

## PRESTO A70 Process system

The air-cooled PRESTO A70 is JULABO's most compact 2-stage process system and offers high cooling capacities for lowest temperatures down to  $-75\text{ }^{\circ}\text{C}$ .

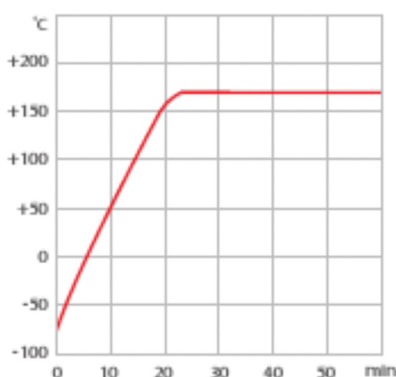
The highly dynamic temperature control systems PRESTO are designed for high-precision temperature control for a wide range of applications such as reactor vessels or material stress tests. Moreover, by using efficient components, the process systems can compensate exothermic and endothermic reactions 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

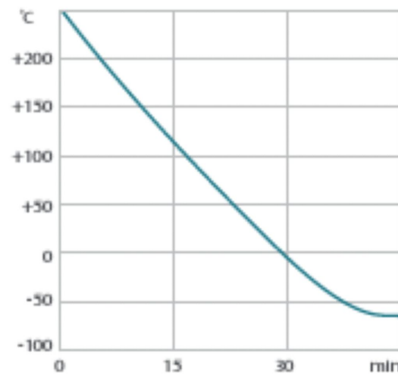
- Analog connections, RS485, Profibus DP (accessory)
- Space optimized design creates more room directly next to the units
- External Pt100 sensor connection
- Built-in 5.7" industrial color touchscreen
- Second external Pt100 sensor connection (accessory)
- Alarm output
- Temperature stability  $\pm 0.01\text{ }^{\circ}\text{C}$  ...  $\pm 0.05\text{ }^{\circ}\text{C}$
- Pump pressure up to 1.7 bar, max. flow rate 40 l/min
- removable ventilation grid

### Heat-up time



Medium: Thermal HL90

### Cool-down time



Medium: Thermal HL90

### Performance values

230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)

|                                 |             |
|---------------------------------|-------------|
| Heating capacity kW             | 1.8         |
| Viscosity max. cSt              | 50          |
| Pump capacity flow rate l/min   | 0 ... 40    |
| Pump capacity flow pressure bar | 0.1 ... 1.7 |
| Power consumption A             | 16          |

|                                                                                                                                                                                                                                                                                                              |               |      |      |                                   |          |      |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------|-----------------------------------|----------|------|------|
| Order No.                                                                                                                                                                                                                                                                                                    | 9420701.N1.03 |      |      |                                   |          |      |      |
| <b>Cooling capacity 1 (Ethanol)</b>                                                                                                                                                                                                                                                                          |               |      |      |                                   |          |      |      |
| °C                                                                                                                                                                                                                                                                                                           | 20            | 0    | -20  | -40                               | -50      | -60  | -70  |
| kW                                                                                                                                                                                                                                                                                                           | 1.12          | 1.1  | 0.98 | 0.9                               | 0.69     | 0.45 | 0.23 |
| * 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. |               |      |      |                                   |          |      |      |
| Cooling capacity 1 = capacity at minimum pump level, cooling capacity 2 = capacity at maximum pump level                                                                                                                                                                                                     |               |      |      |                                   |          |      |      |
| <b>Cooling capacity 2 (Ethanol)</b>                                                                                                                                                                                                                                                                          |               |      |      |                                   |          |      |      |
| °C                                                                                                                                                                                                                                                                                                           | 20            | 0    | -20  | -40                               | -50      | -60  | -70  |
| kW                                                                                                                                                                                                                                                                                                           | 1             | 0.91 | 0.84 | 0.75                              | 0.55     | 0.38 | 0.12 |
| * 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. |               |      |      |                                   |          |      |      |
| Cooling capacity 1 = capacity at minimum pump level, cooling capacity 2 = capacity at maximum pump level                                                                                                                                                                                                     |               |      |      |                                   |          |      |      |
| Note about natural refrigerants:<br>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.                             |               |      |      |                                   |          |      |      |
| <b>Refrigerant stage 1</b>                                                                                                                                                                                                                                                                                   |               |      |      | <b>Refrigerant stage 2</b>        |          |      |      |
| Refrigerant                                                                                                                                                                                                                                                                                                  | R449A         |      |      | Refrigerant                       | R170     |      |      |
| Filling weight g                                                                                                                                                                                                                                                                                             | 650           |      |      | Filling weight g                  | 99       |      |      |
| Global Warming Potential for R449A                                                                                                                                                                                                                                                                           | 1397          |      |      | Global Warming Potential for R170 | 6        |      |      |
| Carbon dioxide equivalent t                                                                                                                                                                                                                                                                                  | 0.90805       |      |      | Carbon dioxide equivalent t       | 0.000594 |      |      |

## Technical data

### Available voltage versions

Order No. 9 420 701

#### Available voltage versions:

9420701.N1.14 208V/60Hz (Nema N6-20 Plug) (R449A)

9420701.N1.03 230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F) (R449A)

### Other

|                                |                         |
|--------------------------------|-------------------------|
| Sound pressure level dbA       | 69                      |
| Classification                 | Classification III (FL) |
| IP Code                        | IP 20                   |
| Pump type                      | Centrifugal Pump        |
| Pump type Magnetically coupled | 1                       |

### Cooling

Cooling of compressor 2-stage Air

### Electronics

|                                      |                                                                                                                                           |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 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 | 4.8            |
| Minimal process volume l           | 2.3            |
| Active heat exchanger volume l     | 1.7            |
| Weight kg                          | 138            |
| Dimensions cm (W x L x H)          | 57 x 74.5 x 88 |
| Pump connections                   | M24x1.5 male   |

| Temperature values                                   |                 |
|------------------------------------------------------|-----------------|
| Setting the resolution of the temperature display °C | 0.01            |
| Working temperature range °C                         | -75 ... +250    |
| Temperature stability °C                             | ±0.01 ... ±0.05 |
| Ambient temperature °C                               | +5 ... +40      |
| Temperature display resolution °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.



**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](http://www.julabo.com).