Julabo

THE TEMPERATURE CONTROL COMPANY

MAGIO™

Refrigerated and heating circulators

ENGLISH

MAGIO™. The best for your laboratory.

From research institutes to industrial companies, laboratories around the world need high performance circulators for challenging temperature applications. The high-end circulators in the MAGIO range have been specially developed by JULABO with pioneering technologies for these requirements and are manufactured to the highest quality standards in Germany.

With the MAGIO range we offer our customers high-end devices in the highest performance class for the working temperature range from -50 °C to +300 °C. On all models, the wetted parts are made from stainless steel. In combination with high-performance pumps, this makes the circulators particularly suitable for challenging external applications. The high resolution touch display guarantees simple, intuitive operation and optimal visibility of all relevant functions. Thanks to the proven JULABO premium quality, all models meet the highest standards in terms of precision, reliability, and functionality.

With a wide selection of accessories, all MAGIO instruments can be tailored to customer-specific applications in a modular and individual way. Modern interfaces and an integrated programmer complete the intelligent design of the MAGIO models.

MAGIO.
The advantages at a glance.

Everything made of stainless steel.

The highest level of quality and material compatibility. All parts that come into contact with the medium are made of stainless steel.

Many interfaces.

Simple remote control, data management and integration into process structures. USB, RS232 and ethernet are permanently integrated.

Touch display. Perfect control.

A high resolution TFT touch display means that the operator always has an eye on all values and functions. The intuitive menu structure makes easy control possible.

Multilingual.

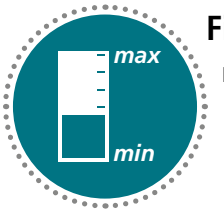
The complete menu navigation is available in multiple languages.

Maximum safety.

The classification III according to DIN12876-1 makes safe operation possible, even with flammable liquids. Automatic shut-off in case of high temperature or low liquid level.

Programmer. Integrated.

The integrated programmer allows automatic running of temperature time profiles.



Filling level. Monitored.

Level indicator of the bath medium on the display.

Environmentally friendly.

Units with this symbol work with environmentally friendly, natural refrigerants.

Energy-saving

The high-quality insulation of all relevant components saves energy.

Temperature. Under control.

External Pt100 sensor connection for highly precise measurement and control directly in the external application.

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Power PUMP

JULABO exclusive

Powerful pump.

The integrated pressure/suction pump with performance values of 0.92 and -0.4 bar is the strongest in its class and is continuously adjustable.

Analog I/O.

Analog interfaces for integration into process control systems (accessories).

Process stability.

Early visual and acoustic notification of critical conditions increases process safety.

TCF

Process. Under control.

Full supervision of the control dynamics. Access to all important control parameters for individual process optimisation.

ATC10

Highest measuring accuracy.

'Absolute Temperature Calibration' for manual compensation of a temperature difference, 10-point calibration.

ICC

Intelligent temperature control.

Intelligent Cascade Control – automatic and self-optimizing adjustment of the PID control parameters with external constancy of ±0.05 °C.

Condensation protection.

Superb design solution. Integrated ventilation directs air over the bath lid and minimizes condensation.

Stable. Mobile.

Perfect stability thanks to rubber feet. Additionally integrated casters means that even the large, high-performance JULABO circulators are easy to handle.

Connection. Easy.

Inclined pump connections (M16×1) facilitate the connection of applications. Each unit includes 2 barbed fittings of 8/12 mm diameter each.

Space saving.

Place your JULABO circulators right next to an application, another unit, or wall. This saves space. A lack of vents and connections on the side makes it possible.

Refrigerated circulators

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Refrigerated / heating circulators of the MAGIO range are perfect for precise, reliable temperature control of demanding external applications. The devices are designed to surpass the requirements of laboratories and institutions around the world with their application of modern technology and high quality.

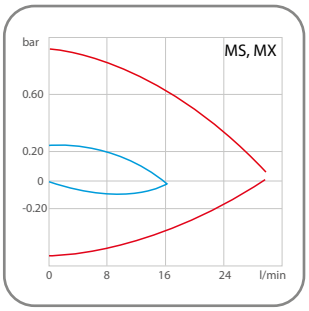
MAGIO MS refrigerated / heating circulators

for working temperatures from -50 °C to +200 °C

As with all circulators from the MAGIO range, the refrigerated circulators stand out thanks to their premium quality, high performance and intuitive operation. The devices offer extra strong pressure and suction pumps, thus fulfilling the highest demands for temperature control of external applications. Whether in basic research, material testing or technical systems – the MAGIO refrigerated circulators offer high-tech solutions for high customer requirements.

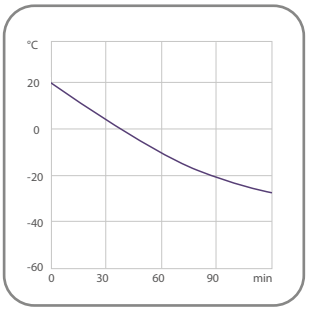
- Ideal for demanding external applications
- Simple control of complex applications
- Continuously adjustable, extremely powerful pressure / suction pump
- Flow rate 16 ... 31 l / min, pressure 0.24 ... 0.92 bar, suction 0.03 ... 0.4 bar
- Large, high-resolution TFT touch display with multilingual user interface
- Parts being in contact with the medium made of stainless steel
- Integrated programmer
- External Pt100 sensor connection
- USB interface
- RS232 interface
- Ethernet interface
- Analog interfaces (accessories)
- Classification III according to DIN 12876-1

Pump capacity
Bath fluid: Water



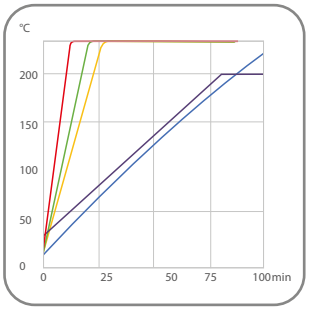
lowest pump speed
highest pump speed

Cool-down time
Bath fluid: Ethanol



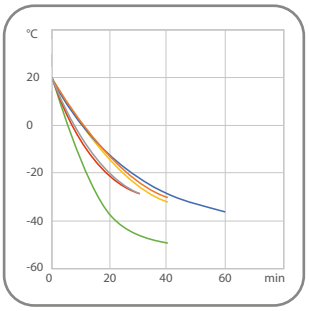
449F

Heat-up time
Bath fluid: Thermal



310F/450F 449F 600F/1000F/W
601F 900F

Cool-down time
Bath fluid: Ethanol



310F 601F 900F
450F 600F 1000F/W

MAGIO™ MS-310F

Order No.	**9 032 713.N1***		
Working temperature range °C	-30 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	0.26	0.21	0.17
	-20 °C	**-30 °C**	**-40 °C**
	0.10	0.01	-
Flow rate l / min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 13 × 15 / 15		
Filling volume min. liters	3 … 4		
Dimensions cm	W × L × H 23 × 40 × 65		

