G
Unistat TR401	50...400	31	0,9[1]	3,0/9,0	–	–	–	–	288 x 379 x 890	1028.0007.01	3
Unistat TR401w HT	(15) 50...400	26	0,8[1]	3,0/9,0	10,0	10,0	10,0	10,0	288 x 379 x 890	1028.0018.01	3
Unistat TR402	80...425	31	1,0[1]	3,0/9,0	–	–	–	–	288 x 332 x 870	1028.0006.01	3

[1] Integrated VPC pressure control

w = water-cooled | HT = controlled cooling

all technical data from page 134

Unistats® "P"

for applications with high pressure loss

The Unistat "P" models are suited for applications with narrow cross-sections and high pressure loss due to construction restrictions. The devices are equipped with circulation pumps and high delivery pressure. Typical applications are found in the flow-through chemistry and semicon industry.

Down to -90 °C
Working temperature

Up to 25 kW
Cooling power

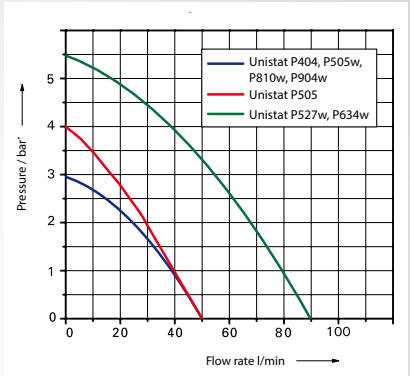
Up to 90 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unistat P505w

Unistat P810w

Unistat P404



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. VPC (l/min)	(bar)	Heating power (kW)	Cooling power (kW) at (°C)* 250	0	-20	-40	-80	Dimensions W x D x H (mm)	Cat.No.	G
Unistat P404	-45...250	50	3,0	3,5	1,0	1,0	0,05	0,05	–	460 x 604 x 1064	1043.0004.01	35
Unistat P505	-55...250	50	4,0	6,0	–	5,3	2,8	0,9	–	1200 x 805 x 1493	1044.0004.01	4
Unistat P505w	-55...250	50	4,0	6,0	–	5,3	2,8	0,9	–	460 x 554 x 1453	1044.0001.01	4
Unistat P527w	-55...250	90	5,5	12,0	7,0	12,0	6,0	2,0	–	540 x 704 x 1491	1045.0001.01	4
Unistat P530w	-55...250	90	2,5	12,0	–	16,0	–	3,0	–	540 x 704 x 1491	1045.0004.01	4
Unistat P634w	-60...200	90	5,5	24,0	–	25,0	–	16,0	–	950 x 1005 x 1650	1046.0001.01	5
Unistat P810w	-85...250	50	3,0	3,4	–	1,5	–	1,3	0,3	460 x 604 x 1465	1047.0001.01	4
Unistat P904w	-90...250	50	3,0	6,0	–	4,1	–	3,7	0,3	540 x 654 x 1650	1048.0001.01	4
Unistat P905	-90...250	40	0,9	6,0	–	3,6	–	3,5	0,7	540 x 654 x 1499	1054.0001.01	4

* Cooling power data quoted at maximum pump capacity according to DIN 12876

w = water-cooled

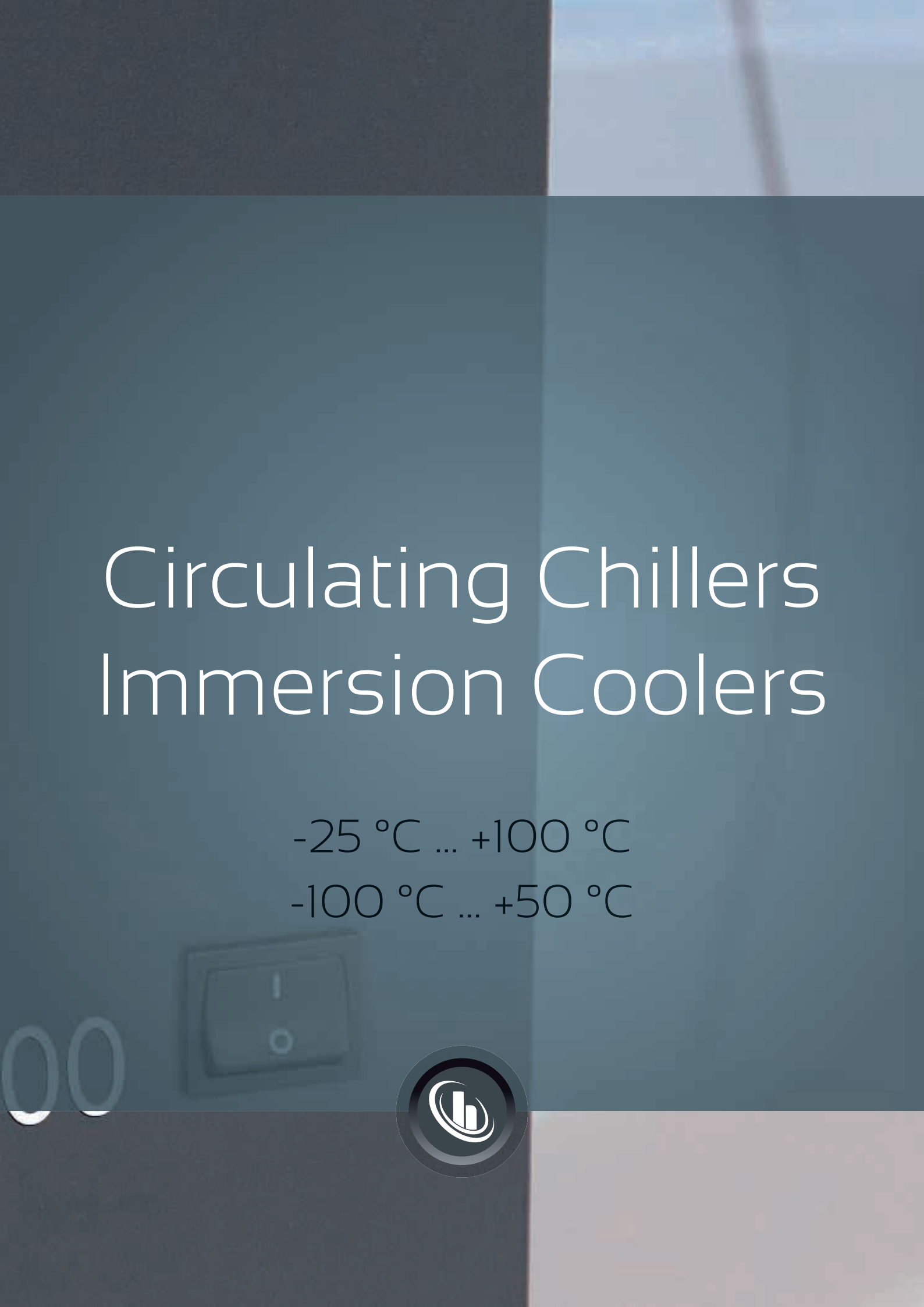
all technical data from page 134

all technical data from page 134

Unichillers & Minichillers: Cooling solutions for the laboratory and as fresh water replacement

Environmentally friendly and economical cooling in the laboratory and industry

HTS heat exchanger for precise temperature control of external applications



Circulating Chillers
Immersion Coolers

-25 °C ... +100 °C
-100 °C ... +50 °C

Minichillers and Unichillers are the solution for environmentally-friendly and economical cooling in the laboratory and industry

Minichillers and Unichillers are reliable and efficient

Minichillers® and Unichillers®

Huber circulation chillers have modern features, are robust and service-friendly. Perfect to dissipate process heat and to cool laboratory equipment.

Huber circulation chillers are available as air and water-cooled versions and are suited for applications in laboratory and industry with cooling capacities of 0.3 to 50 kW. These chillers offer high efficiencies, stable pressure and flow rates and a constant cooling water temperature.

The use of circulation chillers reduces the water consumption for many applications, thus protecting the environment and reducing operating costs. Huber circulation chillers are therefore a resource-saving solution, with short ROI.

Circulating Chillers
Immersion Coolers

- Circulation and immersion coolers for working temperatures down to -100 °C
- Modern energy management reduces operating costs and consumption
- With cooling capacities up to 50 kW suitable for laboratory and industry
- Reliably continuous operation at environmental temperatures up to +40 °C
- Powerful circulation pumps with flow rates up to 220 l/min
- Easy operation with large touch screen or OLED display

Circulating / Immersion Coolers

Functions and features in detail

Intelligent cooling

Minichillers and Unichillers are intelligent circulation chillers that are used as environmentally-friendly and economical cooling alternative to expensive fresh water to dissipate process heat. Low temperatures result in better efficiencies and higher recovery volumes in the condensation of processes.

In contrast to tap water cooling a desired setpoint temperature can be set. The chiller controls the cooling water temperature with high accuracy. Constant pressures and flow rates also permit better reproducibility.

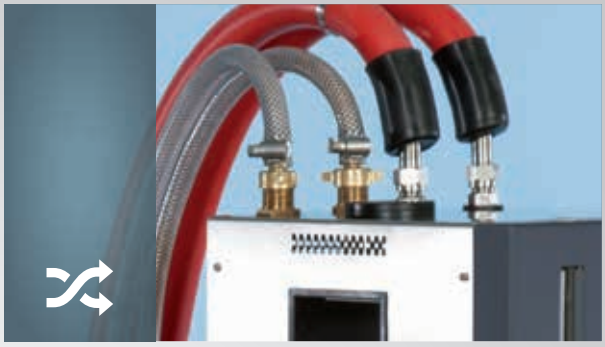
Varied use

Huber circulation chillers offer a universal solution for different applications. Typical laboratory applications include reactor blocks, autoclaves, vapour barriers, vacuum pumps, rotary evaporators, heat exchangers and microscopes, analysis and measurement devices.

The Unichillers become powerful process thermostats for temperatures up to +100 °C when fitted with optional heating. Their modern control technology ensures high temperature stability and offers various functions to also meet higher demands.

Optional heating

All circulation chillers can be factory-fitted with an optional heating and an independent overtemperature protection. The maximum working temperature is then +100 °C. The design permits continuous operation at ambient temperatures up to +40 °C.



More pump pressure

Unichiller "P" models are suitable for applications with high pressure loss. These circulation chillers are equipped with a high-pressure circulation pump as standard. More powerful pumps are available at request for the larger Unichiller models.

Air- and water-cooled

Huber circulation chillers are available either with air or water-cooled refrigeration machine. Depending on the model, the cooling capacities range from 0,3 to 50 kW. The compact Minichillers have been a bestseller in the laboratory for many years. The large Unichillers are a proven solution to dissipate heat in a range of industrial processes.

Economical

A sample calculation based on fresh water and drainage costs in Germany results in short ROI periods e.g. a Minichiller can save about 48,000 litres of water in a working week (5 days, 8 hours a day). Due to the low purchase price, the investment pays off just after a few months.

Circulating / Immersion Coolers

Functions and features in detail

Heat exchanger systems

The HTS models are connected to existing cooling water on the primary side and provide a secondary cooling circuit via a plate heat exchanger. The separation of the cooling water circuits is also useful for high purity specifications.

Application possibilities for the HTS heat exchangers are everywhere to be found where a cooling water supply with stable pressure and flow as well as precise adjustable working temperature is required.

Flexible immersion coolers down to -100 °C

The immersion coolers of the TC model range are a flexible solution for numerous cooling applications. The devices are easy to use and are suitable for fast cooling of liquids. A typical application is the counter-cooling for heating circulators.

TC immersion coolers are available unregulated for cooling tasks where continuous cooling is required or as variant with temperature control and Pt100 sensor connection.

Economical and quiet

Intelligent energy management ensures less waste heat and reduces the operating costs for power and cooling water. The cooling capacity is adjusted automatically to the requirements. In the case of air-cooled models, the noise generation is also minimised with speed-controlled and particularly quiet fans.

Inside and outside

Minichillers and Unichillers are designed for unattended continuous operation at room temperatures up to +40 °C. Unichillers can also be set up in outdoor areas with the option weather protection as well as winter or tropical mode. Thanks to the removable controller Pilot ONE the device is then remote-controlled by means of data cable.

Simple handling

Minichillers and Unichillers impress in daily work with easy handling with illuminated level indicator, overflow port and drain on the front. The filling port is on the top and therefore readily accessible at all times.

Compact and durable

All Huber circulation chillers have high-quality stainless steel housings which help to ensure a long working life. Despite their robust construction they have extremely compact dimensions and take up minimal floor space.

Circulating / Immersion Coolers

Controller features at a glance

Circulation chillers are available with OLÉ or Pilot ONE® controllers

Simple operation
Simple 3-key operation with menu navigation in plain text.

OLED display
Large, bright OLED display with display of setpoint and actual value, Tmin, Tmax.

Basic functions
Equipped with functions for the most routine applications in the laboratory.

USB, RS232
As standard with RS232, USB and Pt100-sensor connection (option).

Ease of operation
Intuitive operation in 13 languages via touch screen and full process control.

5,7" touch colour display
Large, colour TFT touch screen with graphics function and favourites menu.

Extended professional functions
Functional features can be extended for demanding applications by means of E-grade.

Interfaces
As standard with RS232, USB and Ethernet as well as Pt100 control probe connection.

Integrated programme encoder
Programme encoder with 100 steps as well as linear and non-linear ramp function.

Record process data
Recording of process data on a connected USB medium.

OLÉ controller

Pilot ONE controller

	Function/Feature	OLÉ	Pilot ONE		
			E-grade "Basic" in scope of delivery	E-grade "Exclusive" Cat.No. 9495	E-grade "Professional" Cat.No. 9496
Thermoregulation	Controller parameter tuning	predefined	predefined[1]	TAC	TAC
	Calibration program for control sensor (Internal, Process)	1-point	2-point	5-point	5-point
	Monitoring (Level protection, Over temperature protection[2])	✓	✓	✓	✓
	Adjustable limit alarms		✓	✓	✓
	VPC (Variable Pressure Control)[3]	✓	✓	✓	✓
	Venting program	✓	✓	✓	✓
	Compressor automatic control	✓	✓	✓	✓
	Set point limits	✓	✓	✓	✓
	Programmer			3 Programmes / max. 15 steps	10 Programmes / max. 100 steps
	Ramp function			linear	linear, non-linear
	Temperature control mode (Internal, Process)			✓	✓
	Maximum heating / cooling power adjustable			✓	✓
Display and Operation	Temperature display	OLED	5,7" TFT touch screen, colour		
	Display mode	numeric	graphic, numeric		
	Display resolution	0,1 °C	0,1 °C	0,1 °C / 0,01 °C	0,1 °C / 0,01 °C
	Graphic display of temperature curves		Window, full screen, scalable		
	Calendar, Date, Time		✓	✓	✓
	Languages menu navigation	DE, EN	DE, EN, FR, IT, ES, PT, CZ, PL, RU, CN, JP, KO, TR		
	Temperature format	°C / °F	°C / °F / K	°C / °F / K	°C / °F / K
	Screen switch by swiping		✓	✓	✓
	Favourites menu		✓	✓	✓
	User menues (Administrator level)				✓
	2. set point				✓
Connections	Digital interface RS232	✓	✓	✓	✓
	USB interface	✓	✓	✓	✓
	Ethernet RJ45 interface		✓	✓	✓
	Pt100 control probe connection (external control)			✓	✓
	Pt100 sensor connection (only display)	✓[4]	✓		
	External control signal / ECS STANDBY[5]	✓[4]	✓	✓	✓
	Volt-free contact / ALARM[5]	✓[4]	✓	✓	✓
	AIF (analog interface) 0/4-20 mA or 0-10 V[6]		✓	✓	✓
	Digital interface RS485[6]		✓	✓	✓
Various	Alarm signal optical / acoustic	✓	✓	✓	✓
	AutoStart (Mains failure automatic)	✓	✓	✓	✓
	Plug & Play technology		✓	✓	✓
	Technical glossary		✓	✓	✓
	Remote control / Data visualisation via Spy Software	✓	✓	✓	✓
	E-grade Evaluation versions available (30 days)		✓	✓	✓
	Service data recorder (flight recorder)		✓	✓	✓
	Saving/loading of temperature control programs			✓	✓
	Process data logging direct to USB stick			✓	✓
	Calendar start			✓	✓

[1] 30-day evaluation version TAC function available
[2] For units with integrated over-temperature protection
[3] For models with variable-speed pump or an external bypass
[4] Optional, only available factory fitted (additional charge)
[5] Standard on Unistats, otherwise via optional Com.G@te or POKO/ECS Interface
[6] Via optional Com.G@te

RotaCool®

Circulating Chiller for rotary evaporator

RotaCool is a space-saving circulation chiller in L-design specifically for rotary evaporators. The additional space requirement on the laboratory bench is nil! If the rotary evaporator is attached, the RotaCool becomes almost invisible. Cooling capacity and circulation are adapted especially to meet the requirements of common rotary evaporators.

- **Down to -10 °C**
  Working temperature
- **Up to 0,42 kW**
  Cooling power
- **Up to 14 l/min**
  Pump capacity
- **MPC controller**
  LED display

Accessories	Cat.No.	G
Additional extension plate (112 mm)	10270	1
Vacuum pump mounting	10275	1

Model	Working temperature range (°C)	Pump Data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Cooling power (kW) at (°C) 15	0	-10	Dimensions W x D x H (mm)	Cat.No.	G
RotaCool	-10...40	14	0,25	10,5	0,17	0,42	0,35	0,22	225 x 360 x 380	3033.0007.99	3

all technical data from page page 134

Minichillers®

▸ with OLÉ controller, air- and water-cooled models

Minichillers are a cost-effective and environmentally-friendly cooling solution for many laboratory applications and routine tasks in research and industry. Due to the low purchase price, the investment pays off after just a few months. The OLÉ controller combines modern technology and easy operation with practice-orientated features including USB, RS232 and OLED display.

Down to -25 °C
Working temperature

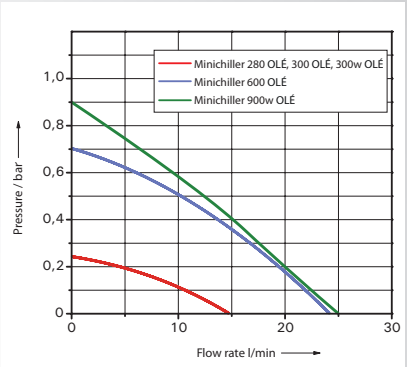
Up to 0,9 kW
Cooling power

Up to 24 l/min
Pump capacity

OLÉ controller
OLED display

Minichiller 600 OLÉ

Minichiller 280 OLÉ



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump Data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Cooling power (kW) at (°C) 15	0	-10	-20	Dimensions W x D x H (mm)	Cat.No.	G
Minichiller 280 OLÉ	-5...40	14	0,25	10,5	0,17	0,28	0,2	–	–	225 x 360 x 380	3006.0105.98	2
Minichiller 300 OLÉ	-20...40 (80)**	14	0,25	10,5	0,17	0,3	0,2	0,14	0,07	225 x 360 x 380	3006.0089.98	2
Minichiller 300w OLÉ	-20...40 (80)**	14	0,25	10,5	0,17	0,3	0,2	0,14	0,07	225 x 360 x 380	3006.0090.98	2
Minichiller 600 OLÉ	-20...40	24	0,7	18,0	0,4	0,6	0,5	0,35	0,15	280 x 490 x 424	3006.0098.98	2
Minichiller 600w OLÉ	-20...40	24	0,7	18,0	0,4	0,6	0,5	0,35	0,15	280 x 490 x 424	3006.0126.98	2
Minichiller 900w OLÉ	-25...40	24	0,9	–	–	0,9	0,7	0,4	0,2	280 x 490 x 414	3006.0121.98	2

** Permissible return temperature +80 °C All models use natural refrigerant as standard Options on request: heater

w = water-cooled

all technical data from page page 134

Unichillers®

with OLÉ controller, air- and water-cooled models

Unichillers with OLÉ controller offer better efficiencies than cooling water as well as stable pressure and flow rates and a constant operating temperature. They are suitable for a wide range of applications such as removing heat from chemical processes or cooling scientific equipment.

Down to -20 °C
Working temperature

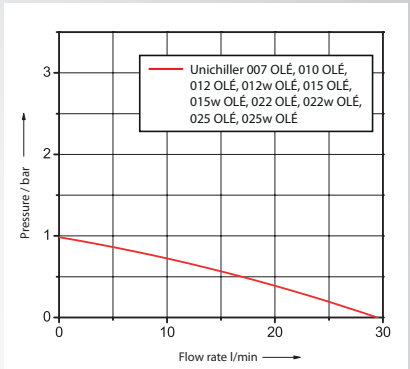
Up to 2,5 kW
Cooling power

Up to 29 l/min
Pump capacity

OLÉ controller
OLED display

Unichiller 007 OLÉ

Unichiller 022w OLÉ



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. (l/min)	max. pressure (bar)	Cooling power (kW) at (°C) 15	0	-10	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller 007 OLÉ	-20...40	29	1,0	0,7	0,55	0,4	350 x 496 x 622	3012.0120.98	3
Unichiller 010 OLÉ	-20...40	29	1,0	1,0	0,8	0,5	350 x 496 x 622	3012.0124.98	3
Unichiller 012 OLÉ	-20...40	29	1,0	1,2	1,0	0,7	420 x 487 x 579	3009.0090.98	3
Unichiller 012w OLÉ	-20...40	29	1,0	1,2	1,0	0,7	350 x 496 x 622	3012.0133.98	3
Unichiller 015 OLÉ	-20...40	29	1,0	1,5	1,0	0,7	420 x 487 x 579	3009.0094.98	3
Unichiller 015w OLÉ	-20...40	29	1,0	1,5	1,0	0,7	350 x 496 x 622	3012.0137.98	3
Unichiller 022 OLÉ	-10...40	29	1,0	2,2	1,6	1,0	460 x 590 x 743	3010.0050.98	3
Unichiller 022w OLÉ	-10...40	29	1,0	2,2	1,6	1,0	420 x 487 x 579	3009.0098.98	3
Unichiller 025 OLÉ	-10...40	29	1,0	2,5	2,0	1,2	460 x 590 x 743	3010.0054.98	3
Unichiller 025w OLÉ	-10...40	29	1,0	2,5	2,0	1,2	420 x 487 x 579	3009.0102.98	3

Options on request: heating, natural refrigerant

w = water-cooled

all technical data from page page 134

with Pilot ONE® controller, air- and water-cooled models

Unichillers with Pilot ONE controller are suited for demanding cooling applications. The devices have extensive technical features with numerous functions.

Down to -20 °C
Working temperature

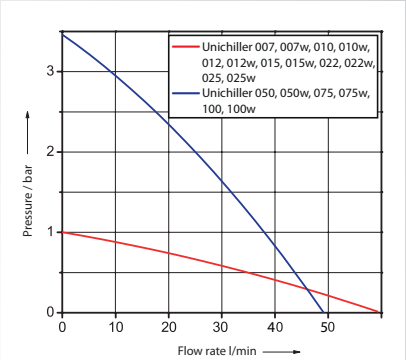
Up to 2,5 kW
Cooling power

Up to 29 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unichiller 012w

Unichiller 015-H



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. (l/min)	max. pressure (bar)	Cooling power (kW) at (°C) 15	0	-10	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller 007	-20...40	29	1,0	0,7	0,55	0,4	350 x 496 x 622	3012.0189.01	3
Unichiller 007w	-20...40	29	1,0	0,7	0,55	0,4	350 x 496 x 622	3012.0215.01	3
Unichiller 010	-20...40	29	1,0	1,0	0,8	0,5	350 x 496 x 622	3012.0191.01	3
Unichiller 010w	-20...40	29	1,0	1,0	0,8	0,5	350 x 496 x 622	3012.0219.01	3
Unichiller 012	-20...40	29	1,0	1,2	1,0	0,7	420 x 487 x 579	3009.0145.01	3
Unichiller 012w	-20...40	29	1,0	1,2	1,0	0,7	350 x 496 x 622	3012.0193.01	3
Unichiller 015	-20...40	29	1,0	1,5	1,0	0,7	420 x 487 x 579	3009.0147.01	3
Unichiller 015w	-20...40	29	1,0	1,5	1,0	0,7	350 x 496 x 622	3012.0195.01	3
Unichiller 022	-10...40	29	1,0	2,2	1,6	1,0	460 x 590 x 743	3010.0081.01	3
Unichiller 022w	-10...40	29	1,0	2,2	1,6	1,0	420 x 487 x 579	3009.0149.01	3
Unichiller 025	-10...40	29	1,0	2,5	2,0	1,2	460 x 590 x 743	3010.0083.01	3
Unichiller 025w	-10...40	29	1,0	2,5	2,0	1,2	420 x 487 x 579	3009.0151.01	3

Options on request: heating, natural refrigerant,

w = water-cooled

all technical data from page page 134

Unichillers® "P"

with OLÉ controller and high pressure pumps

Unichiller "P" are equipped with high pressure pumps and are suited for applications with high pressure drops. The devices with OLÉ controller are a basic equipment with easy operation.

Down to -20 °C
Working temperature

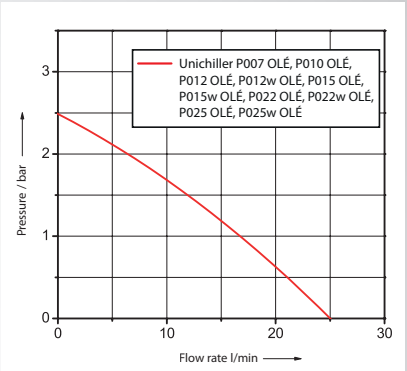
Up to 2,5 kW
Cooling power

Up to 25 l/min
Pump capacity

OLÉ controller
OLED display

Unichiller P007 OLÉ

Unichiller P025w OLÉ



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. (l/min)	max. pressure (bar)	Cooling power (kW) at (°C) 15	0	-10	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller P007 OLÉ	-20...40	25	2,5	0,7	0,55	0,4	350 x 496 x 622	3012.0161.98	3
Unichiller P010 OLÉ	-20...40	25	2,5	1,0	0,8	0,5	350 x 496 x 622	3012.0163.98	3
Unichiller P012 OLÉ	-20...40	25	2,5	1,2	1,0	0,7	420 x 487 x 579	3009.0115.98	3
Unichiller P012w OLÉ	-20...40	25	2,5	1,2	1,0	0,7	350 x 496 x 622	3012.0165.98	3
Unichiller P015 OLÉ	-20...40	25	2,5	1,5	1,0	0,7	420 x 487 x 579	3009.0117.98	3
Unichiller P015w OLÉ	-20...40	25	2,5	1,5	1,0	0,7	350 x 496 x 622	3012.0167.98	3
Unichiller P022 OLÉ	-10...40	25	2,5	2,2	1,6	1,0	460 x 590 x 743	3010.0064.98	3
Unichiller P022w OLÉ	-10...40	25	2,5	2,2	1,6	1,0	420 x 487 x 579	3009.0119.98	3
Unichiller P025 OLÉ	-10...40	25	2,5	2,5	2,0	1,2	460 x 590 x 743	3010.0066.98	3
Unichiller P025w OLÉ	-10...40	25	2,5	2,5	2,0	1,2	420 x 487 x 579	3009.0121.98	3

Options on request: heating, natural refrigerant, externally open applications

w = water-cooled

all technical data from page 134

with Pilot ONE® controller and high pressure pumps

Unichiller "P" with high pressure pumps and Pilot ONE controller for demanding cooling applications. The devices have extensive technical features with numerous professional functions.

Down to -20 °C
Working temperature

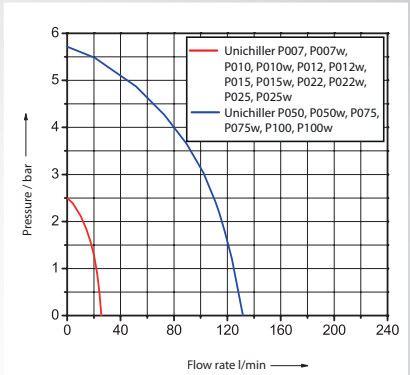
Up to 2,5 kW
Cooling power

Up to 25 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unichiller P012w

Unichiller P015-H



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. (l/min)	Pump max. pressure (bar)	Cooling power (kW) at (°C) 15	0	-10	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller P007	-20...40	25	2,5	0,7	0,55	0,4	350 x 496 x 622	3012.0169.01	3
Unichiller P007w	-20...40	25	2,5	0,7	0,55	0,4	350 x 496 x 622	3012.0217.01	3
Unichiller P010	-20...40	25	2,5	1,0	0,8	0,5	350 x 496 x 622	3012.0171.01	3
Unichiller P010w	-20...40	25	2,5	1,0	0,8	0,5	350 x 496 x 622	3012.0220.01	3
Unichiller P012	-20...40	25	2,5	1,2	1,0	0,7	420 x 487 x 579	3009.0123.01	3
Unichiller P012w	-20...40	25	2,5	1,2	1,0	0,7	350 x 496 x 622	3012.0173.01	3
Unichiller P015	-20...40	25	2,5	1,5	1,0	0,7	420 x 487 x 579	3009.0125.01	3
Unichiller P015w	-20...40	25	2,5	1,5	1,0	0,7	350 x 496 x 622	3012.0175.01	3
Unichiller P022	-10...40	25	2,5	2,2	1,6	1,0	460 x 590 x 743	3010.0068.01	3
Unichiller P022w	-10...40	25	2,5	2,2	1,6	1,0	420 x 487 x 579	3009.0127.01	3
Unichiller P025	-10...40	25	2,5	2,5	2,0	1,2	460 x 590 x 743	3010.0070.01	3
Unichiller P025w	-10...40	25	2,5	2,5	2,0	1,2	420 x 487 x 579	3009.0129.01	3

Options on request: heating, natural refrigerant, externally open applications

w = water-cooled

all technical data from page 134

Unichillers®

▸ with Pilot ONE® controller , air- and water-cooled models

The completely redesigned Unichiller range with cooling capacities up to 20 kW represent powerful solutions at budget-friendly prices. The chillers are ideally suited for cooling applications in laboratory and industry. All models are equipped with the controller Pilot ONE and are characterised by their robust stainless steel housings, rollers, removable venting grid and very quiet operation.

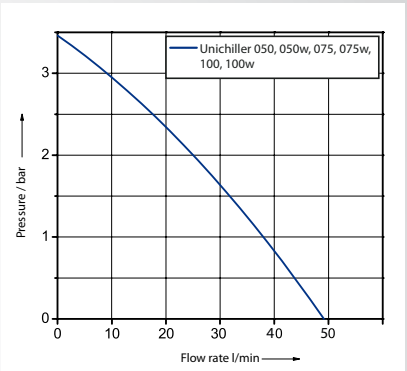
Down to -20 °C
Working temperature

Up to 10 kW
Cooling power

Up to 48 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unichiller 050



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. max. pressure (l/min)	(bar)	Cooling power (kW) at (°C) 20	0	-10	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller 050	-20...40	48	3,4	5,0	5,0	3,0	740 x 1160 x 1050	3038.0001.01	35
Unichiller 050w	-20...40	48	3,4	5,0	4,2	3,0	740 x 1160 x 1050	3040.0001.01	35
Unichiller 075	-20...40	48	3,4	7,5	6,1	4,0	740 x 1160 x 1050	3038.0018.01	35
Unichiller 075w	-20...40	48	3,4	7,5	6,1	4,0	740 x 1160 x 1050	3040.0009.01	35
Unichiller 100	-20...40	48	3,4	10,0	8,6	6,0	740 x 1160 x 1050	3038.0035.01	4
Unichiller 100w	-20...40	48	3,4	10,0	8,6	6,0	740 x 1160 x 1050	3040.0017.01	4

Options on request: heating, outdoor setup

w = water-cooled

all technical data from page page 134

Unichillers® "P"

with Pilot ONE® controller and high pressure pumps

Unichiller "P" are equipped with higher pressure circulation pumps and are suited for applications with high pressure drops.

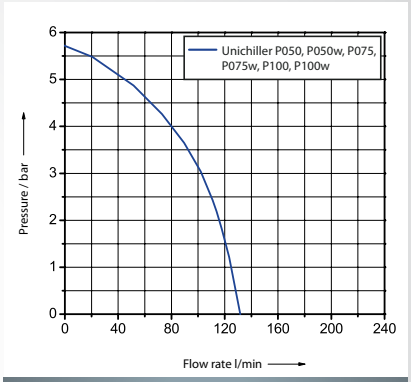
Down to -20 °C
Working temperature

Up to 10 kW
Cooling power

Up to 130 l/min
Pump capacity

Pilot ONE
Touch screen display

Unichiller P050



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. max. pressure (l/min)	(bar)	Cooling power (kW) at (°C) 20	0	-10	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller P050	-20...40	130	5,7	5,0	3,4	2,3	740 x 1160 x 1050	3038.0004.01	35
Unichiller P050w	-20...40	130	5,7	5,0	3,4	2,3	740 x 1160 x 1050	3040.0003.01	35
Unichiller P075	-20...40	130	5,7	7,5	5,3	3,3	740 x 1160 x 1050	3038.0021.01	35
Unichiller P075w	-20...100	130	5,7	7,5	5,3	3,3	740 x 1160 x 1050	3040.0011.01	35
Unichiller P100	-20...40	130	5,7	10,0	7,8	5,3	740 x 1160 x 1050	3038.0037.01	4
Unichiller P100w	-20...40	130	5,7	10,0	7,8	5,3	740 x 1160 x 1050	3040.0019.01	4

Options on request: heating, outdoor setup

w = water-cooled

all technical data from page page 134

Unichillers® “Tower”

with Pilot ONE® controller, tower design, air-cooled

Powerful Unichillers in compact tower design with small space requirements and air-cooled refrigeration machine. The devices are equipped with the Pilot ONE controller with numerous professional functions. The circulation chillers are turned into powerful process thermostats with the heating options. The option “freeze protection” permits operation with water.

