Julabo

THE TEMPERATURE CONTROL COMPANY

Highly Dynamic Temperature Control Systems

PRESTO™ & FORTE HT

ENGLISH

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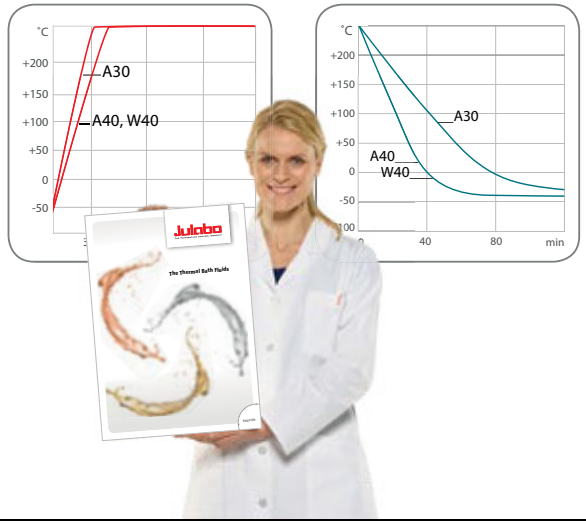
PRESTO™

BEST PERFORMANCE IN HIGHLY DYNAMIC

HIGHLIGHTS

- Ideal for highly precise, external temperature control tasks from -92 °C to +250 °C
- Wide working temperature ranges using one thermal fluid
- Rapid heating and cooling
- Powerful circulation pumps, electronically adjustable in stages or by setting the pressure value

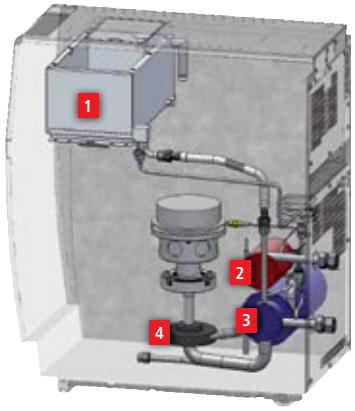


The PRESTO principle

Expansion vessel (1)

Heat exchanger:
Heating section (2)
Refrigeration section (3)

Circulation pump (4)



Flexible set up

Space saving design

JULABO PRESTO are the only highly dynamic temperature control systems with closed side panels without ventilation slits. Save space by placing PRESTO units directly next to each other or your application.

TEMPERATURE CONTROL SYSTEMS

COMFORT

- Side panels without ventilation slits
- Important interfaces directly accessible from the front
- Easy to transport
- Hydraulically sealed to prevent unpleasant vapors and odors

SAFETY

- Actively cooled expansion vessel compensates for temperature-induced volume changes in the heat exchanger
- Simple and safe filling procedure
- Hot or cold thermal bath fluid does not come into contact with oxygen
- Three user levels with password protection

PERFORMANCE

- Rapid heating and cooling
- Heating capacity up to 36 kW
- Cooling capacity up to 31 kW
- Wide temperature ranges covered with only one thermal fluid
- Powerful, magnetically coupled pumps (free of seals and leak free)

PROCESS SAFETY

- Fully automated degassing procedure
- eproducible results
- Maximum uptime
- Electronically adjustable pumps in stages or by setting the pressure value (except A30)

COST EFFICIENCY

- Less thermal bath fluid needed compared to open bath circulators
- Smaller footprint

PRESTO™

THE PERFECT **TEMPERATURE**

PRESTO for extremely wide temperature ranges

PRESTO is the perfect solution if you need to cover wide working temperature ranges. The PRESTO are designed to work in wide temperature ranges with one and the same thermal fluid. Forget about frequently changing the bath fluid and reduce your stock.

Filling is made easy: The filling funnel can be easily accessed from the top of the PRESTO allowing safe and easy filling.

PRESTO systems are closed

The closed system design of the PRESTO prevents the hot or cold thermal fluid from getting in contact with ambient air. This lowers oxidation of the fluid at high temperatures to a minimum and prevents crystallization of humidity at low temperatures. In addition, the built-in expansion vessel is actively cooled.
Your benefit: Increased user safety and an extended life expectancy of the thermal fluid.

The absolute asset: Thanks to the closed design, the new PRESTO prevents unpleasant oil vapor.

CONTROL SOLUTION

PRESTO with maximum performance

Providing strong cooling and heating capacities, the PRESTO systems cover a working temperature range of -92 °C to +250 °C. Highly efficient components compensate exothermic and endothermic reactions in no time (extremely fast).

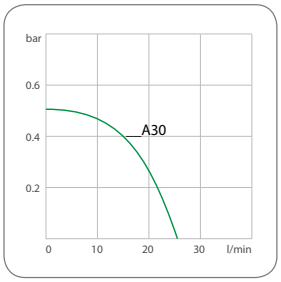
The smaller active heat exchange volume ensures faster heat-up and cool-down times.

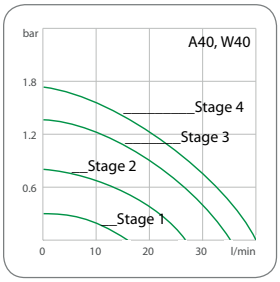
PRESTO pump power

The new PRESTO units generate the desired pressure at any time – to protect your applications and investments. The pumps even dynamically compensate for viscosity changes in the heat transfer fluid (except A30). Permanent internal monitoring and magnetically coupled pumps (without seals and leak free) provide best performance and maximum uptime.

BOOST the PRESSURE
use the JULABO Booster Pump to increase pump pressure

Pump capacity





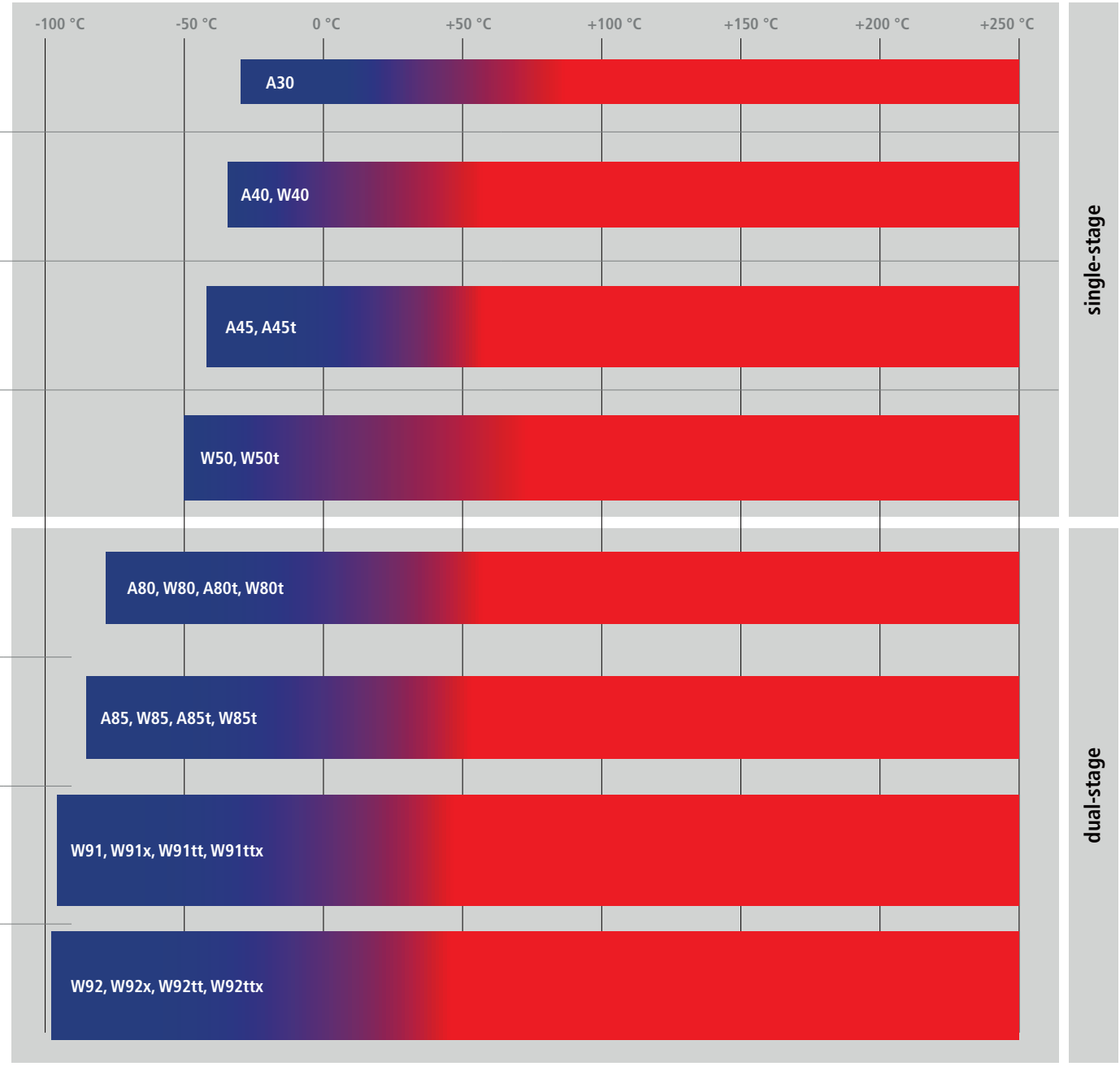
The pump capacity can be adjusted gradually or by using a pressure value (except A30). The pressure build-up is constantly monitored. Viscosity changes are compensated interactively.