MAGIO™ MS-601F

Order No.	**9 032 705**		
Working temperature range °C	-35 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	0.6	0.44	0.27
	-20 °C	**-30 °C**	**-40 °C**
	0.16	0.04	-
Flow rate l / min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 22 × 15 / 20		
Filling volume min. liters	8 … 10		
Dimensions cm	W × L × H 33 × 47 × 74		

MAGIO™ MS-450F

Order No.	9 032 714.N1*		
Working temperature range °C	-30 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	0.4	0.33	0.24
	-20 °C	**-30 °C**	**-40 °C**
	0.12	0.01	-
Flow rate l/min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 13 × 15 / 15		
Filling volume min. liters	3 … 4		
Dimensions cm	W × L × H 23 × 40 × 65		

MAGIO™ MS-449F

Order No.	9 032 716.N1		
Working temperature range °C	-30 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	0.4	0.31	0.24
	-20 °C	**-30 °C**	**-40 °C**
	0.19	0.05	-
Flow rate l/min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 28 × 35 / 20		
Filling volume min. liters	21 … 30		
Dimensions cm	W × L × H 37 × 59 × 69		

MAGIO™ MS-600F

Order No.	9 032 704		
Working temperature range °C	-35 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	0.6	0.44	0.27
	-20 °C	**-30 °C**	**-40 °C**
	0.16	0.04	-
Flow rate l/min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 22 × 15 / 15		
Filling volume min. liters	5 … 7.5		
Dimensions cm	W × L × H 33 × 47 × 69		

MAGIO™ MS-900F

Order No.	9 032 706		
Working temperature range °C	-38 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	0.9	0.8	0.52
	-20 °C	**-30 °C**	**-40 °C**
	0.31	0.11	-
Flow rate l/min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 26 × 35 / 20		
Filling volume min. liters	21 … 30		
Dimensions cm	W × L × H 39 × 62 × 75		

MAGIO™ MS-1000F

Order No.	9 032 707		
Working temperature range °C	-50 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	1	0.96	0.7
	-20 °C	**-30 °C**	**-40 °C**
	0.51	0.25	0.11
Flow rate l/min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 18 × 13 / 15		
Filling volume min. liters	5 … 7.5		
Dimensions cm	W × L × H 42 × 49 × 74		

MAGIO™ MS-1000FW

Order No.	9 032 727		
Working temperature range °C	-50 … +200		
Temperature stability °C	± 0.01		
Heating capacity kW	2		
Cooling capacity kW (Medium: Ethanol)	**+20 °C**	**0 °C**	**-10 °C**
	1	0.96	0.7
	-20 °C	**-30 °C**	**-40 °C**
	0.51	0.25	0.11
Flow rate l/min	16 … 31		
Pressure bar	0.24 … 0.92		
Suction bar	0.03 … 0.4		
Bath opening / bath depth cm	W × L / D 18 × 13 / 15		
Filling volume min. liters	5 … 7.5		
Dimensions cm	W × L × H 42 × 49 × 74		

MAGIO **heating circulators** offer professional technology for demanding tasks in the laboratory or industry. The wide range of models provide a flexible solution for any application.

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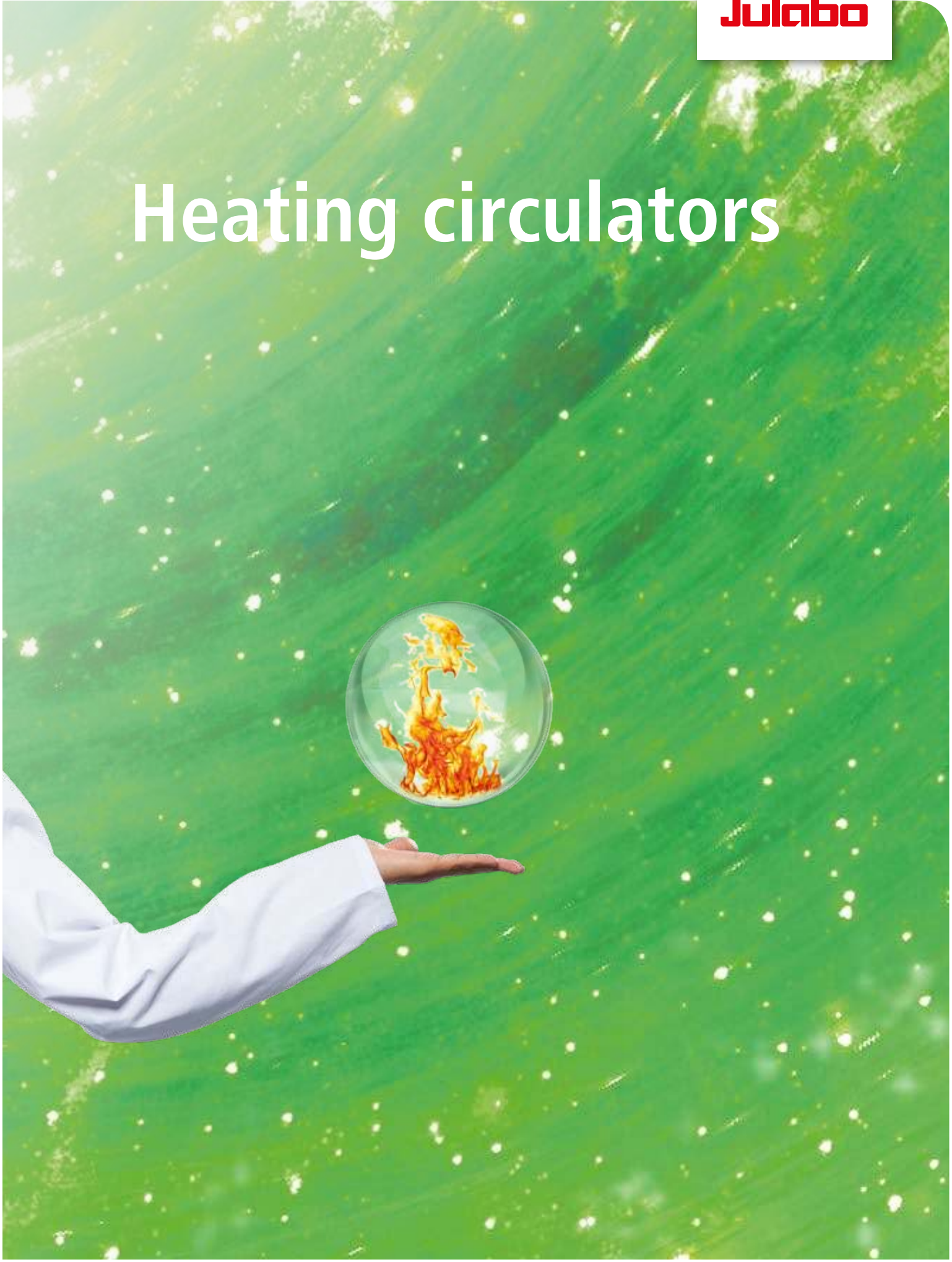
Heating circulators