Down to -20 °C
Working temperature

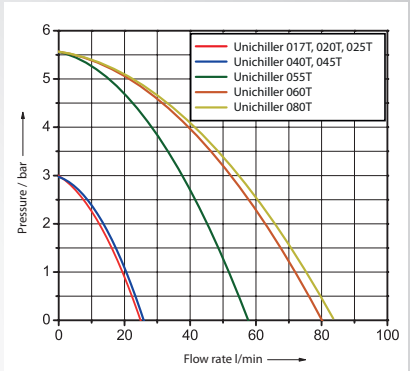
Up to 40 kW
Cooling power

Up to 220 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unichiller 080T

Unichiller 045T

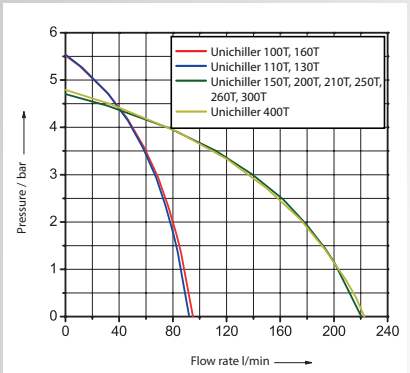


Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. Type	(l/min)	(bar)	Cooling power (kW) at (°C) 15	0	-10	-20	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller 017T	-10...40	B	25	3,0	1,7	0,9	0,4	–	450 x 510 x 1230	3013.0001.01	3
Unichiller 020T	-20...40	B	25	3,0	2,0	2,0	1,5	0,8	450 x 510 x 1230	3013.0002.01	3
Unichiller 025T	-10...40	B	25	3,0	2,5	1,2	0,6	–	450 x 510 x 1230	3013.0003.01	3
Unichiller 040T	-10...40	B	26	3,0	4,0	2,5	1,5	–	500 x 552 x 1451	3014.0001.01	3
Unichiller 045T	-20...40	B	26	3,0	4,5	4,5	2,9	1,5	500 x 552 x 1451	3014.0002.01	3
Unichiller 055T	-10...40	C3	57	5,6	5,5	3,0	1,3	–	600 x 692 x 1613	3015.0042.01	35
Unichiller 060T	-20...40	C3	80	5,6	6,0	6,0	3,9	2,0	600 x 692 x 1613	3015.0044.01	35
Unichiller 080T	-10...40	C3	84	5,6	8,0	4,8	2,5	–	600 x 790 x 1614	3016.0001.01	35

Options on request: heating, natural refrigerant, externally open applications, winter option, outdoor setup

all technical data from page page 134



Pump curve
according to DIN 12876 with water at 20 °C

Unichiller 017T

Unichiller 100T

Model	Working temperature range (°C)	Pump max. Type	(l/min)	(bar)	Cooling power (kW) at (°C) 15	0	-10	-20	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller 100T	-20...40	C3	96	5,6	10,0	10,0	6,5	2,5	600 x 790 x 1614	3017.0001.01	4
Unichiller 110T	-10...40	C3	90	5,6	11,0	6,0	2,7	–	600 x 790 x 1614	3017.0002.01	4
Unichiller 130T*	-10...40	C3	90	5,6	13,0	7,0	4,5	–	905 x 1582 x 1837	3018.0012.01	4
Unichiller 150T*	-20...40	D3	220	4,7	15,0	15,0	9,7	3,7	905 x 1582 x 1837	3019.0020.01	4
Unichiller 160T*	-10...40	C3	96	5,6	16,0	8,8	4,0	–	905 x 1582 x 1837	3018.0013.01	4
Unichiller 200T*	-10...40	D3	220	4,7	20,0	11,0	5,0	–	905 x 1582 x 1837	3019.0026.01	4
Unichiller 210T*	-20...40	D3	220	4,7	21,0	21,0	13,6	5,2	904 x 2172 x 1870	3020.0001.01	4
Unichiller 250T*	-10...40	D3	220	4,7	25,0	14,0	6,2	–	904 x 2172 x 1870	3020.0002.01	5
Unichiller 260T*	-20...40	D3	220	4,7	26,0	26,0	13,6	5,2	904 x 2172 x 1870	3020.0003.01	5
Unichiller 300T*	-10...40	D3	220	4,7	30,0	16,5	7,5	–	904 x 2172 x 1870	3020.0004.01	5
Unichiller 400T*	-10...40	D3	220	4,6	40,0	22,0	10,0	–	904 x 2172 x 1870	3021.0001.01	5

Options on request: heating, natural refrigerant, externally open applications, winter option, outdoor setup
* without rollers

all technical data from page page 134

Unichillers® “Tower”

with Pilot ONE® controller, tower design, water-cooled

Powerful Unichillers in compact tower design with small space requirements and water-cooled refrigeration machine. These devices are equipped with the Pilot ONE controller with numerous professional functions. The circulation chillers are turned into powerful process thermostats with the heating options. The option “freeze protection” permits operation with water.

Down to -20 °C
Working temperature

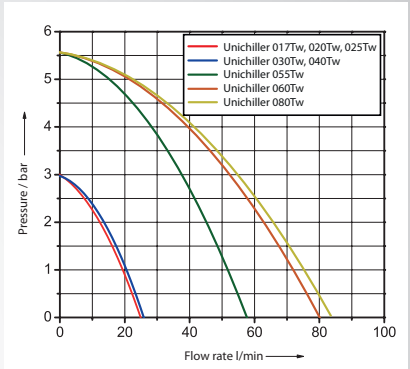
Up to 50 kW
Cooling power

Up to 220 l/min
Pump capacity

Pilot ONE
Touch screen controller

Unichiller 060 Tw

Unichiller 020Tw



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temperature range (°C)	Pump max. Type	(l/min)	(bar)	Cooling power (kW) at (°C) 15	0	-10	-20	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller 017Tw	-10...40	B	25	3,0	1,7	0,9	0,4	–	400 x 440 x 1230	3024.0021.01	3
Unichiller 020Tw	-20...40	B	25	3,0	2,0	2,0	1,5	0,8	400 x 440 x 1230	3024.0025.01	3
Unichiller 025Tw	-10...40	B	25	3,0	2,5	1,2	0,6	–	400 x 440 x 1230	3024.0031.01	3
Unichiller 030Tw	-20...40	B	26	3,0	3,0	3,0	2,0	1,0	400 x 440 x 1230	3025.0022.01	3
Unichiller 040Tw	-10...40	B	26	3,0	4,0	2,5	1,5	–	400 x 440 x 1230	3025.0033.01	3
Unichiller 055Tw	-10...40	C3	57	5,6	5,5	4,0	2,0	–	500 x 552 x 1261	3026.0001.01	35
Unichiller 060Tw	-20...40	C3	80	5,6	6,0	6,0	3,8	2,1	500 x 552 x 1261	3026.0002.01	35
Unichiller 080Tw	-10...40	C3	84	5,6	8,0	4,65	2,35	–	500 x 552 x 1261	3026.0003.01	35

Options on request: heating, natural refrigerant, externally open applications, winter option, outdoor setup

w = water-cooled

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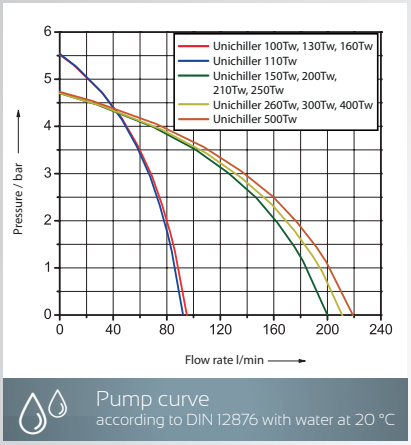


Pump curve
according to DIN 12876 with water at 20 °C

Unichiller 110 Tw

Unichiller 250Tw

Model	Working temperature range (°C)	Pump max. Type	(l/min)	(bar)	Cooling power (kW) at (°C) 15	0	-10	-20	Dimensions W x D x H (mm)	Cat.No.	G
Unichiller 100Tw	-20...40	C3	96	5,6	10,0	10,0	6,3	3,0	600 x 600 x 1450	3027.0001.01	4
Unichiller 110Tw	-10...40	C3	90	5,6	11,0	5,8	2,55	–	600 x 600 x 1450	3027.0002.01	4
Unichiller 130Tw	-10...40	C3	96	5,6	13,0	7,0	4,5	–	600 x 600 x 1450	3027.0003.01	4
Unichiller 150Tw	-20...40	D3	200	4,7	15,0	15,0	10,0	5,0	760 x 800 x 1560	3028.0001.01	4
Unichiller 160Tw	-10...40	C3	96	5,6	16,0	9,5	5,5	–	600 x 600 x 1450	3027.0004.01	4
Unichiller 200Tw	-10...40	D3	200	4,7	20,0	10,7	4,7	–	760 x 800 x 1560	3028.0002.01	4
Unichiller 210Tw	-20...40	D3	200	4,7	21,0	21,0	15,5	9,5	760 x 800 x 1560	3028.0003.01	4
Unichiller 250Tw	-10...40	D3	200	4,7	25,0	14,0	6,2	–	760 x 800 x 1560	3028.0004.01	5
Unichiller 260Tw	-20...40	D3	210	4,7	26,0	26,0	20,0	12,0	760 x 800 x 1560	3028.0005.01	5
Unichiller 300Tw	-10...40	D3	210	4,7	30,0	16,0	7,1	–	760 x 900 x 1560	3029.0001.01	5
Unichiller 400Tw	-10...40	D3	210	4,7	40,0	21,0	10,0	–	760 x 900 x 1560	3029.0002.01	5
Unichiller 500Tw*	-10...40	D3	220	4,7	50,0	30,0	–	–	1000 x 1103 x 1580	3030.0001.01	5

Options on request: heating, natural refrigerant, externally open applications, winter option, outdoor setup
* without rollers

w = water-cooled

all technical data from page page 134

DC®

Flow-through chillers

Flow-through chillers are ideally suited for counter-cooling of immersion and heating thermostats. In case of external temperature control, the flow-through chiller is installed in the return line of the thermostat.

Down to -30 °C
Working temperature

Up to 0,6 kW
Cooling power

DC30

DC31

Model	Working temperature range (°C)	Cooling power (kW) at (°C) 15	0	-20	Dimensions W x D x H (mm)	Cat.No.	G
DC30	-30...50	0,2	0,15	0,07	190 x 250 x 360	3000.0001.99	2
DC31	-30...50	0,4	0,35	0,10	250 x 310 x 400	3001.0001.99	2
DC32	-30...50	0,6	0,47	0,12	280 x 340 x 460	3002.0001.99	2

all technical data from page 134

TC®

Immersion coolers

Immersion coolers are a flexible solution for the fast cooling of liquids and for counter-cooling of heating circulator. The devices are available without control for continuous cooling and as variant with type addition "E" with temperature control (accuracy ±0.5 K), Pt100 sensor connection (sensor in the scope of delivery) and LED temperature display with setpoint input. All models either with spiral or flexible immersion cooling probe made of stainless steel. Special evaporators for thermal analysis devices from Mettler, Perkin Elmer, Gerstel etc. available on request.

Down to -100 °C
Working temperature

Up to 0,3 kW
Cooling power

Special evaporators
e.g. for thermal analysis

TC50

TC100E

Evaporator in special design or customised on request.

Model	Working temperature range (°C)	Cooling power (kW) at (°C) 0	-20	-30	-90	Dimensions W x D x H (mm)	Cat.No. "standard"	Cat.No. with flexible cooling probe	G
TC45	-45...100	0,24	0,18	0,1	–	190 x 295 x 360	3003.0001.99	3003.0003.99	2
TC45E	-45...100	0,24	0,18	0,1	–	190 x 295 x 360	3003.0002.99	3003.0004.99	2
TC50	-50...50	0,3	0,26	0,2	–	260 x 330 x 415	3004.0001.99	3004.0003.99	2
TC50E	-50...50	0,3	0,26	0,2	–	260 x 330 x 415	3004.0002.99	3004.0004.99	2
TC100	-100...40	0,16	0,15	0,14	0,07	295 x 500 x 570	3005.0043.99	3005.0045.99	2
TC100E	-100...40	0,16	0,15	0,14	0,07	295 x 500 x 570	3005.0044.99	3005.0046.99	2

Options on request: various other special cooling probes available

all technical data from page 134

Hotbox

Heating circulator

Circulation heaters suited for temperature control of externally open systems in compact design and for installation in systems. They are equipped with stainless steel circulation pump and adjustable overtemperature protection according to DIN 12876.

Up to +250 °C
Working temperature

Up to 12 kW
Heating power

Up to 100 l/min
Pump capacity

Pilot ONE
Touch screen controller

HB120

Application example

Advantages:

- Efficient circulation pump
- Digital level display
- Pt100 external sensor connection
- Compact design, suited for installation in systems

Model	Working temperature range (°C)	connection	Pump flow rate (l/min)	pressure max. (bar)	Heating power (kW)	Dimensions W x D x H (mm)	Cat.No.	G
HB45	45...250	M24x1,5	55	0,9	4,5	185 x 440 x 405	2030.0001.01	3
HB60	60...250	M30x1,5	90	2,5	6,0	323 x 451 x 498	2031.0004.01	3
HB120	60...250	M30x1,5	100	2,5	12,0	323 x 451 x 498	2031.0003.01	3

all technical data from page page 134

HTS

Heat exchanger systems

Heat exchanger systems with circulation pump for connection to cooling water on the primary side. The devices provide a cooling circuit with stable pressure/flow and adjustable operating temperature. The cooling capacity is generated using a plate heat exchanger via the cooling water. Since there is no active cooling machine, the devices operate in a quiet and energy-saving manner and are a cost-effective alternative to conventional chillers e.g. for the temperature control of Peltier elements, bioreactors, etc.

Up to +5 °C
Operating temperature

Up to 15 kW
Cooling power at 20 °C

Up to 33 l/min
Pump capacity

Pilot ONE
Touch screen controller

The **model HTS PS1** contains the heat exchanger system, however it does **not have any temperature control**. The device is therefore suited for applications with low requirements for control accuracy.

Advantages:

Models HTS PS3-PS15:

- Efficient circulation pump
- Temperature stability ±0,1 K
- RS232 interface
- Pt100 external sensor connection
- Low cooling water usage
- Application protection with cooling stage separation

HTS PS5

Model	Operating temperature range (°C)	Pump flow rate (l/min)	Pump pressure max. (bar)	Cooling power[3] at 20 °C (kW)	Heating power OPTIONAL (max. kW)[4]	Dimensions W x D x H (mm)	Cat.No.	G
HTS PS1[1]	(5)...(80)[2]	8	0,2	0,6	–	280 x 427 x 414	3011.0008.99	2
HTS PS3	(3)...(95)[2]	33	0,7	3,0	2,0	280 x 491 x 414	3011.0001.01	3
HTS PS5	(3)...(95)[2]	25	2,5	5,0	2,0	280 x 491 x 414	3011.0006.01	3
HTS PS6	(3)...(95)[2]	25	2,5	6,0	10,0	400 x 491 x 529	3011.0002.01	3
HTS PS15	(3)...(95)[2]	25	2,5	15,0	10,0	400 x 491 x 529	3011.0024.01	4

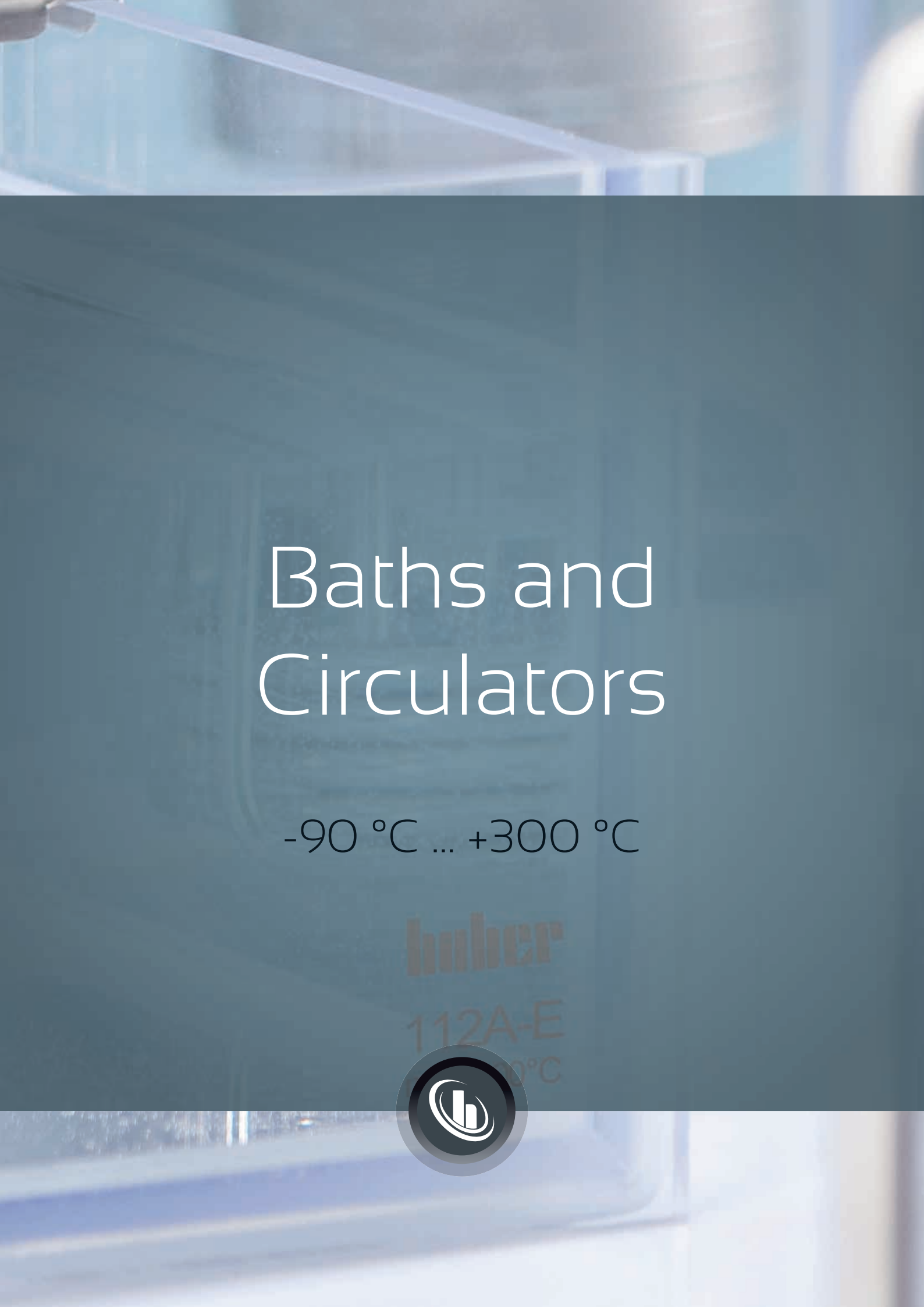
[1] Air-cooled [2] auxiliary cooling/heating device required (see glossary "Working Temperature Range")
[3] Cooling power data measured with cooling water-inlet temperature of +10 °C and 2 bar [4] optionally available on request with heating and OT-protection

all technical data from page page 134

Immersion circulators
and baths for the research
laboratory

Refrigeration
circulators
down to -40 °C

Refrigeration
circulators
down to -95 °C



Baths and Circulators

-90 °C ... +300 °C

KISS and CC circulators are ideally suited for quality controls, material tests, sample preparation, analytics, medical technology etc.

Modern circulators for many applications
in laboratory and industry

KISS®, CC® and Ministats®

**Huber bath circulators are modern classics.
Robust, convincing technology and easy to operate.**

The circulators are split into two product lines: the Compatible Control models and the simpler KISS models. Both product lines represent classically constructed laboratory circulators with open baths. Baths and circulators for heating applications up to +300 °C are available, as well as models for heating and cooling applications from -90 °C to +200 °C. Immersion or bridge circulators are suitable for thermal control of existing baths. The Ministats, the smallest cooling and heating circulators in the world, are the first choice for operation in fume-hoods or integrating into systems.

Bath Circulators

- Heating and cooling models for working temperatures from -90 to +300 °C
- Suitable for internal and external temperature control applications
- Extensive basic functions and function extension by E-grade
- Different device classes with heating and cooling capacities up to 7 kW
- Warning and safety functions according to DIN 12876
- Environmentally compatible with natural refrigerants

Bath Circulators

Functions and features in Detail

USB and RS232

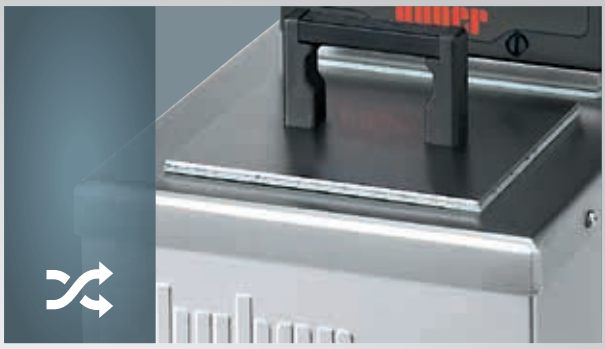
The bath circulators of the KISS, CC and Ministat series and the model Variostat are equipped with an RS232 interface as well as a USB port as standard. Remote control is possible via the interfaces, measurement data can be recorded and process data visualised. The free software SpyLight is available for this purpose.

Environmentally-friendly

All cooling circulators have Active Cooling Control for active cooling capacity control. At the peak temperature and an automatic cooling capacity adaptation for energy-saving operation and reduced heat emmission. Huber cooling circulators have been working for many years with environmentally-friendly natural refrigerants.

Modern pump technology

All models have powerful pressure and suction pumps. The top range models with the Pilot ONE have powerful pressure and suction pumps. The circulation can be adjusted to the respective bath configuration.



Robust construction

The temperature control bath is directly welded to the unit cover plate. This means that no seal is required and offers life-long protection to the insulation. The cover plate is of the cooling circulators is also passively thermoregulated (no energy consumption) to avoid condensation or ice formation.

Safety first

No compromise in terms of safety! The requirements of the highest safety classification (III/FL) according to DIN 12876 are achieved through level protection and an adjustable independent overtemperature protection.

Infinitely variable

KISS and CC thermostats are typical bath circulators and are often used for direct thermoregulation in the bath. They comprise of an immersion circulator with a bath or a cooling bath. The models are available in different sizes and versions.

Bath Circulators

Functions and features in Detail

Free SpyLight

Using the free software SpyLight the process-relevant data can be visualised and documented. Communication is achieved via RS232, RS485, USB (virtual COM port) or TCP/IP.

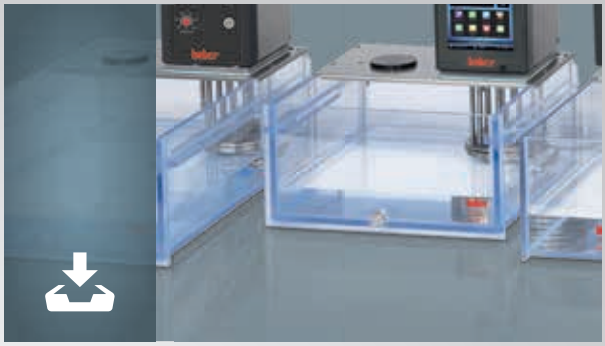
SpyLight is characterised by a low consumption of PC resources and easy operation. The recorded data can be displayed over time. The axes of the diagram are freely scalable and a zoom function simplifies the graphical evaluation of individual time periods.

Calibration inserts

Through the use of special calibration inserts, our bath circulators can be used for the calibration of sensors, thermometers and measurement devices. When working with a calibration insert, the circulator medium flows through the heat exchanger and the distributor at the bottom into the calibration bath. This evens out temperature fluctuations so that there are virtually no gradients and no delays with quick ramps. The temperature stability can improve by a factor 5 to 10.

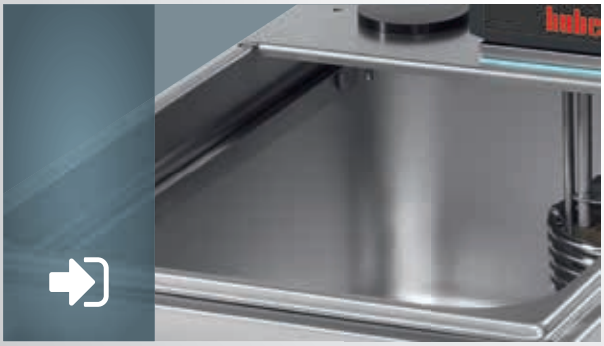
Expansion by E-grade

The electronic upgrade function offers excellent flexibility for all thermostats with Pilot ONE controller. These devices have comfortable functions already in the basic version for most typical temperature control applications. By means of E-grade the range of functions can be expanded again for special tasks.



Bath inserts and more

A comprehensive selection of accessories is available for our bath circulators to make daily work easier, e.g. test glass inserts, platforms, bath covers and Pt100 external sensors as well as hoses, thermal liquids and various adapters.



Refill automatically

Bath circulators are available with an automatic refill mechanism. A float switch controls the automatic water supply by means of a solenoid valve. If the fluid level drops, the valve opens and the bath is refilled automatically. An excessively low fluid level e.g. by evaporation, can therefore be avoided.

Displacement inserts

Displacement inserts reduce the fluid volume in the bath and thus the mass to be controlled. The smaller the mass to be cooled or heated, the faster the temperature ramp rate.

Bath Circulators

Controller features at a glance

Bath Circulators are available either with the controllers KISS® or Pilot ONE®

Simple operation
Simple 3-key operation with menu navigation in plain text.

OLED display
Large, bright OLED display with display of setpoint and actual value, Tmin, Tmax.

Basic functions
Equipped with functions for most routine applications in the laboratory.

USB, RS232
As standard with RS232, USB and Pt100-sensor connection (option).

Ease of operation
Intuitive operation in 13 languages via touch screen and full process control.

5,7" touch colour display
Large, colour TFT touch screen with graphics function and favourites menu.

Extended professional functions
Functional features can be extended for demanding applications by means of E-grade.

Interfaces
As standard with RS232, USB and Ethernet as well as Pt100 control probe connection.

Integrated programme encoder
Programme encoder with 100 steps as well as linear and non-linear ramp function.

Record process data
Recording of process data on a connected USB medium.

KISS Controller

Pilot ONE Controller

	Function/Features	KISS	Pilot ONE		
			E-grade „Basic“ in scope of delivery	E-grade „Exclusive“ Cat.No. 9495	E-grade „Professional“ Cat.No. 9496
Thermoregulation	Controller parameter tuning	predefined	predefined[1]	TAC	TAC
	Calibration program for control sensor (Internal, Process)	1 Point	2 Point	5 Point	5 Point
	Monitoring (Level protection, Over temperature protection[2])	✓	✓	✓	✓
	Adjustable limit alarms		✓	✓	✓
	VPC (Variable Pressure Control)[3]	✓	✓	✓	✓
	Venting program	✓	✓	✓	✓
	Compressor automatic control	✓	✓	✓	✓
	Set point limit	✓	✓	✓	✓
	Programmer			3 programmes / max. 15 steps	10 programmes / max. 100 steps
	Ramp function			linear	linear, non-linear
	Temperature control mode (Internal, Process)			✓	✓
	Maxium heating / cooling power adjustable			✓	✓
Display and operation	Temperature display	OLED	5,7“ TFT touch screen, colour		
	Display mode	numeric	graphic, numeric		
	Display resolution	0,1 °C	0,1 °C	0,1 °C / 0,01 °C	0,1 °C / 0,01 °C
	Graphic display of temperature curves		Window, full screen, scalable		
	Calendar, Date, Time		✓	✓	✓
	Languages menu navigarion	DE, EN	DE, EN, FR, IT, ES, PT, CZ, PL, RU, CN, JP, KO, TR		
	Changeable temperature format	°C / °F	°C / °F / K	°C / °F / K	°C / °F / K
	Switch display by swiping with finger		✓	✓	✓
	Favourites menu		✓	✓	✓
	User menues (Administrator level)				✓
	2. Setpoint				✓
Connections	Digital Interface RS232	✓	✓	✓	✓
	USB interface	✓	✓	✓	✓
	Ethernet RJ45 interface		✓	✓	✓
	Pt100 control probe connection (external control)			✓	✓
	Pt100 sensor connection (only display)	✓[4]	✓		
	External control signal / ECS STANDBY[5]		✓	✓	✓
	Volt-free contact / ALARM[5]		✓	✓	✓
	AIF (Analogue interface) 0/4-20 mA or 0-10 V[6]		✓	✓	✓
	Digital interface RS485[6]		✓	✓	✓
Various	Alarm signal optical / acoustic	✓	✓	✓	✓
	AutoStart (Mains failure automatic)	✓	✓	✓	✓
	Plug & Play technology		✓	✓	✓
	Technical glossary		✓	✓	✓
	Remote control / visualisation via Spy Software	✓	✓	✓	✓
	E-grade Evaluation versions available (30 days)		✓	✓	✓
	Service data recorder (flight recorder)		✓	✓	✓
	Saving/loading of temperature control programs			✓	✓
	Process data logging direct to USB stick			✓	✓
	Calendar start			✓	✓

[1] 30-day evaluation version TAC function available
[2] For units with integrated over-temperature protection
[3] For models with variable-speed pump or an external bypass
[4] Optional, only available factory fitted (additional charge)
[5] Standard on Unistats, otherwise via optional Com.G@te or POKO/ECS interface
[6] Via optional Com.G@te

Immersion Circulators

the universal ones with screw terminal

Immersion circulators with an adjustable screw fixing for easy installation on any bath. All models are equipped with a powerful pressure/suction pump and comply with protection class III (FL) for flammable liquids.

Up to +200 °C
Temperature Range

2,0 kW
Heating power

Up to 27 l/min
Pump capacity

CC-E

KISS E

KISS circulators are available in three colour variants:
Grey (Standard)
Red (Cat.No. 61998)
Blue (Cat.No. 61999)

Model	Temperature range (°C)	Temperature stability (l/min)	Heating power (kW)	Pump data max. pressure (l/min)	(bar)	max. Sog (l/min)	(bar)	Safety class (kW)	Dimensions W x D x H / ID[1] (mm)	Cat.No.	G
CC-E	(-30)* 25...200	0,02	2,0	27	0,7	22	0,4	FL, III	132 x 159 x 315/150	2000.0023.01	1
KISS E	(-30)* 25...200	0,05	2,0	14	0,25	10,5	0,17	FL, III	132 x 163 x 312/150	2035.0012.98	1
CC-E xd	(-30)* 25...200	0,02	2,0	22	0,4	17	0,25	FL, III	132 x 159 x 360/195	2000.0005.01	1

* Auxiliary cooling device required (see glossary "Working Temperature Range") [1] Immersion Depth

all technical data from page 134

Bridge Circulators

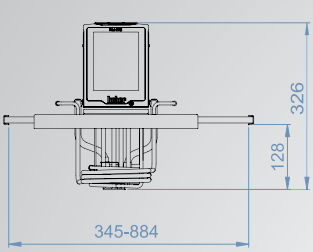
for any bath

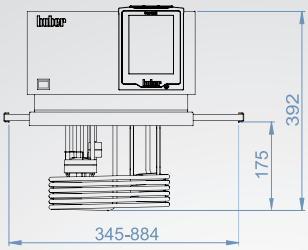
Bridge circulators can be used for the temperature control of any bath. External systems can also be controlled using the speed-controlled pressure suction pump with VPC technology. Models with greater heating capacity are suited for controlling larger bath volumes. The telescopic arms can be extended up to a maximum of 884 millimeters.

Up to +300 °C
Temperature range

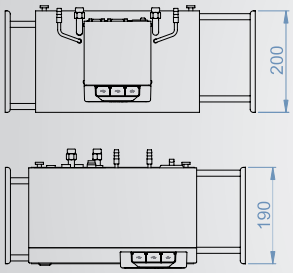
Up to 4,0 kW
Heating power

Up to 27 l/min
Pump capacity





VPC
Variable Pressure Control



Model	Temperature range (°C)	Heating power (kW)	Temperature stability (K)	Pump data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Cat.No.	G
CC-200BX	(-20)* 28...200	2,0	0,02	27	0,7	22	0,4	2000.0003.01	1
CC-300BX	(-20)* 28...300	3,0/4,0	0,02	25	0,7	18,5	0,4	2007.0002.01	1

* Auxiliary cooling device required (see glossary "Working Temperature Range")

all technical data from page 134

Heating Circulators

with polycarbonate bath

Heating bath circulators with transparent baths made from polycarbonate. The circulators are equipped with an overtemperature and low level protection in accordance with protection class III (FL). The circulating pump ensures optimal mixing and temperature uniformity and permits the temperature control of external applications using pump adapters (accessories).

Up to +100 °C
Temperature range

2,0 kW
Heating power

Up to 18 Liter
Bath volume

Model	Temperature range (°C)	Heating power (kW)	opening W x D (mm)	Bath depth (mm)	volume (ltr)	Pump data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Dimensions W x D x H (mm)	Cat.No.	G
CC-106A	(15)* 25...100	2,0	130 x 110	150	6	27	0,7	22	0,4	147 x 307 x 330	2001.0001.01	1
KISS 106A	(15)* 25...100	2,0	130 x 110	150	6	14	0,25	10,5	0,17	147 x 307 x 330	2037.0043.98	1
CC-108A	(15)* 25...100	2,0	130 x 210	150	8	27	0,7	22	0,4	147 x 407 x 330	2001.0002.01	1
KISS 108A	(15)* 25...100	2,0	130 x 210	150	8	14	0,25	10,5	0,17	147 x 407 x 330	2037.0045.98	1
CC-110A	(15)* 25...100	2,0	130 x 310	150	10	27	0,7	22	0,4	147 x 507 x 330	2001.0003.01	1
KISS 110A	(15)* 25...100	2,0	130 x 310	150	10	14	0,25	10,5	0,17	147 x 507 x 330	2037.0047.98	1
CC-112A	(15)* 25...100	2,0	275 x 161	150	12	27	0,7	22	0,4	333 x 360 x 335	2001.0004.01	1
KISS 112A	(15)* 25...100	2,0	275 x 161	150	12	14	0,25	10,5	0,17	333 x 360 x 335	2037.0049.98	1
CC-118A	(15)* 25...100	2,0	275 x 321	150	18	27	0,7	22	0,4	333 x 520 x 335	2001.0005.01	1
KISS 118A	(15)* 25...100	2,0	275 x 321	150	18	14	0,25	10,5	0,17	333 x 520 x 335	2037.0051.98	1

* Auxiliary cooling device required (see glossary "Working Temperature Range") Temperature stability: CC ±0,02 K ; KISS ±0,05 K

all technical data from page 134

with stainless steel bath

Heating bath circulators with insulated stainless steel baths for temperatures up to +200 °C. The devices can be used for externally closed and externally open (with optional level control) temperature control tasks using a pump adapter (accessories). Models with Pilot ONE have a speed-controlled pressure/suction pump.

Up to +200 °C
Temperature range

2,0 kW
Heating power

Up to 25 Liter
Bath volume

Model	Temperature range (°C)	Heating power (kW)	opening W x D (mm)	Bath depth (mm)	volume (ltr)	Pump data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Dimensions W x D x H (mm)	Cat.No.	G
CC-208B	(-30)* 25...200	2,0	230 x 127	150	8,5	27	0,7	22	0,4	290 x 350 x 375	2002.0001.01	1
KISS 208B	(-30)* 25...200	2,0	230 x 127	150	8,5	14	0,25	10,5	0,17	290 x 350 x 375	2038.0053.98	1
CC-212B	(-30)* 25...200	2,0	290 x 152	150	12	27	0,7	22	0,4	350 x 375 x 375	2002.0002.01	1
KISS 212B	(-30)* 25...200	2,0	290 x 152	150	12	14	0,25	10,5	0,17	350 x 375 x 375	2038.0052.98	1
CC-215B	(-30)* 25...200	2,0	290 x 152	200	15	27	0,7	22	0,4	350 x 375 x 425	2002.0003.01	1
KISS 215B	(-30)* 25...200	2,0	290 x 152	200	15	14	0,25	10,5	0,17	350 x 375 x 425	2038.0051.98	1
CC-220B	(-30)* 25...200	2,0	290 x 329	150	20	27	0,7	22	0,4	350 x 555 x 375	2002.0004.01	1
KISS 220B	(-30)* 25...200	2,0	290 x 329	150	20	14	0,25	10,5	0,17	350 x 555 x 375	2038.0050.98	1
CC-225B	(-30)* 25...200	2,0	290 x 329	200	25	27	0,7	22	0,4	350 x 555 x 425	2002.0005.01	1
KISS 225B	(-30)* 25...200	2,0	290 x 329	200	25	14	0,25	10,5	0,17	350 x 555 x 425	2038.0049.98	1

* Auxiliary cooling device required (see glossary "Working Temperature Range") Temperature stability: CC ±0,02 K ; KISS ±0,05 K

all technical data from page 134

Heating Circulators

▸ with filling port, for external temperature control

Heating circulators for the temperature control of externally connected applications. The devices are equipped with baths made of stainless steel or transparent polycarbonate and have rear pump connections and a stainless steel bath cover with filling port as standard. All models have an overtemperature and low level protection of protection class III (FL) according to DIN 12876 for use with flammable liquids.

The models 202C are equipped with integrated cooling coil as standard, for models 104A it is available as an option.

