

## HT60-M3-CU High Temperature Circulator

### 2-zone technique for working temperatures up to 400 °C

JULABO high temperature circulators: The response to present requirements in the market. Peak performance, rapid heating and cooling, fast action in case of exotherm reactions - these are only few of the features of our high temperature circulators. The self-optimizing controller (ICC - Intelligent Cascade Control) ensures high temperature stability. The classic PID control parameters are available at the touch of a button for modification at any time. MULTI-DISPLAY (LED) and interactive LCD display offer convenient operation. The implemented heating automation, strong pump and controlled cooling produce rapid and precise results for temperature applications to +400 °C. The instruments are completely sealed. This prevents the release of oil fumes and results in long life time of the heat transfer liquid. Automatic air-purge allows easy filling. Electrical connections and the optional Profibus permit future-oriented automation technology. JULABO high temperature circulators are recommended for applications using jacketed reactors and autoclaves, distillation columns as well as laboratory, miniplant and process-scale applications.



### Your advantages

- Working temperature range up to 400 °C
- Self-optimizing ICC temperature controller
- Strong pumping capacity 18 l/min - 1.2 bar max
- Automatic air-purge allows easy filling
- Automated heat-up feature adjusts to external systems
- Bright MULTI-DISPLAY (LED) with display resolution 0.01 °C
- Backlit interactive 4-line LCD display
- On-line communication via built-in RS232 interface
- Stand-by input for external emergency switch-off
- Integrated programmer stores up to 6 profiles (60 sections each)
- Electronic level indication
- ATC function for simple correction of temperature variations
- ATC function allows use as testing instrument according to ISO 9000
- Tap water cooling for temperatures from 40 to 400 °C and rapid cooling
- Cooling capacity up to 15 kW (with tap water 20°C)


### Technical Data


Order No.	9800066
Category	High Temperature Circulators Forte HT
Working temperature range (°C)	+40 ... +400
Temperature stability (°C)	±0.01-0.1
Setting / display resolution	0.01 °C
Integrated programmer	6x60 steps
Temperature Display	LCD, LED
Heating capacity (kW)	6
Pump capacity flow rate (l/min)	14-18


Pump capacity flow pressure (psi)	11.6-17.4
Pump connections	M16x1
Filling volume liters	2
External Pt100 sensor connection	integrated
Digital interface	RS232, RS485 Optional: Profibus
Ambient temperature	5...40 °C
Dimensions W x L x H (inch)	Thermostat: 9.8 x 9.8 x 7.1
Weight (LBS)	81
Classification according to DIN12876-1	Classification III (FL)
Display for pump pressure and filling volume	Backlit indicator
Filling volume expansion vessel liters	1.6+0.9
Power requirement V / Hz / A	3x 208/60/15
Dimensions Control unit B x T x H	25 x 25 x 18
Available voltage versions	208 V / 3 Ph. / 60 Hz 230 V / 3 Ph. / 60 Hz

## Characteristics


### Display

 **Easy to read**  
Large LED temperature display for actual value and setpoint (resolution 0.1 °C)


 **Additional plain text information**  
Comfortable LCD dialog display for interactive operation with plain text display


 **Pump stage and liquid level**  
Backlit indicator for selected pump stages and filling volume on Presto® PLUS, Magnum 91 & Forte HT


### Operation

 **Clearly structured**  
Comfortable, splash-proof keypad for setpoint adjustment, high/low temperatures, timer and shaking frequency (SW models)


### Temperature Control


 **For perfect results**  
'Intelligent Cascade Control', automatic & self optimizing adjustment of PID control parameters, temperature stability ±0.005 °C internal, <±0.05 °C external


 **Full control**  
'Temperature Control Features' for individual optimization, access to all important control parameters, additional settings for band limit, limits, Co-Speedfactor etc.

 **High measuring accuracy**  
'Absolute Temperature Calibration' for manual compensation of a temperature difference, 1-point calibration


### Technical Features


 **Control from the external application**  
External Pt100 sensor connection for precise measurement and control directly in the external application


 **Connection compliant to standard**  
RS232/RS485 dual-interface for serial data transmission according to EIA-485 industry standard (2-wire bus technology), upgradable with Profibus DP

 **Optimal program control**  
For the execution of time and temperature dependant profiles, 6 temperature profiles with 60 steps max., with real time clock

### Warning & Safety Functions

 **Early warning system for high/low temperature limits**  
Maximum safety for applications, optical and audible alarm, convertible to automated cut-off function

 **Enhanced protective functions**  
Maximum safety, adjustable high temperature cut-off or dry-running protection, additional display of setpoints permits easy and precise adjustments

 **For flammable bath fluids**  
Classification III (FL) according to DIN 12876-1