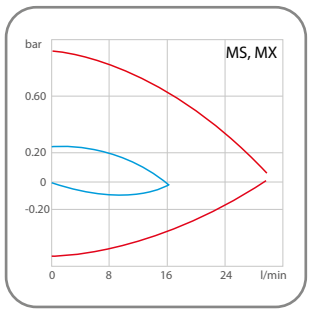
MAGIO MS and MX bridge mounted circulators

for working temperatures from +20 °C to +300 °C

MAGIO bridge mounted circulators combine high temperature performance with maximum flexibility. The adjustable bridge allows the circulators to be used with bath tanks up to a filling volume of 100 liters.

- Immersion depth of 200 mm (MX-Z) and 150 mm (MS-Z)
- Strong heating capacity of 3 kW (MX-Z) and 2 kW (MS-Z)
- Extendable stainless steel bridge from 33 to 68 cm
- Ideal for demanding external applications
- Simple control of complex applications
- Continuously adjustable, extremely powerful pressure / suction pump
- Flow rate 16 ... 31 l / min, pressure 0.24 ... 0.92 bar, suction 0.03 ... 0.4 bar
- Large, high-resolution TFT touch display with multilingual user interface
- Parts being in contact with the medium made of stainless steel
- Integrated programmer
- External Pt100 sensor connection
- USB interface
- RS232 interface
- Ethernet interface
- Analog interfaces (accessories)
- Classification III according to DIN 12876-1

Pump capacity
Medium: Water



lowest pump speed
highest pump speed

MAGIO™ MS-Z

Order No.	9 032 201
Working temperature range °C [1]	+20 … +300
Temperature stability °C	± 0.01
Heating capacity kW	2
Flow rate l/min	16 … 31
Pressure bar	0.24 … 0.92
Suction bar	0.03 … 0.4
Dimensions cm	W × L × H 34 × 19 × 36

MAGIO™ MX-Z

Order No.	9 033 201
Working temperature range °C [1]	+20 … +300
Temperature stability °C	± 0.01
Heating capacity kW	3
Flow rate l/min	16 … 31
Pressure bar	0.24 … 0.92
Suction bar	0.03 … 0.4
Dimensions cm	W × L × H 34 × 19 × 41

High resolution TFT touch display

The modern TFT touch display gives you all the important information at a glance. Three large, predefined main screens clearly display data and graphics with various application priorities. Menu navigation is self-explanatory, arranged by relevance to daily operations and easy to operate with the touch of a finger. The in-built help function provides detailed support in case of additional questions.

[1] For applications near or below ambient temperature: use a cooling coil or JULABO immersion cooler

MAGIO MS and MX heating circulators

for working temperatures from +20 °C to +300 °C

MAGIO heating circulators feature professional technology for the most demanding applications. The systems have been designed to provide precise temperature control to external applications. However samples can also be temperature-controlled inside the high-quality insulated, closed bath tank.

- Models for internal and external applications from 3 to 26 liters
- Ideal for demanding external applications
- Simple control of complex applications
- Continuously adjustable, extremely powerful pressure / suction pump
- Large color TFT touch display, multi-lingual user interface
- Stainless steel parts in contact with the medium
- Flow rate 16 ... 31 l / min, pressure 0.24 ... 0.92 bar, suction 0.03 ... 0.4 bar
- Integrated programmer
- External Pt100 sensor connection
- USB interface
- RS232 interface
- Ethernet interface
- Analog interfaces (accessories)
- Classification III according to DIN 12876-1
- High-quality thermal insulation of the bath tanks
- Built-in drain tap for easy and safe drainage

We offer a comprehensive range of accessories to adapt the MAGIO heating circulators to your individual application (racks, tubing, adapters, and more).

MAGIO™ MS-BC4

Order No.	9 032 504
Working temperature range °C [1]	+20 … +300
Temperature stability °C	± 0.01
Heating capacity kW	2
Flow rate l / min	16 … 31
Pressure bar	0.24 … 0.92
Suction bar	0.03 … 0.4
Bath opening / bath depth cm	W × L / D 13 × 15 × 15
Filling volume liters	3 … 4.5
Dimensions cm	W × L × H 23 × 41 × 42

MAGIO™ MX-BC6

Order No.	9 033 506
Working temperature range °C [1]	+20 … +300
Temperature stability °C	± 0.01
Heating capacity kW	3
Flow rate l/min	16 … 31
Pressure bar	0.24 … 0.92
Suction bar	0.03 … 0.4
Bath opening/bath depth cm	W × L / D 13 × 15 × 20
Filling volume liters	4.5 … 6
Dimensions cm	W × L × H 24 × 44 × 47