Up to +200 °C
Temperature range

2,0 kW
Heating power

Up to 27 l/min
Pump capacity

KISS 104A

CC-202C

Model	Temperature range (°C)	Heating power (kW)	opening W x D (mm)	Bath depth (mm)	volume (ltr)	Pump data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Dimensions W x D x H (mm)	Cat.No.	G
CC-104A	(15)* 25...100	2,0	Ø25	150	4	27	0,7	22	0,4	147 x 235 x 330	2001.0016.01	1
KISS 104A	(15)* 25...100	2,0	Ø25	150	4	14	0,25	10,5	0,17	147 x 235 x 330	2037.0040.98	1
CC-202C	(-30)* 45...200	2,0	Ø25	150	2	27	0,7	22	0,4	178 x 260 x 355	2003.0001.01	1
KISS 202C	(-30)* 45...200	2,0	Ø25	150	2	14	0,25	10,5	0,17	178 x 260 x 355	2039.0012.98	1

* Auxiliary cooling device required (see glossary "Working Temperature Range") Temperature stability: CC ±0,02 K ; KISS ±0,05 K

all technical data from page 134

Heating Bath Circulators

▸ with open bath, for internal and external temperature control

Heating circulators for the temperature control of externally connected applications. Furthermore it is possible to thermoregulate any objects directly in the circulator bath. The devices are equipped with durable baths made from high-grade stainless steel and have pump connections at the rear as standard. All models have overtemperature and low level protection to protection class III (FL) according to DIN 12876 for use with flammable liquids.

Up to +300 °C
Temperature range

Up to 4,0 kW
Heating power

Up to 27 l/min
Pump capacity

Model	Temperature range (°C)	Bath volume (ltr.)	Bath depth (mm)	Heating power (kW)	Pump data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Dimensions W x D x H (mm)	Cat.No.	G
CC-205B	(-30)* 45...200	5,0	150	2,0	27	0,7	22	0,4	178 x 337 x 355	2004.0001.01	1
KISS 205B	(-30)* 45...200	5,0	150	2,0	14	0,25	10,5	0,17	178 x 337 x 355	2040.0012.98	1
CC-304B	(-20)* 28...300	5,0	155	3,0	25	0,7	18,5	0,4	210 x 335 x 392	2005.0001.01	1
CC-308B	(-20)* 28...300	8,5	155	3,0	25	0,7	18,5	0,4	242 x 404 x 392	2006.0001.01	1
CC-315B	(-20)* 28...300	15	200	3,0/4,0	25	0,7	18,5	0,4	335 x 382 x 433	2007.0001.01	1

* Auxiliary cooling device required (see glossary "Working Temperature Range") Temperature stability: CC ±0,02 K ; KISS ±0,05 K

all technical data from page page 134

Ministats®

Our smallest cooling circulators

Ministats are the smallest cooling circulators in the world and permit operation in the smallest of spaces, for example in a fume hood or within technical systems. The devices have a wide range of features and are ideally suited for the temperature control of photometers, refractometers, viscometers, distillation apparatus, reaction vessels and Miniplant facilities. The application focus is on external applications - the bath opening, however, also permits the thermoregulation of smaller objects directly in the circulator bath.

Down to -45 °C
Working temperature range

Up to 0,6 kW
Cooling power

Up to 22 l/min
Pump capacity

Ministat 240

Ministat 230

Ministat 125

Model	Working temp. range (°C)	Heating power (kW)	Bath volume (ltr.)	Bath depth (mm)	Pump data max. pressure (l/min)	Pump data max. pressure (bar)	Pump data max. suction (l/min)	Pump data max. suction (bar)	Cooling power (kW) at (°C) 20	0	-20	-30	Dimensions W x D x H (mm)	Cat.No.	G
Ministat 125	-25...150	1,0	2,75/1,3*	120	22	0,7	16	0,4	0,30	0,21	0,05	–	225 x 370 x 429	2014.0011.01	2
Ministat 125w	-25...150	1,0	2,75/1,3*	120	22	0,7	16	0,4	0,30	0,20	0,10	–	225 x 370 x 429	2014.0006.01	2
Ministat 230	-40...200	2,0	3,2/1,7*	135	22	0,7	16	0,4	0,42	0,38	0,25	0,14	255 x 450 x 476	2015.0005.01	2
Ministat 230w	-40...200	2,0	3,2/1,7*	135	22	0,7	16	0,4	0,42	0,38	0,25	0,14	255 x 450 x 476	2015.0007.01	2
Ministat 240	-45...200	2,0	4,9/2,8*	157	22	0,7	16	0,4	0,60	0,55	0,35	0,125	300 x 465 x 516	2016.0005.01	2
Ministat 240w	-45...200	2,0	4,9/2,8*	157	22	0,7	16	0,4	0,60	0,55	0,35	0,125	300 x 465 x 516	2016.0006.01	2

All units use natural refrigerant as standard * with displacement insert Temperature stability: ±0,02 K

w = water-cooled

all technical data from page page 134

Variostat®

Cooling Circulator for variable baths

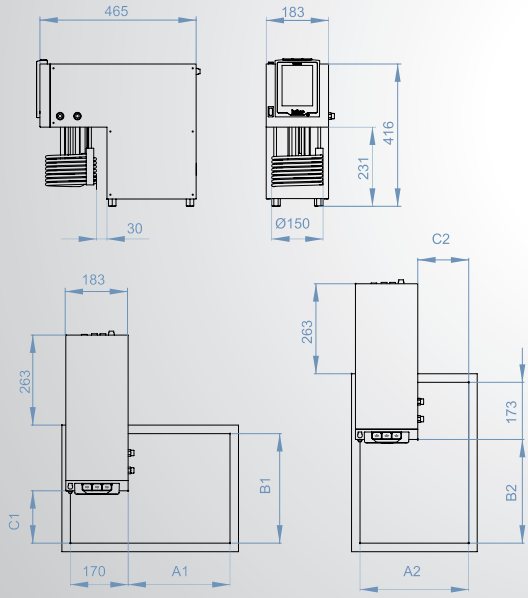
The Variostat can control the temperature of a wide range of bath dimensions. The special construction permits greatest flexibility for the user. The circulation can be adjusted to suit the bath size using the stepless variable speed suction/pressure pump. The pump pressure can also be controlled with an optional pressure sensor for external applications.

Insulated stainless steel baths are available in three standard sizes or can be made to measure.

Down to -30 °C
Working temperature range

Up to 0,3 kW
Cooling power

Up to 25 l/min
Pump capacity



Model	Working temp. range (°C)	Bath volume (ltr.)	Heating power (kW)	Pump data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Cooling power (kW) (kW) at (°C) 100	20	0	-20	-30	Cat.No.	G
Variostat	-30...150	variable	1,0	25	0,7	18,5	0,4	0,3	0,3	0,2	0,12	0,03	2013.0003.01	2

All units use natural refrigerant as standard Function version available by E-grade Temperature stability: ±0,02 K

all technical data from page 134

Cooling Circulators

for internal and external temperature control

Cooling bath circulators with insulated baths made of stainless steel are suitable for the temperature control of objects directly in the thermostat bath and for the temperature control of externally closed or externally open (with optional level control) applications. The cooling circulators work in an environmentally and climate friendly manner using a natural refrigerants.

Down to -25 °C
Working temperature range

Up to 0,26 kW
Cooling power

Up to 27 l/min
Pump capacity

CC-K6 / CC-K6s

KISS K6 / KISS K6s

Model	Working temp. range (°C)	Heating power (kW)	Bath opening (mm)	Bath depth (mm)	Bath volume (ltr.)	Pump data max. pressure (l/min)	Pump data max. pressure (bar)	Pump data max. suction (l/min)	Pump data max. suction (bar)	Cooling power (kW) at (°C) 20	0	-20	Dimensions W x D x H (mm)	Cat.No.	G
CC-K6	-25...200	2,0	140 x 120	150	4,5	27	0,7	22	0,4	0,20	0,15	0,05	210 x 400 x 546	2008.0005.01	2
KISS K6	-25...200	2,0	140 x 120	150	4,5	14	0,25	10,5	0,17	0,20	0,15	0,05	210 x 400 x 546	2008.0043.98	2
CC-K6s	-25...200	2,0	140 x 120	150	4,5	27	0,7	22	0,4	0,26	0,21	0,05	210 x 400 x 546	2008.0002.01	2
KISS K6s	-25...200	2,0	140 x 120	150	4,5	14	0,25	10,5	0,17	0,26	0,21	0,05	210 x 400 x 546	2008.0044.98	2

All units use natural refrigerant as standard Temperature stability: CC ±0,02 K ; KISS ±0,05 K

all technical data from page 134

for internal temperature control

Cooling bath circulators with insulated baths made of stainless steel are cost-effective solutions for the temperature control of objects directly in the bath. Using a pump adapter (accessory), the devices can be used for both externally closed and externally open (with option level control) temperature control applications. The cooling circulators work in an environmentally and climate friendly manner using a natural refrigerant.

Down to -30 °C
Working temperature range

Up to 0,35 kW
Cooling power

Up to 27 l/min
Pump capacity

Model	Working temp. range (°C)	Heating power (kW)	Bath opening (mm)	Bath depth (mm)	Bath volume (ltr.)	Pump data max. pressure (l/min)	(bar)	max. suction (l/min)	(bar)	Cooling power (kW) at (°C) 0	-10	-20	Dimensions W x D x H (mm)	Cat.No.	G
CC-K12	-20...200	2,0	290 x 152	150	12	27	0,7	22	0,4	0,2	0,12	0,05	350 x 560 x 430	2009.0002.01	2
KISS K12	-20...200	2,0	290 x 152	150	12	14	0,25	10,5	0,17	0,2	0,12	0,05	350 x 560 x 430	2009.0020.98	2
CC-K15	-20...200	2,0	290 x 152	200	15	27	0,7	22	0,4	0,2	0,12	0,05	350 x 560 x 430	2010.0002.01	2
KISS K15	-20...200	2,0	290 x 152	200	15	14	0,25	10,5	0,17	0,2	0,12	0,05	350 x 560 x 430	2010.0017.98	2
CC-K20	-30...200	2,0	290 x 329	150	20	27	0,7	22	0,4	0,35	0,27	0,16	350 x 555 x 615	2011.0002.01	2
KISS K20	-30...200	2,0	290 x 329	150	20	14	0,25	10,5	0,17	0,35	0,27	0,16	350 x 555 x 615	2011.0013.98	2
CC-K25	-30...200	2,0	290 x 329	200	25	27	0,7	22	0,4	0,35	0,27	0,16	350 x 555 x 615	2012.0002.01	2
KISS K25	-30...200	2,0	290 x 329	200	25	14	0,25	10,5	0,17	0,35	0,27	0,16	350 x 555 x 615	2012.0015.98	2

All units use natural refrigerant as standard Temperature stability: CC ±0,02 K ; KISS ±0,05 K

all technical data from page 134

Cooling Circulators

Series CC-400

Cooling bath circulators with insulated baths made from stainless steel. The devices have a temperature controlled bath cover plate to prevent the formation of ice or condensation in the bath, and are suited for the temperature control of external applications and temperature control of objects directly in the circulator bath. Typical applications are, for example, photometers, refractometers, viscometers, double-walled reaction vessels and autoclaves. Depending on the model, the devices can be used in Miniplant facilities, kilo laboratories, for the determination of freezing point, for low-temperature calibration, for petroleum testing, for temperature control of measuring instruments and test set-ups as well as for material testing, quality control and many more. Equipped with a professional range of functions of the Pilot ONE controller, high requirements are met.

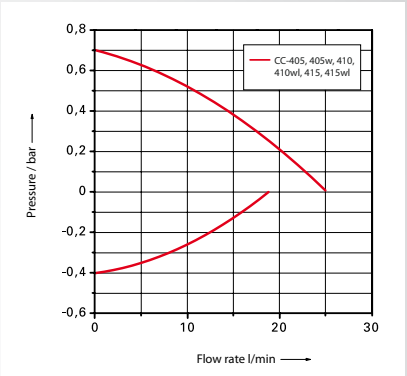
A powerful pressure/suction pump ensures good circulation and heat transfer to the application. The pump speed is controlled steplessly, the pressure can also be controlled using an optional pressure sensor.

The cooling circulators of the CC model range have Active Cooling Control for active cooling capacity control at the peak temperature and an automatic cooling capacity adaptation for energy-saving operation and reduced waste heat. The cover plate is temperature-controlled to prevent the formation of ice.

Down to -45 °C
Working temperature range

Up to 1,2 kW
Cooling power

Up to 25 l/min
Pump capacity



Pump curve
according to DIN 12876 with water at 20 °C

VPC
Variable Pressure Control

Plug & Play
3 years warranty

Model	Working temp. range (°C)	Heating power (kW)	Bath volume (ltr.)	Bath depth (mm)	Pump data max. pressure (l/min)	Pump data max. pressure (bar)	Pump data max. suction (l/min)	Pump data max. suction (bar)	Cooling power (kW) at (°C) 100	20	0	-20	-30	-40	Cat.No.	G
CC-405	-40...200	1,5	5	150	25	0,7	18,5	0,4	0,7	0,7	0,7	0,45	0,18	0,03	2017.0001.01	2
CC-405w	-40...200	1,5	5	150	25	0,7	18,5	0,4	0,7	0,7	0,7	0,45	0,18	0,03	2017.0002.01	2
CC-410	-45...200	3,0	22/8,5*	200	25	0,7	18,5	0,4	0,8	0,8	0,8	0,5	0,15	0,1	2019.0004.01	2
CC-410wl	-45...200	3,0	22/8,5*	200	25	0,7	18,5	0,4	0,8	0,8	0,8	0,5	0,15	0,1	2019.0001.01	3
CC-415	-40...200	1,5	5	150	25	0,7	18,5	0,4	1,2	1,2	1,0	0,6	0,2	0,05	2018.0001.01	2
CC-415wl	-40...200	1,5	5	150	25	0,7	18,5	0,4	1,2	1,2	1,0	0,6	0,2	0,05	2018.0002.01	3

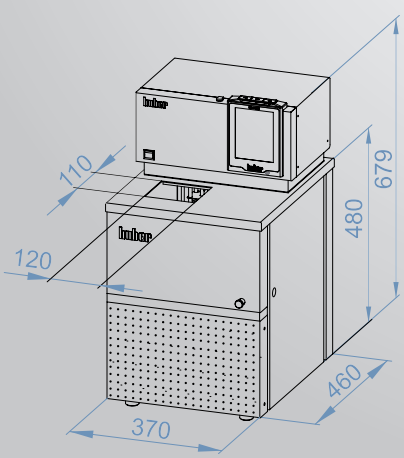
Options on request: natural refrigerant * with displacement insert Temperature stability: ±0,02 K

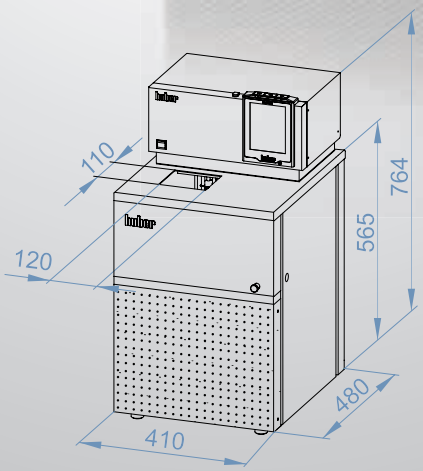
w = water-cooled | wl = air/water-cooled

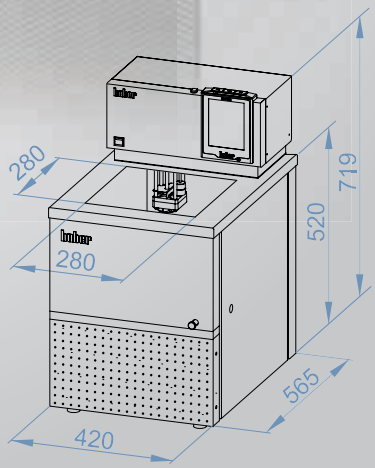
all technical data from page page 134

CC-415wl

CC-410wl







all technical data from page 134

Cooling Circulators

Series CC-500

Cooling bath circulators of 500 series are equipped with insulated baths made from stainless steel and offer cooling capacities up to 7 kW for demanding temperature control applications down to -55 °C. The circulators are fitted with a temperature-controlled cover plate to avoid the formation of condensation and ice.

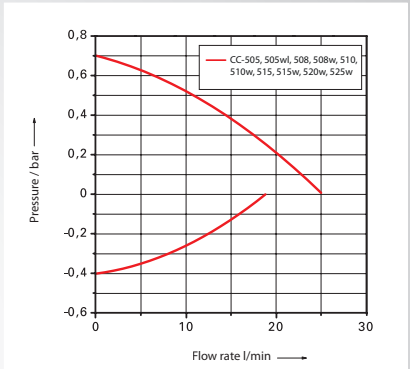
Down to -55 °C
Working temperature range

Up to 7,0 kW
Cooling power

Up to 25 l/min
Pump capacity

CC-510w

CC-505



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temp. range (°C)	Heating power (kW)	Bath volume (ltr)	Bath depth (mm)	Pump data max. pressure (l/min)	Pump data max. pressure (bar)	Pump data max. suction (l/min)	Pump data max. suction (bar)	Cooling power (kW) at (°C) 100	20	0	-20	-40	Dimensions W x D x H (mm)	Cat.No.	G
CC-505	-50...200	1,5	5	150	25	0,7	18,5	0,4	1,2	1,2	1,0	0,6	0,15	410x480x764	2018.0003.01	2
CC-505wl	-50...200	1,5	5	150	25	0,7	18,5	0,4	1,2	1,2	1,0	0,6	0,15	410x480x764	2018.0004.01	3
CC-508*	-55...200	3,0	5	160	25	0,7	18,5	0,4	1,5	1,5	1,5	1,0	0,3	410x480x764	2018.0023.01	2
CC-508w*	-55...200	3,0	5	160	25	0,7	18,5	0,4	1,5	1,5	1,5	1,0	0,3	410x480x764	2018.0026.01	2
CC-510	-50...200	3,0	26/15**	200	25	0,7	18,5	0,4	2,1	2,1	2,1	1,0	0,4	605x706x1136	2020.0010.01	2
CC-510w	-50...200	3,0	18/11**	200	25	0,7	18,5	0,4	2,4	2,4	2,4	1,0	0,4	455x515x1014	2020.0002.01	2
CC-515	-55...200	3,0	26/15**	200	25	0,7	18,5	0,4	3,3	3,3	3,3	1,6	0,6	605x706x1136	2021.0001.01	2
CC-515w	-55...200	3,0	18/11**	200	25	0,7	18,5	0,4	3,3	3,3	3,3	1,6	0,6	455x515x1014	2020.0003.01	2
CC-520w	-55...200	3,0	17/10**	200	25	0,7	18,5	0,4	5,0	5,0	5,0	3,0	1,5	539x629x1102	2022.0001.01	3
CC-525w	-55...100	3,0	17/10**	200	25	0,7	18,5	0,4	7,0	7,0	5,0	3,0	1,5	539x629x1102	2023.0001.01	3

Options on request: natural refrigerant * as standard with natural refrigerant ** with displacement insert Temperature stability: ±0,02 K

w = water-cooled

all technical data from page 134

Series CC-800 / 900

Cooling bath circulators of 800 and 900 series are equipped with insulated baths made from high-grade stainless steel and offer low working temperatures down to -90 °C. The devices are ideally suited for e.g. freezing point determination, low temperature calibration and petroleum testing.

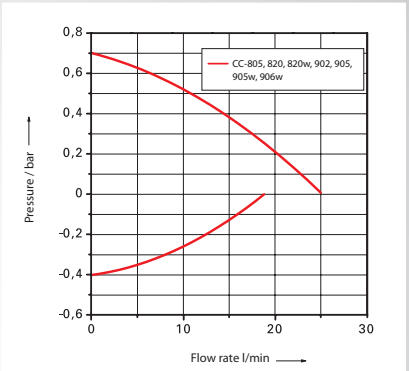
Down to -90 °C
Working temperature range

Up to 3,0 kW
Cooling power

Up to 25 l/min
Pump capacity

CC-820w

CC-902



Pump curve
according to DIN 12876 with water at 20 °C

Model	Working temp. range (°C)	Heating power (kW)	Bath volume (ltr)	Bath depth (mm)	Pump data max. pressure (l/min)	Pump data max. pressure (bar)	Pump data max. suction (l/min)	Pump data max. suction (bar)	Cooling power (kW) at (°C) 100	20	0	-20	-40	-60	Dimensions W x D x H (mm)	Cat.No.	G
CC-805	-80...100	1,5	5	150	25	0,7	18,5	0,4	0,5	0,5	0,5	0,4	0,3	0,3	410x480x764	2024.0001.01	2
CC-820	-80...100	3,0	17/10*	200	25	0,7	18,5	0,4	1,2	1,2	1,2	1,1	0,9	0,6	539x629x1102	2025.0001.01	3
CC-820w	-80...100	3,0	17/10*	200	25	0,7	18,5	0,4	1,2	1,2	1,2	1,1	0,9	0,6	539x629x1102	2025.0002.01	3
CC-902	-90...200	1,5	5	200	25	0,7	18,5	0,4	1,2	1,2	1,2	1,1	0,9	0,6	550x600x911	2026.0005.01	3
CC-905	-90...200	3,0	26/15*	200	25	0,7	18,5	0,4	2,0	2,0	2,0	1,9	1,7	1,0	605x706x1136	2027.0001.01	3
CC-905w	-90...200	3,0	26/15*	200	25	0,7	18,5	0,4	2,0	2,0	2,0	1,9	1,7	1,0	605x706x1136	2027.0002.01	3
CC-906w	-90...200	3,0	30/19*	200	25	0,7	18,5	0,4	3,0	3,0	3,0	2,8	2,4	1,6	605x706x1136	2036.0001.01	3

Options on request: natural refrigerant * with displacement insert Temperature stability: ±0,02 K

w = water-cooled

all technical data from page 134

Visco Baths

for viscosimeters and densitometers

Visco baths are ideally suited for measuring tasks with capillary viscometers or densitometers. The devices are equipped with transparent polycarbonate baths and have a cooling coil for counter cooling as standard.

Visco 3: with 3 square inserts, 90 x 90 mm
Visto 5: with 5 round openings, Ø 51 mm

Up to +100 °C
Working temperature range

Up to 2,0 kW
Heating power

Up to 27 l/min
Pump capacity

CC-130A Visco 3

Viscosimeters are not included in scope of delivery!

Holder for Ubbelohde Viscosimeter for Visco 3 (Cat.No. 9586)

Model	Temperature range (°C)	Heating power (kW)	opening W x D (mm)	Bath depth (mm)	volume (ltr)	Pressure pump pressure (l/min)	max. (bar)	Dimensions W x D x H (mm)	Cat.No.	G
CC-130A Visco 3	(15)* 28...100	2,0	90 x 90	310	30	27	0,7	500 x 240 x 490	2001.0006.01	1
CC-130A Visco 5	(15)* 28...100	2,0	Ø 51	310	30	27	0,7	500 x 240 x 490	2001.0007.01	1

* Auxiliary cooling device required (see glossary "Working temperature range") Temperature stability: ±0,02 K

all technical data from page 134

BFT®

Beer forced aging test bath

Air-cooled heating/cooling bath circulator for beer forced aging test for the determination of the shelf life of beers. The device is equipped with a programme encoder for automatic temperature cycles. Due to the constant temperature change between 0 °C and 40 °C / 0 °C and +60 °C in the cycle time of 24 hours, an artificial aging of the beer is simulated.

Down to -40 °C
Working temperature range

Up to 1,2 kW
Cooling power

40 litres
Bath volume

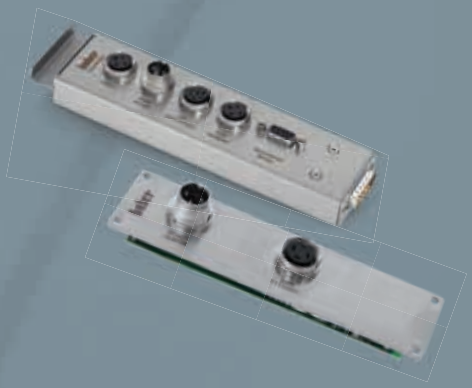
A universal basket is available as option on request.

BFT5

Model	Working temp. range (°C)	Bath opening W x D (mm)	Bath depth (mm)	Heating power (kW)	Cooling power at 20°C (kW)	Dimensions W x D x H (mm)	Cat.No.	G
BFT5	-40...80	350 x 410	270	2,0	1,2	460 x 710 x 911	2041.0001.01	3

all technical data from page 134

Com.G@te and
POKO/ECS Interface



Control
cables

Bath
covers

Accessories

Thermal fluids

▸ Temperature-control fluids for best heat transfer

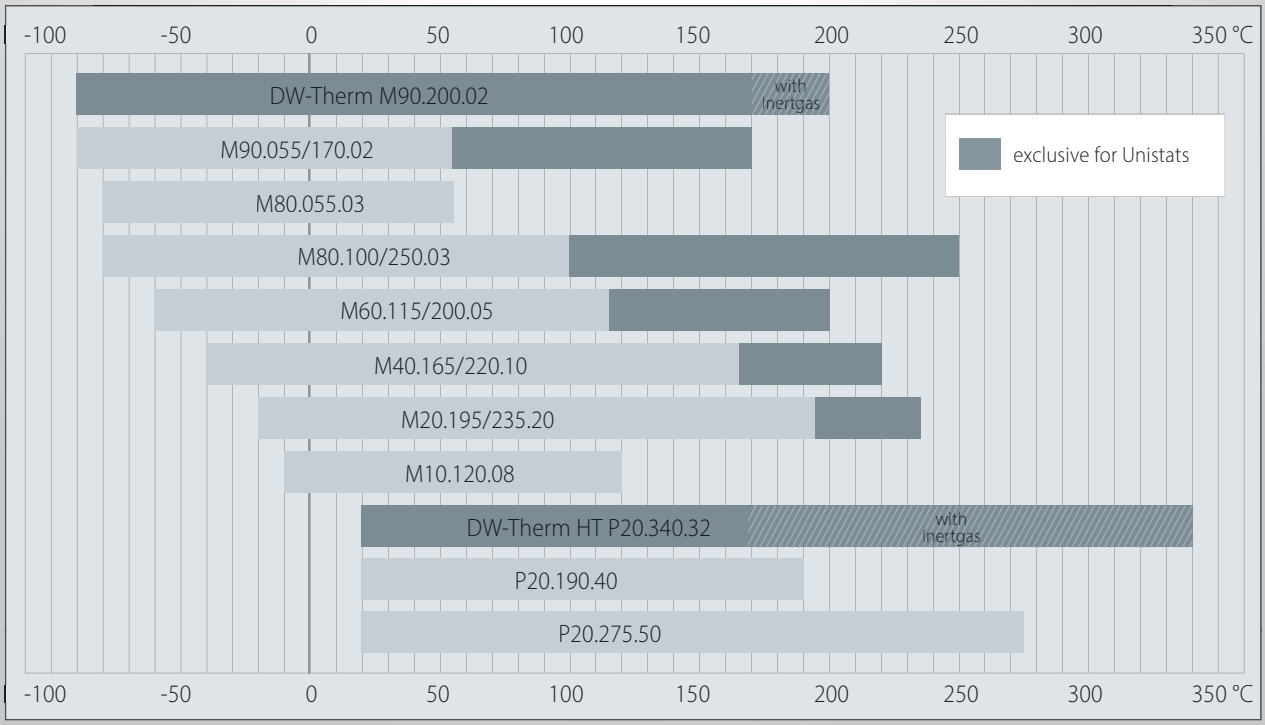
Huber thermofluids have excellent thermo-dynamic and environmentally-friendly properties. The correct selection is crucial and depends on the permissible temperature range. The observance of recommendations regarding use guarantees reliable and safe operation and maximises the service life of the fluid. The safety data sheets are available for download at www.huber-online.com.

Heat transfer fluid	Description	Temperature range (°C)	Cat.No. (5 litre)	Cat.No. (10 litre)	Cat.No. (20 litre)
DW-Therm	M90.200.02	-90...200	–	6479	–
DW-Therm HT	P20.340.32	20...340	6672	6673	–
SilOil	P20.275.50	20...275	6157	6158	–
SilOil	M20.195/235.20	-20...195/235*	6161	6162	–
SilOil	M40.165/220.10	-40...165/220*	6163	6164	–
SilOil	M60.115/200.05	-60...115/200*	6165	6166	–
SilOil	M80.055.03	-80...55	6167	6168	–
SilOil	M80.100/250.03	-80...100/250	6275	6276	–
SilOil	M90.055/170.02	-90...55/170	6258	6259	–
SynOil	M10.120.08	-10...120	9684	9685	–
MinOil	P20.190.40	20...190	6155	–	6156

* The given temperature range refers to use in open or in closed systems (e.g. 195 °C = open / 235 °C = closed)

	Cat.No. (0,1 litre)	Cat.No. (5 litre)	Cat.No. (10 litre)	Cat.No. (50 litre)	Cat.No.
Drain valve for thermal fluid	–	–	–	–	31735
Antifreeze	–	10656	6170	6171	–
Algae Protection	6172	–	–	–	–

Working temperature ranges



Which thermofluids is suitable?

The table shows an indicative overview of the heat transfer fluids and the suitable temperature control unit. When choosing the heat transfer fluid, the operating temperatures of the heat transfer fluid and unit must be considered.	DW-Therm M90.200.02	DW-Therm HT P20.340.32	SilOil P20.275.50	SilOil M20.195/235.20	SilOil M40.165/220.10	SilOil M60.115/200.05	SilOil M80.055.03	SilOil M80.100/250.03	SilOil M90.055/170.02	SynOil M10.120.08	MinOil P20.190.40	Monoethylenglykol	Water
Unistat Temperature Control Systems													
Unistat Petite Fleur, Grande Fleur, Tango – 430w	🟢	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🔴
Unistats 510 – 530w	🟢	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🔴
Unistats 610 – 640w	🟢	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🔴
Unistats 645 – 680w	🟢	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🔴	🔴
Unistats 705 – 825w, P810w	🟢	🔴	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🔴	🔴	🔴	🔴
Unistats 904 – 950w, P904w	🟢	🔴	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🔴	🔴	🔴	🔴
Unistats 1005 – 1015w	**on request**												
Unistats T305 – T402, TR401 – TR402	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Unistat P404	🟢	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🔴	🔴
Unistats P505w, P634w	🟢	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🔴	🔴
Chillers													
Minichillers	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🟢	🟢
Unichillers 003 – 025	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🟢	🟢
Unichillers P007 – P025	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟢
Unichillers 017T – 500T	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟡
RotaCool	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟡
Immersion Cooler TC45 – TC100	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟡
Bath Circulators													
Immersion Circulators	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Bath Circulators, Polycarbonate	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟢
Bath Circulators, Stainless Steel	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🟢	🟢
Visco Baths	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🔴	🟢
Bridge Circulators	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Cooling Circulators	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟡	🔴
Ministat	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟡
Variostat	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟡
Specials													
Beer Force-Ageing-Test Bath	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴	🟢	🟢
Hotbox	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Heat Transfer Station	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢

🟢 Heat transfer fluid is suitable
🟡 Heat transfer fluid is suitable under certain circumstances. Please check the specification.
🔴 Heat transfer fluid is not suitable

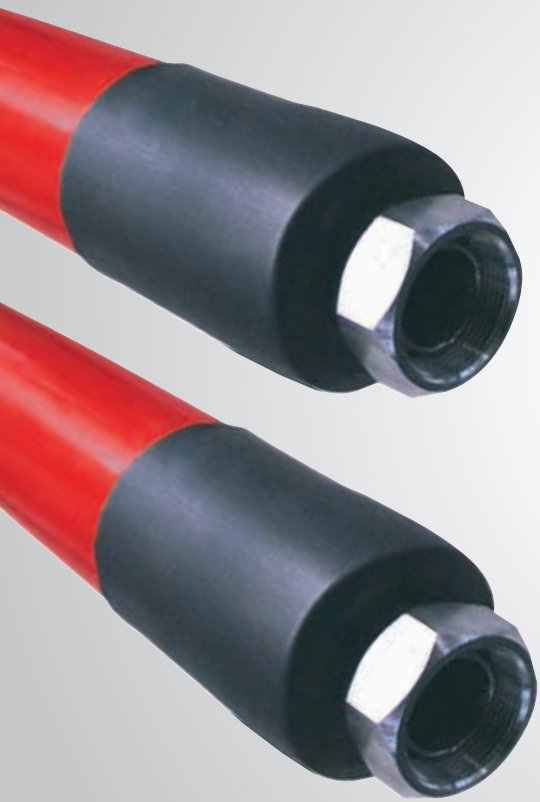
Hoses

Insulated, with inner material PTFE

For optimum thermal transfer

Inner material PTFE			Temperature range (°C)	Length	Cat.No.	G
NW 12	AD 37 mm	M24x1,5	-60...260	100 cm	9325	1
NW 12	AD 37 mm	M24x1,5	-60...260	150 cm	9326	1
NW 12	AD 37 mm	M24x1,5	-60...260	200 cm	9327	1
NW 12	AD 37 mm	M24x1,5	-60...260	300 cm	9328	1
NW 20	AD 44 mm	M30x1,5	-60...260	100 cm	9612	1
NW 20	AD 44 mm	M30x1,5	-60...260	150 cm	9613	1
NW 20	AD 44 mm	M30x1,5	-60...260	200 cm	9614	1
NW 20	AD 44 mm	M30x1,5	-60...260	300 cm	9615	1
NW 25	AD 56 mm	M38x1,5	-60...260	100 cm	9616	1
NW 25	AD 56 mm	M38x1,5	-60...260	150 cm	9617	1
NW 25	AD 56 mm	M38x1,5	-60...260	200 cm	9618	1
NW 25	AD 56 mm	M38x1,5	-60...260	300 cm	9619	1

Inner material is PTFE with a smooth internal bore for best flow characteristics and optimum heat transfer
AD = External diameter

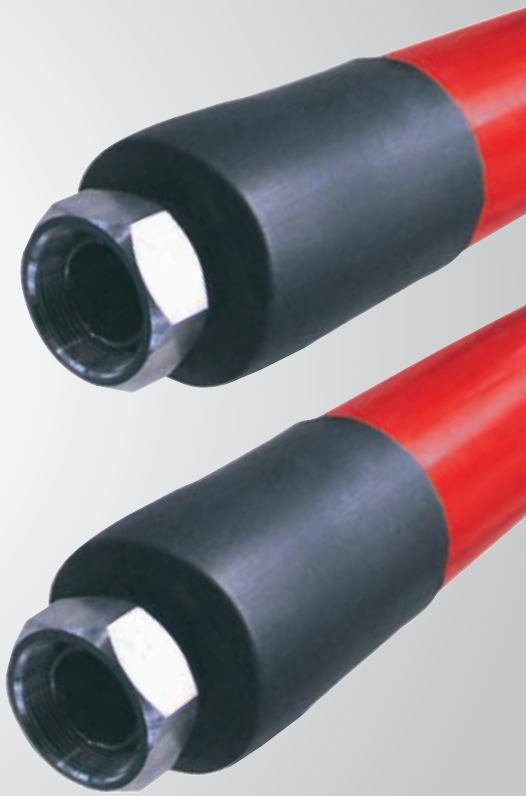


Insulated, with inner material metal

For wide temperature ranges

Inner material metal			Temperature range (°C)	Length	Cat.No.	G
NW 12	AD 33 mm	M16x1	-50...200	100 cm	9608	1
NW 12	AD 33 mm	M16x1	-50...200	150 cm	9609	1
NW 12	AD 33 mm	M16x1	-50...200	200 cm	9610	1
NW 12	AD 33 mm	M16x1	-50...200	300 cm	9611	1
NW 12	AD 44 mm	M16x1	-100...350	100 cm	6084	1
NW 12	AD 44 mm	M16x1	-100...350	150 cm	6085	1
NW 12	AD 44 mm	M16x1	-100...350	200 cm	6136	1
NW 12	AD 44 mm	M16x1	-100...350	300 cm	6255	1
NW 12	AD 44 mm	M24x1,5	-100...350	100 cm	9274	1
NW 12	AD 44 mm	M24x1,5	-100...350	150 cm	9275	1
NW 12	AD 44 mm	M24x1,5	-100...350	200 cm	9276	1
NW 12	AD 44 mm	M24x1,5	-100...350	300 cm	9277	1
NW 12	AD 56 mm	M24x1,5	-120...400	100 cm	6784	1
NW 12	AD 56 mm	M24x1,5	-120...400	150 cm	6785	1
NW 12	AD 56 mm	M24x1,5	-120...400	200 cm	6786	1
NW 12	AD 56 mm	M24x1,5	-120...400	300 cm	6787	1
NW 20	AD 56 mm	M30x1,5	-100...350	100 cm	6426	1
NW 20	AD 56 mm	M30x1,5	-100...350	150 cm	6386	1
NW 20	AD 56 mm	M30x1,5	-100...350	200 cm	6427	1
NW 20	AD 56 mm	M30x1,5	-100...350	300 cm	6428	1
NW 25	AD 63 mm	M38x1,5	-100...350	100 cm	6655	1
NW 25	AD 63 mm	M38x1,5	-100...350	150 cm	6656	1
NW 25	AD 63 mm	M38x1,5	-100...350	200 cm	6657	1
NW 25	AD 63 mm	M38x1,5	-100...350	300 cm	6658	1

Inner material is corrugated hose for especially high and low working temperatures
AD = External diameter



Hoses

▸ for pressureless applications and cooling water

Hoses, pressureless

Hose		Temperature range (°C)	Cat.No.	G
NW 3,2	PVC	-20...60	6072	1
NW 8	PVC	-20...60	6071	1
NW 12	PVC	-20...60	6070	1
NW 8	NBR	-25...110	6075	1
NW 12	NBR	-25...110	6073	1
NW 8	FKM	-20...180	6079	1
NW 12	FKM	-20...180	34322	1
NW 8	PTFE	-60...180	6350	1
NW 12	PTFE	-60...180	6351	1
NW 8	Silikon	-40...180	6077	1
NW 12	Silikon	-40...180	6076	1

As protection against condensation or for high temperatures, we recommend our listed insulated hoses.
All prices per metre.