PRESTO™

THE **BEST CHOICE** FOR EVERY

		Heating capacity	Cooling capacity / kW					
		kW	+20 °C	0 °C	-20 °C	-30 °C	-40 °C	-60 °C	-80 °C
	**PRESTO A30** A30 systems offer a high level of cooling and heating capacity down to -30 °C. Available as air-cooled version.	2.7	0.5	0.4	0.2	0.05			
	**PRESTO A40 and W40** The A40 and W40 offer a high level of cooling and heating capacity down to -40 °C. As air-cooled version for flexible positioning or water-cooled model available.	2.7	1.2	0.9 (A40) 1.0 (W40)	0.6 (A40) 0.55 (W40)	0.3	0.1 (A40) 0.07 (W40)		
	**PRESTO A45 and A45t** The A45 and A45t offer very high cooling and heating capacity down to -45 °C. Both systems are air-cooled, the A45t offers increased heating capacity of 12 kW.	6 (A45) 12 (A45t)	3.5	3.3	1.8	1.0	0.3		
	**PRESTO W50 and W50t** The water-cooled models W50 and W50t offer very high cooling and heating capacity down to -50 °C. The W50t provides double the heating capacity (12 kW).	6 (W50) 12 (W50t)	7.5	6.5	3	1.8	0.6		
	**PRESTO A80 and W80 series** A80 and W80 systems offer a high level of cooling and heating capacity down to -80 °C. Available as air-cooled or water-cooled units with up to 3.4 kW heating capacity.	1.8 (A80, W80) 3.4 (A80t, W80t)	1.2	1.2	1.1	1.1	1.1	0.65	0.1
	**PRESTO A85 and W85 series** PRESTO A85 and W85 offer a high level of cooling and heating capacity down to -85 °C. Available as air-cooled or water-cooled units with up to 15 kW heating capacity.	6 (A85, W85) 15 (A85t, W85t)	2.5	2.4	2.4	2.4	2.4	2.2	0.4
	**PRESTO W91 series** The water-cooled PRESTO W91 offer a high level of cooling and heating capacity down to -91 °C. Available with heating capacity of up to 36 kW and optionally with a gear pump for high-viscosity thermal fluids.	18 kW (W91, W91x) 36 kW(W91tt,W91ttx)	11	11	11	10.5	10.5	8	2
	**PRESTO W92 series** The water-cooled PRESTO W92 is the top performer with the highest level of cooling and heating capacity down to -92 °C. Available with heating capacity of up to 36 kW and optionally with a gear pump for high-viscosity thermal fluids.	18 kW (W92,W92x) 36 kW(W92tt,W92ttx)	27	20	11	10.5	10.5	8	2

APPLICATION



PRESTO – small and powerful

For working temperatures from -40 °C to +250 °C

All the advantages of the PRESTO series for a working temperature range of -40 °C up to +250 °C.

- Heating capacity up to 2.7 kW
- Cooling capacity up to 1.2 kW
- Pump pressure up to 1.7 bar, max. flow rate 40 l/min
- Temperature stability ±0.01 °C ... ±0.05 °C
- Built-in 5.7" industrial color touchscreen
- Ports for USB, Ethernet, RS232, Modbus
- Alarm output
- External Pt100 sensor connection
- Analog connections, RS485, Profibus DP (accessory)
- Second external Pt100 sensor connection for A40 and W40 (accessory)

TIP

Air-cooled or water-cooled

The PRESTO units are available as air-cooled or water-cooled units. Air-cooled units do not require water and can be installed anywhere. If you are looking for a flexible solution or if you expect to move the unit frequently, an air-cooled unit will be the best choice. However, it is important to know that air-cooled units slightly elevate the ambient temperature during operation.

Water-cooled units must be connected to an existing cooling water line. These units are even more quiet and can be virtually enclosed during operation. Robust heat exchangers are installed in the water-cooled PRESTO units.
Clogging up the heat exchanger by particles or impure water is virtually impossible.

The PRESTO Interfaces

- USB (host and device)
- Ethernet interface
- Slot for SD cards
- Modbus
- RS232

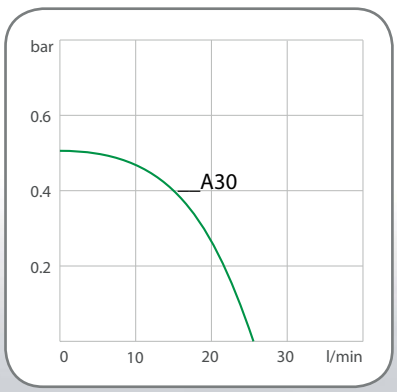
Connections for

- Alarm output
- External Pt100 sensor
- Standby input (accessory)
- Analog inputs and outputs (accessory)
- Flow and pressure sensors (except A30)
- Second external Pt100 sensor (accessory, except A30)

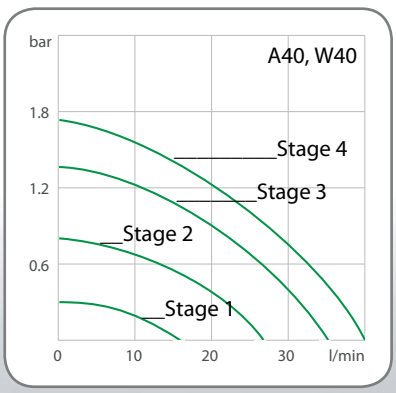
Optional Interfaces

- Profibus DP
- RS485

Pump capacity



Pump capacity



All data refers to the nominal voltage of 230 V, nominal frequency of 50 Hz and ambient temperature of +20 °C.
Cooling capacity measured at max. pump stage. All pump data refers to a bath fluid with a specific density of 1 kg/dm³.
Cooling capacity measured with Thermal HL (+200 °C) or Ethanol (except +200 °C)

PRESTO™ A30

Order No.	**9 420 300**		
Model	**A30**		
Working temperature range °C	-30 … +250		
Temperature stability °C	±0.01 … ±0.05		
Cooling capacity kW	**+200 °C** 0.5	**+20 °C** 0.5	**0 °C** 0.4
	-20 °C 0.2	**-30 °C** 0.05	**-40 °C** -
Heating capacity kW	2.7		
Pump capacity Flow rate/Pressure	l/min	25	
	bar	0.5	
Process volume min. liters	2.4		
Cooling type	single stage, air cooled		
Dimensions cm	W x L x H 25 x 59 x 62		

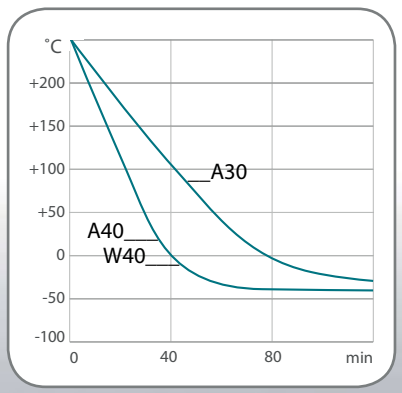
PRESTO™ A40

Order No.	**9 420 401**		
Model	**A40**		
Working temperature range °C	-40 … +250		
Temperature stability °C	±0.01 … ±0.05		
Cooling capacity kW	**+200 °C** 1.2	**+20 °C** 1.2	**0 °C** 0.9
	-20 °C 0.6	**-30 °C** 0.3	**-40 °C** 0.1
Heating capacity kW	2.7		
Pump capacity Flow rate/Pressure	l/min	16 … 40	
	bar	0.3 … 1.7	
Process volume min. liters	3.5		
Cooling type	single stage, air cooled		
Dimensions cm	W x L x H 33 x 59 x 67		