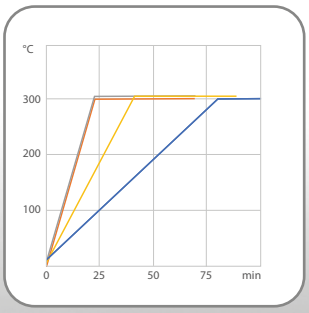
MAGIO™ MX-BC12

Order No.	9 033 512
Working temperature range °C [1]	+20 … +300
Temperature stability °C	± 0.01
Heating capacity kW	3
Flow rate l/min	16 … 31
Pressure bar	0.24 … 0.92
Suction bar	0.03 … 0.4
Bath opening/bath depth cm	W × L / D 22 × 15 × 20
Filling volume liters	8.5 … 12
Dimensions cm	W × L × H 33 × 49 × 47

MAGIO™ MX-BC26

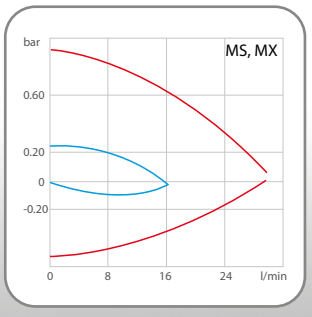
Order No.	9 033 526
Working temperature range °C [1]	+20 … +300
Temperature stability °C	± 0.01
Heating capacity kW	3
Flow rate l/min	16 … 31
Pressure bar	0.24 … 0.92
Suction bar	0.03 … 0.4
Bath opening/bath depth cm	W × L / D 26 × 35 × 20
Filling volume liters	19 … 26
Dimensions cm	W × L × H 39 × 62 × 48

Heat-up time
Medium: Thermal



BC4 BC6
BC12 BC26

Pump capacity
Medium: Water



lowest pump speed
highest pump speed

[1] For applications near or below ambient temperature: use a cooling coil or JULABO immersion cooler

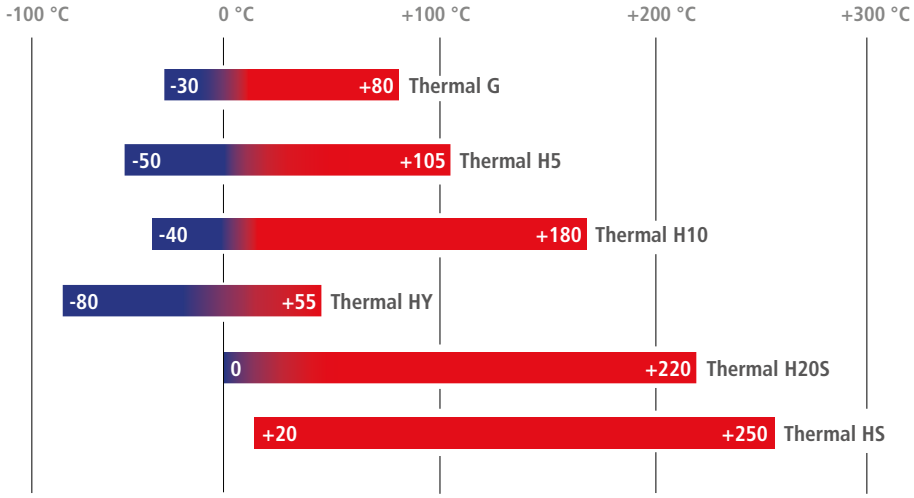
JULABO Thermal bathfluid

JULABO Thermal bath fluids have been carefully selected after long-term testing. They are ideally suited for all temperature control applications guaranteeing safe and reliable operation. Choosing the proper bath fluid is critical for high performance temperature control. The viscosity and heat conductivity of the Thermal fluids are specifically selected for use with JULABO MAGIO temperature control instruments.

Advantages

- Wide temperature ranges
- Low viscosity
- High stability
- Good heat conductivity
- Minimum odor
- Long fluid life

Working temperature ranges



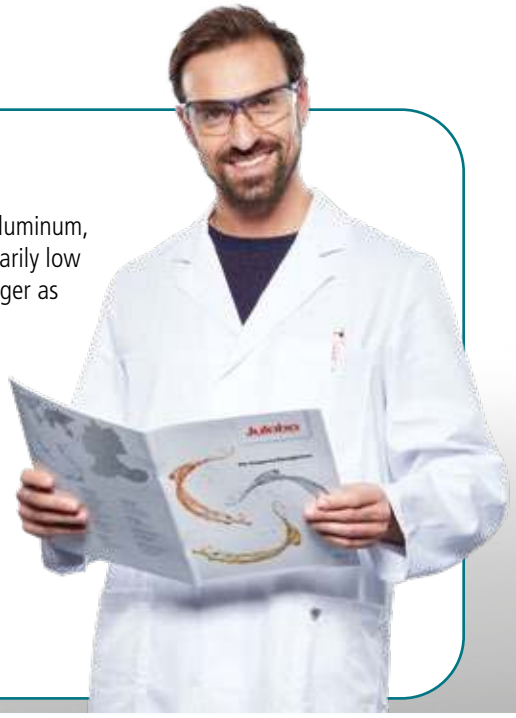
Makes routine laboratory work easier

JULABO Thermal bath fluids are delivered in containers with a handy drain tap.

JULABO Thermal bath fluids based on silicone …
… are chemically inert substances which do not affect metals like iron, copper, zinc, aluminum, chrome or nickel. Compared to other fluids, JULABO Thermal fluids have an extraordinarily low electrical conductivity. When properly stored, the fluids will last for 12 months and longer as they are not susceptible to climatic influences.

JULABO Thermal bath fluids based on water-glycol …
… (monoethylenglycol with anti-corrosion additives) have excellent thermal characteristics and a low viscosity. In addition, they provide anti-freeze protection, i.e. they can be applied at temperatures below the freezing point of water.

