PRESTO W91x Process system

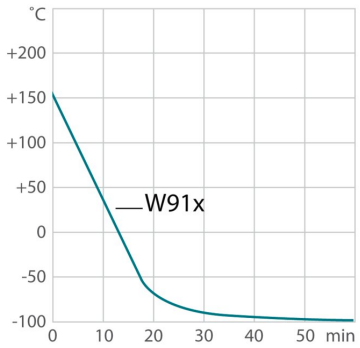
Best heating capacity combined with high cooling capacity – those are the key features of the W91 units. The units are just as ready for embedding into pilot plants as they are for use in material and component testing.

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

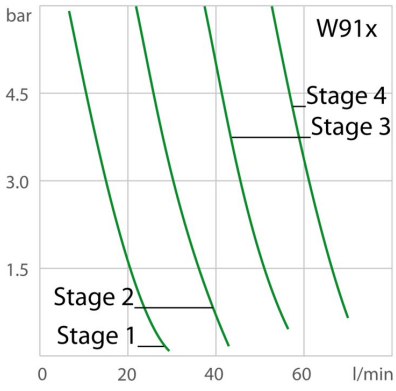
- Cooling capacity up to 11 kW
- Temperature stability ±0.05 °C ... ±0.2 °C
- Ambient temperature range +5 °C to +40 °C
- Built-in 5.7'' industrial color touchscreen
- Analog connections, RS485, Profibus DP (accessory)
- External Pt100 sensor connection
- Second external Pt100 sensor connection (accessory)
- Alarm output
- Pump pressure up to 5.5 bar, max. flow rate 70 l/min

Cool-down time



Medium: Thermal HL

Pump capacity



Performance values

400V/3PNPE/50Hz (Without Plug)	
Heating capacity kW	18
Viscosity max. cSt	70
Pump capacity flow rate l/min	0 ... 70
Pump capacity flow pressure bar	0.1 ... 5.5
Power consumption A	46

Refrigerant variants

Order No.				9421913.07			
Cooling capacity (Ethanol)							
°C	20	0	-20	-40	-60	-80	-90
kW [1]	11	11	11	10.5	8	2	0.8

Refrigerant stage 1		Refrigerant stage 2	
Refrigerant	R404A	Refrigerant	R23
Filling weight g	4500	Filling weight g	1250
Global Warming Potential for R404A	3922	Global Warming Potential for R23	14800
Carbon dioxide equivalent t	17.649	Carbon dioxide equivalent t	18.5

Order No.				9421913.S1.07			
Cooling capacity (Ethanol)							
°C	20	0	-20	-40	-60	-80	-90
kW [1]	11	11	11	10.5	8	2	0.8

Refrigerant stage 1		Refrigerant stage 2	
Refrigerant	R449A	Refrigerant	R23
Filling weight g	4500	Filling weight g	1250
Global Warming Potential for R449A	1397	Global Warming Potential for R23	14800
Carbon dioxide equivalent t	6.2865	Carbon dioxide equivalent t	18.5

[1] 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.	9 421 913
Available voltage versions:	
9421913.07	400V/3PNPE/50Hz (Without Plug) (R404A)
9421913.S1.07	400V/3PNPE/50Hz (Without Plug) (R449A)
9421913.17	480V/3P(N)PE/60Hz (Without Plug) (R404A)

Cooling

Cooling of compressor	2-stage Water
Cooling water pressure max. bar	6
Max. heat dissipated by unit into cooling water kW	28

Recommended cooling water properties

Cooling water temperature range °C	10 ... 15
Cooling water difference pressure bar	1.5 ... 6
Cooling water consumption l/min [2]	16 ... 20

Permissible cooling water properties

Cooling water temperature range °C	5 ... 35
Cooling water difference pressure bar [3]	0.5 ... 6

[2] Cooling water consumption may vary outside recommended cooling water properties.
[3] At cooling water temperatures of 25 °C and higher, the minimum differential pressure is 1 bar.

Other

Sound pressure level dbA	74

Electronics

Classification	Classification III (FL)
IP Code	IP 21
Pump type	Gear Pump
Pump type Magnetically coupled	1

Interfaces	Alarm output, Ethernet, Modbus, Profibus optional, REG/EPROG optional, RS232, RS485 optional, SD memory card, Standby-Input optional, USB
External pt100 sensor connection	integrated
2nd external Pt100 sensor connection	accessory
Integrated programmer	8x60 steps
Temperature control	ICC
Absolute temperature calibration	3 Point Calibration
Temperature display	5.7" TFT Touchscreen
Temperature setting	Touchscreen

Dimensions and volumes

Internal usable expansion volume l	40
Minimal process volume l	28
Active heat exchanger volume l	16
Weight kg	870
Cooling Water Connection in	G¾
Dimensions cm (W × L × H)	95 x 127 x 190
Pump connections	M38x1.5 male

Temperature values

Setting the resolution of the temperature display °C	0.01
Working temperature range °C	-91 ... +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

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.

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

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

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

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

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

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

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

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.

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

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

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.

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

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

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

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

Green technology.
Development consistently applied environmentally friendly materials and technologies.

JULABO. Quality.
Highest standards of quality for a long product life.

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

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

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