PRESTO™ W40

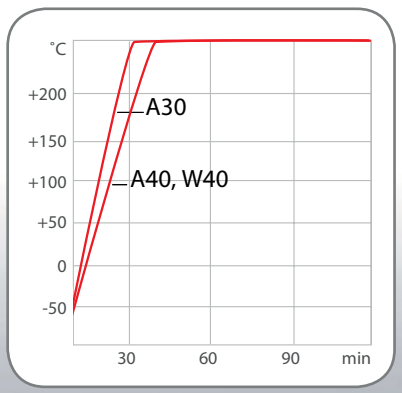
Order No.	**9 421 401**		
Model	**W40**		
Working temperature range °C	-40 … +250		
Temperature stability °C	±0.01 … ±0.05		
Cooling capacity kW	**+200 °C** 1.2	**+20 °C** 1.2	**0 °C** 1.0
	-20 °C 0.55	**-30 °C** 0.3	**-40 °C** 0.07
Heating capacity kW	2.7		
Pump capacity Flow rate/Pressure	l/min	16 … 40	
	bar	0.3 … 1.7	
Process volume min. liters	3.5		
Cooling type	single stage, water cooled		
Dimensions cm	W x L x H 33 x 59 x 67		

Cool-down time
Bath fluid: Thermal HL



Maximum pump capacity (voltage 230 V)

Heat-up time
Bath fluid: Thermal HL



Maximum pump capacity (voltage 230 V)

PRESTO A45/A45t
Air-cooled top performance

For working temperatures from -45 °C to +250 °C

Top PRESTO performance down to -45 °C, increased heating power with the A45t.

- Heating capacity up to 12 kW
- Cooling capacity up to 3.5 kW
- Pump pressure up to 3.2 bar, max. flow rate 76 l/min
- Temperature stability ±0.05 °C ... ±0.1 °C
- Built-in 5.7" industrial color touchscreen
- Ports for USB, Ethernet, RS232, Modbus
- Alarm output
- External Pt100 sensor connection
- Analog connections, RS485, Profibus DP (accessory)
- Second external Pt100 sensor connection (accessory)

PRESTO™ A45

Order No.	9 420 452		
Model	**A45**		
Working temperature range °C	-45 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C** 3.4	**+20 °C** 3.5	**0 °C** 3.3
	-20 °C 1.8	**-30 °C** 1	**-40 °C** 0.3
Heating capacity kW	6		
Pump capacity Flow rate/Pressure	l/min	35 … 76	
	bar	0.48 … 3.2	
Process volume min. liters	7.5		
Cooling type	single stage, air cooled		
Dimensions cm	W x L x H 53 x 66.5 x 126		

PRESTO™ A45t

Order No.	9 420 452.T		
Model	**A45t**		
Working temperature range °C	-45 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C** 3.4	**+20 °C** 3.5	**0 °C** 3.3
	-20 °C 1.8	**-30 °C** 1	**-40 °C** 0.3
Heating capacity kW	12		
Pump capacity Flow rate/Pressure	l/min	35 … 76	
	bar	0.48 … 3.2	
Process volume min. liters	7.5		
Cooling type	single stage, air cooled		
Dimensions cm	W x L x H 53 x 66.5 x 126		

PRESTO User Convenience

The state-of-the-art 5.7-inch industrial-grade color touchscreen is one of the identifying characteristics of the PRESTO. It gives the user a clear and well-organized view of important information with unmatched, intuitive user-friendliness. You can control the PRESTO with a simple tap of your finger.

There are three preset screen layouts displaying temperature reading, temperature graph, and other important information. Users may also customize screen info to their specific needs. PRESTO can be operated in ten different languages.

Password management enables administrators to configure a total of three user levels. Managers can set the desired parameters for recurring day-to-day tasks. Employees can then operate the PRESTO with their limited access rights.

All data refers to the nominal voltage of 400 V, nominal frequency of 50 Hz and ambient temperature of +20 °C.
Cooling capacity measured at max. pump stage. All pump data refers to a bath fluid with a specific density of 1 kg/dm³.
Cooling capacity measured with Thermal HL (+200 °C) or Ethanol (except +200 °C)

PRESTO W50/W50t
Water-cooled and powerful

For working temperatures from -50 °C to +250 °C

W50 and W50t instruments are able to compensate reactions very fast. Maximum heating and cooling performance paired with powerful pumps.

- Heating capacity up to 12 kW
- Cooling capacity up to 7.5 kW
- Pump pressure up to 3.2 bar, max. flow rate 76 l/min
- Temperature stability ±0.05 °C ... ±0.1 °C
- Built-in 5.7" industrial color touchscreen
- Ports for USB, Ethernet, RS232, Modbus
- Alarm output
- External Pt100 sensor connection
- Analog connections, RS485, Profibus DP (accessory)
- Second external Pt100 sensor connection (accessory)

PRESTO™ W50

Order No.	**9 421 502**		
Model	**W50**		
Working temperature range °C	-50 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C**	**+20 °C**	**0 °C**
	7	7.5	6.5
	-20 °C	**-30 °C**	**-40 °C**
	3	1.8	0.6
Heating capacity kW	6		
Pump capacity Flow rate/Pressure	l/min	35 … 76	
	bar	0.48 … 3.2	
Process volume min. liters	7.5		
Cooling type	single stage, water cooled		
Dimensions cm	W x L x H 53 x 66.5 x 126		

PRESTO™ W50t

Order No.	**9 421 502.T**		
Model	**W50t**		
Working temperature range °C	-50 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C**	**+20 °C**	**0 °C**
	7	7.5	6.5
	-20 °C	**-30 °C**	**-40 °C**
	3	1.8	0.6
Heating capacity kW	12		
Pump capacity Flow rate/Pressure	l/min	35 … 76	
	bar	0.48 … 3.2	
Process volume min. liters	7.5		
Cooling type	single stage, water cooled		
Dimensions cm	W x L x H 53 x 66.5 x 126		

ADJUSTABLE PUMPS FOR MAXIMUM SAFETY

All PRESTO units are equipped with adjustable pumps (except A30). They can be controlled not to exceed the maximum allowed fluid pressure in the application (e.g. in glass reactors). A two-stage, built-in adjustable safety setting is double assurance that the maximum amount of allowed pressure is not exceeded. That means maximum process safety, and an additional external pressure control is not needed – which saves space and budget.

The adjustable pumps also ensure more flexibility in connecting the application: high pump performance allows to bridge long distances or height differences. Set to low pressure, sensitive systems can also be connected with short lines.

PRESTO A80/A80t and W80/W80t
Low temperatures – no problem

For working temperatures from -80 °C to +250 °C

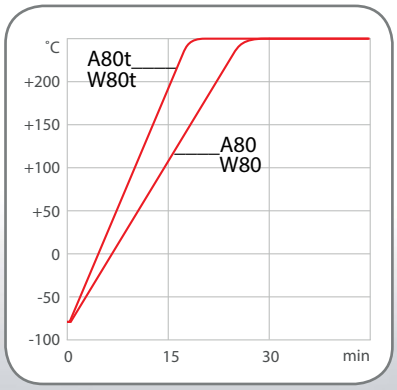
The 2-stage cooling systems provide lower temperatures with all of the other PRESTO advantages.