More information about JULABO Thermal bath fluids …
… in our brochure 'Thermal Bath Fluids' at



Thermal G

Order No. 5 liters	**8 940 125**
Order No. 10 liters	**8 940 124**
Working temperature range °C	-30 … +80
Flash point °C	-
Fire point °C	-
Viscosity, (kinematic at +20 °C) mm^2/s	4.13 mPas
Density (at +20 °C) g/cm^3	1.0681 g/cm^3
Pour point °C	-44
Boiling point °C	+109
Ignition temperature °C	+109
Color	light yellow

Thermal H5

Order No. 5 liters	**8 940 107**
Order No. 10 liters	**8 940 106**
Working temperature range °C	-50 … +105
Flash point °C	>+120
Fire point °C	+142
Viscosity, (kinematic at +20 °C) mm^2/s	5.66
Density (at +20 °C) g/cm^3	0.92
Pour point °C	-100
Boiling point °C	+288
Ignition temperature °C	+288
Color	clear

Thermal H10

Order No. 5 liters	**8 940 115**
Order No. 10 liters	**8 940 114**
Working temperature range °C	-40 … +180
Flash point °C	>+165
Fire point °C	+220
Viscosity, (kinematic at +20 °C) mm^2/s	10
Density (at +20 °C) g/cm^3	0.93
Pour point °C	<-60
Boiling point °C	+288
Ignition temperature °C	+288
Color	clear

Thermal HL30

Order No. 5 liters	**8 940 139**
Order No. 10 liters	**8 940 138**
Working temperature range °C	-30 … +90
Flash point °C	-
Fire point °C	-
Viscosity, (kinematic at +20 °C) mm^2/s	4.13mPas
Density (at +20 °C) g/cm^3	1.0681
Pour point °C	-44
Boiling point °C	+109
Ignition temperature °C	+109
Color	light yellow

Thermal H20S

Order No. 5 liters	**8 940 109**
Order No. 10 liters	**8 940 108**
Working temperature range °C	0 … +220
Flash point °C	>+200
Fire point °C	+264
Viscosity, (kinematic at +20 °C) mm^2/s	20
Density (at +20 °C) g/cm^3	0.95
Pour point °C	-70
Boiling point °C	+424
Ignition temperature °C	+424
Color	light brown

Thermal HS

Order No. 5 liters	**8 940 103**
Order No. 10 liters	**8 940 102**
Working temperature range °C	+20 … +250
Flash point °C	>+250
Fire point °C	+360
Viscosity, (kinematic at +20 °C) mm^2/s	50 mm^2/s
Density (at +20 °C) g/cm^3	0.97 g/cm^3
Pour point °C	<-60
Boiling point °C	-
Ignition temperature °C	-
Color	light brown

Water bath protective media to prevent the formation of algae and bacteria and descaling agent

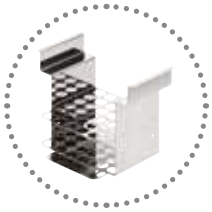
Order No.	Description	Suitable for
8 940 006	Aqua Stabil, 6 bottles, 100 ml each	MAGIO
8 940 012	Aqua Stabil, 12 bottles, 100 ml each	MAGIO
9 940 200	Descaling agent, 1 liter	MAGIO

Extendable bridge

Order No.	Description	Suitable for
9 970 201	adjustable from 330 to 680 mm	MAGIO

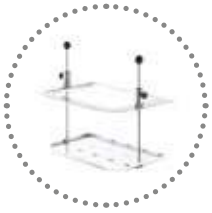
Hollow balls to reduce heat loss, evaporation, oxygen input, odors, and action of light

Order No.	Description	Suitable for
8 970 010	Hollow balls, polypropylene®, 20 mm Ø, 1000 pcs (up to +100 °C, for water only)	MAGIO



Test tube racks made of stainless steel, up to +150 °C

Order No.	Description	Suitable for
9 970 320	Test tube rack for 30 tubes 100 × 17 mm	MS-BC4, MX-BC6,MS-310F, 450F
9 970 323	Test tube rack for 10 falcon tubes 50 ml	MS-BC4, MX-BC6,MS-310F, 450F



Adjustable platforms

Order No.	Description	Suitable for
9 970 506	Immersion-height adjustable platform	MS-449F, MS-900F, MX-BC26

Booster Heater

Order No.	Description	Suitable for
9 810 007	Booster Heater 6 kW	BC12, 600F, 601F, 1000F, 1000FW

Heat exchangers / cooling installations

Order No.	Description	Suitable for
9 970 240	Bath lid with built-in heat exchanger	MS-BC4, MX-BC6,MS-310F, MS-450F
9 970 242	Bath lid with built-in heat exchanger	MX-BC12 MS-600F, MS-601F, MS-1000F, MS-1000FW

Lockable bath cover / condensation trap

9 970 243	Lockable bath cover	MS-600F, MS-601F, MS-1000F, MS-1000FW, MX-BC12
9 970 700	Condensation trap with bath lid	MS-600F, MS-601F, MS-1000F, MS-1000FW

Viton® tubing (-35 °C ... +200 °C)

Order No.	Description	Suitable for
8 930 108	1 m, 8 mm ID	MAGIO
8 930 110	1 m, 10 mm ID	MAGIO
8 930 112	1 m, 12 mm ID	MAGIO

Silicon tubing (-50 °C ... +180 °C)

Order No.	Description	Suitable for
8 930 120	1 m, 8 mm ID	MAGIO
8 930 122	1 m, 12 mm ID	MAGIO

PTFE tubing (-60 °C ... +180 °C)

Order No.	Description	Suitable for
8 930 140	1 m, 8 mm ID	MAGIO
8 930 142	1 m, 12 mm ID	MAGIO

Tubing insulation (-50 °C ... +100 °C)

Order No.	Description	Suitable for
8 930 410	1 m, for tubing 8-10 mm ID	CR® / Viton® tubing
8 930 412	1 m, for tubing 12 mm ID	CR® / Viton® tubing

Tube clamps

Order No.	Description	Suitable for
8 970 480	2 tube clamps, size 1	CR® / Viton® tubing 8 mm ID
8 970 481	2 tube clamps, size 2	CR® / Viton® tubing 10-12 mm ID

Metal tubing flexible, triple insulated, (-100 °C … +350 °C)

Order No.	Description	Suitable for
8 930 209	0.5 m metal tubing, 2 fittings M16×1 female	MAGIO
8 930 216	2.0 m Metal tubing, 2 connectors M16×1 female	MAGIO
8 930 211	1.5 m metal tubing, 2 fittings M16×1 female	MAGIO
8 930 214	3.0 m metal tubing, 2 fittings M16×1 female	MAGIO

Metal tubing flexible, insulated, (-50 °C … +200 °C)