Flexible braided hoses (cooling water)

Hose (HDPE)	Temperature range (°C)	Length	Cat.No.	G
G½	-20...90	100 cm	16851	1
G½	-20...90	150 cm	16852	1
G½	-20...90	200 cm	16853	1
G¾	-20...90	100 cm	16854	1
G¾	-20...90	150 cm	16855	1
G¾	-20...90	200 cm	16856	1
G1	-20...90	100 cm	16857	1
G1	-20...90	150 cm	16858	1
G1	-20...90	200 cm	16859	1
G1 ¼	-20...90	100 cm	18021	1
G1 ¼	-20...90	150 cm	18022	1
G1 ¼	-20...90	200 cm	18023	1

Flexible braided hoses suitable for water and water / Mono ethylene glycol mixtures up to 50 %.
As protection against condensation or for high temperatures, we recommend our listed unsulated hoses.

Hoses

For use with water and water / MEG-Mix	Temperature range (°C)	Cat.No.	G
NW 8, AD 16,3 mm, material NBR	-30...100	10753	1
NW 10, AD 17,6 mm, material NBR	-30...100	10754	1
NW 12, AD 19,6 mm, material EPDM	-40...100	10506	1

AD = External diameter

Hose insulations

Insulations up to max. 110 °C suitable for	Thickness	Internal Ø ID	Cat.No.	G
Hose NW 8	7 mm	13 mm	6083	1
Hose NW 12	7 mm	17 mm	6082	1
Hose NW 12	12 mm	17 mm	3968	1
Hose insulated M16x1	22 mm	42 mm	6375	1
Hose insulated M30x1,5	23 mm	57 mm	6377	1
Flexible braided hose, insulated G½	13 mm	22 mm	1782	1
Flexible braided hose, insulated G¾	13 mm	28 mm	1889	1
Flexible braided hose, insulated G1¼	22 mm	50 mm	6376	1
Flexible braided hose G½, self adhesive	19 mm	19 mm	10067	1
Flexible braided hose G¾, self adhesive	19 mm	28 mm	10068	1
Flexible braided hose G1, self adhesive	19 mm	35 mm	10069	1
Flexible braided hose G1¼, self adhesive	19 mm	42 mm	10070	1

Quick-disconnect couplers

Quick-disconnect couplers for frequent changes of application (e.g. reactor) on the temperature control device. The quick-release connectors meet the special requirements in temperature control technology and reliably prevent the leaking of thermofluid. The quick-release connectors ensure only minor pressure losses and thus ensure good performance of the overall system.

Item description	Temperature range (°C)	Nominal diameter	Cat.No.	G
Quick-disconnect coupler M24x1.5, coupling	-75...230	12 mm	10530	99
Quick-disconnect coupler M24x1.5, nipple	-75...230	12 mm	10529	99
Quick-disconnect coupler M30x1.5, coupling	-90...230	20 mm	10407	99
Quick-disconnect coupler M30x1.5, nipple	-90...230	20 mm	10406	99

10406, 10407

10529, 10530

Adaptors, Splitters

▸ for thread M16x1, M24x1,5

Adaptor for M16x1

Thread	to	Cat.No.	G
male	M16x1 male	6278	1
female	M16x1 female	6359	1
male	G1/2 male	6299	1
male	G1/2 female	6364	1
female	R1/2 male	6360	1
female	G1/2 female	6229	1
male	G3/4 female	5443	1
female	G3/4 female	6361	1
female	M30x1,5 male	6431	1
male	M30x1,5 male	6449	1
male	M30x1,5 female	6454	1

Adaptor for M24x1,5

Thread	to	Cat.No.	G
female	M30x1,5 male	6723	1
female	M16x1 male	6724	1
female	3/4 NPT female	6874	1
male	M16x1 female	6945	1
male	R1/2 female	9243	1
female	R1/2 male	9244	1
male	M24x1,5 male	9386	1

for thread M30x1,5, M38x1,5, R1/2

Adaptor for M30x1,5

Thread	to	Cat.No.	G
male	M30x1,5 male	6448	1
female	G3/8 male	6445	1
male	G1/2 male	6393	1
male	R1/2 female	6394	1
female	G1/2 male	6391	1
female	G1/2 female	6392	1
male	G3/4 male	6447	1
male	R3/4 female	6442	1
female	G3/4 female	6452	1
female	3/4 NPT male	6472	1
male	G1 male	6444	1
female	G1 female	6453	1
male	M38x1,5 female	6612	1

Adaptor for M38x1,5

Thread	to	Cat.No.	G
female	1 NPT male	6600	1
female	R3/4 male	6665	1

Adaptor for R1/2

Thread	to	Cat.No.	G
female	R1/2 female	6358	1
female	3/4 NPT female	6356	1

Adaptors, Headers

▸ for thread sizes M16x1, M24x1,5

M16x1

Item		Cat.No.	G
Hose connector NW6		7979	1
Hose connector NW8		6086	1
Hose connector NW10		349096	1
Hose connector NW12		6087	1
Blank plug		6088	1
Nut		6089	1
Micro hose connector NW3,2		6090	1
90° Adaptor		6195	1
Ball valve	-20 °C...+140 °C (max. 6 bar at +140 °C) -60 °C...+200 °C (max. 6 bar at +200 °C)	6091 328240	1 1
2-way header		337657	1
3-way header		341870	1
4-way header		341871	1
5-way header		341892	1
2-way valve system	-20 °C...+140 °C (max. 6 bar at +140 °C)	343294	1
3-way valve system	-20 °C...+140 °C (max. 6 bar at +140 °C)	343295	1
4-way valve system	-20 °C...+140 °C (max. 6 bar at +140 °C)	343304	1
5-way valve system	-20 °C...+140 °C (max. 6 bar at +140 °C)	343305	1

All valve systems are also available with extended temperature range -60 ° C ... + 200 ° C (max 6 bar at +200 ° C)

M24x1,5

Item		Cat.No.	G
90° Adaptor		9256	1
Nut		12634	1
Ball valve	-10 °C...+180 °C (max. 6 bar at +180 °C) -60 °C...+200 °C (max. 6 bar at +200 °C)	9236 328184	1 1
2-way header		343221	1
3-way header		343226	1
4-way header		343228	1
2-way valve system	-10 °C...+180 °C (max. 6 bar at +180 °C)	343306	1
3-way valve system	-10 °C...+180 °C (max. 6 bar at +180 °C)	343308	1
4-way valve system	-10 °C...+180 °C (max. 6 bar at +180 °C)	343310	1

All valve systems are also available with extended temperature range -60 ° C ... + 200 ° C (max 6 bar at +200 ° C)

▸ for thread sizes M30x1,5, M38x1,5, G1/2, G3/4, R1/2

M30x1,5

Item		Cat.No.	G
90° Adaptor		6461	1
Nut		5992	1
Ball valve	-10 °C...+180 °C (max. 6 bar at +180 °C) -60 °C...+200 °C (max. 6 bar at +200 °C)	6451 328203	1 1
2-way header		343230	1
3-way header		342639	1
4-way header		342656	1
2-way valve system	-10 °C...+180 °C (max. 6 bar bei +180 °C)	343314	1
3-way valve system	-10 °C...+180 °C (max. 6 bar bei +180 °C)	343317	1
4-way valve system	-10 °C...+180 °C (max. 6 bar bei +180 °C)	343318	1

All valve systems are also available with extended temperature range -60 ° C ... + 200 ° C
(max 6 bar at +200 ° C)

M38x1,5

Item		Cat.No.	G
90° Adaptor		6699	1
Nut		12058	1
Ball valve	-10 °C...+180 °C (max. 6 bar at +180 °C) -60 °C...+200 °C (max. 6 bar at +200 °C)	6700 328191	1 1
2-way header		342090	1
3-way header		343234	1
4-way header		343235	1
2-way valve system	-10 °C...+180 °C (max. 6 bar at +180 °C)	343321	1
3-way valve system	-10 °C...+180 °C (max. 6 bar at +180 °C)	343329	1
4-way valve system	-10 °C...+180 °C (max. 6 bar at +180 °C)	343331	1

All valve systems are also available with extended temperature range -60 ° C ... + 200 ° C
(max 6 bar at +200 ° C)

G1/2, G3/4 and R1/2

Item	Cat.No.	G
Hose connection G1/2 for 3/8 hose	2294	1
Hose connection G3/4 for 1/2 hose	2295	1
90° Adaptor R1/2 to M30x1,5 female	9323	1

Adaptors, Headers

▸ for Mettler Toledo, CPC-couplings

Connections for Mettler Toledo

"LabMax", "RC1"	Adaptor Unistat 40x Metall hose NW20 / M30x1,5	Cat.No.	G
For use with the LabMax or the RC1 in variations High temp, Mid temp and Low temp, use the adaptors listed here	M30x1,5 male – R1/2 female	6394	1
	M30x1,5 male – R3/4 female	6442	1
	M16x1 female – M30x1,5 male	6431	1

Headers with CPC couplings

	Cat.No.	G
Pentagon 5-way header, hose connection: inlet 3/8" (approx. 10 mm), outlet 1/4" (approx. 8 mm)	343210	1
Oktagon 8-way header, hose connection: inlet 3/8" (approx. 10 mm), outlet 1/4" (approx. 8 mm)	343938	1

343210

343938

Flow rate measuring

▸ for Unichillers® and Unistats®

Flow rate measuring devices to be installed in the temperature control fluid circuit for measurement and control of Heat Transfer Fluid flow rate. The flow rate can be displayed directly on the Pilot ONE and also be transmitted via the digital interfaces (USB, RS232, LAN and optional RS485, Profibus). It is also possible to control the flow rate – for this a temperature control unit with an integrated VPC-Bypass or an external VPC-Bypass as an accessory is required.

The flow rate measurement allows essential functions such as finding the Kinetics/Dynamics of reaction synthesis and crystallisation, heat flow investigation and scale-up in process technology. Further information available on request.

For Unichillers	Temperature range (°C)	Measurement accuracy at 1...15 l/min	Flow rate max.	Cat.No.	G
1/2"	-40...130	1,6...0,6 %	100 l/min	10465	4
1"	-40...130	3,7...0,7 %	310 l/min	10464	4

For Unistats	Operating temperature (°C)	Operating pressure (bar)	Flow rate max.	Cat.No.	G
M30x1,5	-100...350	5	6 bis 60 l/min	10647	4
M38x1,5	-100...350	5	15 bis 150 l/min	10648	4

10647

10464

Other accessories

▸ Bypasses for pressure reduction

Manual bypasses

Model	Connection	Temperature range (°C)	Cat.No.	G
For Unistats	M16x1	-20...140	6415	1
	M16x1	-60...200	10154	1
	M24x1,5	-10...150	9258	1
	M24x1,5	-20...150	9339	1
	M24x1,5	-60...200	10155	1
	M30x1,5	-20...150	6417	1
	M30x1,5	-60...200	10153	1
	M38x1,5	-20...150	9340	1
	M38x1,5	-60...200	10156	1
For Unichillers	G3/4	-20...150	6933	1
	G3/4	-60...200	10157	1
	G1 1/4	-20...150	9414	1
	G1 1/4	-60...200	10158	1

Manual bypasses with manometer

Model	Connection	Temperature range (°C)	Cat.No.	G
For Unistats	M16x1	-20...140	9889	1
	M24x1,5	-20...150	9969	1
	M24x1,5	-60...200	10295	1
	M30x1,5	-20...150	9890	1
	M30x1,5	-60...200	10269	1
	M38x1,5	-20...150	9970	1
For Unichillers	G3/4	-20...150	9888	1
	G3/4	-60...200	10297	1
	G1 1/4	-20...150	9622	1
	G1 1/4	-60...200	10298	1

Controlled VPC bypasses

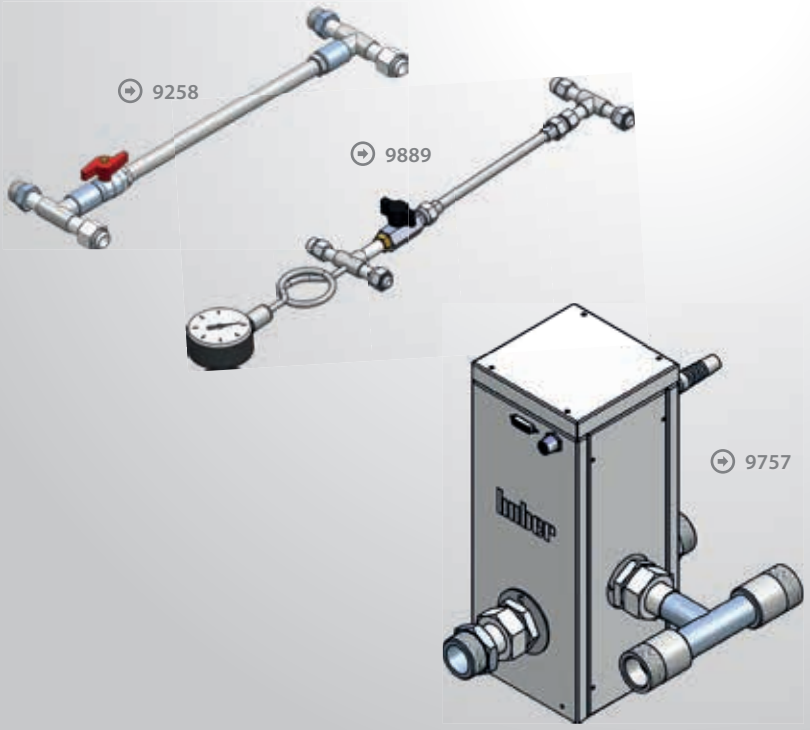
loose, not mounted on the unit	Connection	Temperature range (°C)	Cat.No.	G
For Unistats	M24x1,5	-90...200	9819	4
	M30x1,5	-90...200	9726	4
	M38x1,5	-90...200	9820	4
For Unichillers	G3/4	-90...200	9767	4
	G1 1/4	-90...200	9757	4

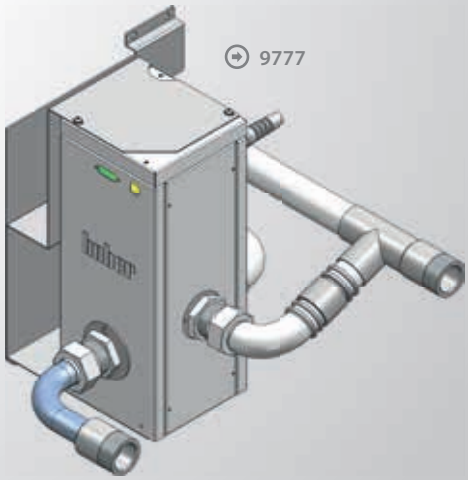
VPC bypasses with connection set

Model		Connection	Temperature range (°C)	Cat.No.	G
For Unistats	912w, 915w	M30x1,5	-90...200	9845	4
For Unichillers	040T – 045T	G3/4	-90...200	9799	4
	017T – 025T, 017Tw –040Tw	G3/4	-90...200	9774	4
	055Tw – 080Tw	G1 1/4	-90...200	9775	4
	100Tw – 130Tw, 160Tw	G1 1/4	-90...200	9776	4
	200Tw – 260Tw, 150Tw	G1 1/4	-90...200	9777	4
	055T –060T, 080T – 110T	G1 1/4	-90...200	9798	4

External pressure sensors for VPC bypasses

Model	Connection	Cat.No.	G
For units with VPC bypass (cable length 3 m)	M24x1,5	9338	4
	M30x1,5	9336	4
	M38x1,5	9337	4
For units with VPC variable speed pumps (cable length 3 m)	M16x1	9792	4
	M24x1,5	9794	4
	M30x1,5	9795	4





Accessories for Unistats®

Explosion proof enclosures

Two solutions are available for ATEX areas:
The Unistat can be placed in a Stainless Steel Ex px pressure enclosure. Compressed air is used to purge the cabinet of any potentially dangerous vapours and creating a pressure slightly above atmospheric to keep potentially explosive vapours out.
An ATEX certified remote control is located in the ATEX zone, controlling the Unistat situated in the safe zone.

Description:
Ex px enclosure for zone 1 with pressure encapsulation to EN 60079-2

Type:
Ex II 2G Ex px II T4 Gb

Features:
- Stainless steel construction
- Standard operation with Pilot ONE
- Temperature monitoring with compressed air cooling
- 1x Pt100 process sensor connection and 1x Ethernet

	for	Dimensions W x D x H (mm)	Cat.No.
Ex px enclosure I	Unistat 425w, 430w, 510w, 515w, 520w, 525w, 527w, 530w, 610w, 615w, 620w, 625w, 815w, 825w, 905w, 912w, 915w, 1005w, T320w HT, T330w HT	990 x 1150 x 1750	10148
Ex px enclosure II	Unistat 630w, 635w, 640w, 920w, 925w, 930w*, 1015w*	1405 x 1349 x 1900	10149
Ex px enclosure III	Unistat 645w, 650w	2250 x 1694 x 2108	10150
Ex px enclosure IV	Unistat tango w, 405w, 705w, T305w HT	990 x 675 x 970	10151
Remote control Unistat II 2G EEx ib IIC T4	all units with Pilot ONE	–	on request
Ex ia process temperature measurement	all Unistats, Pilot ONE	–	on request

* on request

High precision calibration

Calibration is a comparison between a measurement system and a reference or standard. During the comparison it is established how large the deviation between the two values or if the value lies within the specified limits. Calibration is normally carried out in accordance with rigorous national or international standards. Meaningful and comparable measurements around the world require calibrated instruments. The quality of measurements is defined in terms of tolerance and repeatability, and is only achievable with the use of calibrated measurement devices or by adjusting sensors. Calibration baths are used in quality management departments of industry and research. The modular concept based on the combination of a calibration bath with a Unistat, which dictates the temperature range and speed of temperature change. The stainless steel calibration bath is designed in a similar format to a calorimeter to ensure temperature homogeneity. Baths with a 118 mm diameter and depth of 384 mm are offered for calibration of measurement and control sensors. The calibration space is freely accessible and symmetrical. The upper edge is designed to allow exact reading of the temperature measured by glass thermometers and also offers a tight seal for the customer specific bath lid. The calibration space of the baths can be customised to suit specific customer requirements.

Accessories	Temperature range (°C)	Cat.No.	G
Bath covers stainless steel*	-100...300	6367	1
Bath covers PTFE*	-100...200	6365	1

* Additional cost for holes

Advantages:

- Temperature stability up to ± 0,002 K
- Temperature homogeneity better than ± 0,01 K
- External overflow vessel
- 5-point calibration of the control sensor

The insulated stainless steel or PTFE bath covers allow for individual data recordings for sensors and thermometers, etc. We can custom design and manufacture the covers to your specifications (additional cost).

See page 113 for the calibration inserts for our bath circulators.

Model	Temperature range (°C)	Pump connection	Dimensions W x D x H (mm)	opening (mm)	Bath depth (mm)	volume (litres)	Cat.No.	G
Unical 700	-100...300	M30x1,5	300 (440*) x 300 x 566	Ø118	384	7,0	9623	3

* with external overflow vessel (140 mm)

Interfaces technology

Accessories for data communication

Profibus

Our Profibus accessory enables the connection of Huber temperature control machines to Profibus systems, offering a comprehensive range of possibilities for data communication with PLC and process control systems.

Profibus solution for units with Pilot ONE	Cat.No.	G
Profibus Gateway 3E, external (complete, in housing)	10503	3

Com.G@te, POKO/ECS Interface

Units with the Pilot ONE controller have USB and LAN connections fitted as standard. For applications where additional connections are required, depending on the model, the following optional interface modules are available:

Com.G@te: The Com.G@te has connections complying with the NAMUR standard. The following interfaces are integrated: RS232 (bi-directional), RS485 (bi-directional), ECS external control signal, Volt free contact (programmable), AIF Analogue-Interface 0/4-20 mA or 0-10 V (bi-directional).
POKO/ECS Interface: The POKO/ECS Interface has connections complying with the NAMUR Standard and is fitted as standard on all Unistats. The following interfaces are integrated: ECS external control signal, POKO Volt free contact (programmable).

Com.G@te (NAMUR)	for	Cat.No.	G
Com.G@te, intern	Petite Fleur, Grande Fleur, Unichillers with Pilot ONE, Ministats, CC-300BX to CC-906w	31217	1
Com.G@te, external	Unistats, CC-E to CC-205B	6915	1
POKO/ECS Interface	Unichillers with Pilot ONE, Ministats, CC-300BX to CC-906w	10003	1
Holder for Com.G@te	Unistats (tower housing models)	10018	1
Holder for Com.G@te	Unistats (bench top models)	10019	1

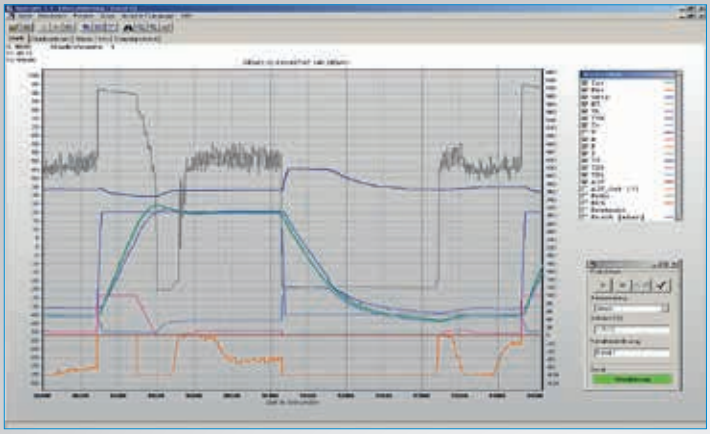
Control cables

A range of control cables is available for USB, RS232 or RS485. You can select from control cables for the transfer of digital data or analogue signals 0/4-20 mA / 0-10 V (AIF), as well as for an external control signal (ECS), a floating contact (POKO) or by an external float switch (LEVEL).

Length 3 m			Cat.No.	G
Mini USB	→	USB type A (e.g. Pilot ONE to PC)	54949	1
RS232 9 pol.	→	Sub-D 9 pol. (e.g. Com.G@te to PC)	6146	1
RS232 15 pol.	→	Sub-D 9 pol. (e.g. thermostats to PC)	55018	1
RS485	→	Cable ends open	6279	1
AIF	→	Cable ends open	9353	1
ECS	→	Cable ends open	9491	1
POKO	→	Cable ends open	9490	1
LEVEL	→	Cable ends open	9492	1

Software

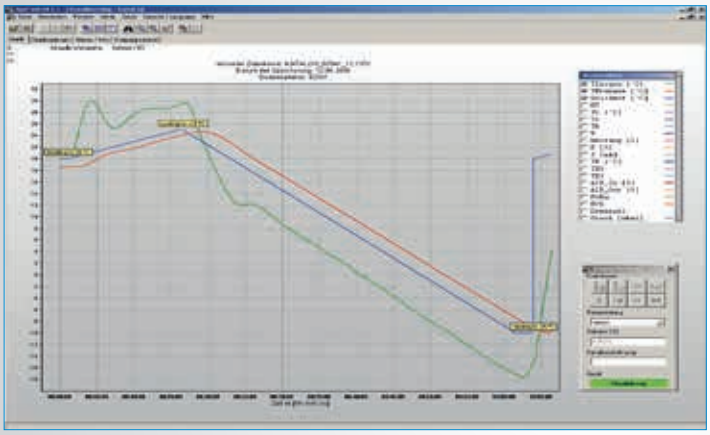
Accessories for data communication



SpyLight®

The SpyLight software (free of charge) enables process relevant data to be visualised and documented. The communication options are RS232, RS485, USB (virtual COM-Port) or TCP/IP. SpyLight is easy to install, is economic with computer resources and child's play to use. The recorded data is displayed to a base of time.

Huber Software	Cat.No.	G
SpyLight (1 channel)	6790	1



SpyControl®

SpyControl is based on the SpyLight software but offers more features. Installation and operation is identical. SpyControl can operate up to 10 channels simultaneously. Each channel is independently documented and the graphic options can be configured as required.

Huber Software	Cat.No.	G
SpyControl (10 channels)	6792	1

Pilot Remote

The Pilot Remote software enables the complete remote control of Huber temperature control units with Pilot ONE via a Windows PC. The user display of the Pilot ONE is equally displayed on the PC, this means identical operation on PC and temperature control unit. The communication takes place via Ethernet network connectivity with a secure authentication and encoding.

Huber Software	Cat.No.	G
Pilot Remote	10645	1
Pilot Remote, ATEX-Version	10646	1

E-grades®

▸ Functional extensions via unlock code

E-grade® Exclusive, Professional

Models with Pilot ONE already have a wide ranging functionality for classic temperature-control applications in the basic version. Per E-grade this functionality can be extended at any time and thus adapted to suit special tasks and the budget. Only a device-specific activation key must be entered on the device.

E-grade for Pilot ONE	Cat.No.	G
E-grade Basic (standard for thermostats and chillers)	–	–
E-grade Exclusive additionally with process temperature control, programme encoder (3x5 steps), ramp function (linear), TAC, USB-process data recording	9495	99
E-grade Professional (standard for Unistats) additionally with programme encoder (10x10 steps), 2. setpoint, calendar start, ramp function (linear, non-linear), customisable user menus	9496	99

E-grade® Explore

The optional E-grade Explore turns your Unistat into a development tool for process and chemical engineering. The E-grade unlocks further information on temperature, heating/cooling capacity and pump capacity in the system. Typical applications are process development and scale-up trials.

E-grade for Pilot ONE	Cat.No.	G
E-grade Explore	10495	99

E-grade® OPC-UA

The OPC UA (OPC Unified Architecture) communication protocol semantically describes data and thus allows a data exchange between automation systems without the need to program a driver. Huber temperature control units with Pilot ONE can already communicate via the modern OPC UA protocol by using the E-grade OPC UA.

E-grade for Pilot ONE	Cat.No.	G
E-grade OPC-UA	10561	99

Controller technology

Device controller and controller accessories

Pilot ONE

Plug & Play controller

Controller with E-grade function to upgrade or as a replacement for an existing temperature control machine.

Item	Cat.No.	G
Pilot ONE-controller for CC Circulators, Unichillers, Unistats	503.0011	3

9494

9493

56014

Accessories for controller Pilot ONE®

Holder and extension cable for using the Plug & Play controller as a remote control.

Item	Cat.No.	G
Table stand for Pilot ONE	9494	1
Wall mounting bracket for Pilot ONE	9493	1
Side mounting bracket for Pilot ONE	10072	1
Extension cable for controller Pilot ONE for using the controller as remote control, length 3 m	16160	1
USB connection cable for controller Pilot ONE to PC	54949	1
Touchpen for Pilot ONE	56014	1

10688

61998

61999

Accessories for controller KISS® and OLÉ

Options for devices with KISS and OLÉ controller. The Pt100 measuring sensor connection is available only from the factory or via a Huber service partner.

Item	Cat.No.	G
Pt100 measuring sensor connection for KISS Lemosa socket for Pt100 sensor (only measurement, no control)	10688	1
Colour set RED for KISS circulators	61998	
Colour set BLUE for KISS circulators	61999	
Pt100 measuring sensor connection for OLÉ Lemosa socket for Pt100 sensor (only measurement, no control)	10519	1
POKO/ECS Interface for OLÉ	10689	1


Pilot ONE®
Tmin -35°C | Tmax 90°C | UT 95°C
huber
21.04.2012 08:31 Pilot ONE
T Prozess -20.00 °C
T Intern -22.17 °C
T Sollwert -20.00 °C
1500 rpm
Level
°C
40
20
0
-20
-40
0 20 40 60 80 100 120 140 160 180 min
Programmschritt 7/105 erfolgreich. Sollwert erreicht.
Favoriten
Menü
Start
35. 20.00
Overtemp.
huber

Accessories for circulators

Displacement inserts

Displacement inserts

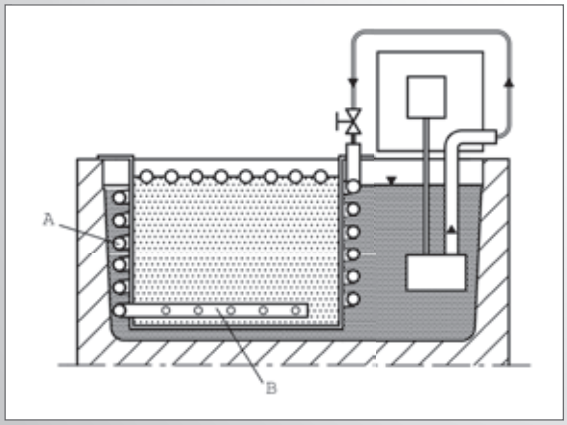
Model	Cat.No.	G
Ministat 125, Ministat 125w	6818	2
Ministat 230, Ministat 230w	6819	2
Ministat 240, Ministat 240w	6820	2
CC-410, CC-410wl	6293	2
CC-510w, CC-515w, CC-520w, CC-525w, CC-820, CC-820w	6049	2
CC-510, CC-515, CC-905, CC-905w, CC-906w	6050	2
CC-308B	31973	1
CC-315B	6043	1
CC-205B	6041	1

Simple options to boost performance

- Reducing the bath volume reduces the thermal load and leads to faster ramping times
- Reduce the liquid´s exposed surface area, which reduces moisture absorption
- Contain the expansion volume HTF and prevent the bath from overflowing

Calibration inserts

Item	Cat.No.	G
Ministat 125, Ministat 125w	6806	2
Ministat 230, Ministat 230w	6807	2
Ministat 240, Ministat 240w	6808	2
CC-405, CC-405w, CC-415, CC-415wl, CC-505, CC-505wl, CC-508, CC-508w, CC-805, CC-902	10020	2
CC-410, CC-410wl	6294	2
CC-510w, CC-515w, CC-520w, CC-525w, CC-820, CC-820w	6496	2
CC-510, CC-515, CC-905, CC-905w, CC-906w	6150	2
CC-308B	9355	1
CC-315B	6126	1



Function principle

The thermal fluid at constant temperature flows through the heat exchanger (A) and via the distributor pipe (B) down into the calibrating bath. Temperature fluctuations in the circulator are evened out in (A). There are virtually no gradients and no delay in the case of swift ramps. Temperature stability can be improved by a factor of 5 to 10.
Please also see the calibration bath “Unical 700“ for our Unistats temperature control systems on page 105.

Accessories for circulators

Baths, tubs

Cooling baths

The cooling baths K12 to K25 use natural refrigerants. In combination with an immersion circulator these cooling systems offer active cooling, in continuous operation over the complete working range.

Model	Temperature range (°C)	opening W x D (mm)	Bath depth (mm)	volume (ltr)	Cooling power (kW) at 0°C	-10°C	-20°C	Dimensions W x D x H (mm)	Cat.No.	G
K12	-20...200	290 x 320	150	12	0,2	0,12	0,05	350 x 560 x 263	2009.0001.99	2
K15	-20...200	290 x 320	200	15	0,2	0,12	0,05	350 x 560 x 263	2010.0001.99	2
K20	-30...200	290 x 500	150	20	0,35	0,27	0,16	350 x 555 x 448	2011.0001.99	2
K25	-30...200	290 x 500	200	25	0,35	0,27	0,16	350 x 555 x 448	2012.0001.99	2

Stainless steel baths

Insulated stainless steel baths are available in three standard sizes. They can be customised to suit requirements at additional cost with the addition of inlet/outlet connections for either direct flow into the bath or into the jacket of the bath.

The drain is fitted as shown but can be fitted on the long side on request.
The order number has the suffix -L (e.g. 6052-L).

Stainless steel bath	Bath depth (mm)	Opening W x D (mm)	Dimensions W x D x H (mm)	Cat.No.	G
5,5 litre	165	160 x 232	210 x 282 x 205	6052	2
11 litre	165	200 x 370	250 x 420 x 205	6053	2
22 litre	165	320 x 470	370 x 520 x 205	6054	2
Drain valve with cap				6839	1

Insulated cover for:		Cat.No.	G
Stainless steel bath	5,5 litre	6176	2
Stainless steel bath	11,0 litre	6178	2
Stainless steel bath	22,0 litre	6180	2

Custom sizes and double-wall versions with inlet and outlet connections on request

Polycarbonate baths

All models are designed to operate up to a maximum temperature of +100 °C.

Model	Dimensions W x D x H (mm)	opening W x D (mm)	Bath depth (mm)	volume (ltr)	Cat.No.	G
106A	142 x 305 x 161	130 x 290	150	6	30527	1
108A	142 x 405 x 161	130 x 390	150	8	30528	1
110A	142 x 505 x 161	130 x 490	150	10	30529	1
112A	333 x 358 x 166	275 x 342	150	12	30523	1
118A	333 x 518 x 166	275 x 502	150	18	30526	1
130A	500 x 200 x 322	480 x 180	312	30	17098	1

Stainless steel baths (insulated)

All models are designed to operate up to a maximum temperature of +200 °C.