- Heating capacity up to 3.4 kW
- Cooling capacity up to 1.2 kW
- Pump pressure up to 1.7 bar, max. flow rate 40 l/min
- Temperature stability ±0.01 °C ... ±0.05 °C
- Built-in 5.7" industrial color touchscreen
- Ports for USB, Ethernet, RS232, Modbus
- Alarm output
- External Pt100 sensor connection
- Analog connections, RS485, Profibus DP (accessory)
- Second external Pt100 sensor connection (accessory)

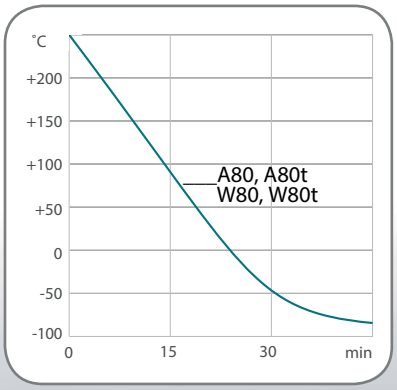
PRESTO™ A80

Order No.	**9 420 801**		
Model	**A80**		
Working temperature range °C	-80 … +250		
Temperature stability °C	±0.01 … ±0.05		
Cooling capacity kW	**+200 °C** 1.2	**+20 °C** 1.2	**0 °C** 1.2
	-40 °C 1.1	**-60 °C** 0.65	**-80 °C** 0.1
Heating capacity kW	1.8		
Pump capacity Flow rate/Pressure	l/min	16 … 40	
	bar	0.3 … 1.7	
Process volume min. liters	3.9		
Cooling type	2-stage, air cooled		
Dimensions cm	W x L x H 43 x 65 x 126		

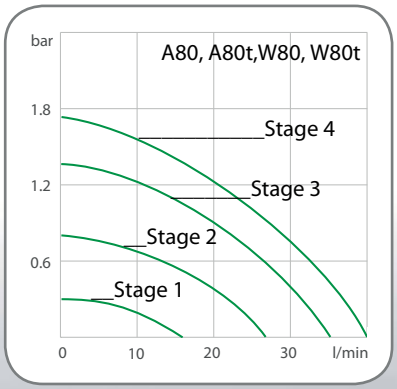
Heat-up time
Bath fluid: Thermal HL



Cool-down time
Bath fluid: Thermal HL



Pump capacity



All data refers to the nominal voltage of 230 V, nominal frequency of 50 Hz (respectively 400 V, 3Ph., 50 Hz) and ambient temperature of +20 °C.
Cooling capacity measured at max. pump stage. All pump data refers to a bath fluid with a specific density of 1 kg/dm³.
Cooling capacity measured with Thermal HL (+200 °C) or Ethanol (except +200 °C)

PRESTO™ A80t

Order No.	**9 420 801.T**		
Model	**A80t**		
Working temperature range °C	-80 … +250		
Temperature stability °C	±0.01 … ±0.05		
Cooling capacity kW	**+200 °C** 1.2	**+20 °C** 1.2	**0 °C** 1.2
	-40 °C 1.1	**-60 °C** 0.65	**-80 °C** 0.1
Heating capacity kW	3.4		
Pump capacity Flow rate/Pressure	l/min	16 … 40	
	bar	0.3 … 1.7	
Process volume min. liters	3.9		
Cooling type	2-stage, air cooled		
Dimensions cm	W x L x H 43 x 65 x 126		

PRESTO™ W80

Order No.	**9 421 801**		
Model	**W80**		
Working temperature range °C	-80 … +250		
Temperature stability °C	±0.01 … ±0.05		
Cooling capacity kW	**+200 °C** 1.2	**+20 °C** 1.2	**0 °C** 1.2
	-40 °C 1.1	**-60 °C** 0.65	**-80 °C** 0.1
Heating capacity kW	1.8		
Pump capacity Flow rate/Pressure	l/min	16 … 40	
	bar	0.3 … 1.7	
Process volume min. liters	3.9		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 43 x 65 x 126		

PRESTO™ W80t

Order No.	**9 421 801.T**		
Model	**W80t**		
Working temperature range °C	-80 … +250		
Temperature stability °C	±0.01 … ±0.05		
Cooling capacity kW	**+200 °C** 1.2	**+20 °C** 1.2	**0 °C** 1.2
	-40 °C 1.1	**-60 °C** 0.65	**-80 °C** 0.1
Heating capacity kW	3.4		
Pump capacity Flow rate/Pressure	l/min	16 … 40	
	bar	0.3 … 1.7	
Process volume min. liters	3.9		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 43 x 65 x 126		

EXTRAORDINARY USER SAFETY

All PRESTO units are equipped with an internal expansion tank which collects expanding thermal fluid. Surplus thermal fluid can be diverted via the installed overflow port. PRESTO units are extremely safe.

PRESTO A85/A85t and W85/W85t Power packages

For working temperatures from -85 °C to +250 °C

High cooling capacities enable extremely low temperatures down to -85 °C possible. The high heating capacity, particularly with the A85t and the W85t, provides even more flexibility in the application.

- Heating capacity up to 15 kW
- Cooling capacity up to 2.8 kW
- Pump pressure up to 3.2 bar, max. flow rate 80 l/min
- Temperature stability ±0.05 °C ... ±0.1 °C
- Built-in 5.7" industrial color touchscreen
- Ports for USB, Ethernet, RS232, Modbus
- Alarm output
- External Pt100 sensor connection
- Analog connections, RS485, Profibus DP (accessory)
- Second external Pt100 sensor connection (accessory)

PRESTO™ A85

Order No.	**9 420 852**		
Model	**A85**		
Working temperature range °C	-85 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C** 2.8	**+20 °C** 2.5	**0 °C** 2.4
	-40 °C 2.4	**-60 °C** 2.2	**-80 °C** 0.4
Heating capacity kW	6		
Pump capacity Flow rate/Pressure	l/min	35 … 80	
	bar	0.48 … 3.2	
Process volume min. liters	9.5		
Cooling type	2-stage, air cooled		
Dimensions cm	W x L x H 61 x 108 x 125		

BEST PERFORMANCE

PRESTO provides the best values in heating and cooling performance and enables rapid compensation of temperature changes in the application. Powerful magnetically coupled pumps (with no seals and leak free) keep the lab clean and achieve high flow rates without damaging the application connected.

PRESTO is suitable for a wide range of applications such as double-jacketed reactors, autoclaves, combinatorial chemistry, reaction blocks and much more. The W91 and W92 systems are especially well suited for use in pilot plants, material and component testing as well as for environmental testing and simulations.

All data refers to the nominal voltage of 400 V, 3Ph., nominal frequency of 50 Hz and ambient temperature of +20 °C.
Cooling capacity measured at max. pump stage. All pump data refers to a bath fluid with a specific density of 1 kg/dm³.
Cooling capacity measured with Thermal HL (+200 °C) or Ethanol (except +200 °C)

PRESTO™ A85t

Order No.	**9 420 852.T**		
Model	**A85t**		
Working temperature range °C	-85 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C** 2.8	**+20 °C** 2.5	**0 °C** 2.4
	-40 °C 2.4	**-60 °C** 2.2	**-80 °C** 0.4
Heating capacity kW	15		
Pump capacity Flow rate/Pressure	l/min	35 … 80	
	bar	0.48 … 3.2	
Process volume min. liters	9.5		
Cooling type	2-stage, air cooled		
Dimensions cm	W x L x H 61 x 108 x 125		

PRESTO™ W85

Order No.	**9 421 852**		
Model	**W85**		
Working temperature range °C	-85 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C** 2.8	**+20 °C** 2.5	**0 °C** 2.4
	-40 °C 2.4	**-60 °C** 2.2	**-80 °C** 0.4
Heating capacity kW	6		
Pump capacity Flow rate/Pressure	l/min	35 … 80	
	bar	0.48 … 3.2	
Process volume min. liters	9.5		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 61 x 84.5 x 125		

PRESTO™ W85t

Order No.	**9 421 852.T**		
Model	**W85t**		
Working temperature range °C	-85 … +250		
Temperature stability °C	±0.05 … ±0.1		
Cooling capacity kW	**+200 °C** 2.8	**+20 °C** 2.5	**0 °C** 2.4
	-40 °C 2.4	**-60 °C** 2.2	**-80 °C** 0.4
Heating capacity kW	15		
Pump capacity Flow rate/Pressure	l/min	35 … 80	
	bar	0.48 … 3.2	
Process volume min. liters	9.5		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 61 x 84.5 x 125		

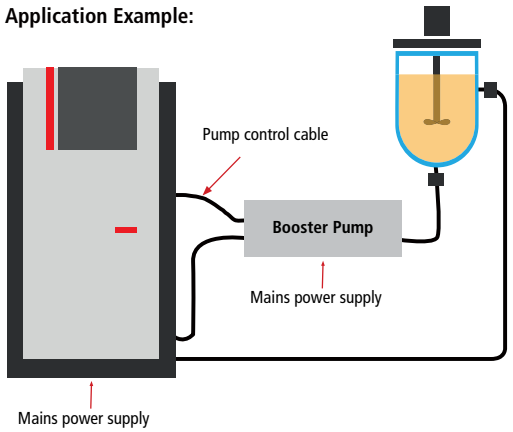
Booster Pump

The JULABO magnetically coupled Booster Pump is the ideal solution to increase the pressure or flow rate in your application. The Booster Pump is specifically designed to be easily connected between PRESTO units and your application.