Order No.	Description	Suitable for
8 930 220	0.5 m metal tubing, 2 fittings M16×1 female	MAGIO
8 930 221	1 m metal tubing, 2 fittings M16×1 female	MAGIO
8 930 222	1.5 m metal tubing, 2 fittings M16×1 female	MAGIO
8 930 223	3 m metal tubing, 2 fittings M16×1 female	MAGIO
8 930 224	2 m metal tubing, 2 fittings M16×1 female	MAGIO

Connectors and adapters

Order No.	Description	Suitable for
8 970 446	2 barbed fittings for tubing 8 mm ID	MAGIO
8 970 447	2 barbed fittings for tubing 10 mm ID	MAGIO
8 970 445	2 barbed fittings for tubing 12 mm ID	MAGIO
8 970 443	1 adapter M16×1 male to M16×1 male	MAGIO
8 970 490	2 collar nuts M16×1 female	MAGIO
8 970 442	2 elbow fittings 90°, M16×1 female/male	MAGIO

Order No.	Description	Suitable for
8 890 024	2 adapters M16×1 female to M16×1 female	MAGIO
8 970 448	2 elbow fittings 90°, M16×1 female/male, side length 1 × 54 mm / 1 × 120 mm	MAGIO
8 890 004	2 adapters M16×1 female to NPT 1/4″ male	MAGIO
8 890 005	2 adapters M16×1 female to NPT 1/4″ female	MAGIO
8 890 006	2 adapters M16×1 female to NPT 3/8″ male	MAGIO
8 890 007	2 adapters M16×1 female to NPT 3/8″ female	MAGIO
8 890 008	2 adapters M16×1 female to NPT 1/2″ male	MAGIO
8 890 009	2 adapters M16×1 female to NPT 1/2″ female	MAGIO
8 890 010	2 adapters M16×1 male to NPT 1/4″ female	MAGIO
8 891 008	1 adapter M16×1 male to BSP 1/2″ female	MAGIO
8 891 009	1 adapter M16×1 male to BSP 3/4″ female	MAGIO
8 890 011	2 adapters M16×1 female to tube 1/4″ male	MAGIO
8 890 012	2 adapters M16×1 female to tube 3/8″ male	MAGIO
8 890 013	2 adapters M16×1 female to tube 1/2″ male	MAGIO

Shut-off valves for loop circuit

Order No.	Description	Suitable for
8 970 456	Shut-off valve (-10 °C ... +100 °C), M16×1	MAGIO
8 970 457	Shut-off valve (-30 °C ... +200 °C), M16×1	MAGIO
8 980 701	Solenoid valve set (2 pieces, max. +100 °C)	MAGIO
8 970 850	Shut-off valve (-60 °C ... +200 °C), M16×1	MAGIO

Self-sealing coupling

Order No.	Description	Suitable for
8 980 710	Self-sealing coupling (-20 °C … +200°C) Connection M16×1 male Connection temperature: +20 °C Laser engraving with temperature range Materials: Stainless steel Seal: FKM	MAGIO
8 980 711	Self-sealing adapter (-20 °C … +200°C), Connection M16×1 male Connection temperature: +20 °C Laser engraving with temperature range Materials: Stainless steel Seal: FKM	MAGIO
8 980 714	Self-sealing coupling (-45 °C … +220°C), Connection M16×1 male Connection temperature: +20 °C, Laser engraving with temperature range Materials: Stainless steel 1.4404/1.4571 or equivalent Seal: FFKM	MAGIO
8 980 715	Self-sealing adapter (-45 °C … +220°C), Connection M16×1 male Connection temperature: +20 °C Materials: Stainless steel 1.4404/1.4571 or equivalent Seal: FFKM	MAGIO
8 980 720	Self-sealing coupling (-45 °C … +220°C), Connection male Connection temperature: +20 °C, Laser engraving with temperature range Materials: Stainless steel 1.4404/1.4571 or equivalent Seal: FFKM Double-sided shut-off clean-break technology (low-loss and low-inclusion operation)	MAGIO
8 980 721	Self-sealing adapter (-45 °C … +220°C), Connection M16×1 male Connection temperature: +20 °C, Laser engraving with temperature range Materials: Stainless steel 1.4404/1.4571 or equivalent Seal: FFKM Double-sided shut-off cle-an-break technology (low-loss and low-inclusion operation)	MAGIO

Distributor

Order No.	Description	Suitable for
8 970 470	Twin distributing adapter with barbed fittings	Tubing 8 mm ID
8 970 471	Twin distributing adapter with barbed fittings	Tubing 12 mm ID
8 970 472	Twin distributing adapter with barbed fittings	Tubing 10 mm ID
8 970 473	Twin distributing adapter M16×1 female to 2 × M16×1 male	MAGIO

External Pt100 sensor

Order No.	Description	Suitable for
8 981 003	External Pt100 sensor, 200 × 6 mm ø, stainless steel, 1.5 m connecting cable	MAGIO
8 981 006	External Pt100 sensor, 20 × 2 mm ø, stainless steel, 1.5 m connecting cable	MAGIO
8 981 010	External Pt100 sensor, 300 × 6 mm ø, stainless steel, 1.5 m connecting cable	MAGIO
8 981 013	External Pt100 sensor, 600 × 6 mm ø, stainless steel / PTFE, 3 m connecting cable	MAGIO
8 981 014	External Pt100 sensor, 1200 × 6 mm ø, stainless steel / PTFE, 3 m connecting cable	MAGIO
8 981 015	External Pt100 sensor, 300 × 6 mm ø, stainless steel / PTFE, 3 m connecting cable	MAGIO
8 981 016	External Pt100 sensor, 900 × 6 mm ø, stainless steel / PTFE, 3 m connecting cable	MAGIO
8 981 017	External Pt100 sensor, 200 × 6 mm ø, stainless steel / PTFE, 3 m connecting cable	MAGIO
8 981 020	M+R in-line Pt100 sensor with external Pt100 sensor, 1.5 m connecting cable	MAGIO
8 981 103	Extension cable 3.5 m for Pt100 sensor. With Lemosa connectors	MAGIO

Connection plugs

Order No.	Description	Suitable for
8 980 131	External Pt100 sensor plug	MAGIO
8 980 133	Standby plug, 3 pin	MAGIO
8 980 135	Alarm plug 5 pin	MAGIO
8 980 136	REG EPROG-plug 6 pin	MAGIO
8 980 137	Stakei plug	MAGIO