Model	Dimensions W x D x H (mm)	opening W x D (mm)	Bath depth (mm)	volume (ltr)	Cat.No.	G
208B	290 x 350 x 206	235 x 290	150	8,5	6683	1
212B	350 x 375 x 206	290 x 320	150	12	6684	1
215B	350 x 375 x 256	290 x 320	200	15	6012	1
220B	350 x 555 x 206	290 x 500	150	20	6685	1
225B	350 x 555 x 256	290 x 500	200	25	6013	1

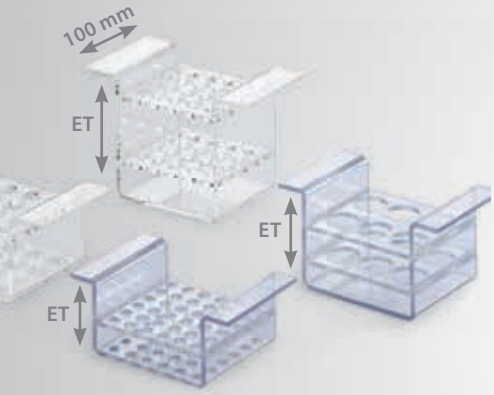
Accessories for circulators

Bath covers, test tube racks

Adjustable bases

for stainless steel, polycarbonate and cooling baths with CC-E, KISS E

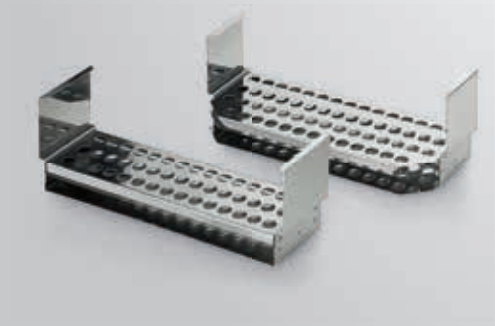
Model	Cat.No.	G
Adjustable base for 112A	40764	1
Adjustable base for 212B, 215B, K12, K15	40763	1
Adjustable base for 118A, 220B, 225B, K20, K25	40681	1



Polycarbonate test tube racks

for 106A to 110A

Model	Holes	Immersion depth (mm) ID	Cat.No.	G
A	12 x Ø22	50	6028	1
B	20 x Ø17	55	6029	1
C	20 x Ø17	95	6030	1
D	30 x Ø13	45 (Hämolyse)	6031	1
E	6 x Ø31	50	6032	1
F	36 x Ø11	25 (Eppendorf)	6033	1



Stainless steel test tube racks

for 112A, 118A, 212B to 225B and cooling baths K12-K25

Type	Holes	Immersion depth (mm) ID	Cat.No.	G
1	36 x Ø17	100	6037	1
2	45 x Ø13	70	6038	1
3	46 x Ø17	100	6039	1
4	58 x Ø13	70	6040	1

Bath bridges

Model	Cat.No.	G
Polycarbonate bath 106A, 108A, 110A	19592	1
Polycarbonate bath 112A, 118A	19593	1
Stainless steel bath 208B	19594	1
Stainless steel bath 212B, 215B, 220B, 225B	19595	1
Cooling bath K12, K15, K20, K25	19596	1

Bath covers

for stainless steel, polycarbonate and cooling baths with CC-E, KISS E

Model	Cat.No.	G
Bath cover one piece 106A	37533	1
Bath cover one piece 108A	37552	1
Bath cover one piece 110A	37572	1
Bath cover one piece 112A	37653	1
Bath cover one piece 118A	9579	1
Bath cover one piece 208B	19597	1
Bath cover one piece 212B, 215B, K12, K15	19598	1
Bath cover one piece 220B, 225B, K20, K25	19599	1
Bath cover back 118A, 220B, 225B, K20, K25	6024	1
Bath cover front 118A	41313	1
Bath cover front 220B, 225B, K20, K25	19598	1

18 litres and larger, covers can be in one or two parts

Bath covers for adjustable platforms

Suitable for use with adjustable bases for stainless steel, polycarbonate and cooling baths with CC-E, KISS E.

Model	Cat.No.	G
Bath cover one piece 112A	41291	1
Bath cover one piece 212B, 215B, K12, K15	41279	1
Bath cover back 118A, 220B, 225B, K20, K25	41280	1

Other accessories

Trolleys, safety, weather protection

Trolleys

Stainless steel trolleys make the circulators mobile.

Model	Cat.No.	G
Trolley for Unistat tango, T305/HT/w HT	9350	2
Trolley for Unistats 705, 705w, 410w	6263	2
Trolley for Unistats 405/w	9392	2
Trolley for Unichillers 007, 010, 012w, 015w, 023w	10637	2
Trolley for 012, 015, 022w, 025w	10638	2
Trolley for K20, K25	6334	2
Trolley for CC-405	6715	2
Trolley for CC-410wl	6295	2
Trolley for CC-805, CC-415, CC-505, CC-508	6235	2
Trolley for Ministat 125 / 125w	9596	2
Trolley for Ministat 230 / 230w	9597	2
Trolley for Ministat 240 / 240w	9598	2

Safety devices

		Cat.No.	G
Float switch in sight glass, leak monitoring (highest safety class)	Float switch	6152	1
Breather controller for Unistats: Atmospheric sealing kit for sight glass and expansion vessel, for pressurisation of the thermal fluid circuit	Breather controller for Unistats	9771	3

Options for weather protection and winter operation

		Cat.No.	G
Weather protection and winter operation for outside location and low environmental temperatures	Weather protection for Unistats and Unichillers	on request	
	Weather operation for Unistats and Unichillers	on request	

External Pt100 sensors

For external thermoregulation applications a range of sensors are available.
Special versions can be made on request.

Standard cable length 1,5 m	Cat.No.	G
Closed, Ø 6 mm, 180 mm	6138	1
Closed with handle, Ø 6 mm, 200 mm	6105	1
Closed, Ø 8 mm, 400 mm	6064	1
Open in protective pipe, Ø 8 mm, 170 mm	6205	1
M16x1 sensor for flow or return	6352	1
M16x1 sensor for flow or return double	6353	1
M30x1,5 sensor for flow or return	6509	1
M30x1,5 sensor for flow or return double	6510	1
G3/4 sensor for flow or return	10142	1
G1 1/4 sensor for flow or return	9937	1
Extension cable Pt100, length 3 m	6292	1

Unipump® Pressure Booster

Designed to compensate for pressure loss in external systems the Unipump is made of stainless steel for temperatures from -120 °C to +300 °C. The Unipump is connected in series with the pump of compatible control circulator and can be controlled via the voltfree contact of the Com.G@te.

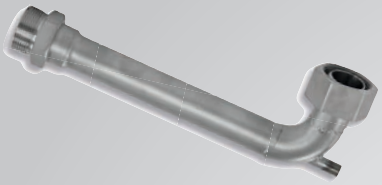
		Pressure Increase max. (bar)	Cat.No.	G
Unipump I DC	M24x1,5	1,0	527.0008	2
Unipump IV MC	M38x1,5	1,5	527.0028	2
Unipump V MC	M38x1,5	3,0	527.0029	2
Control Cable Unipump / Unistat (3 m)		–	6221	1
Adaptor M38x1,5 to M30x1,5		–	6612	1

Other accessories

Calibration bends, accessories for circulators and chillers

Calibration bends

Calibration bend mounted on the machine outlet. The calibration bend has a sensor pocket for sensor which has to be calibrated by the user. The measured value appears on the display as reference for the internal flow temperature sensor.



	Cat.No.	G
for calibration of the internal flow temp. sensor (Ø 4 mm) M16x1	9914	1
for calibration of the internal flow temp. sensor (Ø 6 mm) M24x1,5	10005	1
for calibration of the internal flow temp. sensor (Ø 6 mm) M30x1,5	9779	1
for calibration of the internal flow temp. sensor (Ø 6 mm) M38x1,5	9925	1

More dimensions and configurations on request

19606

14562

30554

30541

6839

30564

19607

Model	Cat.No.	G
Holder for immersion coolers TC45(E), TC50(E), TC100(E) for mounting on bath	14562	1
Drain valve with cap not for baths 112A, 118A and 130A	6839	1
Drain valve without cap for baths 112A, 118A and 130A	6026	1
Pump adaptor for KISS E, CC-E with baths 106A to 118A	19606	1
Pump adaptor for KISS E, CC-E with baths 208B to 225B and K12 to K25	19607	1
Pump adaptor with screw clamp for open baths	10030	1
Cooling coil for KISS E, CC-E with baths 104A to 118A	30554	1
Cooling coil for KISS E, CC-E with baths 208B to 225B	30564	1
Pump discharge pipe (for diverting flow in bath) for bath circulators with KISS E, CC-E	33288	1
Screw clamp for KISS E, CC-E	30541	1
Stand for KISS E and CC-E	6302	1
DS level controller for external open baths, only suitable for units with pressure and suction pump and Minichillers. Useable for baths with a maximum wall thickness of 26 mm	9580	1
Holder for Ubbelohde-Viscosimeter for Visco 3	9586	2

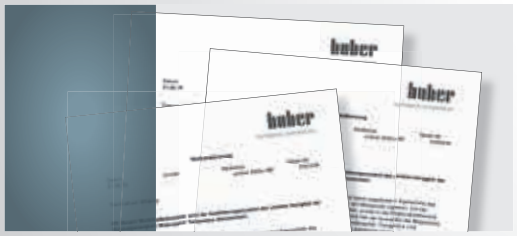
Service agreements

Regular checking and servicing of your unit is the best protection for minimising down time, and also serves for long life and maintains the value of the unit. A regular professional check of your system also ensures control accuracy and economy.

	Cat.No.	G
Service agreements for circulators	9665	99
A standard agreement with regular checking of all safety devices and machine functions, as well as checking of cooling and heating performance for any visible wear. Inclusive service protocol and data logging with every service. Service interval and work performed can be individually customised to suit individual requirements. For more information contact your local distributor.		

Certificates / Calibration

If required, you can obtain a factory calibration certificate. Test protocol and other certification for your Huber unit is available on request.



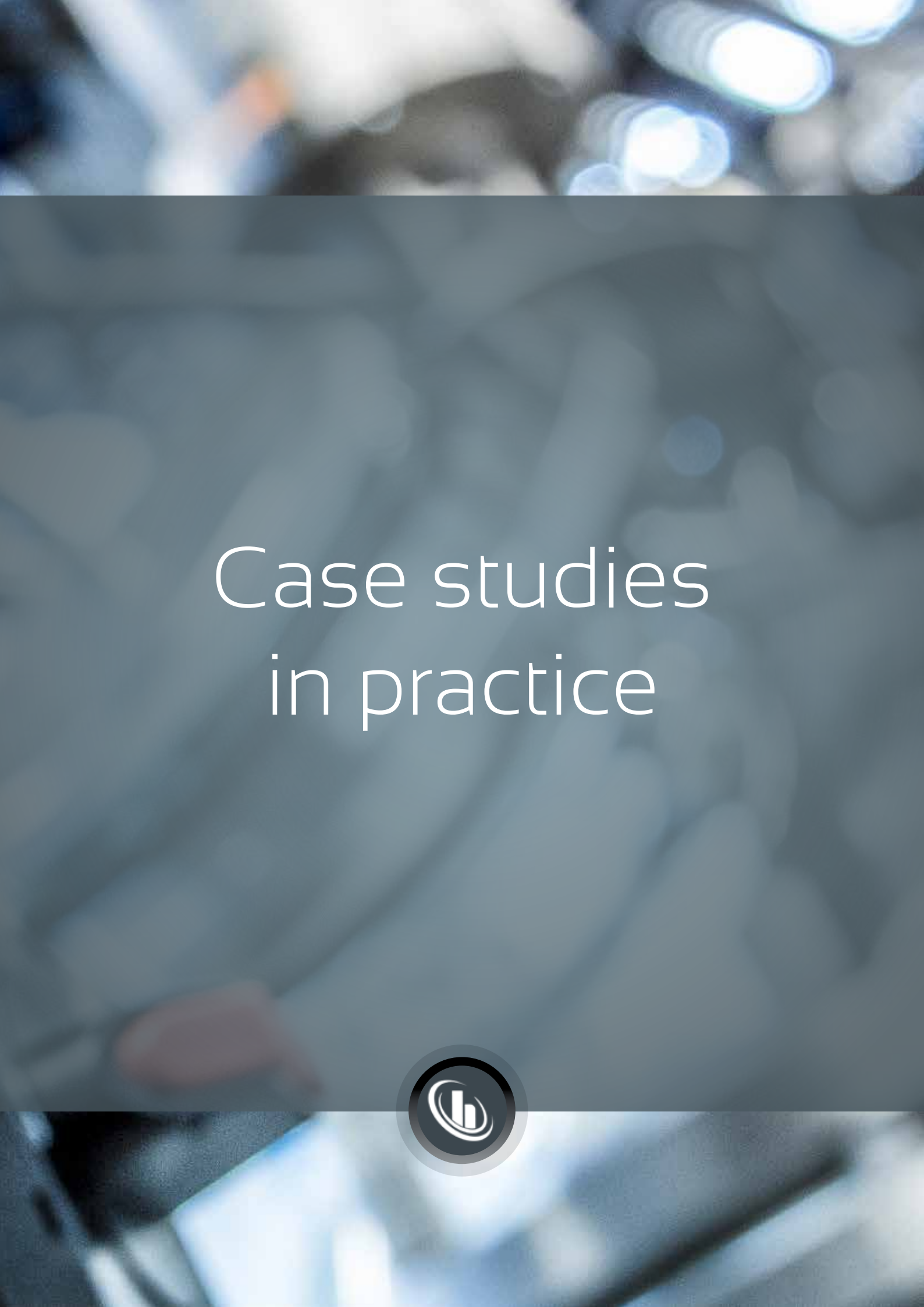
Document	Cat.No.	G
Factory calibration certificate – temperature stability to DIN 12876	6252	99
Factory calibration certificate – absolute accuracy	6905	99
Testing protocol FAT (Final Acceptance Test)	9778	99
Analysis certificate for thermal fluid	9669	99

3-2-2 warranty

Free warranty extensions with many benefits.
Our free of charge 3-2-2 warranty extension offers many extra benefits. All you have to do is to fill in the free online registration form on our website.
The guarantee for all Huber products is 12 months from the day of delivery. When registering the machine giving the end customer address and the serial number, Huber will give an extended guarantee as listed below.

3 years for Plug & Play electronic components
2 years for refrigeration components (including compressor)
2 years for mechanical and electrical components which are subject to the regular abrasion (e.g. pumps)

More than 200 case studies on www.huber-online.com support you in the purchasing decision.



Case studies in practice

Unistat®
Petite Fleur®

CS 1219

Baby Tango® – Petite Fleur® – controlling Syrris 2-litre triple wall reactor

Requirement

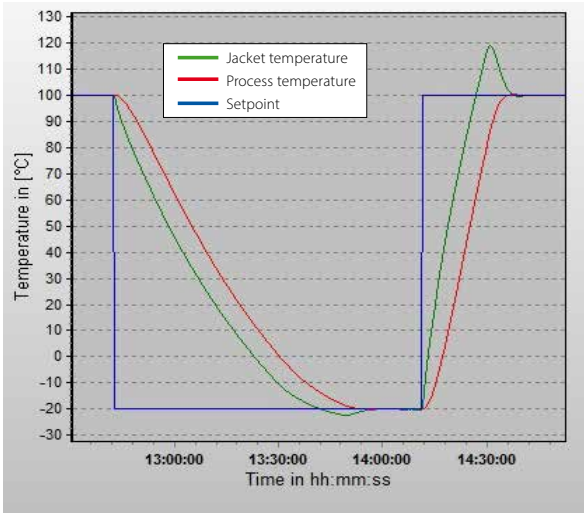
This case study demonstrates the closeness of the temperature control and the minimum process temperature achievable in the process mass.

Method

The 2-litre Syrris reactor was connected to Petite Fleur using two M16x1 1-meter flexible hoses. The thermofluid used in the system was "M90.055.03". "Process" control was carried out via a Pt100 sensor located in the "process" mass. Stirrer speed was set to 450 rpm.

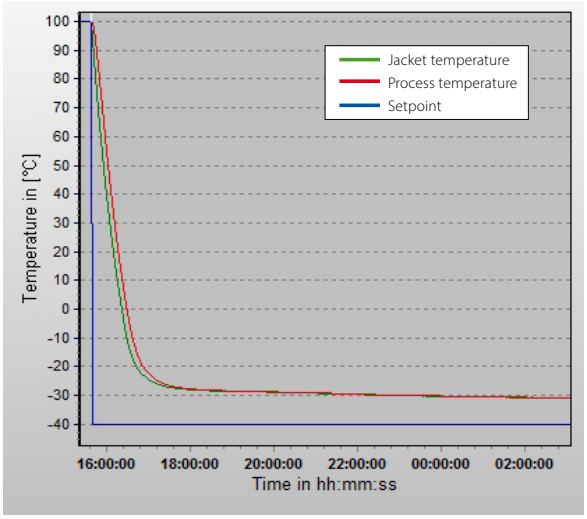
Setup details

Temperature range:	-40 °C...+200 °C
Cooling power:	0,48 kW @ +20°C
	0,48 kW @ +200°C
	0,45 kW @ 0°C
	0,27 kW @ -20°C
	0,16 kW @ -30°C
Heating power:	1,5 kW
Hoses:	M16x1; 2* 1 m
Thermal fluid:	M90.055.03
Reactor:	Syriss 2-litre insulated reactor
Reactor content:	1 litre M40.165.10
Stirrer speed:	450 rpm
Control:	process



Results Performance

To demonstrate the efficient performance of the Petite Fleur, this graphic shows that it can cool the process in a 2-litre glass reactor from 100°C to -20°C in approximately 70 minutes, hitting and stabilizing exactly on the set-point. A rapid heat-up time of less than 30 minutes from -20°C to 100°C with the same accuracy can also be seen.



Lowest achievable temperature:

Once stable at +100°C under "Process" control, a set-point of -40°C is entered. The Petite Fleur cools the reactor down to the minimum achievable process temperature of -31°C.

Unistat®
Grande Fleur®

CS 1243

Controlling QVF 6 litre reactor

Requirement

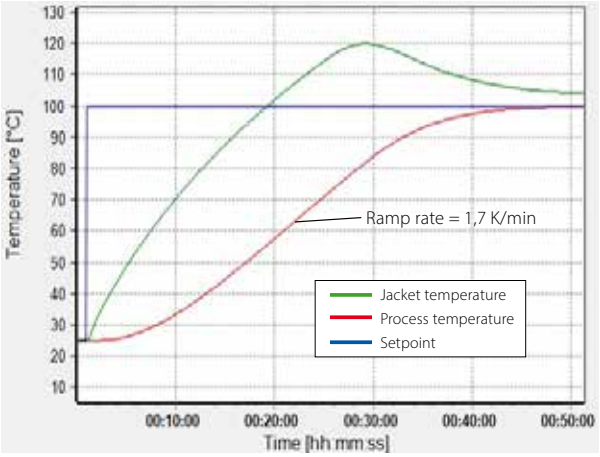
This Case Study examines the cooling, heating and temperature control capabilities of the Unistat Grande Fleur connected to an uninsulated QVF 6-litre glass jacketed reactor.

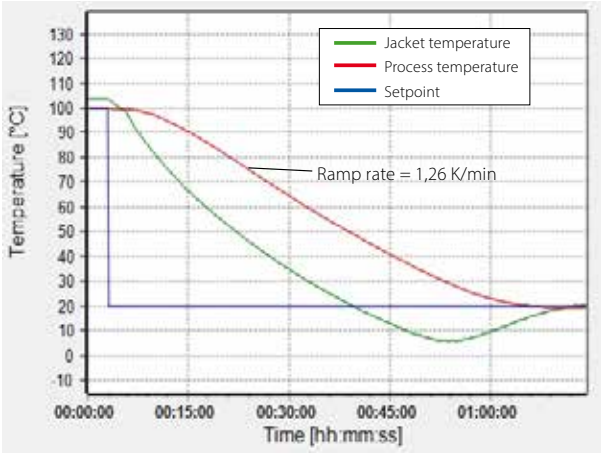
Method

The 6 litre QVF reactor was connected to Grande Fleur using two M16 1-meter flexible hoses. The thermofluid used in the system was "M40.165/220.10 (6 l). "Process" control was carried out via a Pt100 sensor located in the "process" mass. Stirrer speed was set to 270 rpm.

Setup details

Temperature range:	-40°C...+200°C
Cooling power:	0,48 kW @ +20°C
	0,48 kW @ +200°C
	0,45 kW @ 0°C
	0,27 kW @ -20°C
	0,16 kW @ -30°C
Heating power:	1,5 kW
Hoses:	M16; 2x1 m
Thermofluid:	M40.165/220.10
Reactor:	QVF 6 litre glass jacketed reactor
Reactor content:	5 litre M40.165/220.10
Stirrer speed:	270 rpm
Control:	process





Results Performance

The first graphic shows the time taken to heat the process from 25°C to 100°C. It can be seen that it takes approximately 43 minutes with the process temperature reaching and stabilising at the new set-point perfectly.

The second graphic shows the time taken to cool the process from 100°C to 20°C. It can be seen that the time taken is approximately 64 minutes, again the stability and accuracy of the control is clearly demonstrated.

CS 19

Unistat® Tango®

Heating and cooling ramps with a 1-litre Buchi Glas Uster reactor

Requirement

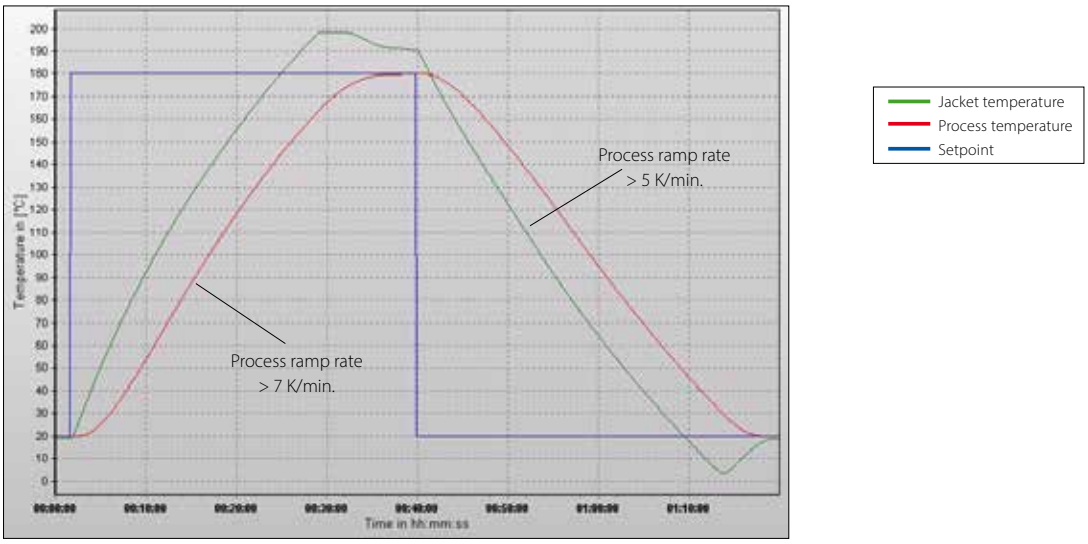
This case study looks at the speed at which the Unistat Tango can heat and cool the process in a 1-litre un-insulated glass pressure reactor.

Method

Using two large diametre (M24x1,5 DN12) insulated metal hoses, the reactor was connected to the Unistat Tango. The reactor was filled with 0.75-litre of "M90.055.03", a Huber supplied silicon based HTF.

Setup details

Temperature range:	-45...250 °C
Cooling power:	0.7 kW @ 250…0 °C
	0.4 kW @ -20 °C
Heating power:	1.5 kW
Hoses:	2x1 m; M24x1.5 (#9325)
HTF:	DW-Therm (#6479)
Reactor:	1-litre un-insulated glass pressure reactor glass pressure reactor
Reactor content:	0.75 litre M90.055.03 (#6259)
Stirrer speed:	500 rpm
Control:	process



Results

Efficient thermal transfer made possible by the low flow resistance of the wide bore tubing coupled with the highly efficient thermal transfer capabilities of the Unistat Tango Technology results in a rapid ramping rate and extremely stable control. The diagram illustrates a heating curve from 20 °C to 180 °C in a time of 37 minutes and back to 20 °C in 38 minutes. The process temperature reached both set-points without any overshoot demonstrating the capability of the controller to ramp temperatures with speed and accuracy.

Unistat® 410w

CS 1212

Unistat® 410w cycling a 50-litre Chemglass un-insulated glass jacketed reactor between 100 °C and -15 °C

Requirement

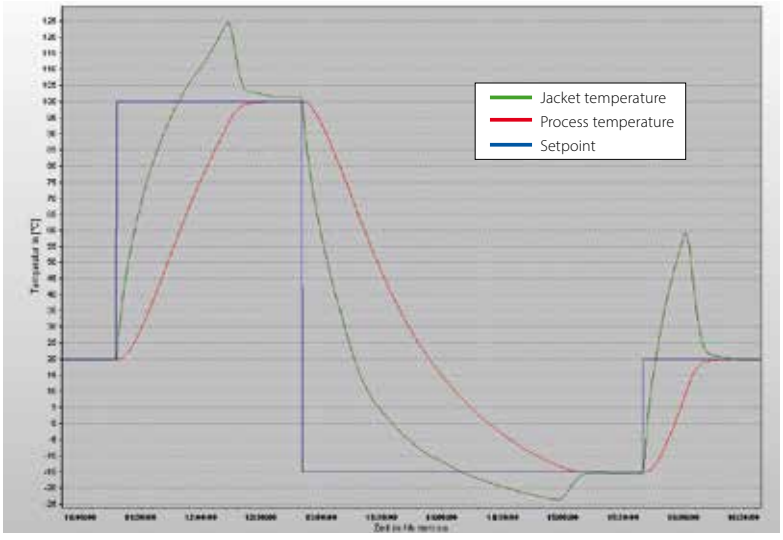
The Unistat 410w is a bench top model with small dimensions but has 2,5 kW of cooling at 100 °C and 1,5 kW at 0 °C. Heating power of 3 kW makes this compact unit a good choice for comparatively large reactors above 0 °C as this case study shows.

Method

The reactor was filled with 34,5 litre of Huber's silicon based Heat Transfer Fluid (HTF) "M90.055.03", the stirrer speed was set to 100 rpm and control to "Process" control. The unit was cycled between 20 °C to 100 °C then to -15 °C before being returned to 20 °C.

Setup details

Temperature range:	-45...250 °C
Cooling power:	1,5 kW @ 0 °C 0,8 kW @ -20 °C 0,2 kW @ -40 °C
Heating power:	1,5/3,0 kW
Hoses:	1x2 m; M30x1,5 (#6427) 1x1 m; M30x1,5 (#6426)
HTF:	M90.055.03 (#6259)
Reactor:	50-litre un-insulated jacketed glass reactor
Reactor content:	34,5 litre M90.055.03 (#6259)
Stirrer speed:	100 rpm
Control:	process



Results

It can be seen in the graphic that the Unistat 410w heats the process from 20 °C to 100 °C in approximately 1 hour. Cooling from 100 °C to -15 °C takes approximately 2,5 hours.

Given the physical size of the Huber Unistat 410w, its performance on a 50-litre un-insulated reactor is remarkable. The tightness of control as the process temperature reaches set point and the stability can clearly be seen.

Unistat® 510w

CS 1102

Cooling a Chemglass 50-litre jacketed glass reactor from 20 °C to T_{min}

Requirement

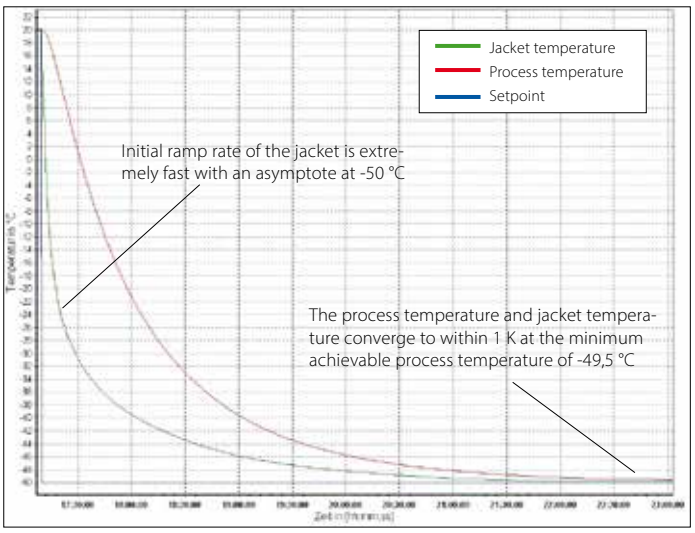
This case study examines the minimum achievable process temperature within a Chemglass 50-litre jacketed glass reactor when connected to a Huber Unistat 510w.

Method

The Unistat and reactor were connected using two 1,5 m insulated metal hoses. The reactor was filled with 37 litre of "M90.055.03", a Huber supplied silicon based HTF.

Setup details

Temperature range:	-50 °C...+250 °C
Cooling power:	5,3 kW @ 250…0 °C
	2,8 kW @ -20 °C
	0,9 kW @ -40 °C
Heating power:	6,0 kW
Hoses:	2x1,5 m; M38x1,5 (#6659)
HTF:	DW-Therm (#6479)
Reactor:	50-litre Chemglass jacketed reactor (un-insulated)
Reactor content:	37 litre M90.055.03
Stirrer speed:	80 rpm
Control:	process



Results

As can be seen in the graphic, the jacket achieves a temperature of approximately -50 °C and the process temperature asymptotes just above this at approximately -49 °C.

CS 32

Unistat® 925w

Predictable and repeatable control of a Buchi Glas Uster CR252 GLSS reactor

Requirement

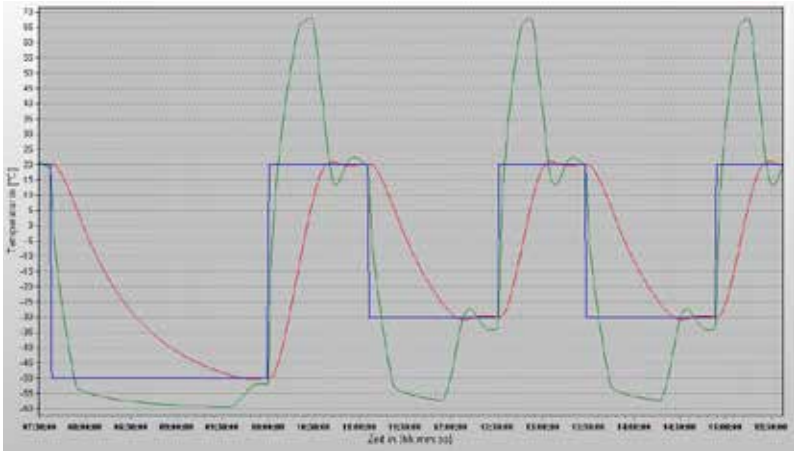
This case study examines the performance of a Unistat 925w when connected to a Buchi Glas Uster 250-litre insulated jacketed GLSS reactor.

Method

The Unistat and reactor are connected using two 2-metre insulated metal hoses. The reactor is filled with 200 litre of Ethanol.

Setup details

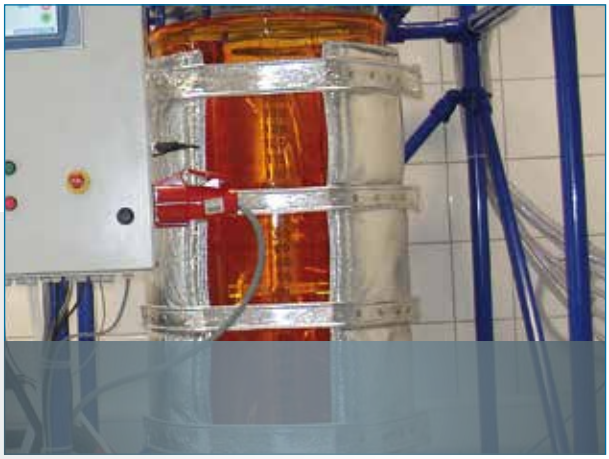
Temperature range:	-90 °C...+200 °C
Cooling power:	16 kW @ 200…–20 °C 15 kW @ –40 °C 13,5 kW @ –60 °C
Heating power:	24 kW
Hoses:	M38x1,5; 2*2 m
HTF:	DW-Therm
Reactor:	Buchi Glas Uster CR252 250-litre insulated jacketed reactor
Reactor content:	200 litre Ethanol
Stirrer speed:	90 rpm
Control:	process



Results

The minimum jacket temperature of the Buchi Glas Uster reactor was limited to -60 °C as was the ramp rate to avoid damaging the glass lining. It can be seen that the Unistat 925w was still well within its maximum performance capabilities at this temperature. The first curve shows the process temperature being lowered to -50 °C from 20 °C (70 K) which the 925w achieved in approximately 2-hours. The process temperature set-point is maintained with a DT of only (approximately) 2 K. The next curve demonstrates the heat-up capability of the Unistat 925w by returning the process temperature to 20 °C from -50 °C in approximately 40-minutes.
The following curves show the repeatability and predictability of the performance of the Unistat 925w by ramping the process temperature between 20 °C and -30 °C, each curve being exactly the same.

Unistat® 930w



CS 85

Controlling simulated exothermic reactions of 1 kW (860 kcal / hr) and 2 kW (1720 kcal / hr) in a Diehm 100-litre reactor

Requirement

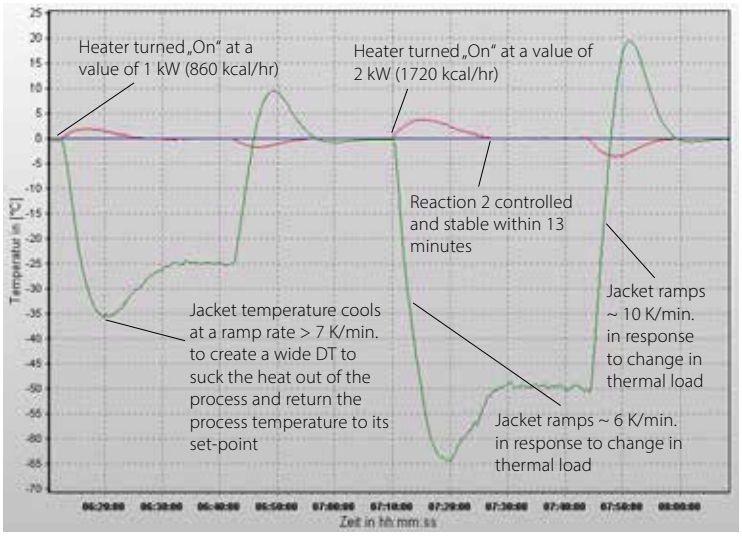
This case study is to see the performance of a Unistat 930w as it works to control simulated exothermic reactions in a 100-litre reactor.

Method

The Unistat and reactor are connected using two 1,5-metre insulated metal hoses. The reactor is filled with 75 litre of "M90.055.03", a Huber supplied silicon based HTF.

Setup details

Temperature range:	-90...200 °C
Cooling power:	20 kW @ 0…-40 °C 15 kW @ -60 °C
Heating power:	24 kW
Hoses:	2x1,5 m; M38x1,5 (#6656)
HTF:	DW-Therm (#6479)
Reactor:	100-litre un-insulated glass reactor VPC Bypass installed
Reactor content:	75 litre M90.055.03 (#6259)
Stirrer speed:	400 rpm
Control:	process



Results

The response of the Unistat 930w can be seen in the graphic below. The jacket temperature is rapidly changed to control the "reaction" and maintain process temperature at its set-point.

