

## Magnum 91

### temperature control system / process system

Reactor temperature control, tests for all kinds of substances or temperature simulation. The new PRESTO® are made for highly precise temperature control and rapid temperature changes. Highly efficient components allow extremely fast compensation of exothermic and endothermic reactions. Lab users benefit from high flow rates, constant pressure, and a controlled build-up of pump pressure. Permanent internal monitoring and self-lubricating pumps contribute to the new PRESTO®'s long service life. The integrated 5.7" industrial touch screen displays all important information clearly and concisely enhancing ease of use considerably.

### Your advantages

- For highly precise, external temperature applications
- Rapid heating and cooling
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5,7" industrial color TFT touch screen
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input



### Technical Data

Order No.	9410191								
Model series	Magnum								
Category	Temperature control system Presto PLUS & Magnum								
Working temperature range (°C)	-91 ... +250								
Temperature stability (°C)	0.05-0.2								
Setting / display resolution	0.01 °C								
Integrated programmer	6x60 steps								
Temperature Display	VFD, LCD								
Heating capacity (kW)	6								
Cooling capacity (Medium Ethanol)	°C	200	100	20	0	-20	-40	-60	-80
	kW	3	4.8	4.6	4.6	4.5	4.3	2	0.5
Pump capacity flow rate (l/min)	24-35								
Pump capacity flow pressure (bar)	0.8-2.2								
Pump connections	M 24x1.5								
Filling volume liters	21.6								
Refrigerant	R23, R404A								
External Pt100 sensor connection	integrated								
Digital interface	RS232, RS485, Optional Profibus								
Ambient temperature	5...40 °C								

Dimensions W x L x H (cm)	71 x 88 x 165
Weight (kg)	442
Classification according to DIN12876-1	Classification III (FL) according to DIN 12876-1
Order information	Recommended bath fluids: Thermal HL80, Thermal HL45, Thermal H5, Fluorinert, Galden.
Cooling of compressor	Water
Filling volume expansion vessel liters	11,4
Volumetric capacity liters	13
Gross volume liters	21.5 (includes 11L chiller volume)
Available voltage versions	400 V / 3 Ph. / 50 Hz 230 V / 3 Ph. 60 Hz

## Characteristics

### Display



#### A perfect view

Ample, easy to read VFD Comfort display for simultaneous display of 3 values, warning functions, high temperature cut-off, pump stages (resolution 0.01 °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

### 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

### Refrigeration Technology



#### 100 % Cooling capacity

Active Cooling Control for cooling available throughout the entire working temperature range, fast cool-down even at higher temperatures



#### Energy saving cooling

Proportional cooling control for automatic adjustment of cooling power or temporary switch-off of compressor as needed to save up to 90 % energy in comparison to unregulated cooling machines

### Technical Features



#### Control from the external application

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



#### Serial connection

RS232 interface for PC connection, e.g. for data communication and recording of measured values



#### 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

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