Castor platform

Order No.	Description	Suitable for
8 910 040	Castor platform	MAGIO

Software and hardware for instrument control, data recording and visualization, interfaces

Order No.	Description	Suitable for
8 901 102	EasyTEMP Software (free of charge at www.julabo.com)	MAGIO
8 901 105	EasyTEMP Professional Software, incl. USB dongle	MAGIO
9 900 100	Electronic module with analog connectors	MAGIO
9 900 110	2 m, USB interface cable, type A-B	MAGIO
9 900 112	5 m, USB 2.0 repeater extension cable	MAGIO
9 900 114	10 m, USB 2.0 repeater extension cable	MAGIO
8 980 073	2.5 m, RS232 interface cable with 9-pin plug / 9 pin socket	MAGIO
8 980 074	5 m, RS232 interface cable with 9-pin plug / 9 pin socket	MAGIO
8 980 075	3 m, RS232 interface cable with 9-pin plug / 9-pin socket	MAGIO
8 980 031	Ethernet / RS232 interface converter	MAGIO
8 980 032	Ethernet / RS232 interface converter for up to 4 JULABO instruments	MAGIO
8 980 033	Ethernet / RS232 interface converter for up to 8 JULABO	MAGIO
8 900 020	Profibus DP interface	MAGIO
8 980 036	ATEX Tablet Agile X	MAGIO

Calibration and Manufacturer's Certificates

Order No.	Description	Suitable for
8 902 901	1-point manufacturer's calibration certificate for circulators	MAGIO
8 902 903	3-point manufacturer's calibration certificate for circulators	MAGIO
8 902 905	5-point manufacturer's calibration certificate for circulators	MAGIO
8 903 025	Manufacturer's Testing Certificate for JULABO Units, Category 2	MAGIO

IQ/OQ documentation

Order No.	Description	Suitable for
2 310 120	IQ/OQ Documentation, Category 2	MAGIO

Maintenance

Order No.	Description	Suitable for
2 350 102	Maintenance JULABO Units, Category 2 Maintenance includes preventive measures that help to maintain functionality, to minimize downtime as well as costs. A JULABO maintenance comprises works such as visual inspection, cleaning, functional test and includes a maintenance report.	MAGIO

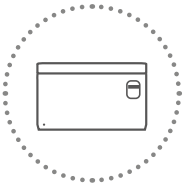
The Julabo advantages at a glance.

JULABO temperature control solutions – high-precision and speed

JULABO products include high-quality temperature control solutions to cover the temperature range -95 °C to +400 °C.

Refrigerated circulators

JULABO refrigerated circulators are suitable for internal and external applications and can be used within the temperature range -95 °C to +200 °C.



Water baths and shaking water baths

JULABO water baths and shaking water baths can be used for a variety of applications within the temperature range +18 °C to +99.9 °C.

Heating circulators

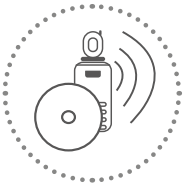
Heating circulators are available in various designs including heating immersion circulators, heating circulators with open bath, and heating circulators to cover a temperature range from +20 °C to +300 °C.

Additional products

In addition, the JULABO product portfolio offers instruments for special requirements such as calibration baths, beer forcing test baths, immersion / flow-through coolers and temperature controllers.

Highly dynamic temperature control systems

The highly dynamic temperature control systems from JULABO can be used for demanding temperature applications ranging from -93 °C to +400 °C. The PRESTO series offers unique high-performance specifications to meet these requirements.

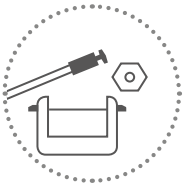


Wireless communication & software solutions

JULABO facilitates the automation of applications. The temperature control instruments can be comfortably controlled and monitored via PC.

Recirculating coolers

The high degree of efficiency of JULABO recirculating coolers makes them an environmentally-friendly and economic alternative to tap water cooling in the temperature range -25 °C to +130 °C.



Accessories

An extensive range of accessories allows for adaptation of JULABO products for research and industry use.

Comprehensive service and on-site support

JULABO takes pride in offering customers expert advice for pairing the proper JULABO temperature control solution to their specific application. JULABO service and support options include installation and calibration, equipment qualification documentation and application training. These invaluable services ensure customer confidence in the operation and maintenance of any JULABO unit.

Custom requirements - custom products

JULABO's wide range of products provide a solution for almost any application. If no standard product can be used for a specific requirement, our specialists will work out a custom solution together with you.

Julabo

JULABO. Quality.
Highest quality standards to ensure a long product life.

Green technology.
Deliberately engineered with environmentally friendly materials and technologies.

Satisfied customers.
11 subsidiaries and more than 100 partners worldwide guarantee fast and qualified JULABO support.

100 % checked.
100 % testing. 100 % quality. Every JULABO product is shipped to customers after a successful final inspection.

Quick start.
Individual JULABO consultation and detailed manuals get your instruments up and running on site.

Services 24/7.
Around the clock availability. You can find suitable accessories, data sheets, manuals, case studies and more at www.julabo.com.