CS 1022

Unistat® 1005w

Controlling an Asahi 10-litre triple wall reactor

Requirement

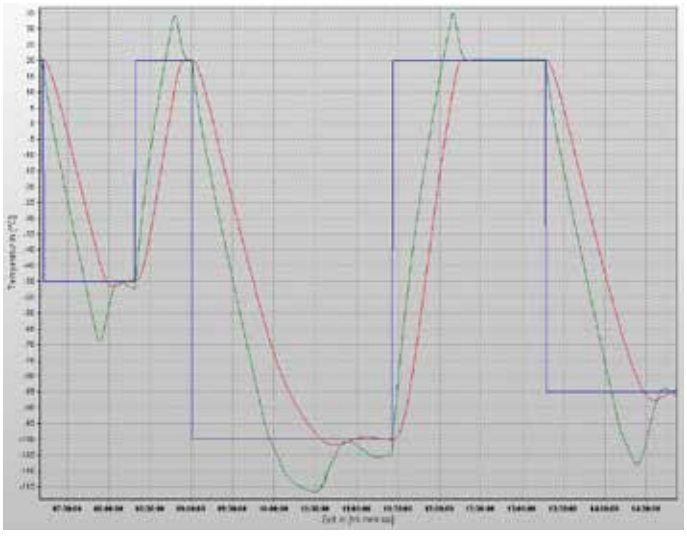
This case study demonstrates the ability of the Unistat 1005w to cool the contents of an Asahi vacuum insulated 10-litre reactor to -100 °C.

Method

The Asahi reactor was connected to the Unistat 1005w using two M30 x 1,5 2-meter insulated metal flexible hoses. The HTF used was "Kryothermal S", a dedicated low temperature HTF with a minimum operating temperature of -120 °C.

Setup details

Temperature range:	-120...100 °C
Cooling power:	1,5 kW @ 100…-40 °C 1,4 kW @ -60… -80 °C 1,0 kW @ -100°C
Heating power:	2,0 kW
Hoses:	2 x2 m; M30x1,5 (#6386)
HTF:	Kryothermal S
Reactor:	10-litre insulated jacketed glass pressure reactor
Reactor content:	10 litre M90.055.03
Stirrer speed:	~ 200 rpm
Control:	process



Results

Once stable at 20 °C under "Process" control, a set-point of -50 °C is entered. The jacket rapidly cools to approximately -68 °C to pull the process to -50 °C in approximately 1-hour.

The second curve shows the process stable at 20 °C before a new set-point of -100 °C is entered. Again the jacket rapidly cools to -116 °C pulling the process to -100 °C in just over 1,5 hours.

Ministat® 230-cc®-NR

CS 1216

Ministat® 230-cc®-NR controlling a vacuum insulated Syrris 2-litre glass jacketed reactor between 20 °C and -20 °C

Requirement

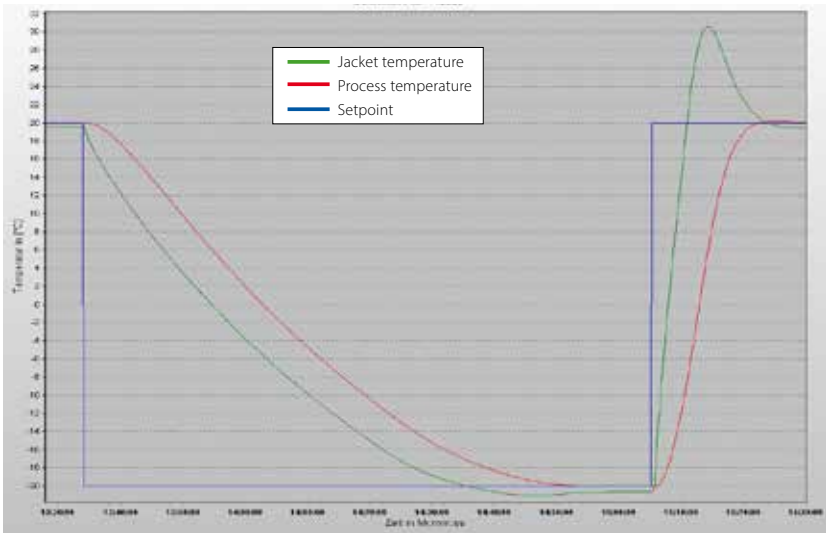
This case study demonstrates the lowest achievable temperature, speed of cooling and heating and level of control when connected with a Syrris "Atlas" system configured with a 2-litre reactor.

Method

The reactor was filled to 1.6 litre with M90.055.03, the HTF used was Ethanol, the stirrer set to 700 rpm and the control to "process". The results were recorded using the "Spyware" software.

Setup details

Temperature range:	-40 °C...+200 °C
Cooling power:	0,38 kW @ 0 °C
	0,25 kW @ -20 °C
	0,14 kW @ -30 °C
Pump speed:	4500 rpm
Heating power:	2 kW
Hoses:	2x1 m; M16x1 (#9608)
HTF:	Ethanol
Reactor:	2-litre jacketed glass reactor
Reactor content:	1,4 litre M90.055.03 (#6259)
Stirrer speed:	700 rpm
Control:	process



Results

It can be seen from the graphic that the Ministat 230-cc-NR cools the process to -20 °C within approximately 1 hour and 20 minutes. The graphic shows the precise control and stability.

The heat up curve shows the precise control made possible by the Ministat 230-cc-NR as the process temperature reached exactly 20 °C from -20 °C in approximately 15 minutes.

CC®-K6

CS 1245

CC®-K6 controlling a 1-litre Labtex reactor

Requirement

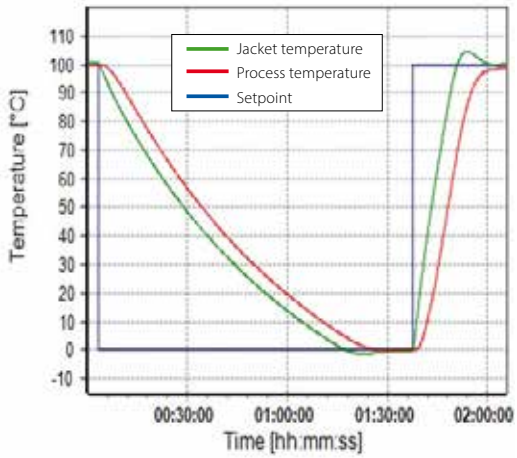
This case study looks at the efficiency and performance of a CC-K6 connected to a 1-litre Labtex reactor.

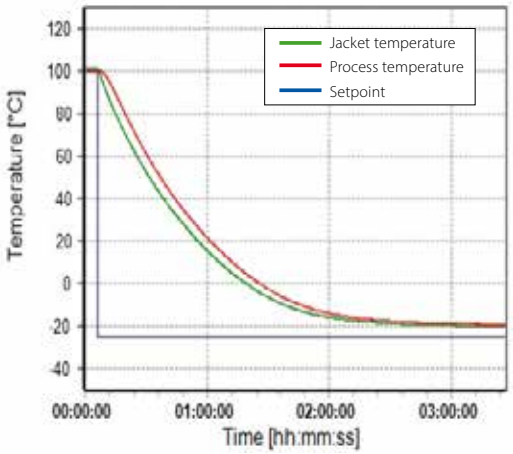
Method

The 1-litre Labtex uninsulated glass jacketed reactor, was connected to the CC-K6 using two insulated metal hoses. The thermofluid used in the system was M80.100/250.03. "Process" control was carried out via a Pt100 sensor located in the process mass. Stirrer speed was set to 300 rpm.

Setup details

Temperature range:	-25°C...+200°C
Cooling power:	0,20 kW @ +20°C 0,15 kW @ 0°C 0,05 kW @ -20°C
Heating power:	2,0 kW
Hoses:	M16x1; 2 x 1 m
HTF:	M80.100/250.03
Reactor:	1-litre Labtex glass jacketed reactor, uninsulated
Reactor content:	M80.100/250.03 (0,7l)
Stirrer speed:	300 rpm
Control:	process





Results Performance

The first graphic shows the cooling and heating of the process from +100°C to 0°C achived in 83 minutes (ramp rate = 1,2 K/min) and back to +100°C acheived in 40 minutes (ram p rate = 2,5 K/min).

Lowest achievable temperature (T_{min})

The second graphic shows the minimum achievable process temperature of -18°C. It can also be seen that the Process cool down time to -15°C from +100°C was 120 minutes (ramp rate = 1 K/min) and to -18°C took 150 minutes.

Technical data

Model	Catalogue page	Temperature range	T_{min} with cooling	T_{min} with water cooling	Heating power	Bath volume	min. filling capacity	Bath volume with displacement insert	Bath opening W x D x H	Resolution of display	Temperature stability	Cooling power (kW) at								
		(°C)	(°C)	(°C)	(kW)	(l)	(l)	(l)	(mm)	(°C)	(K)	300°C	200°C	100°C	20°C	0°C	-20°C	-40°C	-60°C	-80°C
Unistats Petite Fleur, Grande Fleur & Tango																				
Petite Fleur	26	-40...200			1,5		1,5			0,01	0,01		0,48	0,48	0,48	0,45	0,27	0,04		
Petite Fleur w	26	-40...200			1,5		1,5			0,01	0,01		0,48	0,48	0,48	0,45	0,27	0,04		
Petite Fleur-eo	26	-40...200			1,5		2,0			0,01	0,01		0,48	0,48	0,48	0,45	0,27	0,04		
Grande Fleur	26	-40...200			1,5		1,5			0,01	0,01		0,6	0,6	0,6	0,6	0,35	0,04		
Grande Fleur w	26	-40...200			1,5		1,5			0,01	0,01		0,6	0,6	0,6	0,6	0,35	0,04		
Grande Fleur-eo	26	-40...200			1,5		1,5			0,01	0,01		0,6	0,6	0,6	0,6	0,35	0,04		
Grande Fleur w-eo	26	-40...200			1,5		1,5			0,01	0,01		0,6	0,6	0,6	0,6	0,35	0,04		
Unistat tango	26	-45...250			1,5 / 3,0		1,5			0,01	0,01		0,7	0,7		0,7	0,4	0,06		
Unistat tango w	26	-45...250			1,5 / 3,0		1,5			0,01	0,01		0,7	0,7		0,7	0,4	0,06		
Unistat tango wl	26	-45...250			1,5 / 3,0		1,5			0,01	0,01		0,7	0,7		0,7	0,4	0,06		
Unistats series 400																				
Unistat 405	27	-45...250			1,5 / 3,0		1,5			0,01	0,01		1,0	1,0		1,0	0,6	0,15		
Unistat 405w	27	-45...250			1,5 / 3,0		1,5			0,01	0,01		1,3	1,3		1,3	0,7	0,15		
Unistat 405wl	27	-45...250			3,0		1,5			0,01	0,01		0,9	0,9	0,9	0,9	0,6	0,15		
Unistat 410	27	-45...250			3,0		3,0			0,01	0,01		2,5	2,5	2,5	1,5	0,8	0,2		
Unistat 410w	27	-45...250			1,5 / 3,0		1,5			0,01	0,01		2,5	2,5	2,5	1,5	0,8	0,2		
Unistat 425	27	-40...250			2,0		3,6			0,01	0,01		2,0	2,0	2,0	2,5	1,8	0,2		
Unistat 425w	27	-40...250			2,0		3,6			0,01	0,01		2,8	2,8	2,8	2,5	1,9	0,2		
Unistat 430	27	-40...250			4,0		3,9			0,01	0,01		3,5	3,5	3,5	3,5	2,2	0,3		
Unistat 430w	27	-40...250			4,0		3,9			0,01	0,01		3,5	3,5	3,5	3,5	2,2	0,3		
Unistats series 500																				
Unistat 510	28	-50...250			6,0		5,3			0,01	0,01		5,3	5,3		5,3	2,8	0,9		
Unistat 510w	28	-50...250			6,0		4,7			0,01	0,01		5,3	5,3		5,3	2,8	0,9		
Unistat 515w	28	-55...250			6,0		4,7			0,01	0,01		7,0	7,0	7,0	5,3	2,8	0,9		
Unistat 520w	28	-55...250			6,0		5,1			0,01	0,01		6,0	6,0		6,0	4,2	1,5		
Unistat 525	28	-55...250			6,0		5,1			0,01	0,01		10,0	10,0	10,0	7,0	4,2	1,5		
Unistat 525w	28	-55...250			6,0		5,1			0,01	0,01		10,0	10,0	10,0	7,0	4,2	1,5		
Unistat 527w	28	-55...250			6,0		7,2			0,01	0,01		12,0	12,0	12,0	12,0	6,0	2,0		
Unistat 530w	28	-55...250			12,0		7,2			0,01	0,01		19,0	21,0	21,0	16,0	9,0	3,0		
Unistats series 600																				
Unistat 610	29	-60...200			6,0		5,65			0,01	0,01		7,0	7,0		7,0	6,4	3,3	0,8	
Unistat 610w	29	-60...200			6,0		5,65			0,01	0,01		7,0	7,0		7,0	6,4	3,3	0,8	
Unistat 615w	29	-60...200			12,0		5,65			0,01	0,01		9,5	9,5		9,5	8,0	4,8	1,2	
Unistat 620w	29	-60...200			12,0		5,2			0,01	0,01		12,0	12,0		12,0	12,0	6,5	1,8	
Unistat 625w	29	-60...200			12,0		3,4			0,01	0,01		16,0	16,0	16,0	16,0	15,0	7,4	2,2	
Unistat 630w	29	-60...200			24,0		11,4			0,01	0,01		22,0	22,0		21,0	20,0	14,0	5,0	
Unistat 635w	29	-60...200			24,0		21,0			0,01	0,01		27,0	27,0		27,0	25,0	18,0	6,0	
Unistat 640w	29	-60...200			30,0		17,0			0,01	0,01		32,0	32,0		35,0	30,0	18,0	6,0	
Unistat 645w	29	-60...200			36,0		30,0			0,01	0,01		45,0	45,0		45,0	42,0	22,0	7,0	
Unistat 650w	29	-60...200			48,0		28,0			0,01	0,01		65,0	65,0		65,0	56,0	30,0	11,0	
Unistat 680w	29	-60...200			96,0		40,0			0,01	0,01		130,0	130,0		130,0	80,0	60,0	20,0	
Unistats series 700 / 800																				
Unistat 705	30	-75...250			1,5 / 3,0		1,5			0,01	0,01		0,6	0,6		0,65	0,6	0,6	0,3	

-100°C		max. flow rate – pressure (l/min)	max. press – pressure pump (bar)	max. flow rate (suction pump) (l/min)	max. press (suction pump) (bar)	Pump connection	Circulation pump	Safety class	Overtemperature protection	Low level protection	Dimensions W x D x H (mm)	Weight (kg)	Power supply[1] (V; Hz)	Refrigeration machine cooling	min. ambient temperature (°C)	max. ambient temperature (°C)	Cooling water connection	Natural refrigerant[2]	Cat. No.	Model
		25	0,9			M16x1	Yes, vpc	III/FL	Yes	Yes	260 x 450 x 504	45,0	230;1~;50	AIR	5	40		S	1030.0001.01	Petite Fleur
		25	0,9			M16x1	Yes, vpc	III/FL	Yes	Yes	260 x 450 x 504	45,0	230;1~;50	WATER	5	40	G1/2	S	1030.0003.01	Petite Fleur w
		25	0,9			M16x1	Yes, vpc	III/FL	Yes	Yes	260 x 450 x 504	45,0	230;1~;50	AIR	5	40		S	1030.0004.01	Petite Fleur-eo
		47	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	295 x 530 x 570	55,0	230;1~;50	AIR	5	40		S	1041.0001.01	Grande Fleur
		47	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	295 x 530 x 570	55,0	230;1~;50	WATER	5	40	G1/2	S	1041.0007.01	Grande Fleur w
		47	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	295 x 530 x 570	55,0	230;1~;50	AIR	5	40		S	1041.0004.01	Grande Fleur-eo
		47	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	295 x 530 x 570	55,0	230;1~;50	WATER	5	40	G1/2	S	1041.0010.01	Grande Fleur w-eo
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	426 x 270 x 631	56,0	230;1~;50 / 400;3~N;50	AIR	5	40		A	1000.0016.01	Unistat tango
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	426 x 270 x 631	56,0	230;1~;50 / 400;3~N;50	WATER	5	40	G1/2	S	1000.0021.01	Unistat tango w
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	426 x 270 x 631	56,0	230;1~;50 / 400;3~N;50	AIR+WATER	5	40	G1/2	A	1000.0017.01	Unistat tango wl
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	426 x 307 x 631	65,0	230;1~;50 / 400;3~N;50	AIR	5	40		A	1002.0021.01	Unistat 405
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	426 x 307 x 631	62,0	230;1~;50 / 400;3~N;50	WATER	5	40	G1/2	A	1002.0022.01	Unistat 405w
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	426 x 327 x 631		230;1~;50 / 400;3~N;50	AIR+WATER	5	40	G1/2	A	1002.0050.01	Unistat 405wl
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	460 x 554 x 1201	139,0	400;3~;50	AIR	5	40		A	1031.0010.01	Unistat 410
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	425 x 360 x 636	67,5	230;1~;50 / 400;3~N;50	WATER	5	40	G1/2	A	1031.0005.01	Unistat 410w
		105	1,5			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1453	155,0	400;3~;50	AIR	5	40		A	1005.0057.01	Unistat 425
		105	1,5			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1453	159,0	400;3~;50	WATER	5	40	G1/2	A	1005.0058.01	Unistat 425w
		90	1,7			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1453	161,0	400;3~;50	AIR	5	40		A	1005.0059.01	Unistat 430
		90	1,7			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1453	159,0	400;3~;50	WATER	5	40	G1/2	A	1005.0060.01	Unistat 430w
		105	1,5			M30x1,5	Yes	III/FL	Yes	Yes	1100 x 755 x 1370	335,0	400;3~;50	AIR	5	40		A	1005.0082.01	Unistat 510
		105	1,5			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1453	176,0	400;3~;50	WATER	5	40	G1/2	A	1005.0061.01	Unistat 510w
		105	1,5			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1453	177,0	400;3~;50	WATER	5	40	G1/2	A	1032.0006.01	Unistat 515w
		60	1,5			M30x1,5	Yes	III/FL	Yes	Yes	540 x 604 x 1332	203,0	400;3~;50	WATER	5	40	G1/2	A	1006.0020.01	Unistat 520w
		60	1,5			M30x1,5	Yes	III/FL	Yes	Yes	1290 x 736 x 1596	410,0	400;3~;50	AIR	5	40		A	1033.0015.01	Unistat 525
		60	1,5			M30x1,5	Yes	III/FL	Yes	Yes	540 x 604 x 1332	203,0	400;3~;50	WATER	5	40	G1/2	A	1033.0008.01	Unistat 525w
		90	2,5			M30x1,5	Yes	III/FL	Yes	Yes	540 x 704 x 1491	288,0	400;3~;50	WATER	5	40	G3/4	A	1034.0014.01	Unistat 527w
		90	2,5			M30x1,5	Yes	III/FL	Yes	Yes	540 x 704 x 1491	288,0	400;3~;50	WATER	5	40	G3/4	A	1034.0015.01	Unistat 530w
		60	1,5			M30x1,5	Yes	III/FL	Yes	Yes	1290 x 735 x 1600	505,0	400;3~;50	AIR	5	40		A	1007.0040.01	Unistat 610
		60	1,5			M30x1,5	Yes	III/FL	Yes	Yes	630 x 704 x 1520	348,0	400;3~;50	WATER	5	40	G1/2	A	1007.0031.01	Unistat 610w
		60	1,5			M30x1,5	Yes	III/FL	Yes	Yes	630 x 704 x 1520	358,0	400;3~;50	WATER	5	40	G1/2	A	1007.0032.01	Unistat 615w
		90	2,5			M30x1,5	Yes	III/FL	Yes	Yes	730 x 804 x 1520	440,0	400;3~;50	WATER	5	40	G3/4	A	1008.0040.01	Unistat 620w
		90	2,5			M30x1,5	Yes	III/FL	Yes	Yes	730 x 804 x 1520	448,0	400;3~;50	WATER	5	40	G3/4	A	1008.0041.01	Unistat 625w
		110	2,5			M38x1,5	Yes	III/FL	Yes	Yes	950 x 1005 x 1650	682,0	400;3~;50	WATER	5	40	G3/4	A	1009.0021.01	Unistat 630w
		110	2,5			M38x1,5	Yes	III/FL	Yes	Yes	950 x 1005 x 1650	734,0	400;3~;50	WATER	5	40	G3/4	A	1009.0022.01	Unistat 635w
		110	2,5			M38x1,5	Yes	III/FL	Yes	Yes	950 x 1005 x 1650	705,0	400;3~;50	WATER	5	40	G3/4	A	1010.0007.01	Unistat 640w
		130	4,0			M38x1,5	Yes	III/FL	Yes	Yes	1800 x 1200 x 1830	1518	400;3~;50	WATER	5	40	G1 1/2	A	1011.0006.01	Unistat 645w
		130	4,0			M38x1,5	Yes	III/FL	Yes	Yes	1800 x 1200 x 1830	1500	400;3~;50	WATER	5	40	G1 1/2	A	1012.0005.01	Unistat 650w
		130	4,0			M38x1,5	Yes	III/FL	Yes	Yes	4500 x 2000 x 2000	3500	400;3~;50	WATER	5	40	G2	A	1013.0003.01	Unistat 680w
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	425 x 400 x 720	90,0	230;1~;50 / 400;3~N;50	AIR	5	40		A	1001.0041.01	Unistat 705

FL = Suitable for inflammable and non-inflammable liquids

[1] Voltage can be changed, must be specified with order

[2] S = Standard, , A = on request

[3] Option

Technical data

Model	Catalogue page	Temperature range	T_{min} with cooling	T_{min} with water cooling	Heating power	Bath volume	min. filling capacity	Bath volume with displacement insert	Bath opening W x D x H	Resolution of display	Temperature stability	Cooling power (kW) at								
		(°C)	(°C)	(°C)	(kW)	(l)	(l)	(l)	(mm)	(°C)	(K)	300°C	200°C	100°C	20°C	0°C	-20°C	-40°C	-60°C	-80°C
Unistat 705w	30	-75...250			1,5 / 3,0		1,5			0,01	0,01		0,6	0,6		0,65	0,6	0,6	0,3	
Unistat 815	30	-85...250			2,0		3,8			0,01	0,01		1,3	1,3		1,5	1,5	1,4	1,2	0,2
Unistat 815w	30	-85...250			2,0		3,2			0,01	0,01		1,5	1,5		1,5	1,5	1,4	1,2	0,2
Unistat 825	30	-85...250			3,0		2,9			0,01	0,01		2,3	2,3		2,2	2,0	2,0	1,4	0,3
Unistat 825w	30	-85...250			3,0		3,0			0,01	0,01		2,3	2,3		2,4	2,4	2,4	1,5	0,3
Unistats series 900 / 1000																				
Unistat 905	31	-90...250			6,0		3,5			0,01	0,01		4,0	3,8		3,6	3,5	3,5	2,2	0,7
Unistat 905w	31	-90...250			6,0		3,5			0,01	0,01		4,5	4,5		4,5	4,5	4,0	2,5	0,7
Unistat 912w	31	-90...250			6,0		5,2			0,01	0,01		7,0	7,0		7,0	7,0	6,0	3,5	0,9
Unistat 915w	31	-90...250			6,0		5,2			0,01	0,01		11,0	11,0		11,0	11,0	8,0	4,0	1,1
Unistat 920w	31	-90...200			12,0		12,0			0,01	0,01		11,0	11,0	11,0	11,0	11,0	10,0	8,0	2,0
Unistat 925w	31	-90...200			12,0		12,0			0,01	0,01		16,0	16,0	16,0	16,0	16,0	15,0	13,5	3,5
Unistat 930w	31	-90...200			24,0		12,0			0,01	0,01		19,0	19,0	19,0	20,0	20,0	20,0	15,0	5,0
Unistat 950	31	-90...200			36,0		30,0			0,01	0,01		30,0	30,0	30,0	30,0	30,0	30,0	24,0	10,0
Unistat 950w	31	-90...200			36,0		30,0			0,01	0,01		36,0	36,0	36,0	36,0	36,0	36,0	25,0	10,0
Unistat 1005w	31	-120...100			2,0		3,6			0,01	0,01			1,5	1,5	1,5	1,5	1,5	1,4	1,4
Unistat 1015w	31	-120...100			4,0		7,0			0,01	0,01			2,5	2,5	2,5	2,5	2,5	2,5	2,0
Unistat high temperature circulators																				
Unistat T305	32	65...300		15	3,0 / 6,0		1,45			0,01	0,02									
Unistat T305 HT	32	65...300			3,0 / 6,0		1,9			0,01	0,01	3,2	2,3	0,6						
Unistat T305w HT	32	65...300		15	3,0 / 6,0		1,9			0,01	0,01	10,0	10,0	10,0						
Unistat T320w HT	32	65...300		15	12,0		3,5			0,01	0,01	10,0	10,0	6,0						
Unistat T330	32	65...300			24,0		3,5			0,01	0,01									
Unistat T330w HT	32	65...300		15	24,0		3,5			0,01	0,01	10,0	10,0	6,0						
Unistat T340w HT	32	65...300		15	48,0		13,0			0,01	0,01	10,0	10,0	6,0						
Unistat T402	32	80...425		15	3,0 / 6,0		1,45			0,01	0,05									
Unistat TR401	33	50...400			3,0 / 9,0		2,3			0,01/0,1	0,05									
Unistat TR401w HT	33	50...400		15	3,0 / 9,0		2,3			0,01/0,1	0,05	10,0	10,0	10,0						
Unistat TR402	33	80...425			3,0 / 9,0		3,0			0,01/0,1	0,05									
Unistats "P" for application with high pressure loss (high pressure pump)																				
Unistat P404	34	-45...250			3,5					0,01	0,01					1,0		0,05		
Unistat P505	34	-55...250			6,0					0,01	0,01				7,0	5,3	2,8	0,9		
Unistat P505w	34	-55...250			6,0					0,01	0,01				7,0	5,3	2,8	0,9		
Unistat P527w	34	-55...250			12,0					0,01	0,01		12,0	12,0	12,0	12,0	6,0	2,0		
Unistat P530w	34	-55...250			12,0					0,01	0,01					16,0		3,0		
Unistat P634w	34	-60...200			24,0					0,01	0,01					25,0		16,0		
Unistat P810w	34	-85...250			3,4					0,01	0,01					1,5		1,3		0,3
Unistat P904w	34	-90...250			6,0					0,01	0,01					4,1		3,7		0,3
Unistat P905	34	-90...250			6,0					0,01	0,01					3,6		3,5		0,7
Chiller RotaCool																				
RotaCool	46	-10...40					1,5			0,1	1,0					0,35				
Minichillers with OLÉ controller																				
Minichiller 280 OLÉ	47	-5...40					2,0			0,1	1,0					0,2				
Minichiller 300 OLÉ	47	-20...40(80)					1,4			0,1	0,5					0,2	0,07			

-100°C		max. flow rate – pressure (l/min)	max. press – pressure pump (bar)	max. flow rate (suction pump) (l/min)	max. press (suction pump) (bar)	Pump connection	Circulation pump	Safety class	Overtemperature protection	Low level protection	Dimensions W x D x H (mm)	Weight (kg)	Power supply[1] (V; Hz)	Refrigeration machine cooling	min. ambient temperature (°C)	max. ambient temperature (°C)	Cooling water connection	Natural refrigerant[2]	Cat. No.	Model
		55	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	425 x 400 x 720	90,0	230;1~;50 / 400;3~N;50	WATER	5	40	G1/2	S	1001.0042.01	Unistat 705w
		40	0,9			M30x1,5	Yes, vpc	III/FL	Yes	Yes	460 x 604 x 1465	214,0	400;3~;50	AIR	5	40		A	1014.0049.01	Unistat 815
		40	0,9			M30x1,5	Yes, vpc	III/FL	Yes	Yes	460 x 604 x 1465	217,0	400;3~;50	WATER	5	40	G1/2	A	1014.0050.01	Unistat 815w
		40	0,9			M30x1,5	Yes, vpc	III/FL	Yes	Yes	460 x 604 x 1465	215,0	400;3~;50	AIR	5	40		A	1014.0051.01	Unistat 825
		40	0,9			M30x1,5	Yes, vpc	III/FL	Yes	Yes	460 x 604 x 1465	204,0	400;3~;50	WATER	5	40	G1/2	A	1014.0052.01	Unistat 825w
		40	0,9			M30x1,5	Yes, vpc	III/FL	Yes	Yes	540 x 654 x 1500	255,0	400;3~;50	AIR	5	40		A	1035.0011.01	Unistat 905
		40	0,9			M30x1,5	Yes, vpc	III/FL	Yes	Yes	540 x 654 x 1500	238,0	400;3~;50	WATER	5	40	G1/2	A	1035.0012.01	Unistat 905w
		110	1,5			M30x1,5	Yes	III/FL	Yes	Yes	630 x 704 x 1565	384,0	400;3~;50	WATER	5	40	G1/2	A	1016.0027.01	Unistat 912w
		110	1,5			M30x1,5	Yes	III/FL	Yes	Yes	630 x 704 x 1565	384,0	400;3~;50	WATER	5	40	G3/4	A	1036.0006.01	Unistat 915w
		90	2,5			M38x1,5	Yes	III/FL	Yes	Yes	950 x 1205 x 1650	855,0	400;3~;50	WATER	5	40	G3/4	A	1017.0025.01	Unistat 920w
		110	2,5			M38x1,5	Yes	III/FL	Yes	Yes	950 x 1205 x 1650	947,0	400;3~;50	WATER	5	40	G3/4	A	1017.0026.01	Unistat 925w
		110	2,5			M38x1,5	Yes	III/FL	Yes	Yes	950 x 1205 x 1650	940,0	400;3~;50	WATER	5	40	G3/4	A	1017.0027.01	Unistat 930w
		130	4,0			M38x1,5	Yes	III/FL	Yes	Yes	3315 x 1485 x 3040	2100	400;3~;50	AIR	5	40		A	1018.0008.01	Unistat 950
		130	4,0			M38x1,5	Yes	III/FL	Yes	Yes	2630 x 1300 x 1950	2214	400;3~;50	WATER	5	40	G1 1/4	A	1018.0009.01	Unistat 950w
	1,0	30	0,9			M30x1,5	Yes, vpc	III/FL	Yes	Yes	700 x 804 x 1520	314,0	400;3~;50	WATER	5	40	G1/2	A	1019.0009.01	Unistat 1005w
	2,0	44	1,5			M30x1,5	Yes	III/FL	Yes	Yes	950 x 1205 x 1650	685,0	400;3~;50	WATER	5	40	G1/2	A	1020.0010.01	Unistat 1015w
		45	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	425 x 250 x 631	37,0	230;1~;50/60 / 400;3~N;50/60		5	40			1003.0021.01	Unistat T305
		45	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	425 x 250 x 631	41,0	230;1~;50/60 / 400;3~N;50/60		5	40			1003.0020.01	Unistat T305 HT
		45	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	425 x 250 x 631	43,0	230;1~;50/60 / 400;3~N;50/60		5	40	G1/2		1003.0017.01	Unistat T305w HT
		60	1,5			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1330	143,0	400;3~;50		5	40	G1/2		1004.0019.01	Unistat T320w HT
		60	2,5			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1330	141,0	400;3~;50		5	40			1004.0031.01	Unistat T330
		60	2,5			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1330	138,0	400;3~;50		5	40	G1/2		1004.0025.01	Unistat T330w HT
		60	2,5			M30x1,5	Yes	III/FL	Yes	Yes	600 x 704 x 1520	163,0	400;3~;50		5	40	G1/2		1024.0007.01	Unistat T340w HT
		45	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	505 x 400 x 765	54,0	230;1~;50/60 / 400;3~N;50/60		5	40	G1/2		1038.0003.01	Unistat T402
		31	0,9			M24x1,5	Yes, vpc	III/FL	Yes	Yes	288 x 379 x 890	55,0	230;1~;50/60 / 400;3~N;50/60		5	40	G1/2		1028.0007.01	Unistat TR401
		26	0,8			M24x1,5	Yes, vpc	III/FL	Yes	Yes	288 x 379 x 890	54,0	230;1~;50/60 / 400;3~N;50/60		5	40	G1/2		1028.0018.01	Unistat TR401w HT
		31	1,0			M24x1,5	Yes, vpc	III/FL	Yes	Yes	288 x 332 x 870	48,0	230;1~;50/60 / 400;3~N;50/60		5	40	G1/2		1028.0006.01	Unistat TR402
		50	3,0			M24x1,5	Yes	III/FL	Yes	Yes	460 x 604 x 1064		400;3~;50	AIR	5	40		A	1043.0004.01	Unistat P404
		50	4,0			M30x1,5	Yes	III/FL	Yes	Yes	1200 x 805 x 1493	365,0	400;3~;50	AIR	5	40		A	1044.0004.01	Unistat P505
		50	4,0			M30x1,5	Yes	III/FL	Yes	Yes	460 x 554 x 1453	175,0	400;3~;50	WATER	5	40	G1/2	A	1044.0001.01	Unistat P505w
		90	5,5			M30x1,5	Yes	III/FL	Yes	Yes	540 x 704 x 1491		400;3~;50	WATER	5	40	G3/4	A	1045.0001.01	Unistat P527w
		90	2,5			M30x1,5	Yes	III/FL	Yes	Yes	540 x 704 x 1491		400;3~;50	WATER	5	40	G3/4	A	1045.0004.01	Unistat P530w
		90	5,5			M38x1,5	Yes	III/FL	Yes	Yes	950 x 1005 x 1650		400;3~;50	WATER	5	40	G3/4	A	1046.0001.01	Unistat P634w
		50	3,0			M30x1,5	Yes	III/FL	Yes	Yes	460 x 604 x 1465	214,0	400;3~;50	WATER	5	40	G1/2	A	1047.0001.01	Unistat P810w
		50	3,0			M30x1,5	Yes	III/FL	Yes	Yes			400;3~;50	WATER	5	40	G1/2	A	1048.0001.01	Unistat P904w
		40	0,9			M30x1,5	Yes	III/FL	Yes	Yes	540 x 654 x 1499		400;3~;50	AIR	5	40		A	1054.0001.01	Unistat P905
		14	0,25	10,5	0,17	M16x1	Yes	I/NFL	No	Yes	470 x 580 x 420	32,0	230;1~;50/60	AIR	5	40		S	3033.0007.99	RotaCool
		14	0,25	10,5	0,17	M16x1	Yes	I/NFL	No	No	225 x 360 x 380	28,0	230;1~;50/60	AIR	5	40		S	3006.0105.98	Minichiller 280 OLÉ
		14	0,25	10,5	0,17	M16x1	Yes	I/NFL	No	No	225 x 360 x 380	23,0	230;1~;50/60	AIR	5	40		S	3006.0089.98	Minichiller 300 OLÉ

