

## MAGIO MS-1000FF Ultra-low refrigerated / heating circulator

As with all circulators from the MAGIO range, the ultra-low 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. They cover an enormous temperature range and are also suitable for simulating extreme conditions down to -90 °C.

The cooling machine is equipped with sustainable, natural refrigerant in both cooling stages, making it a particularly future-proof solution. Thanks to the tool-free removable venting grid, the condenser can be cleaned easily, ensuring that the full cooling capacity is available throughout the entire life cycle. A heated bath cover plate to prevent condensation and ice build-up is implemented as standard. In addition, the absence of side vents means that several units can be placed next to each other to save space. Using an additional condensation trap (accessories) significantly reduces the dilution of bath fluids at low operating temperatures.



### High resolution TFT touch display

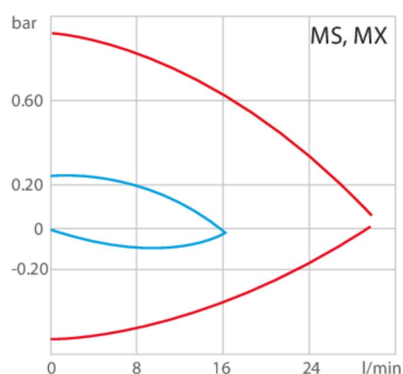
The modern TFT touch display gives you all the important information at a glance. Three large, predefined main screens clearly display data and graphics with various application priorities. Menu navigation is self-explanatory, arranged by relevance to daily operations and easy to operate with the touch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



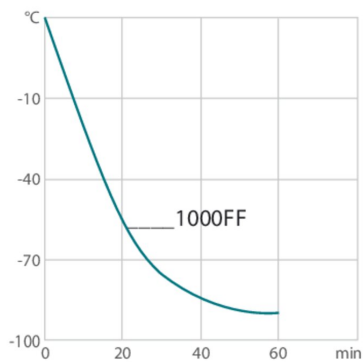
### Product features

- Class III (FL) according to DIN 12876-1
- RS232 interface for online communication
- Integrated programmer
- Integrated external Pt100 connection
- Ethernet
- analog interfaces (accessory)
- Ideal for demanding external applications
- USB connection
- Simple control of complex applications
- Flow rate 16 ... 31 l / min, pressure 0.24 ... 0.92 bar, suction 0.03 ... 0.4 bar
- Continuously adjustable, extremely powerful pressure / suction pump
- Large, high-resolution TFT touch display with multilingual user interface
- Parts being in contact with the medium made of stainless steel
- Connections for solenoid valve
- Integrated pump connection M16×1

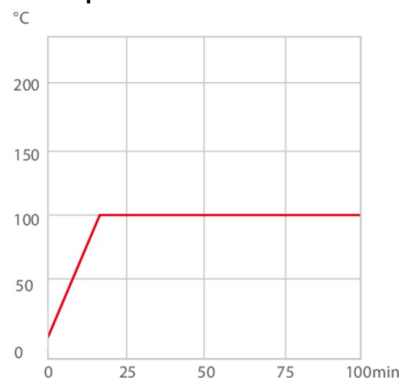
### Pump capacity



Medium: Water



### Heat-up time



Medium: Thermal

### Technical data

| Available voltage versions  |  |
|-----------------------------|--|
| Order No.                   | 9 032 757  |
| Available voltage versions: |  |
| 9032757.N1.03               | 230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F) (R290) |
| 9032757.N1.13               | 230V/60Hz (Nema N6-20 Plug) (R290)                   |
| 9032757.N1.04               | 230V/50Hz (UK Plug Type BS1363A) (R290)              |
| 9032757.N1.03.chn           | 230V/50Hz (CN Plug) (R290)                           |

| Bath                               |                 |
|------------------------------------|-----------------|
| Bath tank                          | Stainless steel |
| Bath cover                         | integrated      |
| Usable bath opening cm (W x L / D) | 13 x 15 / 15    |

