

## PRESTO W93x Process system

W93 process systems offer users high cooling capacity for dynamic applications even in the lowest temperature ranges. They work with natural refrigerants and are also very energy efficient thanks to state-of-the-art technologies.

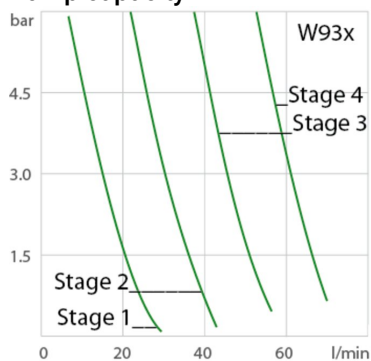
The highly dynamic temperature control systems PRESTO are designed for high-precision temperature control for a wide range of applications such as reactor vessels or material stress tests. Moreover, by using efficient components, the process systems can compensate exothermic and endothermic reactions exceptionally fast. Permanent internal monitoring and self-lubricating pumps ensure a long life-time. In addition, numerous interfaces offer many remote control possibilities across networks or for integration into higher-level control systems.



### Product features

- External Pt100 sensor connection
- Alarm output
- Second external Pt100 sensor connection (accessory)
- Built-in 5.7" industrial color touchscreen
- Cooling capacity up to 19.5 kW
- Heating capacity up to 27 kW
- Analog connections, RS485, Profibus DP (accessory)
- Temperature stability  $\pm 0.05\text{ }^{\circ}\text{C}$  ...  $\pm 0.2\text{ }^{\circ}\text{C}$
- Integrated gas warning sensor, electrically wired and calibrated
- Intelligent warning and safety functions
- Ambient temperature range  $+5\text{ }^{\circ}\text{C}$  to  $+40\text{ }^{\circ}\text{C}$
- Pump pressure up to 5.5 bar, max. flow rate 70 l/min

### Pump capacity



## Performance values

### 400V/3PNPE/50Hz (Without Plug)

Heating capacity kW	27
Viscosity max. cSt	70
Pump capacity flow rate l/min	0 ... 70
Pump capacity flow pressure bar	0.1 ... 5.5
Power consumption A	87

Order No. 9421933.N1.07

#### Cooling capacity (Ethanol)

°C	20	0	-20	-40	-60	-80
kW <sup>1</sup>	19.5	19.5	19.5	19.5	13	3.5

#### Note about natural refrigerants:

Temperature control units using natural refrigerants are often subject to regulatory requirements regarding the installation site, operation, transport or disposal of the units. If you have any questions, we will be happy to advise you.

#### Refrigerant stage 1

Refrigerant R1270

Filling weight g 999

Global Warming Potential for R1270 2

Carbon dioxide equivalent t 0.001998

#### Refrigerant stage 2

Refrigerant R170

Filling weight g 999

Global Warming Potential for R170 6

Carbon dioxide equivalent t 0.005994

<sup>1</sup> Performance specifications measured in accordance with DIN 12876. Cooling capacities up to 20 °C measured with ethanol; over 20 °C with thermal oil unless otherwise specified. Performance specifications apply at an ambient temperature of 20 °C. Performance values may differ with other bath fluids.

## Technical data

### Available voltage versions

Order No. 9 421 933

#### Available voltage versions:

9421933.N1.07	400V/3PNPE/50Hz (Without Plug) (R1270)
9421933.N1.17	480V/3P(N)PE/60Hz (Without Plug) (R1270)

### Cooling

Cooling of compressor 2-stage Water

Cooling water pressure max. bar	6
Max. heat dissipated by unit into cooling water kW	53

### Recommended cooling water properties

Cooling water temperature range °C	10 ... 15
Cooling water difference pressure bar	1.5 ... 6
Cooling water consumption l/min <sup>2</sup>	40

### Permissible cooling water properties

Cooling water temperature range °C	5 ... 30
Cooling water difference pressure bar <sup>3</sup>	0.5 ... 6

<sup>2</sup> Cooling water consumption may vary outside recommended cooling water properties.

<sup>3</sup> At cooling water temperatures of 25 °C and higher, the minimum differential pressure is 1 bar.

### Other

Sound pressure level dbA	78
Classification	Classification III (FL)
IP Code	IP 20

### Electronics

<b>Pump type</b>	Gear Pump	<b>Interfaces</b>	Alarm output, Ethernet, Modbus, Profibus optional, REG/EPROG optional, RS232, RS485 optional, SD memory card, Standby-Input optional, USB
Pump type Magnetically coupled	1		
<b>Dimensions and volumes</b>		<b>Temperature values</b>	
Internal usable expansion volume l	36	External pt100 sensor connection	integrated
Minimal process volume l	30	2nd external Pt100 sensor connection	accessory
Active heat exchanger volume l	11	Integrated programmer	8x60 steps
Weight kg	950	Temperature control	ICC
Cooling Water Connection in	G $\frac{3}{4}$	Absolute temperature calibration	3 Point Calibration
Dimensions cm (W x L x H)	93 x 138 x 192	Temperature display	5.7" TFT Touchscreen
Pump connections	M38x1.5 male	Temperature setting	Touchscreen
		Setting the resolution of the temperature display °C	0.01
		Working temperature range °C	-93 ... +250
		Temperature stability °C	±0.05 ... ±0.2
		Ambient temperature °C	+5 ... +40
		Setting the resolution of the temperature display °C	0.01

### All Benefits



**Integrated gas detection sensor**  
For a high personal and process safety, the new W93 series is equipped with a gas detection sensor. The sensor is already electrically wired and calibrated upon delivery.



**Space-saving footprint**  
All connections as well supply and exhaust air are located at the front or rear, no venting grids on the sides, units can be placed close to each other or the application



**Services 24/7.**  
Around the clock availability. You can find suitable accessories, data sheets, manuals, case studies, and more at [www.julabo.com](http://www.julabo.com).



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



**Quick start.**  
Individual JULABO consultation and comprehensive manuals at your disposal.



**100% Checked.**  
100% testing. 100% quality. Each JULABO Circulator undergoes thorough quality testing before leaving the factory.



**Quick support**  
If an error occurs, the integrated Black-Box function permits fast diagnosis by the JULABO service team



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



**Duplicate safety**  
Adjustable high temperature cut-off for internal tank and for integrated expansion vessel



**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.



**Continuous operation up to +40 °C**  
Robust temperature control instrument, continuous operation even at ambient temperatures of up to +40 °C



**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.



**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.



**Intelligent pump system**  
Reliable and consistent pump capacity, electronically adjustable pump stages or pressure value, automatic adjustment of pump capacity to viscosity



**Highest measuring accuracy**  
'Absolute Temperature Calibration' for manual compensation of a temperature difference, 3-point calibration



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



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



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



**100 % Cooling capacity**  
'Active Cooling Control' for cooling available throughout the entire working temperature range, fast cool-down even at higher temperatures



**Convenience for several users**  
Administrator level for customizing instrument settings, user levels with limited permissions for fast and safe defined access, password protection, all levels adjustable