FL = Suitable for inflammable and non-inflammable liquids

[1] Voltage can be changed, must be specified with order

[2] S = Standard, , A = on request

[3] Option

Technical data

Model	Catalogue page	Temperature range	T_{min} with cooling	T_{min} with water cooling	Heating power	Bath volume	min. filling capacity	Bath volume with displacement insert	Bath opening W x D x H	Resolution of display	Temperature stability	Cooling power (kW) at								
		(°C)	(°C)	(°C)	(kW)	(l)	(l)	(l)	(mm)	(°C)	(K)	300°C	200°C	100°C	20°C	0°C	-20°C	-40°C	-60°C	-80°C
Minichiller 300w OLÉ	47	-20...40(80)					1,4			0,1	0,5					0,2	0,07			
Minichiller 600 OLÉ	47	-20...40					2,8			0,1	0,5					0,5	0,15			
Minichiller 600w OLÉ	47	-20...40					2,8			0,1	0,5					0,5	0,15			
Minichiller 900w OLÉ	47	-25...40					2,8			0,1	0,5					0,7	0,2			
Unichillers with OLÉ controller																				
Unichiller 007 OLÉ	48	-20...40					3,8			0,1	0,5					0,55	0,2			
Unichiller 010 OLÉ	48	-20...40					3,8			0,1	0,5					0,8	0,15			
Unichiller 012 OLÉ	48	-20...40					3,8			0,1	0,5					1,0	0,25			
Unichiller 012w OLÉ	48	-20...40					3,8			0,1	0,5					1,0	0,25			
Unichiller 015 OLÉ	48	-20...40					3,8			0,1	0,5					1,0	0,3			
Unichiller 015w OLÉ	48	-20...40					3,8			0,1	0,5					1,0	0,3			
Unichiller 022 OLÉ	48	-10...40					3,8			0,1	0,5					1,6				
Unichiller 022w OLÉ	48	-10...40					3,8			0,1	0,5					1,6				
Unichiller 025 OLÉ	48	-10...40					3,8			0,1	0,5					2,0				
Unichiller 025w OLÉ	48	-10...40					3,8			0,1	0,5					2,0				
Unichillers with Pilot ONE controller																				
Unichiller 007	49	-20...40					3,8			0,01/0,1	0,5					0,55	0,2			
Unichiller 007w	49	-20...40					3,8			0,01/0,1	0,5					0,55	0,2			
Unichiller 010	49	-20...40					3,8			0,01/0,1	0,5					0,8	0,15			
Unichiller 010w	49	-20...40					3,8			0,01/0,1	0,5					0,8	0,15			
Unichiller 012	49	-20...40					3,8			0,01/0,1	0,5					1,0	0,25			
Unichiller 012w	49	-20...40					3,8			0,01/0,1	0,5					1,0	0,25			
Unichiller 015	49	-20...40					3,8			0,01/0,1	0,5					1,0	0,3			
Unichiller 015w	49	-20...40					3,8			0,01/0,1	0,5					1,0	0,3			
Unichiller 022	49	-10...40					3,8			0,01/0,1	0,5					1,6				
Unichiller 022w	49	-10...40					3,8			0,01/0,1	0,5					1,6				
Unichiller 025	49	-10...40					3,8			0,01/0,1	0,5					2,0				
Unichiller 025w	49	-10...40					3,8			0,01/0,1	0,5					2,0				
Unichiller 050	52	-20...40					18,0			0,01/0,1	0,5				5,0	4,2	1,8			
Unichiller 050w	52	-20...40					18,0			0,01/0,1	0,5				5,0	4,2	1,8			
Unichiller 075	52	-20...40					18,0			0,01/0,1	0,5				7,5	6,1	2,4			
Unichiller 075w	52	-20...40					18,0			0,01/0,1	0,5				7,5	6,1	2,4			
Unichiller 100	52	-20...40					18,0			0,01/0,1	0,5				10,0	8,6	3,9			
Unichiller 100w	52	-20...40					18,0			0,01/0,1	0,5				10,0	8,6	3,9			
Unichillers "P" with OLÉ controller and high pressure pumps																				
Unichiller P007 OLÉ	50	-20...40					3,8			0,1	0,5					0,55	0,2			
Unichiller P010 OLÉ	50	-20...40					3,8			0,1	0,5					0,8	0,15			
Unichiller P012 OLÉ	50	-20...40					3,8			0,1	0,5					1,0	0,25			
Unichiller P012w OLÉ	50	-20...40					3,8			0,1	0,5					1,0	0,25			
Unichiller P015 OLÉ	50	-20...40					3,8			0,1	0,5					1,0	0,3			
Unichiller P015w OLÉ	50	-20...40					3,8			0,1	0,5					1,0	0,3			
Unichiller P022 OLÉ	50	-10...40					3,8			0,1	0,5					1,6				
Unichiller P022w OLÉ	50	-10...40					3,8			0,1	0,5					1,6				
Unichiller P025 OLÉ	50	-10...40					3,8			0,1	0,5					2,0				

-100°C	max. flow rate – pressure (l/min)	max. press – pressure pump (bar)	max. flow rate (suction pump) (l/min)	max. press (suction pump) (bar)	Pump connection	Circulation pump	Safety class	Overtemperature protection	Low level protection	Dimensions W x D x H (mm)	Weight (kg)	Power supply[1] (V; Hz)	Refrigeration machine cooling	min. ambient temperature (°C)	max. ambient temperature (°C)	Cooling water connection	Natural refrigerant[2]	Cat. No.	Model
	14	0,25	10,5	0,17	M16x1	Yes	I/NFL	No	No	225 x 360 x 380	23,0	230;1~;50/60	WATER	5	40	G1/2	S	3006.0090.98	Minichiller 300w OLÉ
	24	0,7	18	0,4	M16x1	Yes, A	I/NFL	No	Yes	280 x 490 x 424	35,0	230;1~;50/60	AIR	5	40		S	3006.0098.98	Minichiller 600 OLÉ
	24	0,7	18	0,4	M16x1	Yes, A	I/NFL	No	No	280 x 490 x 424	35,0	230;1~;50/60	WATER	5	40	G1/2	S	3006.0126.98	Minichiller 600w OLÉ
	24	0,9	18	0,4	M16x1	Yes, A	I/NFL	No	No	280 x 490 x 414	36,0	230;1~;50	WATER	5	40	G1/2	S	3006.0121.98	Minichiller 900w OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	No	350 x 496 x 622	56,0	230;1~;50/60	AIR	5	40		A	3012.0120.98	Unichiller 007 OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	No	350 x 496 x 622	49,0	230;1~;50/60	AIR	5	40		A	3012.0124.98	Unichiller 010 OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	No	420 x 487 x 579	52,0	230;1~;50	AIR	5	40		A	3009.0090.98	Unichiller 012 OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	No	350 x 496 x 622	52,0	230;1~;50	WATER	5	40	G1/2	A	3012.0133.98	Unichiller 012w OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	No	420 x 487 x 579	60,0	230;1~;50	AIR	5	40		A	3009.0094.98	Unichiller 015 OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	52,0	230;1~;50	WATER	5	40	G1/2	A	3012.0137.98	Unichiller 015w OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	78,0	230;1~;50	AIR	5	40		A	3010.0050.98	Unichiller 022 OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	93,0	230;1~;50	WATER	5	40	G1/2	A	3009.0098.98	Unichiller 022w OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	88,0	230;1~;50	AIR	5	40		A	3010.0054.98	Unichiller 025 OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	95,0	230;1~;50	WATER	5	40	G1/2	A	3009.0102.98	Unichiller 025w OLÉ
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	56,0	230;1~;50/60	AIR	5	40		A	3012.0189.01	Unichiller 007
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	56,0	230;1~;50/60	WATER	5	40	G1/2	A	3012.0215.01	Unichiller 007w
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	57,0	230;1~;50/60	AIR	5	40		A	3012.0191.01	Unichiller 010
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	52,0	230;1~;50/60	WATER	5	40	G1/2	A	3012.0219.01	Unichiller 010w
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	52,0	230;1~;50	AIR	5	40		A	3009.0145.01	Unichiller 012
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	56,0	230;1~;50	WATER	5	40	G1/2	A	3012.0193.01	Unichiller 012w
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	52,0	230;1~;50	AIR	5	40		A	3009.0147.01	Unichiller 015
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	52,0	230;1~;50	WATER	5	40	G1/2	A	3012.0195.01	Unichiller 015w
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	83,0	230;1~;50	AIR	5	40		A	3010.0081.01	Unichiller 022
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	83,0	230;1~;50	WATER	5	40	G1/2	A	3009.0149.01	Unichiller 022w
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	83,0	230;1~;50	AIR	5	40		A	3010.0083.01	Unichiller 025
	29	1,0			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	83,0	230;1~;50	WATER	5	40	G1/2	A	3009.0151.01	Unichiller 025w
	48	3,4			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	AIR	5	40		A	3038.0001.01	Unichiller 050
	48	3,4			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	WATER	5	40	G1/2	A	3040.0001.01	Unichiller 050w
	48	3,4			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	AIR	5	40		A	3038.0018.01	Unichiller 075
	48	3,4			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	WATER	5	40	G1/2	A	3040.0009.01	Unichiller 075w
	48	3,4			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	AIR	5	40		A	3038.0035.01	Unichiller 100
	48	3,4			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	WATER	5	40	G1/2	A	3040.0017.01	Unichiller 100w
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	59,0	230;1~;50/60	AIR	5	40		A	3012.0161.98	Unichiller P007 OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	49,0	230;1~;50/60	AIR	5	40		A	3012.0163.98	Unichiller P010 OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	60,0	230;1~;50	AIR	5	40		A	3009.0115.98	Unichiller P012 OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	52,0	230;1~;50	WATER	5	40	G1/2	A	3012.0165.98	Unichiller P012w OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	64,0	230;1~;50	AIR	5	40		A	3009.0117.98	Unichiller P015 OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	52,0	230;1~;50	WATER	5	40	G1/2	A	3012.0167.98	Unichiller P015w OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	76,0	230;1~;50	AIR	5	40		A	3010.0064.98	Unichiller P022 OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	93,0	230;1~;50	WATER	5	40	G1/2	A	3009.0119.98	Unichiller P022w OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	79,0	230;1~;50	AIR	5	40		A	3010.0066.98	Unichiller P025 OLÉ

FL = Suitable for inflammable and non-inflammable liquids [1] Voltage can be changed, must be specified with order [2] S = Standard, A = on request [3] Option

Technical data

Model	Catalogue page	Temperature range	T_{min} with cooling	T_{min} with water cooling	Heating power	Bath volume	min. filling capacity	Bath volume with displacement insert	Bath opening W x D x H	Resolution of display	Temperature stability	Cooling power (kW) at								
		(°C)	(°C)	(°C)	(kW)	(l)	(l)	(l)	(mm)	(°C)	(K)	300°C	200°C	100°C	20°C	0°C	-20°C	-40°C	-60°C	-80°C
Unichiller P025w OLÉ	50	-10...40					3,8			0,1	0,5					2,0				
Unichillers "P" with Pilot ONE controller and high pressure pumps																				
Unichiller P007	51	-20...40					3,8			0,01/0,1	0,5					0,55	0,2			
Unichiller P007w	51	-20...40					3,8			0,01/0,1	0,5					0,55	0,2			
Unichiller P010	51	-20...40					3,8			0,01/0,1	0,5					0,8	0,15			
Unichiller P010w	51	-20...40					3,8			0,01/0,1	0,5					0,8	0,15			
Unichiller P012	51	-20...40					3,8			0,01/0,1	0,5					1,0	0,25			
Unichiller P012w	51	-20...40					3,8			0,01/0,1	0,5					1,0	0,25			
Unichiller P015	51	-20...40					3,8			0,01/0,1	0,5					1,0	0,3			
Unichiller P015w	51	-20...40					3,8			0,01/0,1	0,5					1,0	0,3			
Unichiller P022	51	-10...40					3,8			0,01/0,1	0,5					1,6				
Unichiller P022w	51	-10...40					3,8			0,01/0,1	0,5					1,6				
Unichiller P025	51	-10...40					3,8			0,01/0,1	0,5					2,0				
Unichiller P025w	51	-10...40					3,8			0,01/0,1	0,5					2,0				
Unichiller P050	53	-20...40					18,0			0,01/0,1	0,5				5,0	3,4	1,2			
Unichiller P050w	53	-20...40					18,0			0,01/0,1	0,5				5,0	3,4	1,2			
Unichiller P075	53	-20...40			6,0		18,0			0,01/0,1	0,5				7,5	5,3	1,8			
Unichiller P075w	53	-20...40					18,0				0,2				7,5	5,3	1,8			
Unichiller P100	53	-20...40					18,0			0,01/0,1	0,5				10,0	7,8	3,3			
Unichiller P100w	53	-20...40					18,0			0,01/0,1	0,5				10,0	7,8	3,3			
Unichillers "Tower" with Pilot ONE controller, air-cooled																				
Unichiller 017T	54	-10...40					2,5			0,01/0,1	0,5					0,9				
Unichiller 020T	54	-20...40					2,5			0,01/0,1	0,5					3,0	0,9			
Unichiller 025T	54	-10...40					2,5			0,01/0,1	0,5					1,2				
Unichiller 040T	54	-10...40					3,5			0,01/0,1	0,5					2,5				
Unichiller 045T	54	-20...40					3,5			0,01/0,1	0,5					4,5	1,5			
Unichiller 055T	54	-10...40					5,0			0,01/0,1	0,5					3,0				
Unichiller 060T	54	-20...40					5,0			0,01/0,1	0,5					6,0	2,0			
Unichiller 080T	54	-10...40					5,0			0,01/0,1	0,5					4,8				
Unichiller 100T	55	-20...40					8,36			0,01/0,1	0,5					10,0	3,5			
Unichiller 110T	55	-10...40					8,36			0,01/0,1	0,5					6,0				
Unichiller 130T	55	-10...40					14,0			0,01/0,1	0,5					7,0				
Unichiller 150T	55	-20...40					14,0			0,01/0,1	0,5					9,7	5,0			
Unichiller 160T	55	-10...40					14,0			0,01/0,1	0,5					10,0				
Unichiller 200T	55	-10...40					14,0			0,01/0,1	0,5					11,0				
Unichiller 210T	55	-20...40					14,0			0,01/0,1	0,5					21,0	7,0			
Unichiller 250T	55	-10...40					14,0			0,01/0,1	0,5					14,0				
Unichiller 260T	55	-20...40					14,0			0,01/0,1	0,5					26,0	9,0			
Unichiller 300T	55	-10...40					14,0			0,01/0,1	0,5					16,5				
Unichiller 400T	55	-10...40					14,0			0,01/0,1	0,5					22,0				
Unichillers "Tower" with Pilot ONE controller, water-cooled																				
Unichiller 017Tw	56	-10...40					2,5			0,01/0,1	0,5					0,9				
Unichiller 020Tw	56	-20...40					2,5			0,01/0,1	0,5					2,0	0,7			
Unichiller 025Tw	56	-10...40					2,5			0,01/0,1	0,5					1,2				

-100°C	max. flow rate – pressure (l/min)	max. press – pressure pump (bar)	max. flow rate (suction pump) (l/min)	max. press (suction pump) (bar)	Pump connection	Circulation pump	Safety class	Overtemperature protection	Low level protection	Dimensions W x D x H (mm)	Weight (kg)	Power supply[1] (V; Hz)	Refrigeration machine cooling	min. ambient temperature (°C)	max. ambient temperature (°C)	Cooling water connection	Natural refrigerant[2]	Cat. No.	Model
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	95,0	230;1~;50	WATER	5	40	G1/2	A	3009.0121.98	Unichiller P025w OLÉ
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	57,0	230;1~;50/60	AIR	5	40		A	3012.0169.01	Unichiller P007
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	56,0	230;1~;50/60	WATER	5	40	G1/2	A	3012.0217.01	Unichiller P007w
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	57,0	230;1~;50/60	AIR	5	40		A	3012.0171.01	Unichiller P010
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	52,0	230;1~;50/60	WATER	5	40	G1/2	A	3012.0220.01	Unichiller P010w
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	52,0	230;1~;50	AIR	5	40		A	3009.0123.01	Unichiller P012
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622	57,0	230;1~;50	WATER	5	40	G1/2	A	3012.0173.01	Unichiller P012w
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	59,0	230;1~;50	AIR	5	40		A	3009.0125.01	Unichiller P015
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	350 x 496 x 622		230;1~;50	WATER	5	40	G1/2	A	3012.0175.01	Unichiller P015w
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	80,0	230;1~;50	AIR	5	40		A	3010.0068.01	Unichiller P022
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	67,0	230;1~;50	WATER	5	40	G1/2	A	3009.0127.01	Unichiller P022w
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	460 x 590 x 743	81,0	230;1~;50	AIR	5	40		A	3010.0070.01	Unichiller P025
	25	2,5			G3/4	Yes, B	I/NFL	No	Yes	420 x 487 x 579	69,0	230;1~;50	WATER	5	40	G1/2	A	3009.0129.01	Unichiller P025w
	130	5,7			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	AIR	5	40		A	3038.0004.01	Unichiller P050
	130	5,7			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	WATER	5	40	G1/2	A	3040.0003.01	Unichiller P050w
	130	5,7			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	AIR	5	40		A	3038.0021.01	Unichiller P075
	130	5,7			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	WATER	5	40	G1/2	A	3040.0011.01	Unichiller P075w
	130	5,7			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	AIR	5	40		A	3038.0037.01	Unichiller P100
	130	5,7			G1 1/4	Yes, B	I/NFL	No	Yes	740 x 1160 x 1050	300,0	400;3~;50	WATER	5	40	G1/2	A	3040.0019.01	Unichiller P100w
	25	3,0			G3/4	Yes, B	I/NFL	No	Yes	450 x 510 x 1231	114,0	230;1~;50	AIR	5	40		A	3013.0001.01	Unichiller 017T
	25	3,0			G3/4	Yes, B	I/NFL	No	Yes	450 x 510 x 1230	130,0	230;1~;50	AIR	5	40		A	3013.0002.01	Unichiller 020T
	25	3,0			G3/4	Yes, B	I/NFL	No	Yes	450 x 510 x 1230	134,0	230;1~;50	AIR	5	40		A	3013.0003.01	Unichiller 025T
	26	3,0			G3/4	Yes, B	I/NFL	No	Yes	500 x 552 x 1451	164,0	400;3~;50	AIR	5	40		A	3014.0001.01	Unichiller 040T
	26	3,0			G3/4	Yes, B	I/NFL	No	Yes	500 x 552 x 1451	164,0	400;3~;50	AIR	5	40		A	3014.0002.01	Unichiller 045T
	57	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 692 x 1613	230,0	400;3~;50	AIR	5	40		A	3015.0042.01	Unichiller 055T
	80	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 692 x 1613	225,0	400;3~;50	AIR	5	40		A	3015.0044.01	Unichiller 060T
	84	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 790 x 1614	254,0	400;3~;50	AIR	5	40		A	3016.0001.01	Unichiller 080T
	96	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 790 x 1614	230,0	400;3~;50	AIR	5	40		A	3017.0001.01	Unichiller 100T
	90	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 790 x 1614	230,0	400;3~;50	AIR	5	40		A	3017.0002.01	Unichiller 110T
	90	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	904 x 1582 x 1837		400;3~;50	AIR	5	40		A	3018.0012.01	Unichiller 130T
	220	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	904 x 1582 x 1837	481,0	400;3~;50	AIR	5	40		A	3019.0020.01	Unichiller 150T
	96	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	904 x 1582 x 1837		400;3~;50	AIR	5	40		A	3018.0013.01	Unichiller 160T
	220	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	904 x 1582 x 1837	513,0	400;3~;50	AIR	5	40		A	3019.0026.01	Unichiller 200T
	220	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	904 x 2172 x 1870	430,0	400;3~;50	AIR	5	40		A	3020.0001.01	Unichiller 210T
	220	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	904 x 2172 x 1870	430,0	400;3~;50	AIR	5	40		A	3020.0002.01	Unichiller 250T
	220	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	904 x 2172 x 1870	430,0	400;3~;50	AIR	5	40		A	3020.0003.01	Unichiller 260T
	220	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	904 x 2172 x 1870	450,0	400;3~;50	AIR	5	40		A	3020.0004.01	Unichiller 300T
	220	4,6			G1 1/4	Yes, D3	I/NFL	No	Yes	904 x 2172 x 1870	639,0	400;3~;50	AIR	5	40		A	3021.0001.01	Unichiller 400T
	25	3,0			G3/4	Yes, B	I/NFL	No	Yes	400 x 440 x 1230	122,0	230;1~;50	WATER	5	40	G1/2	A	3024.0021.01	Unichiller 017Tw
	25	3,0			G3/4	Yes, B	I/NFL	No	Yes	400 x 440 x 1230	123,0	230;1~;50	WATER	5	40	G1/2	A	3024.0025.01	Unichiller 020Tw
	25	3,0			G3/4	Yes, B	I/NFL	No	Yes	400 x 440 x 1230	123,0	230;1~;50	WATER	5	40	G1/2	A	3024.0031.01	Unichiller 025Tw

FL = Suitable for inflammable and non-inflammable liquids [1] Voltage can be changed, must be specified with order [2] S = Standard, A = on request [3] Option

Technical data

Model	Catalogue page	Temperature range	T_{min} with cooling	T_{min} with water cooling	Heating power	Bath volume	min. filling capacity	Bath volume with displacement insert	Bath opening W x D x H	Resolution of display	Temperature stability	Cooling power (kW) at								
		(°C)	(°C)	(°C)	(kW)	(l)	(l)	(l)	(mm)	(°C)	(K)	300°C	200°C	100°C	20°C	0°C	-20°C	-40°C	-60°C	-80°C
Unichiller 030Tw	56	-20...40					2,5			0,01/0,1	0,5					3,0	1,0			
Unichiller 040Tw	56	-10...40					2,5			0,01/0,1	0,5					2,5				
Unichiller 055Tw	56	-10...40					5,9			0,01/0,1	0,5					3,5				
Unichiller 060Tw	56	-20...40					5,9			0,01/0,1	0,5					6,0	2,0			
Unichiller 080Tw	56	-10...40					5,9			0,01/0,1	0,5					4,65				
Unichiller 100Tw	57	-20...40					6,5			0,01/0,1	0,5					10,0	3,5			
Unichiller 110Tw	57	-10...40					6,5			0,01/0,1	0,5					6,0				
Unichiller 130Tw	57	-10...40					6,5			0,01/0,1	0,5					7,0				
Unichiller 150Tw	57	-20...40					12,7			0,01/0,1	0,5					15,0	5,0			
Unichiller 160Tw	57	-10...40					6,5			0,01/0,1	0,5					10,0				
Unichiller 200Tw	57	-10...40					12,7			0,01/0,1	0,5					11,0				
Unichiller 210Tw	57	-20...40					13,0			0,01/0,1	0,5					21,0	8,0			
Unichiller 250Tw	57	-10...40					5,5			0,01/0,1	0,5					14,0				
Unichiller 260Tw	57	-20...40					12,3			0,01/0,1	0,5					26,0	11,0			
Unichiller 300Tw	57	-10...40					9,5			0,01/0,1	0,5					16,0				
Unichiller 400Tw	57	-10...40					9,5			0,01/0,1	0,5					21,0				
Unichiller 500Tw	57	-10...40					17,0			0,01/0,1	0,5					30,0				
Flow through chillers & Immersion coolers																				
DC30	58	-30...50														0,15	0,07			
DC31	58	-30...50														0,35	0,1			
DC32	58	-30...50														0,47	0,12			
TC45	59	-45...100														0,24	0,18	0,05		
TC45E	59	-45...100								0,1	0,5					0,24	0,18	0,05		
TC50	59	-50...50														0,3	0,26			
TC50E	59	-50...50									0,5					0,3	0,26			
TC100	59	-100...40														0,16	0,15		0,12	0,12
TC100E	59	-100...40									0,5					0,16	0,15		0,12	0,12
Heating circulators, Heat exchanger systems																				
HB45	60	45...250			4,5		3,5													
HB60	60	60...250			6,0		3,5													
HB120	60	60...250			12,0		3,5													
HTS PS1	61	(5)...(80)													0,65*					
HTS PS3	61	(3)...(95)								0,1					3,0*					
HTS PS5	61	(3)...(95)								0,1					5,0*					
HTS PS6	61	(3)...(95)					5,0			0,1					6,0*					
HTS PS15	61	(3)...(95)					5,0			0,1					15,0*					
Heating circulators																				
CC-E	72	25...200	-30	20	2,0					0,01/0,1	0,01									
KISS E	72	25...200	-30	20	2,0					0,1	0,05									
CC-E xd	72	25...200	-30	20	2,0					0,01/0,1	0,01									
CC-200BX	73	28...200	-20	20	2,0					0,01/0,1	0,02									
CC-300BX	73	28...300	-20	20	3,0 / 4,0					0,01/0,1	0,02									
CC-106A	74	25...100	15	20	2,0	6,0	4,9		130 x 110 x 150	0,01/0,1	0,02									
KISS 106A	74	25...100	15	20	2,0	6,0	4,9		130 x 110 x 150	0,1	0,05									

* Cooling power data measured with cooling water-inlet temperature of +10 °C and 2 bar

** Option available on request: Heater, over-temperature protection and safety class II/FL

-100°C	max. flow rate – pressure (l/min)	max. press – pressure pump (bar)	max. flow rate (suction pump) (l/min)	max. press (suction pump) (bar)	Pump connection	Circulation pump	Safety class	Overtemperature protection	Low level protection	Dimensions W x D x H (mm)	Weight (kg)	Power supply[1] (V; Hz)	Refrigeration machine cooling	min. ambient temperature (°C)	max. ambient temperature (°C)	Cooling water connection	Natural refrigerant[2]	Cat. No.	Model
	26	3,0			G3/4	Yes, B	I/NFL	No	Yes	400 x 440 x 1230	131,0	400;3~;50	WATER	5	40	G1/2	A	3025.0022.01	Unichiller 030Tw
	26	3,0			G3/4	Yes, B	I/NFL	No	Yes	400 x 440 x 1230	133,0	400;3~;50	WATER	5	40	G1/2	A	3025.0033.01	Unichiller 040Tw
	57	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	500 x 552 x 1261	185,0	400;3~;50	WATER	5	40	G1/2	A	3026.0001.01	Unichiller 055Tw
	80	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	500 x 552 x 1261	173,0	400;3~;50	WATER	5	40	G1/2	A	3026.0002.01	Unichiller 060Tw
	84	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	500 x 552 x 1261	183,0	400;3~;50	WATER	5	40	G1/2	A	3026.0003.01	Unichiller 080Tw
	96	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 600 x 1450	230,0	400;3~;50	WATER	5	40	G1/2	A	3027.0001.01	Unichiller 100Tw
	90	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 600 x 1450	222,0	400;3~;50	WATER	5	40	G1/2	A	3027.0002.01	Unichiller 110Tw
	96	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 600 x 1450	370,0	400;3~;50	WATER	5	40	G1/2	A	3027.0003.01	Unichiller 130Tw
	200	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	760 x 800 x 1560	359,0	400;3~;50	WATER	5	40	G3/4	A	3028.0001.01	Unichiller 150Tw
	96	5,6			G1 1/4	Yes, C3	I/NFL	No	Yes	600 x 600 x 1450	310,0	400;3~;50	WATER	5	40	G3/4	A	3027.0004.01	Unichiller 160Tw
	200	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	760 x 800 x 1560	430,0	400;3~;50	WATER	5	40	G3/4	A	3028.0002.01	Unichiller 200Tw
	200	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	760 x 800 x 1560	430,0	400;3~;50	WATER	5	40	G3/4	A	3028.0003.01	Unichiller 210Tw
	200	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	760 x 800 x 1560	430,0	400;3~;50	WATER	5	40	G3/4	A	3028.0004.01	Unichiller 250Tw
	210	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	760 x 800 x 1560	385,0	400;3~;50	WATER	5	40	G3/4	A	3028.0005.01	Unichiller 260Tw
	210	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	760 x 800 x 1560	450,0	400;3~;50	WATER	5	40	G3/4	A	3029.0001.01	Unichiller 300Tw
	210	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	760 x 900 x 1560	450,0	400;3~;50	WATER	5	40	G3/4	A	3029.0002.01	Unichiller 400Tw
	220	4,7			G1 1/4	Yes, D3	I/NFL	No	Yes	1000 x 1103 x 1605	615,0	400;3~;50	WATER	5	40	G1 1/4	A	3030.0001.01	Unichiller 500Tw
					M16x1	No	I/NFL	No	No	190 x 250 x 360	16,0	230;1~;50	AIR	5	40		S	3000.0001.99	DC30
					M16x1	No	I/NFL	No	No	250 x 310 x 415	23,0	230;1~;50/60	AIR	5	40		S	3001.0001.99	DC31
					M16x1	No	I/NFL	No	No	280 x 340 x 465	30,0	230;1~;50	AIR	5	40		S	3002.0001.99	DC32
						No	I/NFL	No	No	190 x 295 x 360	16,0	230;1~;50/60	AIR	5	40		S	3003.0001.99	TC45
						No	I/NFL	No	No	190 x 295 x 360	16,0	230;1~;50/60	AIR	5	40		S	3003.0002.99	TC45E
						No	I/NFL	No	No	260 x 330 x 415	25,0	230;1~;50/60	AIR	5	40		S	3004.0001.99	TC50
						No	I/NFL	No	No	260 x 330 x 415	25,0	230;1~;50/60	AIR	5	40		S	3004.0002.99	TC50E
0,01						No	I/NFL	No	No	295 x 500 x 570	61,0	230;1~;50/60	AIR	5	40		S	3005.0043.99	TC100
0,01						No	I/NFL	No	No	295 x 500 x 570	61,0	230;1~;50/60	AIR	5	40		S	3005.0044.99	TC100E
	55	0,9			M24x1,5	Yes, vpc	II/FL	Yes	Yes	185 x 440 x 405	20,0	400;3~N;50		5	40			2030.0001.01	HB45
	90	2,5			M30x1,5	Yes	II/FL	Yes	Yes	323 x 451 x 498	44,0	400;3~N;50		5	40			2031.0004.01	HB60
	100	2,5			M30x1,5	Yes	II/FL	Yes	Yes	323 x 451 x 498	44,0	400;3~N;50		5	40			2031.0003.01	HB120
	8	0,2			M16x1	Yes	I/NFL		Yes	280 x 398 x 387	18,0	230;1~;50/60		5	40			3011.0008.99	HTS PS1
	33	0,7			M16x1	Yes, vpc	I/NFL**	Yes**	Yes	280 x 491 x 414	21,0	230;1~;50/60		5	40			3011.0001.01	HTS PS3
	25	2,5			G3/4	Yes	I/NFL**	Yes**	Yes	280 x 491 x 414	26,0	230;1~;50/60		5	40			3011.0006.01	HTS PS5
	25	2,5			G3/4	Yes	I/NFL**	Yes**	Yes	400 x 491 x 529	39,0	230;1~;50/60		5	40			3011.0002.01	HTS PS6
	25	2,5			G3/4	Yes	III/FL**	Yes**	Yes	400 x 491 x 529	38,0	230;1~;50/60		5	40			3011.0024.01	HTS PS15
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	132 x 159 x 315/150	4,0	230;1~;50/60		5	40			2000.0023.01	CC-E
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	132 x 163 x 312/150	4,0	230;1~;50/60		5	40			2035.0012.98	KISS E
	22	0,4	17	0,25	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	132 x 159 x 360/195	4,8	230;1~;50/60		5	40			2000.0005.01	CC-E xd
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	345 x 200 x 326	12,0	230;1~;50/60		5	40			2000.0003.01	CC-200BX
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	345 x 190 x 392	13,0	230;1~;50/60 / 400;3~N;50/60		5	40			2007.0002.01	CC-300BX
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	147 x 307 x 330	5,0	230;1~;50/60		5	40			2001.0001.01	CC-106A
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	147 x 307 x 330	5,0	230;1~;50/60		5	40			2037.0043.98	KISS 106A

FL = Suitable for inflammable and non-inflammable liquids

[1] Voltage can be changed, must be specified with order

[2] S = Standard, A = on request

[3] Option

Technical data

Model	Catalogue page	Temperature range	T_{min} with cooling	T_{min} with water cooling	Heating power	Bath volume	min. filling capacity	Bath volume with displacement insert	Bath opening W x D x H	Resolution of display	Temperature stability	Cooling power (kW) at								
		(°C)	(°C)	(°C)	(kW)	(l)	(l)	(l)	(mm)	(°C)	(K)	300°C	200°C	100°C	20°C	0°C	-20°C	-40°C	-60°C	-80°C
CC-108A	74	25...100	15	20	2,0	8,0	6,6		130 x 210 x 150	0,01/0,1	0,02									
KISS 108A	74	25...100	15	20	2,0	8,0	6,6		130 x 210 x 150	0,1	0,05									
CC-110A	74	25...100	15	20	2,0	10,0	8,4		130 x 310 x 150	0,01/0,1	0,02									
KISS 110A	74	25...100	15	20	2,0	10,0	8,4		130 x 310 x 150	0,1	0,05									
CC-112A	74	25...100	15	20	2,0	12,0	12,0		275 x 161 x 150	0,01/0,1	0,02									
KISS 112A	74	25...100	15	20	2,0	12,0	12,0		275 x 161 x 150	0,1	0,05									
CC-118A	74	25...100	15	20	2,0	18,0	18,0		275 x 321 x 150	0,01/0,1	0,02									
KISS 118A	74	25...100	15	20	2,0	18,0	18,0		275 x 321 x 150	0,1	0,05									
CC-208B	75	25...200	-30	20	2,0	8,5	8,5		230 x 127 x 150	0,01/0,1	0,02									
KISS 208B	75	25...200	-30	20	2,0	8,5	8,5		230 x 127 x 150	0,1	0,05									
CC-212B	75	25...200	-30	20	2,0	12,0	12,0		290 x 152 x 150	0,01/0,1	0,02									
KISS 212B	75	25...200	-30	20	2,0	12,0	12,0		290 x 152 x 150	0,1	0,05									
CC-215B	75	25...200	-30	20	2,0	15,0	15,0		290 x 152 x 200	0,01/0,1	0,02									
KISS 215B	75	25...200	-30	20	2,0	15,0	15,0		290 x 152 x 200	0,1	0,05									
CC-220B	75	25...200	-30	20	2,0	20,0	20,0		290 x 329 x 150	0,01/0,1	0,02									
KISS 220B	75	25...200	-30	20	2,0	20,0	20,0		290 x 329 x 150	0,1	0,05									
CC-225B	75	25...200	-30	20	2,0	25,0	25,0		290 x 329 x 200	0,01/0,1	0,02									
KISS 225B	75	25...200	-30	20	2,0	25,0	25,0		290 x 329 x 200	0,1	0,05									
CC-104A	76	25...100	15	20	2,0	4,0	3,6		Ø 25 x 150	0,01/0,1	0,02									
KISS 104A	76	25...100	15	20	2,0	4,0	3,6		Ø 25 x 150	0,1	0,05									
CC-202C	76	45...200	-30	20	2,0	2,0			Ø 25 x 150	0,01/0,1	0,02									
KISS 202C	76	45...200	-30	20	2,0	2,0			Ø 25 x 150	0,1	0,05									
CC-205B	77	45...200	-30	20	2,0	5,0			105 x 90 x 150	0,01/0,1	0,02									
KISS 205B	77	45...200	-30	20	2,0	5,0			105 x 90 x 150	0,1	0,05									
CC-304B	77	28...300	-20		3,0	5,0	3,2		130 x 100 x 155	0,01/0,1	0,02									
CC-308B	77	28...300	-20		3,0	8,5	6,0	5,2	130 x 110 x 155	0,01/0,1	0,02									
CC-315B	77	28...300	-20		3,0 / 4,0	15,0	11,5	8,5	270 x 145 x 200	0,01/0,1	0,02									
Cooling circulators																				
Ministat 125	78	-25...150			1,0	2,75	2,0	1,3	178 x 80 x 120	0,01/0,1	0,02			0,3	0,3	0,21	0,05			
Ministat 125w	78	-25...150			1,0	2,75	2,0	1,3	178 x 80 x 120	0,01/0,1	0,02			0,3	0,3	0,2	0,1			
Ministat 230	78	-40...200			2,0	3,2	2,8	1,7	170 x 85 x 135	0,01/0,1	0,02			0,42	0,42	0,38	0,25	0,05		
Ministat 230w	78	-40...200			2,0	3,2	2,8	1,7	170 x 85 x 135	0,01/0,1	0,02			0,42	0,42	0,38	0,25	0,05		
Ministat 240	78	-45...200			2,0	4,9	4,5	2,8	205 x 85 x 157	0,01/0,1	0,02			0,6	0,6	0,55	0,35	0,05		
Ministat 240w	78	-45...200			2,0	4,9	4,5	2,8	205 x 85 x 157	0,01/0,1	0,02			0,6	0,6	0,55	0,35	0,05		
Variostat	79	-30...150			1,0					0,01/0,1	0,02			0,3	0,3	0,2	0,12			
CC-K6	80	-25...200			2,0	4,5			140 x 120 x 150	0,01/0,1	0,02				0,2	0,15	0,05			
KISS K6	80	-25...200			2,0	4,5			140 x 120 x 150	0,1	0,05				0,2	0,15	0,05			
CC-K6s	80	-25...200			2,0	4,5			140 x 120 x 150	0,01/0,1	0,02				0,26	0,21	0,05			
KISS K6s	80	-25...200			2,0	4,5			140 x 120 x 150	0,1	0,05				0,26	0,21	0,05			
CC-K12	81	-20...200			2,0	12,0			290 x 152 x 150	0,01/0,1	0,02				0,25	0,2	0,05			
KISS K12	81	-20...200			2,0	12,0			290 x 152 x 150	0,1	0,05				0,25	0,2	0,05			
CC-K15	81	-20...200			2,0	15,0			290 x 152 x 200	0,01/0,1	0,02				0,25	0,2	0,05			
KISS K15	81	-20...200			2,0	15,0			290 x 152 x 200	0,1	0,05				0,25	0,2	0,05			
CC-K20	81	-30...200			2,0	20,0			290 x 329 x 150	0,01/0,1	0,02				0,4	0,35	0,16			