The Mag Drive Booster Pump can increase your fluid pressure up to 2.1 bar. The stainless steel design of the pump provides excellent chemical resistivity. The magnetically coupled design guarantees 100 % leakage free operation over an extraordinary temperature range of -90 °C … +250 °C.

BOOST the PRESSURE
use the JULABO Booster Pump to increase pump pressure

Application Example:



PRESTO W91

For working temperatures from -91 °C to +250 °C

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

- Heating capacity up to 36 kW
- Cooling capacity up to 11 kW
- Pump pressure up to 5.5 bar, max. flow rate 80 l/min
- Temperature stability ±0.05 °C ... ±0.2 °C
- Built-in 5.7" industrial color touchscreen
- Ports for USB, Ethernet, RS232, Modbus
- Alarm output
- External Pt100 sensor connection
- Analog connections, RS485, Profibus DP (accessory)
- Second external Pt100 sensor connection (accessory)

BEST PUMP PERFORMANCE

All PRESTO units are equipped with powerful, magnetically coupled pumps (without seals and leak free). The W91 and W92 models can also be equipped with a gear pump. The instruments with gear pumps are indicated with an 'x'. The gear pumps provide a higher fluid pressure and a more constant flow rate than the centrifugal pumps, especially when high viscosity fluids are used.

PRESTO™ W91	
Order No.	**9 421 912**
Model	**W91**
Working temperature range °C	-91 … +250
Temperature stability °C	±0.05 … ±0.2
Cooling capacity kW	**+200 °C** 11 / **+20 °C** 11 / **0 °C** 11 **-40 °C** 10.5 / **-60 °C** 8 / **-80 °C** 2
Heating capacity kW	18
Pump capacity Flow rate/Pressure	l/min 26 … 80 bar 0.5 … 3.0
Process volume min. liters	28
Cooling type	2-stage, water cooled
Dimensions cm	W x L x H 95 x 127 x 190

PRESTO™ W91tt	
Order No.	**9 421 912.TT**
Model	**W91tt**
Working temperature range °C	-91 … +250
Temperature stability °C	±0.05 … ±0.2
Cooling capacity kW	**+200 °C** 11 / **+20 °C** 11 / **0 °C** 11 **-40 °C** 10.5 / **-60 °C** 8 / **-80 °C** 2
Heating capacity kW	36
Pump capacity Flow rate/Pressure	l/min 26 … 80 bar 0.5 … 3.0
Process volume min. liters	28
Cooling type	2-stage, water cooled
Dimensions cm	W x L x H 95 x 127 x 190

All data refers to the nominal voltage of 400 V, 3 Ph., 50 Hz and ambient temperature of +20 °C. Cooling capacity measured at max. pump stage. All pump data refers to a bath fluid with a specific density of 1 kg/dm³. Cooling capacity measured with Thermal HL (+200 °C) or Ethanol (except +200 °C)

Top performance for demanding temperature applications

TIP

JULABO PRESTO is synonymous with best performance in highly dynamic temperature control systems. In temperature ranges from -92 °C to +250 °C, PRESTO provides highest heating and cooling capacity paired with powerful and maintenance-free pumps. The PRESTO portfolio features a wide range of units for various applications.

PRESTO systems are ideal for reactor temperature control.

Various reactors can be connected to the PRESTO system using the available tubing. Such as the PRESTO A80. With a heating capacity of 1.8 kW, the PRESTO A80 can heat up a reactor with the thermal bath fluid in it from 0 °C to +50 °C in 1 hour and 30 minutes without overheating*.

* tested with the JULABO Thermal HL80 and 20 l reactor filled with 18 l JULABO Thermal HL40

More case studies can be found at http://case-studies.julabo.com.

PRESTO™ W91x	
Order No.	**9 421 913**
Model	**W91x**
Working temperature range °C	-91 … +250
Temperature stability °C	±0.05 … ±0.2
Cooling capacity kW	**+200 °C** 11 / **+20 °C** 11 / **0 °C** 11 / **-40 °C** 10.5 / **-60 °C** 8 / **-80 °C** 2
Heating capacity kW	18
Pump capacity Flow rate/Pressure	l/min 18 … 70 / bar 0.8 … 5.5
Process volume min. liters	28
Cooling type	2-stage, water cooled
Dimensions cm	W x L x H 95 x 127 x 190

PRESTO™ W91ttx	
Order No.	**9 421 913.TT**
Model	**W91ttx**
Working temperature range °C	-91 … +250
Temperature stability °C	±0.05 … ±0.2
Cooling capacity kW	**+200 °C** 11 / **+20 °C** 11 / **0 °C** 11 / **-40 °C** 10.5 / **-60 °C** 8 / **-80 °C** 2
Heating capacity kW	36
Pump capacity Flow rate/Pressure	l/min 18 … 70 / bar 0.8 … 5.5
Process volume min. liters	28
Cooling type	2-stage, water cooled
Dimensions cm	W x L x H 95 x 127 x 190

PRESTO W92

For working temperatures from -92 °C to +250 °C

Best cooling capacity and best heating capacity: PRESTO W92 are the most powerful systems offering the most modern temperature control technology. Environmental conditions can be simulated or vacuum chambers can be kept at defined temperatures (space conditions). The W92 systems always provide sufficient power.

- Heating capacity up to 36 kW
- Cooling capacity up to 31 kW
- Pump pressure up to 5.5 bar, max. flow rate 80 l/min
- Temperature stability ± 0.05 °C ... ±0.2 °C
- Built-in 5.7" industrial color touchscreen
- Ports for USB, Ethernet, RS232, Modbus
- Alarm output
- External Pt100 sensor connection
- Analog connections, RS485, Profibus DP (accessory)
- Second external Pt100 sensor connection (accessory)