Technical specifications

Model	Order No.	Working temperature range °C	Display / display resolution	Temperature control	Temperature stability °C	Heating capacity kW	Cooling refrigeration unit	Classification according to DIN 12876-1	Permissible ambient temperature °C
MS-310F	9 032 713.N1*	-30 … +200	7" TFT / 0.01	ICC	± 0.01	2	Air	III (FL)	+10 … +40
MS-450F	9 032 714.N1*	-30 … +200	7" TFT / 0.01	ICC	± 0.01	2	Air	III (FL)	+10 … +40
MS-449F	9 032 716.N1	-30 … +200	7" TFT / 0.01	ICC	± 0.01	2	Air	III (FL)	+10 … +40
MS-600F	9 032 704	-35 … +200	7" TFT / 0.01	ICC	± 0.01	2	Air	III (FL)	+10 … +40
MS-601F	9 032 705	-35 … +200	7" TFT / 0.01	ICC	± 0.01	2	Air	III (FL)	+10 … +40
MS-900F	9 032 706	-38 … +200	7" TFT / 0.01	ICC	± 0.01	2	Air	III (FL)	+10 … +40
MS-1000F	9 032 707	-50 … +200	7" TFT / 0.01	ICC	± 0.01	2	Air	III (FL)	+10 … +40
MS-1000FW	9 032 727	-50 … +200	7" TFT / 0.01	ICC	± 0.01	2	Water	III (FL)	+10 … +40
MS-Z	9 032 201	+20 … +300	7" TFT / 0.01	ICC	± 0.01	2	-	III (FL)	+10 … +40
MX-Z	9 033 201	+20 … +300	7" TFT / 0.01	ICC	± 0.01	3	-	III (FL)	+10 … +40
MS-BC4	9 032 504	+20 … +300	7" TFT / 0.01	ICC	± 0.01	2	-	III (FL)	+10 … +40
MX-BC6	9 033 506	+20 … +300	7" TFT / 0.01	ICC	± 0.01	3	-	III (FL)	+10 … +40
MX-BC12	9 033 512	+20 … +300	7" TFT / 0.01	ICC	± 0.01	3	-	III (FL)	+10 … +40
MX-BC26	9 033 526	+20 … +300	7" TFT / 0.01	ICC	± 0.01	3	-	III (FL)	+10 … +40

*also available with synthetic refrigerant (replace .N1 with .S1 in order number)

Model	Cooling capacity (kW) at bath temperature (°C) (Bath fluid: Ethanol)						Pump				Pump connection thread	Filling volume	Mains connection
							Type	Flow rate	Pressure	Suction			
	+20	0	-10	-20	-30	-40	Pressure / suction pump	liters/min	bar	bar	male	liters	V / Hz / A
MS-310F	0.26	0.21	0.17	0.10	0.01	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	3 … 4	230/50/14
MS-450F	0.4	0.33	0.24	0.12	0.01	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	3 … 4	230/50/14
MS-449F	0.4	0.31	0.24	0.19	0.05	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	21 ... 30	230/50/13
MS-600F	0.6	0.44	0.27	0.16	0.04	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	5 … 7.5	230/50/16
MS-601F	0.6	0.52	0.27	0.16	0.04	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	8 … 10	230/50/16
MS-900F	0.9	0.8	0.52	0.31	0.11	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	21 … 30	230/50/16
MS-1000F	1	0.96	0.7	0.51	0.25	0.11		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	5 … 7.5	230/50/16
MS-1000FW	1	0.96	0.7	0.51	0.25	0.11		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	5 … 7.5	230/50/16
MS-Z	-	-	-	-	-	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	-	230/50/11
MX-Z	-	-	-	-	-	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	-	230/50/15
MS-BC4	-	-	-	-	-	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	3 … 4.5	230/50/11
MX-BC6	-	-	-	-	-	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	4.5 … 6	230/50/15
MX-BC12	-	-	-	-	-	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	8.5 … 12	230/50/15
MX-BC26	-	-	-	-	-	-		16 … 31	0.24 … 0.92	0.03 … 0.4	M16×1	19 … 26	230/50/15

Model	External Pt100 sensor connection	Ethernet interface	USB interface	RS232 interface	RS485 interface	Modbus TCP	Analog interface	Usable bath opening W × L / D cm	Dimensions W × L × H cm	Weight net kg
MS-310F	yes	yes	yes	yes	yes	yes	accessories	13 × 15 / 15	23 × 40 × 65	29
MS-450F	yes	yes	yes	yes	yes	yes	accessories	13 × 15 / 15	23 × 40 × 65	29
MS-449F	yes	yes	yes	yes	yes	yes	accessories	28 × 35 / 20	37 × 59 × 69	42
MS-600F	yes	yes	yes	yes	yes	yes	accessories	22 × 15 / 15	33 × 47 × 69	38.3
MS-601F	yes	yes	yes	yes	yes	yes	accessories	22 × 15 / 20	33 × 47 × 74	41.5
MS-900F	yes	yes	yes	yes	yes	yes	accessories	26 × 35 / 20	39 × 62 × 75	49.9
MS-1000F	yes	yes	yes	yes	yes	yes	accessories	18 × 13 / 15	42 × 49 × 74	54.1
MS-1000FW	yes	yes	yes	yes	yes	yes	accessories	18 × 13 / 15	42 × 49 × 74	54.1
MS-Z	yes	yes	yes	yes	yes	yes	accessories	-	34 × 19 × 36	7.2
MX-Z	yes	yes	yes	yes	yes	yes	accessories	-	34 × 19 × 41	7.6
MS-BC4	yes	yes	yes	yes	yes	yes	accessories	13 × 15 / 15	23 × 41 × 42	11.1
MX-BC6	yes	yes	yes	yes	yes	yes	accessories	13 × 15 / 20	24 × 44 × 47	12.8
MX-BC12	yes	yes	yes	yes	yes	yes	accessories	22 × 15 / 20	33 × 49 × 47	14.6
MX-BC26	yes	yes	yes	yes	yes	yes	accessories	26 × 35 / 20	39 × 62 × 48	21.4

Unless otherwise indicated, all data relates to the operation at nominal voltage and frequency and +20 °C ambient temperature.

Voltage options

Model	Order No.	Available mains voltages / heating capacity in kW			
		200 - 230 V 50 - 60 Hz	100 - 115 V 50 - 60 Hz	115 V 60 Hz	100 V 50 - 60 Hz
MS-310F	9 032 713.N1*	1.6 ... 2	-	1	0.8
MS-450F	9 032 714.N1*	1.6 ... 2	-	1	0.8
MS-449F	9 032 716.N1	1.6 … 2	-	1	0.8
MS-600F	9 032 704	1.6 … 2	-	1	0.8
MS-601F	9 032 705	1.6 … 2	-	1	0.8
MS-900F	9 032 706	1.6 … 2	-	1	-
MS-1000F	9 032 707	1.6 … 2	-	1	-
MS-1000FW	9 032 727	1.6 … 2	-	1	-
MS-Z	9 032 201	1.6 … 2	0.8 … 1	-	-
MX-Z	9 033 201	2.3 … 3	-	-	-
MS-BC4	9 032 504	1.6 … 2	-	1	0.8
MX-BC6	9 033 506	2.3 … 3	-	-	-
MX-BC12	9 033 512	2.3 … 3	-	-	-
MX-BC26	9 033 526	2.3 … 3	-	-	-