-100°C	max. flow rate – pressure (l/min)	max. press – pressure pump (bar)	max. flow rate (suction pump) (l/min)	max. press (suction pump) (bar)	Pump connection	Circulation pump	Safety class	Overtemperature protection	Low level protection	Dimensions W x D x H (mm)	Weight (kg)	Power supply[1] (V; Hz)	Refrigeration machine cooling	min. ambient temperature (°C)	max. ambient temperature (°C)	Cooling water connection	Natural refrigerant[2]	Cat. No.	Model
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	147 x 407 x 330	6,0	230;1~;50/60		5	40			2001.0002.01	CC-108A
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	147 x 407 x 330	6,0	230;1~;50/60		5	40			2037.0045.98	KISS 108A
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	147 x 507 x 330	6,0	230;1~;50/60		5	40			2001.0003.01	CC-110A
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	147 x 507 x 330	6,0	230;1~;50/60		5	40			2037.0047.98	KISS 110A
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	333 x 360 x 335	8,0	230;1~;50/60		5	40			2001.0004.01	CC-112A
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	333 x 360 x 335	8,0	230;1~;50/60		5	40			2037.0049.98	KISS 112A
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	333 x 520 x 335	8,0	230;1~;50/60		5	40			2001.0005.01	CC-118A
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	333 x 520 x 335	8,0	230;1~;50/60		5	40			2037.0051.98	KISS 118A
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	290 x 350 x 375	10,0	230;1~;50/60		5	40			2002.0001.01	CC-208B
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	290 x 350 x 375	10,0	230;1~;50/60		5	40			2038.0053.98	KISS 208B
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 375 x 375	11,0	230;1~;50/60		5	40			2002.0002.01	CC-212B
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 375 x 375	11,0	230;1~;50/60		5	40			2038.0052.98	KISS 212B
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 375 x 425	12,0	230;1~;50/60		5	40			2002.0003.01	CC-215B
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 375 x 425	12,0	230;1~;50/60		5	40			2038.0051.98	KISS 215B
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 555 x 375	14,0	230;1~;50/60		5	40			2002.0004.01	CC-220B
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 555 x 375	14,0	230;1~;50/60		5	40			2038.0050.98	KISS 220B
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 555 x 425	16,0	230;1~;50/60		5	40			2002.0005.01	CC-225B
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 555 x 425	16,0	230;1~;50/60		5	40			2038.0049.98	KISS 225B
	27	0,7	22	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	147 x 234 x 329	6,0	230;1~;50/60		5	40			2001.0016.01	CC-104A
	14	0,25	10,5	0,17	M16x1	Yes	III/FL	Yes	Yes	147 x 235 x 330	5,0	230;1~;50/60		5	40			2037.0040.98	KISS 104A
	27	0,7	22	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	178 x 260 x 355	8,0	230;1~;50/60		5	40			2003.0001.01	CC-202C
	14	0,25	10,5	0,17	M16x1	Yes	III/FL	Yes	Yes	178 x 260 x 355	8,0	230;1~;50/60		5	40			2039.0012.98	KISS 202C
	27	0,7	22	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	178 x 337 x 355	9,0	230;1~;50/60		5	40			2004.0001.01	CC-205B
	14	0,25	10,5	0,17	M16x1	Yes	III/FL	Yes	Yes	178 x 337 x 355	9,0	230;1~;50/60		5	40			2040.0012.98	KISS 205B
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	210 x 335 x 392	14,0	230;1~;50/60		5	40			2005.0001.01	CC-304B
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	242 x 404 x 392	18,0	230;1~;50/60		5	40			2006.0001.01	CC-308B
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	335 x 382 x 433	22,0	230;1~;50/60 / 400;3~N;50/60		5	40			2007.0001.01	CC-315B
	22	0,7	16	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	225 x 370 x 429	25,0	230;1~;50/60	AIR	5	35		S	2014.0011.01	Ministat 125
	22	0,7	16	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	225 x 370 x 429	25,0	230;1~;50/60	WATER	5	40	G1/2	S	2014.0006.01	Ministat 125w
	22	0,7	16	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	255 x 450 x 476	35,0	230;1~;50/60	AIR	5	40		S	2015.0005.01	Ministat 230
	22	0,7	16	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	255 x 450 x 476	35,0	230;1~;50/60	WATER	5	40	G1/2	S	2015.0007.01	Ministat 230w
	22	0,7	16	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	300 x 465 x 516	41,0	230;1~;50/60	AIR	5	40		S	2016.0005.01	Ministat 240
	22	0,7	16	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	300 x 465 x 516	41,0	230;1~;50/60	WATER	5	40	G1/2	S	2016.0006.01	Ministat 240w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	183 x 465 x 416	24,0	230;1~;50/60	AIR	5	40		S	2013.0003.01	Variostat
	27	0,7	22	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	210 x 400 x 546	25,0	230;1~;50/60	AIR	5	40		S	2008.0005.01	CC-K6
	14	0,25	10,5	0,17	M16x1	Yes	III/FL	Yes	Yes	210 x 400 x 546	25,0	230;1~;50/60	AIR	5	40		S	2008.0043.98	KISS K6
	27	0,7	22	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	210 x 400 x 546	24,0	230;1~;50/60	AIR	5	40		S	2008.0002.01	CC-K6s
	14	0,25	10,5	0,17	M16x1	Yes	III/FL	Yes	Yes	210 x 400 x 546	25,0	230;1~;50/60	AIR	5	40		S	2008.0044.98	KISS K6s
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 560 x 430	28,0	230;1~;50/60	AIR	5	40		S	2009.0002.01	CC-K12
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 560 x 430	28,0	230;1~;50/60	AIR	5	40		S	2009.0020.98	KISS K12
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 560 x 430	28,0	230;1~;50/60	AIR	5	40		S	2010.0002.01	CC-K15
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 560 x 430	28,0	230;1~;50/60	AIR	5	40		S	2010.0017.98	KISS K15
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 555 x 615	36,0	230;1~;50/60	AIR	5	40		S	2011.0002.01	CC-K20

FL = Suitable for inflammable and non-inflammable liquids

[1] Voltage can be changed, must be specified with order

[2] S = Standard, A = on request

[3] Option

Technical data

Model	Catalogue page	Temperature range	T_{min} with cooling	T_{min} with water cooling	Heating power	Bath volume	min. filling capacity	Bath volume with displacement insert	Bath opening W x D x H	Resolution of display	Temperature stability	Cooling power (kW) at								
		(°C)	(°C)	(°C)	(kW)	(l)	(l)	(l)	(mm)	(°C)	(K)	300°C	200°C	100°C	20°C	0°C	-20°C	-40°C	-60°C	-80°C
KISS K20	81	-30...200			2,0	20,0			290 x 329 x 150	0,1	0,05				0,4	0,35	0,16			
CC-K25	81	-30...200			2,0	25,0			290 x 329 x 200	0,01/0,1	0,02				0,4	0,35	0,16			
KISS K25	81	-30...200			2,0	25,0			290 x 329 x 200	0,1	0,05				0,4	0,35	0,16			
CC-405	82	-40...200			1,5	5,0			120 x 110 x 150	0,01/0,1	0,02			0,7	0,7	0,7	0,45	0,03		
CC-405w	82	-40...200			1,5	5,0			120 x 110 x 150	0,01/0,1	0,02			0,7	0,7	0,7	0,45	0,03		
CC-410	82	-45...200			3,0	22,0		8,5	280 x 280 x 200	0,01/0,1	0,02			0,8	0,8	0,8	0,5	0,1		
CC-410wl	82	-45...200			3,0	22,0		8,5	280 x 280 x 200	0,01/0,1	0,02			0,8	0,8	0,8	0,5	0,1		
CC-415	82	-40...200			1,5	5,0			120 x 110 x 150	0,01/0,1	0,02			1,2	1,2	1,0	0,6	0,05		
CC-415wl	82	-40...200			1,5	5,0			120 x 110 x 150	0,01/0,1	0,02			1,2	1,2	1,0	0,6	0,05		
CC-505	84	-50...200			1,5	5,0	4,0		120 x 110 x 150	0,01/0,1	0,02			1,2	1,2	1,0	0,6	0,15		
CC-505wl	84	-50...200			1,5	5,0	4,0		120 x 110 x 150	0,01/0,1	0,02			1,2	1,2	1,0	0,6	0,15		
CC-508	84	-55...200			3,0	5,0	4,0		120 x 110 x 160	0,01/0,1	0,02			1,5	1,5	1,5	1,0	0,3		
CC-508w	84	-55...200			3,0	5,0	4,0		120 x 110 x 160	0,01/0,1	0,02			1,5	1,5	1,5	1,0	0,3		
CC-510	84	-50...200			3,0	26,0	19,0	15,0	260 x 260 x 200	0,01/0,1	0,02			2,1	2,1	2,1	1,0	0,4		
CC-510w	84	-50...200			3,0	18,0		11,0	270 x 150 x 200	0,01/0,1	0,02			2,4	2,4	2,4	1,0	0,4		
CC-515	84	-55...200			3,0	26,0	19,0	15,0	260 x 260 x 200	0,01/0,1	0,02			3,3	3,3	3,3	1,6	0,6		
CC-515w	84	-55...200			3,0	18,0		11,0	270 x 150 x 200	0,01/0,1	0,02			3,3	3,3	3,3	1,6	0,6		
CC-520w	84	-55...200			3,0	17,0		10,0	270 x 150 x 200	0,01/0,1	0,02			5,0	5,0	5,0	3,0	1,5		
CC-525w	84	-55...100			3,0	17,0		10,0	270 x 150 x 200	0,01/0,1	0,02			7,0	7,0	5,0	3,0	1,5		
CC-805	85	-80...100			1,5	5,0			120 x 110 x 150	0,01/0,1	0,02			0,5	0,5	0,5	0,4	0,3	0,3	0,06
CC-820	85	-80...100			3,0	17,0		10,0	270 x 150 x 200	0,01/0,1	0,02			1,2	1,2	1,2	1,1	0,9	0,6	0,14
CC-820w	85	-80...100			3,0	17,0		10,0	270 x 150 x 200	0,01/0,1	0,02			1,2	1,2	1,2	1,1	0,9	0,6	0,14
CC-902	85	-90...200			1,5	5,0			120 x 110 x 150	0,01/0,1	0,02			1,2	1,2	1,2	1,1	0,9	0,6	0,2
CC-905	85	-90...200			3,0	26,0		15,0	260 x 260 x 200	0,01/0,1	0,02		2,0	2,0	2,0	2,0	1,9	1,7	1,0	0,34
CC-905w	85	-90...200			3,0	26,0		15,0	260 x 260 x 200	0,01/0,1	0,02		2,5	2,0	2,0	2,0	1,9	1,7	1,0	0,34
CC-906w	85	-90...200			3,0	30,0		19,0	260 x 260 x 200	0,01/0,1	0,02		3,0	3,0	3,0	3,0	2,8	2,4	1,6	0,55
Visco baths																				
CC-130A Visco 3	86	28...100	15	15	2,0	30,0	25,5		90 x 90 x 310	0,01/0,1	0,01									
CC-130A Visco 5	86	28...100	15	15	2,0	30,0	25,5		Ø 51 x 310	0,01/0,1	0,01									
Beer forcing test thermostat																				
BFT5	87	-40...80			2,0	40,0			350 x 410 x 270	0,01/0,1	0,03		3,0		1,2				1,6	0,55
Cooling baths																				
K12	114	-20...200				12,0			290 x 320 x 150						0,25	0,2	0,05			
K15	114	-20...200				15,0			290 x 320 x 200						0,25	0,2	0,05			
K20	114	-30...200				20,0			290 x 500 x 150						0,4	0,35	0,16			
K25	114	-30...200				25,0			290 x 500 x 200						0,4	0,35	0,16			

-100°C	max. flow rate – pressure (l/min)	max. press – pressure pump (bar)	max. flow rate (suction pump) (l/min)	max. press (suction pump) (bar)	Pump connection	Circulation pump	Safety class	Overtemperature protection	Low level protection	Dimensions W x D x H (mm)	Weight (kg)	Power supply[1] (V; Hz)	Refrigeration machine cooling	min. ambient temperature (°C)	max. ambient temperature (°C)	Cooling water connection	Natural refrigerant[2]	Cat. No.	Model
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 555 x 615	36,0	230;1~;50/60	AIR	5	40		S	2011.0013.98	KISS K20
	27	0,7	22	0,4	M16x1[3]	Yes, vpc	III/FL	Yes	Yes	350 x 555 x 615	36,0	230;1~;50/60	AIR	5	40		S	2012.0002.01	CC-K25
	14	0,25	10,5	0,17	M16x1[3]	Yes	III/FL	Yes	Yes	350 x 555 x 615	36,0	230;1~;50/60	AIR	5	40		S	2012.0015.98	KISS K25
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	370 x 460 x 679	55,0	230;1~;50/60	AIR	5	40		A	2017.0001.01	CC-405
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	370 x 460 x 679	55,0	230;1~;50/60	WATER	5	40	G1/2	A	2017.0002.01	CC-405w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	420 x 565 x 719	69,0	230;1~;50/60	AIR	5	40		A	2019.0004.01	CC-410
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	420 x 565 x 719	72,0	230;1~;50/60	AIR+WATER	5	40	G1/2	A	2019.0001.01	CC-410wl
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	410 x 480 x 764	60,0	230;1~;50/60	AIR	5	40		A	2018.0001.01	CC-415
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	410 x 480 x 764	61,0	230;1~;50/60	AIR+WATER	5	40	G1/2	A	2018.0002.01	CC-415wl
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	410 x 480 x 764	60,0	230;1~;50/60	AIR	5	40		A	2018.0003.01	CC-505
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	410 x 480 x 764	62,0	230;1~;50/60	AIR+WATER	5	40	G1/2	A	2018.0004.01	CC-505wl
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	410 x 480 x 764	67,0	230;1~;50	AIR	5	40		S	2018.0023.01	CC-508
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	410 x 480 x 764	69,0	230;1~;50	WATER	5	40	G1/2	S	2018.0026.01	CC-508w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	605 x 706 x 1136	143,0	400;3~N;50	AIR	5	40		A	2020.0010.01	CC-510
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	455 x 515 x 1014	96,0	400;3~N;50	WATER	5	40	G1/2	A	2020.0002.01	CC-510w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	605 x 706 x 1136	139,0	400;3~N;50	AIR	5	40		A	2021.0001.01	CC-515
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	455 x 515 x 1014	102,0	400;3~N;50	WATER	5	40	G1/2	A	2020.0003.01	CC-515w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	539 x 629 x 1102	141,0	400;3~N;50	WATER	5	40	G1/2	A	2022.0001.01	CC-520w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	539 x 629 x 1102	142,0	400;3~N;50	WATER	5	40	G1/2	A	2023.0001.01	CC-525w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	410 x 480 x 764	80,0	230;1~;50/60 / 400;3~N;50	AIR	5	40		A	2024.0001.01	CC-805
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	539 x 629 x 1102	150,0	400;3~N;50	AIR	5	40		A	2025.0001.01	CC-820
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	539 x 629 x 1102	150,0	400;3~N;50	WATER	5	40	G1/2	A	2025.0002.01	CC-820w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	550 x 600 x 911	129,0	230;1~;50	AIR	5	40		A	2026.0005.01	CC-902
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	605 x 706 x 1136	162,0	400;3~N;50	AIR	5	40		A	2027.0001.01	CC-905
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	605 x 706 x 1136	170,0	400;3~N;50	WATER	5	40	G1/2	A	2027.0002.01	CC-905w
	25	0,7	18,5	0,4	M16x1	Yes, vpc	III/FL	Yes	Yes	605 x 706 x 1136	185,0	400;3~N;50	WATER	5	40	G1/2	A	2036.0001.01	CC-906w
	27	0,7			M16x1	Yes, vpc	III/FL	Yes	Yes	500 x 240 x 490	11,0	230;1~;50/60		5	40			2001.0006.01	CC-130A Visco 3
	27	0,7			M16x1	Yes, vpc	III/FL	Yes	Yes	500 x 240 x 490	11,0	230;1~;50/60		5	40			2001.0007.01	CC-130A Visco 5
						Yes, vpc	III/FL	Yes	Yes	460 x 710 x 911	74,0	230;1~;50/60	AIR	5	40		A	2041.0001.01	BFT5
						No		No	No	350 x 560 x 263	20,0	230;1~;50/60	AIR	5	40		S	2009.0001.99	K12
						No		No	No	350 x 560 x 263	20,0	230;1~;50/60	AIR	5	40		S	2010.0001.99	K15
						No		No	No	350 x 555 x 448	30,0	230;1~;50/60	AIR	5	40		S	2011.0001.99	K20
						No		No	No	350 x 555 x 448	30,0	230;1~;50/60	AIR	5	40		S	2012.0001.99	K25

FL = Suitable for inflammable and non-inflammable liquids

[1] Voltage can be changed, must be specified with order

[2] S = Standard, A = on request

[3] Option

Controller functions and E-grades

	Function/Features	KISS Controller	OLÉ Controller	
Thermoregulation	Controller parameter tuning	predefined		
	Calibration program for control sensor (internal, process)	1-point		
	Monitoring (Level protection, over temperature protection[2])	✓	✓	
	Adjustable limit alarms			
	VPC (Variable Pressure Control)[3]	✓	✓	
	Venting program	✓	✓	
	Compressor automatic control	✓	✓	
	Set point limits	✓	✓	
	Programmer			
	Ramp function			
	Temperature control mode (internal, process)			
	Maximum heating / cooling power adjustable			
Display and operation	Temperature display	OLED		
	Display mode	numeric		
	Display resolution	0,1 °C		
	Graphic display of temperature curves			
	Calendar, Date, Time			
	Languages menu navigation	DE, EN		
	Temperature format	°C / °F	°C / °F	
	Display mode (screen) switch by swiping			
	Favourites menu			
	User menues (Administrator level)			
	2. set point			
Connections	Digital interface RS232	✓	✓	
	USB interface	✓	✓	
	Ethernet RJ45 interface			
	Pt100 control probe connection (external control)			
	Pt100 sensor connection (only display)	✓[4]	✓[4]	
	External control signal / ECS STANDBY[5]		✓[4]	
	Programmable volt-free contact / ALARM[5]		✓[4]	
	AIF (analog interface) 0/4-20 mA or 0-10 V[6]			
	Digital interface RS485[6]			
Various	Alarm signal optical / acoustic	✓	✓	
	AutoStart (Mains failure automatic)	✓	✓	
	Plug & Play technology			
	Technical glossary			
	Remote control / Data visualisation via Spy Software	✓	✓	
	E-grade Evaluation versions available (30 days)			
	Service data recorder (flight recorder)			
	Saving/loading of temperature control programs			
	Process data logging direct to USB stick			
	Calendar start			
	Tools for process development and optimisation			
	Process data access (system performance, ΔT, pump, etc.)			

[1] 30-days evaluation version TAC function available
[2] For units with integrated over-temperature protection
[3] For models with variable-speed pump or an external bypass

All E-grades as free test version available for 30 days

	Pilot ONE E-grade "Basic"	Pilot ONE E-grade "Exclusive"	Pilot ONE E-grade "Professional" (standard for Unistats)	Pilot ONE E-grade "Explore" (additional for Unistats)
	predefined[1]	TAC (True Adaptive Control)		
	2-point	5-point		
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
		3 programmes / max. 15 steps	10 programmes / max. 100 steps	
		linear	linear, non-linear	
		✓	✓	✓
		✓	✓	✓
	5,7" TFT Touchscreen			
	graphic, numeric			
	0,1 °C	0,1 °C / 0,01 °C		
	Window, full screen, scalable			
	✓	✓	✓	✓
	DE, EN, FR, IT, ES, PT, CZ, PL, RU, CN, JP, KO, TR			
	°C / °F / K	°C / °F / K	°C / °F / K	°C / °F / K
	✓	✓	✓	✓
	✓	✓	✓	✓
			✓	✓
			✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
		✓	✓	✓
	✓			
	✓	✓	✓	✓
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	✓	✓	✓	✓
	✓	✓	✓	✓
		✓	✓	✓
		✓	✓	✓
		✓	✓	✓
				✓
				✓

[4] Optional, only available factory fitted (additional charge)
[5] Standard on Unistats, otherwise via optional Com.G@te or POKO/ECS interface
[6] Via optional Com.G@te

Glossary

Technical terms and explanations

A Ambient Temperature Range

is the permissible temperature range of the environment in which the unit will function. It is 5...40 °C for all Huber units in this catalogue. The quoted cooling powers are for an ambient temperature of +20 °C.

B Bath Opening

is the usable surface that is available for direct thermoregulation, as a rule over the entire usable depth.

Bath Circulator

is a circulator which is equipped with a pump and a bath that contains the object to be thermoregulated. The built-in circulating pump is used to mix the bath liquid, but can also be used if necessary to circulate the thermal fluid through an externally connected circuit, e.g. connection of a flow-through cooler to allow the cooling of heating circulators.

Bath/Circulation Circulator

is a circulator with a bath opening which allows objects to be directly thermoregulated in the bath, but also includes a pump for external closed or open applications. Note: pressure & suction pump is required for open applications. Compatible Control circulators have pressure & suction pump.

Bath Volume (also fill volume)

is the volume of the bath liquid that is required for adequate operation of the circulator, but without considering the volume of thermal fluid in the external circuit. If two values are given, the lower value indicates the minimum required volume with displacement insert, the upper value the permissible maximum amount. The difference is the so-called expansion volume. Especially in the case of external applications, the size of the expansion tank must be considered, since the circulator must also take up the expansion of the liquid in the external circuit. The smaller the surface area of the expansion tank the lower is the area of thermal fluid open to attack from oxidation and air humidity absorption.

C Calibration Bath (CAL)

is a bath circulator with especially high temperature stability and especially consistent temperature distribution through the bath.

Chiller (Unichiller)

is a special cooling circulator which is designed exclusively as a circulator. Circulation chillers have evolved from circulators and form a separate range of units in terms of their type of construction (DeskTop, Tower), the cooling and pump capacities. Generally they have no accessible bath. They are often used as a substitute for cooling with tap water. (exception: Minichiller).

Clear-view Bath

is a bath circulator with transparent walls for direct observation of the object being thermoregulated.

Cooling/Heating Circulator

is a circulator whose working temperature range is above and below the ambient temperature, and which can either add heat to or extract heat from the thermal fluid.

Cooling Circulator

is a circulator whose working temperature range is below the ambient temperature and draws heat from the thermal fluid. Huber cooling circulators are strictly speaking cooling/heating circulators, since their working temperature range is above and below the ambient temperature. Heat can be extracted from and added to the thermal fluid.

D Discharge Pressure

is the positive pressure of the circulating pump of a circulator directly at the pump discharge. If only one value is given in the tables, then this involves the maximum delivery pressure for flow rate zero. Pump curves illustrate discharge in relation to the flow rate.

E

E-grade

stands for electronic upgrade. E-grade can extend the functionality of the Pilot ONE. A unit specific activation code is required. This can be carried out in the factory. If ordered at a later date the activation code can be sent by E-Mail.

Extended Working Temperature Range

is the temperature range that can be attained when using a factory-fitted cooling coil when operating with cooling water.

F

Flow Rate

is the volume of liquid delivered per time unit by the circulating pump measured with water. If only one value is given in the table, this is the maximum flow rate for a zero discharge pressure. Pump curves illustrate discharge in relation to the flow rate.

Flow-through Chiller (DC)

is an add-on cooler which is connected into an external circuit to upgrade a heating circulator to a heating/cooling circulator. Flow-through chillers are used to replace water cooling, and also to extend the lower operating temperature.

H

Heat Load

is the maximum capacity of the installed electric heater. The heating is controlled proportionally. The heating is continually controlled, and as the set point temperature is approached the power is reduced automatically.

Heating Circulator

is a circulator whose working temperature range is primarily above the ambient temperature adds heat to the thermal fluid.

Hydraulically Sealed Circulator (Unistats)

is a circulator in which thermal fluid is pumped through an open or closed external circuit. Hydraulically sealed circulators e.g. the Unistats can have a thermally discoupled expansion vessel, whose surface temperature is not the operating temperature. They do not have an accessible bath. Unistats have a thermally discoupled active surface (expansion vessel), where by the surface temperature is not necessarily the same as the operating temperature

I

Immersion Cooler

is an additional chiller with a flexible tube and a cooling coil (evaporator) for immersion cooling of any desired bath.

Immersion Circulator

is a circulator that can be combined with a bath and to form a complete unit. Immersion circulators are equipped with a screw clamp to attach them to any desired bath wall or can be fixed on a stand. Immersion circulators can also be fitted to a bridge and mounted permanently in a bath.

Industrial Circulator (Unichiller-H)

is a cooling circulator (Unichiller range) with factory fitted heating. Industrial circulators have high cooling, heating and pump powers which allow quick cooling and heating rates due to the small internal volumes. They are ideal for temperature control in process technology, within a smaller temperature range (-20 °C to +120 °C).

Interface, analogue

is used to input the set value or to output the actual value of temperature in analogue form, generally in the form of a current (0/4–20 mA or 0–10 V).

Interface, digital

is used to transfer data between connected units in digital form via data cable. The set and actual temperature values are the main items transferred. The serial RS232 interface allows a point-to-point connection. This means that at anyone time only two participants such as the circulator and the PC can communicate with each other via the interface. The RS485 interface is an addressable interface where up to 32 participants can be connected. Each participant of the bus system has its address.

Glossary

Technical terms and explanations

Intrinsic Temperature

is the operating temperature of a heating circulator that is reached when the heating is switched off. It depends on the pump power, thermal fluid (viscosity and density) used and the insulation of the circulator, e.g. with or without a cover on the bath.

N Net Cooling Capacity

is the effective capacity available in cooling circulators or circulating chillers. This is the net cooling power of the unit after the frictional heat produced by the circulating pump and the heat entering as a result of non-ideal insulation has been subtracted.

O Operating Temperature Range

is the temperature range that is limited by the permissible lowest and highest operating temperatures.

P Pressure/Suction Pump

has a pressure and a suction stage which are driven by the same motor. The thermal fluid is delivered from the pressure stage from the circulator into the circuit, and the suction stage draws the liquid back into the circulator. A pressure/suction pump can be used in just the same way as a pressure pump for a closed circuit. It has the advantage compared to a pressure pump that the pressure in the external circuit falls from positive values (pressure) in the flow line to negative values (suction) in the return line and is almost zero in the application itself. Thus it is suitable for the thermoregulation of pressure-sensitive glass vessels. Additionally it is possible to thermoregulate an open external circuit (e.g. a bath) with the aid of a pressure/suction pump. This cannot be done with a pure pressure pump, since this delivers thermal fluid to the bath. The thermal fluid can only be returned to the bath via a suction stage. In any case a so-called constant level device is required to maintain a constant level in the bath and this ensures that the flows of both pump stages are controlled so that they are equal. This is the only way that the level in the external bath can be maintained constant.

Process Control

Often cascade control, is when the temperature control is dictated by the temperature of the connected external application. A temperature sensor (often a Pt100 4 wire configuration with a Lemosa plug) is therefore required in the external application, which is connected to the circulator. The actual value measured at the external application is measured and a set point for the circulator is continually calculated. Depending on the operating temperature, insulation losses and exothermic reactions, the bath temperature and thus the flow temperature of the circulator can be considerably above or below the set point. (Always consider the safety limits of the fluid!!).

R Refrigerant

is used in the refrigeration unit within the circulator and extracts the heat from the thermal fluid, when the compressed gas expands in the evaporator. Huber has been completely CFC free since 1992 and HCFC (e.g. R22) free since 1994. Huber uses only refrigerants which do no damage to the ozone layer (ODP Ozone Depletion Potential, ODP=0), and minimal Global warming potential (GWP, i.e. Green house effect).

S Safety Classes

It is possible to use non-flammable or flammable bath liquids with circulators. The relevant safety requirements are given in DIN EN 61010-2-010. There is a distinction made between the NFL classes with built-in over-heating protection that are exclusively for non-flammable liquids and FL (Flammable) with adjustable overtemperature protection and low level protection for flammable liquids (all Huber circulators).

Standards

The safety requirements for electrical laboratory equipment, and especially also those for circulators, have been defined in European standards EN 61010-1 and EN 61010-2-01 0, replacement for DIN 12879, among others. The terms and characteristic of characteristic data is defined in DIN 12876-1 and DIN 12876-2.

Suction Pressure

is the negative pressure of the circulating pump of a circulator directly at the pump suction. If only one value is given in the tables, then this is the maximum suction pressure for zero flow rate. Pump curves illustrate suction pressure in relation to the flow rate.

T

Temperature Homogeneity

is the temperature difference between the highest and the lowest measured temperature in a bath tank. In comparison with temperature stability it is determined not only over a defined time period, but also the spatial distribution of temperature within the bath. The temperature uniformity depends on various factors and is influenced for example by the nature and the viscosity of the thermal fluid, the level of circulation or by objects in the bath.

Temperature Stability

is the temperature difference between the highest and the lowest measured temperature divided by two. This value is determined at one point (e.g. the geometric centre of a bath tank or pump output) within a defined period of time (e.g. 30 min.). According to DIN 12876 the measurement must be made at +70 °C (with water) for a heating circulator and at -10 °C (ethanol) for a cooling circulator.

True Adaptive Control (TAC)

is a Huber designed dynamic adaptive controller that continually updates its PID parameters. The TAC controller constructs a virtual multidimensional model of the application in real time to cope with sudden changes in thermal load such as during an exothermic reaction.

V

Variable Pressure Control (VPC)

VPC is an active pressure control capability that allows the operator to control to either a maximum set pressure or pump speed. Through this feature it is possible to maintain the highest HTF flow rates within application pressure limitations (e.g. glass reactors).

W

Working Temperature Range

is the temperature range which can be attained at an ambient temperature of +20 °C by the circulator alone and with the exclusive use of electrical energy. The operating temperature, that may only be reached by using auxiliary devices, is indicated in brackets. In the case of a heating circulator the working temperature begins above room temperature (as a result of the energy introduced by the pump and the effective insulation) and ends at the upper limit of the operating temperature. The WTR of a cooling circulator begins with the lowest operating temperature of the unit and finishes with the upper temperature at which the refrigeration machine can permanently operate.

Working Temperature Range, extended

is the extended low end temperature range which can be attained when using a manufacturer designed cooling coil with water cooling.

General business terms

Hotline

Do you have a thermoregulation problem or questions relating to our products? You can contact us Monday to Friday from 7:30 to 18:00 (CET).

Sales:	+49-781-9603-123
Technical Support:	+49-781-9603-244
Order Processing:	+49-781-9603-109

Terms and Conditions (Extract)

Validity, defence clause

All deliveries and services of the Peter Huber Kältemaschinenbau AG (supplier) are exclusively according to these general business terms and conditions (conditions) and any possible special contractual agreements. Other (purchasing etc.) conditions of the buyer are not a part of the contract, even if not specifically rejected in the order confirmation.

Prices

Unless otherwise agreed, the price is ex works, not including packing, transport, insurance, customs costs and other various incidental expenses accruing. In addition to the price, the sales tax must be added at the appropriate legally valid rate.

Payment Terms

If pre-payment has not been agreed, invoices are all payable within 30 days net, no discount.

Retention of ownership

The goods remain the property of the supplier (title is retained) until the fulfilment of all outstanding financial claims against the buyer.
The buyer may offer the (title retained) goods within the framework of normal business, however now all resulting demands for securing payment to the supplier up to the indebted sum (inclusive sales tax) passes to the new purchaser. The supplier acknowledges this.

Delivery times and delivery delays

The delivery time is calculated under the agreement of the contractual parties. Compliance on the part of the supplier is under the condition that all business and technical questions between the contracted parties are explained, and that the buyer has fulfilled all his obligations within the allotted time. If this is not the case, then the delivery time is extended appropriately. The delivery time is when items for delivery, have left the suppliers works or are ready for pick-up. An article can be offered for selling on by the buyer is allowed.

Transport and liability transfer

The order for the transport of the goods must be placed by the buyer.
The risk is passed to the buyer as soon as the items to be delivered have left the factory. This is also valid for part deliveries or when the supplier is contracted to perform other work (e.g. delivery, assembly and installation).
If the delivery is delayed, or omitted due to circumstances outwith the control of the supplier or because the buyer has so requested, then the risk passes to the buyer from the day the buyer is notified that the goods are ready for collection. This is also true for any delay in acceptance of the goods by the buyer due to other reasons.

Trials

If goods are supplied for testing, then it is classed as being bought by the buyer, if it is not returned within the agreed return time frame. If no return time has been agreed, this is to be taken as 4 weeks. The date of the invoice is decisive. In case of return, the buyer bears the cost of transport, checking and any other costs incurred by the supplier (Cleaning, servicing, repairs etc).

Warranty claims

The supplier is liable for Material and defective title of the delivery, under exception from further liability as follows:
The place of repair is exclusively decided by the supplier. Normally, the repairs take place at the registered office of the supplier, or at another place deemed suitable by the supplier.
The buyer has the right under the legal regulations to with draw from the contract, when the supplier, under consideration of the legal exceptions, has given a reasonable date for repair or replacement due to a manufacturing defect, which has now elapsed without success. If it is only a minor complaint, then the buyer has the right of a reduction in the contract price.
Further demands (damages etc) from the buyer are excluded. The seller is not liable for any problems resulting from an alteration to the unit made by the purchaser or any third party. The seller is also not responsible for any alterations to equipment which have not been authorised in writing in advance. Repairs which have not been authorised in writing by the supplier, outsourced work and modifications of any kind, non intended use, the changing or removal or manipulation of the machine label or the serial

number. All rule out supplier responsibility for defects.
The supplier is not under any circumstances liable for damages to the buyer or end customer caused by the non availability of parts or through production stoppage (e.g. due to late parts deliveries).

Returns according to the (German) electrical and electronic equipment regulation (ElektroG)
The sale price excludes the cost for return and disposal of old equipment. The buyer is considered to be different than private households in the sense of this regulation. If required, the supplier can organise the return and recycling or disposal of such equipment as is distributed by the supplier, on payment of all charges so arising.

Severability Clause
If a clause in these conditions is invalid, it does not change the validity of the other clauses. If a clause is partially invalid, then the other parts of the clause remain valid. The parties are bound to replace the invalid clause with a valid replacement clause, which comes as close as possible to the economic use of the invalid clause.

Note
Please note that the terms and conditions described here are only valid for direct business with Peter Huber Kältemaschinenbau AG. Please consult your distributor for their terms of business.

Technical details and dimensions are subject to change.
No liability is accepted for errors or omisions.

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