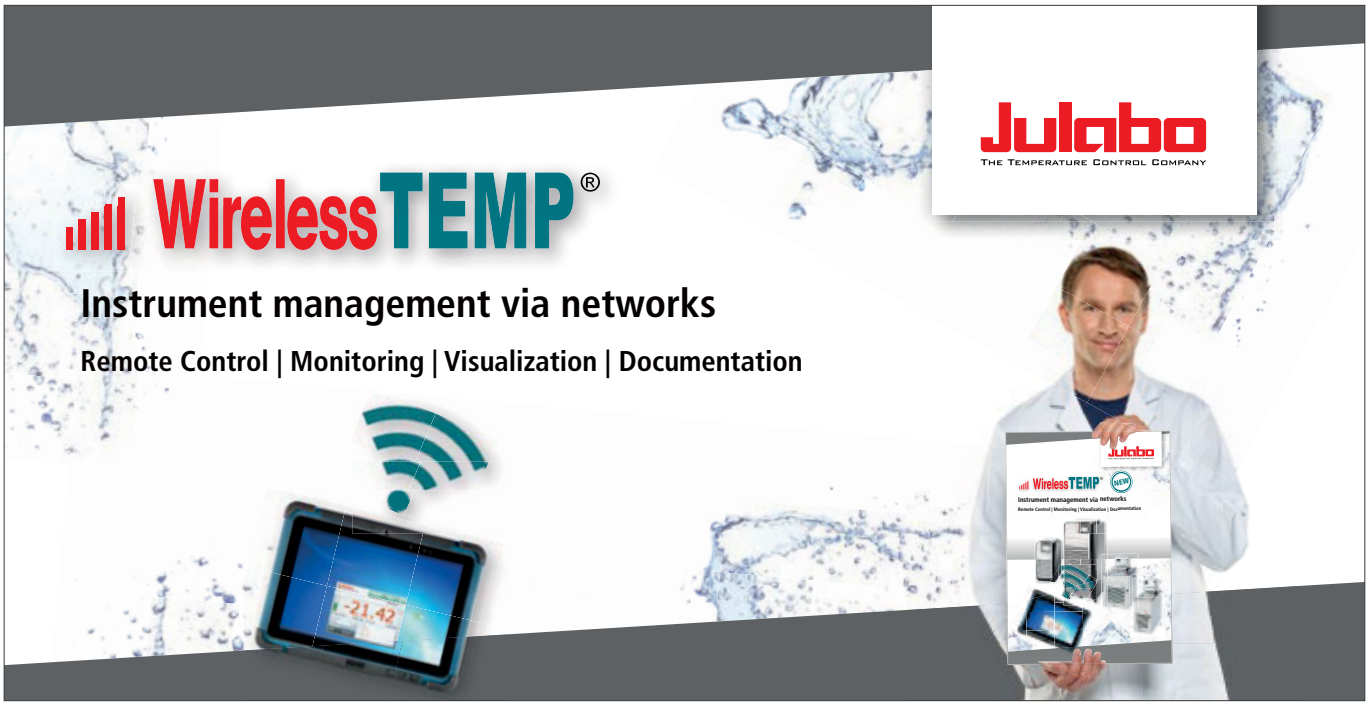
PRESTO™ W92

Order No.	**9 421 922**		
Model	**W92**		
Working temperature range °C	-92 … +250		
Temperature stability °C	±0.05 … ±0.2		
Cooling capacity kW	**+200 °C** 31	**+20 °C** 27	**0 °C** 20
	-40 °C 10.5	**-60 °C** 8	**-80 °C** 2
Heating capacity kW	18		
Pump capacity Flow rate/Pressure	l/min	26 … 80	
	bar	0.5 … 3.0	
Process volume min. liters	28		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 95 x 127 x 190		

PRESTO™ W92tt

Order No.	**9 421 922.TT**		
Model	**W92tt**		
Working temperature range °C	-92 … +250		
Temperature stability °C	±0.05 … ±0.2		
Cooling capacity kW	**+200 °C** 31	**+20 °C** 27	**0 °C** 20
	-40 °C 10.5	**-60 °C** 8	**-80 °C** 2
Heating capacity kW	36		
Pump capacity Flow rate/Pressure	l/min	26 … 80	
	bar	0.5 … 3.0	
Process volume min. liters	28		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 95 x 127 x 190		

All data refers to the nominal voltage of 400 V, 3 Ph., 50 Hz and ambient temperature of +20 °C. Cooling capacity measured at max. pump stage. All pump data refers to a bath fluid with a specific density of 1 kg/dm³. Cooling capacity measured with Thermal HL (+200 °C) or Ethanol (except +200 °C)



PRESTO™ W92x

Order No.	9 421 923		
Model	**W92x**		
Working temperature range °C	-92 … +250		
Temperature stability °C	±0.05 … ±0.2		
Cooling capacity kW	**+200 °C** 31	**+20 °C** 27	**0 °C** 20
	-40 °C 10.5	**-60 °C** 8	**-80 °C** 2
Heating capacity kW	18		
Pump capacity Flow rate/Pressure	l/min	18 … 70	
	bar	0.8 … 5.5	
Process volume min. liters	28		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 95 x 127 x 190		

PRESTO™ W92ttx

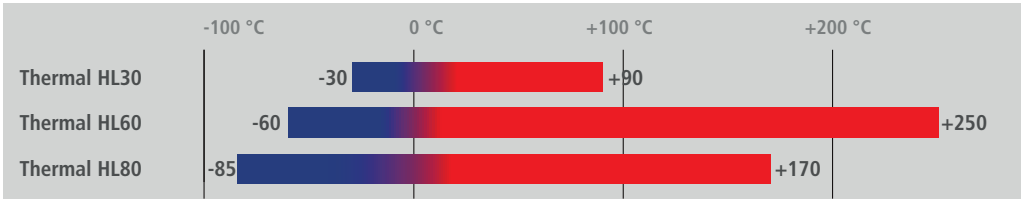
Order No.	9 421 923.TT		
Model	**W92ttx**		
Working temperature range °C	-92 … +250		
Temperature stability °C	±0.05 … ±0.2		
Cooling capacity kW	**+200 °C** 31	**+20 °C** 27	**0 °C** 20
	-40 °C 10.5	**-60 °C** 8	**-80 °C** 2
Heating capacity kW	36		
Pump capacity Flow rate/Pressure	l/min	18 … 70	
	bar	0.8 … 5.5	
Process volume min. liters	28		
Cooling type	2-stage, water cooled		
Dimensions cm	W x L x H 95 x 127 x 190		

JULABO Thermal bath fluids for the new PRESTO

Advantages

- Broad temperature ranges
- Low viscosity
- High stability
- Good thermal conductivity
- Almost odorless
- Low corrosiveness
- Low toxicity
- Long life

Working temperature range



Makes day-to-day work in labs easier
JULABO Thermal bath fluids
With practical drain port included.

Thermal HL30

Order No. 5 liters	**8 940 139**
Order No. 10 liters	**8 940 138**
Suitable for	A30, A40, W40, A45, A45t, W50, W50t
Working temperature range °C	-30 … +80
Flash point °C	not applicable
Fire point °C	not applicable
Viscosity, (kinematic at +20 °C) mm^2/s	4.07
Density (at +20 °C) g/cm^3	1.08
Pour point °C	-70
Boiling point °C	+108
Ignition temperature °C	+430
Color	light yellow

Thermal HL60

Order No. 5 liters	**8 940 141**
Order No. 10 liters	**8 940 140**
Suitable for	PRESTO
Working temperature range °C	-60 … +250
Flash point °C	+124
Fire point °C	+142
Viscosity, (kinematic at +20 °C) mm^2/s	5.66
Density (at +20 °C) g/cm^3	0.92
Pour point °C	-100
Boiling point °C	+288
Ignition temperature °C	+350
Color	clear

Thermal HL80

Order No. 5 liters	**8 940 121**
Order No. 10 liters	**8 940 120**
Suitable for	PRESTO
Working temperature range °C	-85 … +170
Flash point °C	>+63
Fire point °C	+112
Viscosity, (kinematic at +20 °C) mm^2/s	3.21
Density (at +20 °C) g/cm^3	0.89
Pour point °C	<-108
Boiling point °C	+230
Ignition temperature °C	+335
Color	clear

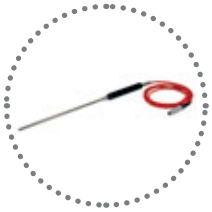
JULABO Thermal bath fluids based on silicone …
… are chemically inert substances which do not affect metals like iron, copper, zinc, aluminum, chrome or nickel. Compared to other fluids, JULABO Thermal fluids have an extraordinarily high dielectric strength. When properly stored, the fluids will last for 12 months and longer as they are not susceptible to climatic influences.

JULABO Thermal bath fluids based on water-glycol …
… (monoethyleneglycol with anti-corrosion additives) have excellent thermal characteristics and a low viscosity. In addition, they provide anti-freeze protection, i.e. they can be applied at temperatures below the freezing point of water.

More information on JULABO Thermal bath fluids …
… in our brochure ‚Thermal Bath Fluids' at www.julabo.com.

COST EFFICIENT: LESS THERMAL BATH FLUID

PRESTO instruments need less thermal bath fluid. Compared to conventional bath circulators, PRESTO uses less active heat exchanger volume. The hot or cold fluid does not come in contact with the surrounding air so a larger temperature range can be covered with only one thermal bath fluid.