| Electronics                      |   |
|----------------------------------|---|
| Interfaces                       | Ethernet, Modbus, RS232, RS485, Stakei, USB |
| External pt100 sensor connection | integrated                                  |
| Integrated programmer            | 8x60 steps                                  |
| Temperature control              | ICC   |
| Absolute temperature calibration | 10 Point Calibration                        |
| Temperature display              | 7" TFT Touchscreen                          |
| Temperature setting              | Touchscreen                                 |
| Electronic Timer h:min           | 00:00 ... 99:59                             |

| Cooling               |             |
|-----------------------|-------------|
| Cooling of compressor | 2-stage Air |

| Other                   |  |
|-------------------------|--|
| Classification          | Classification III (FL)  |
| IP Code                 | IP 20  |
| Pump function           | Pressure Suction Pump  |
| Pump type               | Immersion Pump   |
| User Interface Language | Chinese, Czech, Dutch, English, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Turkish |

| Dimensions and volumes    |              |
|---------------------------|--------------|
| Weight kg                 | 108          |
| Dimensions cm (W x L x H) | 55 x 60 x 94 |
| Filling volume l          | 7.5 ... 10   |
| Pump connections          | M16x1 male   |

| Temperature values                                   |              |
|--|--------------|
| Setting the resolution of the temperature display °C | 0.01         |
| Working temperature range °C                         | -90 ... +100 |
| Temperature stability °C                             | 0.02         |
| Ambient temperature °C                               | +5 ... +40   |
| Temperature display resolution °C                    | 0.01         |

### Included in delivery

2 Barbed fittings for tubing 8 and 12 mm ID. (Pump connections M16x1 male)

## All Benefits



**Intelligent temperature control.**  
Intelligent cascade control - automatic and self-optimizing adaptation of the PID control parameters with external stability of +/- 0.05 °C.



**Many interfaces.**  
Straight-forward remote control, data management, and integration into process structures. USB, Ethernet, RS232, SD card, and alarm off are permanently integrated. Further interfaces available as accessories.



**Touch display. Perfect operation.**  
With the touch display, the user always has an overview of all values and functions. The intuitive and multilingual menu structure enables perfect control.



**Maximum safety.**  
Classification III according to DIN12876-1 enables safe operation, even with flammable fluids. Automatic switch-off in the event of high temperature or low liquid level.



**Space saving. Free up space.**  
Place your JULABO Circulator right next to an application, another unit, or wall. That saves space. This is made possible by eliminating vents and connections on the sides.



**Multi-lingual.**  
Operation in multiple languages.



**Programmer. Integrated.**  
The integrated internal programmer makes it possible to automatically run temperature time profiles.



**Analog I/O.**  
Analog interfaces for integration into process control systems (optional).



**Temperature. Under control.**  
External Pt100 sensor connection for precise measurement and control directly in the external application.



**Fill level. Monitored.**  
Fill level indicator on the display for heat-transfer liquid.



**Process stability.**  
Early warning - visual and acoustic - of critical states increases process stability.



**Process. Under control.**  
Full regulation of the dynamics control, access to all important control parameters for individual process optimization.



**Stable. Mobile.**  
Rubber feet keep JULABO Circulators standing firm. Larger and more powerful units also have integrated rollers for easy handling.



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



**Everything made of stainless steel.**  
Quality and material compatibility at the highest level. All parts in contact with the medium are entirely made of stainless steel.



**Wide range.**  
Refrigerated and heating circulator in various combinations, circulator in various sizes. Maximum flexibility through a large selection of accessories.



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



**Most powerful pump.**  
The integrated pressure/suction pump with performance values of 0.9 bar and -0.4 bar is the most powerful in its class and continuously adjustable.



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



**Highest measuring accuracy**  
'Absolute Temperature Calibration' for manual compensation of a temperature difference, 10-point calibration