External Pt100 sensors

Order No.	Description	Suitable for
8 981 003	200 x 6 mm dia., stainless steel, 1.5 m cable	PRESTO
8 981 006	20 x 2 mm dia., stainless steel, 1.5 m cable	PRESTO
8 981 010	300 x 6 mm dia., stainless steel, 1.5 m cable	PRESTO
8 981 017	200 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	PRESTO
8 981 015	300 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	PRESTO
8 981 013	600 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	PRESTO
8 981 016	900 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	PRESTO
8 981 014	1200 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	PRESTO
8 981 021	M+R in-line Pt100 sensor, 2 fittings M24x1.5 male, 1.5 m cable	PRESTO
8 981 022	M+R in-line Pt100 sensor, 2 fittings M30x1.5 male, 1.5 m cable	PRESTO
8 981 023	M+R in-line Pt100 sensor, 2 fittings M38x1.5 male, 1.5 m cable	PRESTO
8 981 103	Extension cable 3.5 m for Pt100 sensor	PRESTO
8 900 106	Module with Pt100 connection socket for second external Pt100 sensor	PRESTO (except A30)

Metal tubing flexible, triple insulated, -100 °C to +350 °C

Order No.	Description	Suitable for
8 930 261	1.0 m Metal tubing, 2 fittings M24x1.5 female	PRESTO
8 930 262	1.5 m Metal tubing, 2 fittings M24x1.5 female	PRESTO
8 930 263	2.0 m Metal tubing, 2 fittings M24x1.5 female	PRESTO
8 930 264	3.0 m Metal tubing, 2 fittings M24x1.5 female	PRESTO
8 930 271	1.0 m Metal tubing, 2 fittings M30x1.5 female	PRESTO
8 930 272	1.5 m Metal tubing, 2 fittings M30x1.5 female	PRESTO
8 930 273	2.0 m Metal tubing, 2 fittings M30x1.5 female	PRESTO
8 930 274	3.0 m Metal tubing, 2 fittings M30x1.5 female	PRESTO
8 930 275	5.0 m Metal tubing, 2 fittings M30x1.5 female	PRESTO
8 930 282	1.5 m Metal tubing, 2 fittings M38x1.5 female	PRESTO
8 930 283	2.0 m Metal tubing, 2 fittings M38x1.5 female	PRESTO
8 930 284	3.0 m Metal tubing, 2 fittings M38x1.5 female	PRESTO
8 930 285	5.0 m Metal tubing, 2 fittings M38x1.5 female	PRESTO

PTFE tubing -60 °C to +180 °C

Order No.	Description	Suitable for
8 930 140	1 m PTFE Tubing, 8 mm inner dia.	PRESTO
8 930 142	1 m PTFE Tubing, 12 mm inner dia.	PRESTO

Interfaces / Software & Hardware

Order No.	Description	Suitable for
8 900 105	Electronic module with analog connectors (Input, Output, Standby-In)	PRESTO
8 900 020	Profibus DP Interface	PRESTO
8 900 024	RS485 Interface	PRESTO
8 980 771	Pressure sensor, 2 fittings M24x1.5 male (-95 ... +250 °C)	PRESTO
8 980 772	Pressure sensor, 2 fittings M30x1.5 male (-95 ... +250 °C)	PRESTO
8 980 773	Pressure sensor, 2 fittings M38x1.5 male (-95 ... +250 °C)	PRESTO
8 970 815	Sight glass, -100…+280 °C, PN16/Class 230, 2 fittings M30x1.5 male	PRESTO
8 901 102	EasyTEMP Software (free of charge at www.julabo.com)	PRESTO
8 901 105	EasyTEMP Professional Software, incl. USB-Dongle	PRESTO
9 900 112	USB 2.0 Repeater extension cable, length 5 m	PRESTO
9 900 114	USB 2.0 Repeater extension cable, length 10 m	PRESTO

Booster Pump

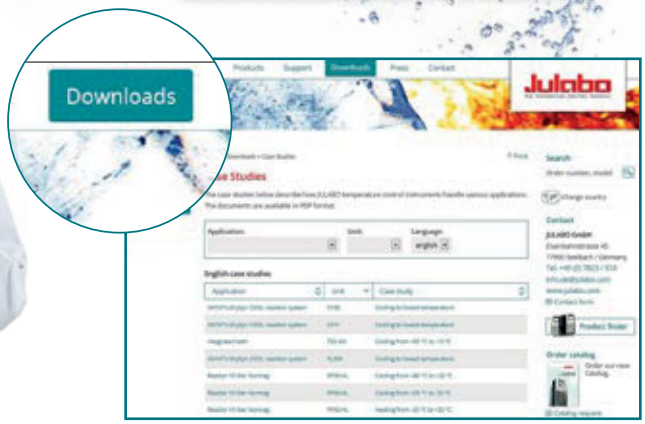
Order No.	Description	Suitable for
8 810 020	Booster Pump (magnetically coupled), 2.1 bar (M30 x 1.5 male)	PRESTO

Julabo
THE TEMPERATURE CONTROL COMPANY

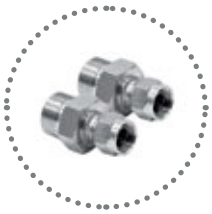
Case Studies

JULABO equipment has to run through a unique quality process. To proof this outstanding performance our products are being tested in real-life environment within everyday test scenarios.

Within our case studies you can find a lot of information about test setups and visualized results. Take our experience to optimize your setups and learn how to achieve the best results with your JULABO equipment.



New Casestudies at http://case-studies.julabo.com



Adapters / Valves / Connectors, etc.

Order No.	Description	Suitable for
8 890 110	Adapter M24x1.5 male to M24x1.5 male	PRESTO
8 890 111	Adapter M30x1.5 male to M30x1.5 male	PRESTO
8 890 112	Adapter M38x1.5 male to M38x1.5 male	PRESTO
8 890 120	2 Elbow fittings 90°, M24x1.5 female/male	PRESTO
8 890 121	2 Elbow fittings 90°, M30x1.5 female/male	PRESTO
8 890 122	2 Elbow fittings 90°, M38x1.5 female/male	PRESTO
8 890 034	2 Adapters M30x1.5 female to M16x1 male, stainless steel	PRESTO
8 890 035	2 Adapters M30x1.5 male to M16x1 male, stainless steel	PRESTO
8 890 052	2 Adapters M24x1.5 female to M16x1 male	PRESTO
8 890 053	2 Adapters M24x1.5 female to NPT 1/4" female	PRESTO
8 890 054	2 Adapters M24x1.5 female to NPT 3/8" female	PRESTO
8 890 055	2 Adapters M24x1.5 female to NPT 1/2" female	PRESTO
8 890 056	2 Adapters M24x1.5 female to NPT 3/4" female	PRESTO
8 890 057	2 Adapters M24x1.5 female to NPT 1" female	PRESTO
8 890 058	2 Adapters M24x1.5 female to NPT 1/4" male	PRESTO
8 890 059	2 Adapters M24x1.5 female to NPT 3/8" male	PRESTO
8 890 060	2 Adapters M24x1.5 female to NPT 1/2" male	PRESTO
8 890 061	2 Adapters M24x1.5 female to NPT 3/4" male	PRESTO
8 890 062	2 Adapters M24x1.5 female to NPT 1" male	PRESTO
8 890 063	2 Adapters M24x1.5 female to tube 1/4"	PRESTO
8 890 064	2 Adapters M24x1.5 female to tube 3/8"	PRESTO
8 890 065	2 Adapters M24x1.5 female to tube 1/2"	PRESTO
8 890 066	2 Adapters M24x1.5 female to tube 1"	PRESTO
8 890 067	2 Adapters M24x1.5 female/M24x1.5 female	PRESTO
8 890 068	2 Adapters M24x1.5 female/M30x1.5 male	PRESTO
8 890 069	2 Adapters M24x1.5 male/M30x1.5 female	PRESTO
8 890 070	2 Adapters M24x1.5 female/M30x1.5 female	PRESTO
8 890 071	2 Adapters M24x1.5 male/M16x1 female	PRESTO
8 890 072	2 Adapters M24x1.5 male to barbed fitting 12 mm	PRESTO
8 890 080	2 Adapters M30x1.5 female/M38x1.5 male	PRESTO
8 890 081	2 Adapters M30x1.5 male/M38x1.5 female	PRESTO
8 890 082	2 Adapters M30x1.5 female/M38x1.5 female	PRESTO
8 890 083	2 Adapters M30x1.5 female to NPT 3/4" male	PRESTO
8 890 084	2 Adapters M30x1.5 female to NPT 3/4" female	PRESTO
8 890 085	2 Adapters M30x1.5 female to NPT 1" male	PRESTO
8 890 086	2 Adapters M30x1.5 female to NPT 1" female	PRESTO

Adapters / Valves / Connectors, etc.

Order No.	Description	Suitable for
8 890 087	2 Adapters M30x1.5 female to tube 1"	PRESTO
8 890 088	2 Adapters M30x1.5 female/M30x1.5 female	PRESTO
8 890 089	2 Adapters M38x1.5 female/M38x1.5 female	PRESTO
8 890 100	2 Adapters M38x1.5 female to NPT 1" male	PRESTO
8 890 101	2 Adapters M38x1.5 female to NPT 1" female	PRESTO
8 890 102	2 Adapters M38x1.5 female to NPT 1 1/4" male	PRESTO
8 890 103	2 Adapters M38x1.5 female to NPT 1 1/4" female	PRESTO
8 890 104	2 Adapters M38x1.5 female to tube 1"	PRESTO
8 890 130	Twin distributing adapter M24x1.5, isolated, 1x M24x1.5 female to 2x M24x1.5 male	PRESTO
8 890 131	Quad distributing adapter M24x1.5, isolated, 1x M24x1.5 female to 4x M24x1.5 male	PRESTO
8 890 132	Twin distributing adapter M30x1.5, isolated, 1x M30x1.5 female to 2x M30x1.5 male	PRESTO
8 890 133	Quad distributing adapter M30x1.5, isolated, 1x M30x1.5 female to 4x M30x1.5 male	PRESTO
8 890 134	Twin distributing adapter M38x1.5, isolated, 1x M38x1.5 female to 2x M38x1.5 male	PRESTO
8 890 135	Quad distributing adapter M38x1.5, isolated, 1x M38x1.5 female to 4x M38x1.5 male	PRESTO
8 890 140	Twin distributing adapter M24x1.5, 1x M24x1.5 female to 2x M24x1.5 male	PRESTO
8 890 141	Quad distributing adapter M24x1.5, 1x M24x1.5 female to 4x M24x1.5 male	PRESTO
8 890 142	Twin distributing adapter M30x1.5, 1x M30x1.5 female to 2x M30x1.5 male	PRESTO
8 890 143	Quad distributing adapter M30x1.5, 1x M30x1.5 female to 4x M30x1.5 male	PRESTO
8 890 144	Twin distributing adapter M38x1.5, 1x M38x1.5 female to 2x M38x1.5 male	PRESTO
8 890 145	Quad distributing adapter M38x1.5, 1x M38x1.5 female to 4x M38x1.5 male	PRESTO
8 970 495	2 Collar nuts M24x1.5	PRESTO
8 970 496	2 Collar nuts M30x1.5	PRESTO
8 970 497	2 Collar nuts M38x1.5	PRESTO
8 970 850	Shut-off valve M16x1 female/male, -60 °C ... +200 °C	PRESTO
8 970 851	Shut-off valve M24x1.5 female/male, -60 °C ... +200 °C	PRESTO
8 970 852	Shut-off valve M30x1.5 female/male, -60 °C ... +200 °C	PRESTO
8 970 853	Shut-off valve M38x1.5 female/male, -60 °C ... +200 °C	PRESTO

External expansion vessels

Order No.	Description	Suitable for
8 970 832	External expansion vessel, 3 liters	A30, A40, W40
8 970 833	External expansion vessel, 3 liters	A45, A45t, W50, W50t, A80, A80t, W80, W80t, A85, A85t, W85, W85t

Filter mats

Order No.	Description	Suitable for
8 970 920	Filter mat	A30
8 970 921	Filter mat	A40
8 970 922	Filter mat	A80
8 970 923	Filter mat	A45
8 970 924	Filter mat	A85

Cooling water connection

Order No.	Description	Suitable for
8 930 312	1 m Reinforced tubing (pressure proof) ½" inner dia.	W40, W80
8 970 482	2 Tube clamps	W40, W80
8 920 000	Particle filter for cooling water circuit	W40, W50, W50t, W80, W80t, W85, W85t, W91 and W92 Models
8 930 331	1.5 m Flexible braided tubing G 3/4" (-30 … +100 °C) with 2 straight fittings with cap nut for cooling water connection	Water-cooled units
8 930 332	2 m Flexible braided tubing G 3/4" (-30 … +100 °C) with 2 straight fittings with cap nut for cooling water connection	Water-cooled units
8 930 341	1.5 m Flexible braided tubing G 3/4" (-30 … +100 °C) 1 straight fitting / 1 elbow fitting 90°, both with cap nut for cooling water connection	Water-cooled units
8 930 342	2 m Flexible braided tubing G 3/4" (-30 … +100 °C) 1 straight fitting / 1 elbow fitting 90°, both with cap nut for cooling water connection	Water-cooled units

Connection plugs

Order No.	Description	Suitable for
8 980 131	External Pt100 connector	PRESTO
8 980 133	Standby connector 3 pin	PRESTO with electronic module 8 900 105
8 980 135	Alarm connector 5 pin	PRESTO
8 980 136	REG+EPROG connector 6 pin	PRESTO with electronic module 8 900 105

Installation with training

JULABO manages the installation of your PRESTO systems and performs the training of professional staff on site. Depending on the system one, two, or three days are required.

Order No.	Description	Suitable for
2 320 101	Installation with training, 1 day	A30, A40, W40
2 320 102	Installation with training, 2 days	A45, W50, A80, W80, A85, W85
2 320 103	Installation with training, 3 days	W91, W92

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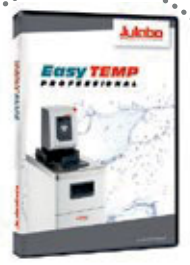
Original **Accessories**



Optimize your application and process by using original JULABO accessories.

Check out all the accessories within this catalog or at www.julabo.com to enhance the performance of your JULABO PRESTO.

Information on all Accessories www. julabo.com

FORTE HT

HIGH TEMPERATURES AND A HIGH

FORTE HT – for extremely high temperatures

High temperature circulators of the FORTE HT series are designed for temperature control in closed external systems. These compact units have a closed design that prevents the escape of oil vapors especially at high temperatures.

- High heating capacity for short heat-up times
- High pump capacity
- Small filling volume
- Cooling water connection for cold oil overlay
- Wide working temperature range without fluid change
- Extended lifetime of the fluid
- Easy to integrate into installations due to the modular concept (separation of circulator and operating panel)
- External Pt100 sensor connection
- Various interfaces

SAFETY LEVEL

FORTE HT with cooling unit

The FORTE HT models with C.U. Cooling unit are suitable for temperature control tasks from +40 °C and above. Running tap water through the cooling unit permits rapid cool-down across the entire temperature range. As a result, exothermic reactions can be immediately compensated, especially at high temperatures.

Additional benefits of models with C.U. cooling unit:

- Controlled cooling water supply for temperature applications from +40 °C
- High cooling capacity up to 15 kW (at +20 °C cooling water and +300 °C oil temperature)
- Rapid cooling
- Rapid temperature control i.e. of exothermic reactions

FORTE HT

For working temperatures from +70 °C to +400 °C

High temperature circulators of the FORTE HT series are designed for temperature control in closed external systems. These compact units have a closed design that prevents the escape of oil vapors especially at high temperatures.

- High heating capacity for short heat-up times
- High pump capacity
- Small filling volume
- Cooling water connection for cold oil overlay
- Wide working temperature range without fluid change
- Extended lifetime of the fluid
- Easy to integrate into installations due to the modular concept (separation of circulator and operating panel)
- External Pt100 sensor connection
- Various interfaces
- Reduction of pump pressure via bypass (accessory)

Connections Control unit

① RS232/RS485
② Analog input
③ Standby input
④ Alarm output
⑤ Connector for control cable to HT Circulator

SAFE EVEN AT HIGH TEMPERATURES

FORTE HT high temperature circulators have a closed design that prevents the escape of oil vapors even at high temperatures.

FORTE HT30-M1

Order No.	9 800 031	
Model	**HT30-M1**	
Working temperature range °C	+70 … +400	
Temperature stability °C	±0.01 … ±0.1	
Cooling capacity kW, max. (Water +20 °C)	-	
Heating capacity kW	3	
Pump capacity Flow Rate/Pressure	l/min	14 … 18
	bar	0.8 … 1.2
Filling volume min. liters	2	
Power requirement V/Hz	230 / 50 or 230 / 60	
Dimensions Circulator cm	W x L x H 23 x 23 x 58	
Dimensions Control unit cm	W x L x H 25 x 25 x 18	

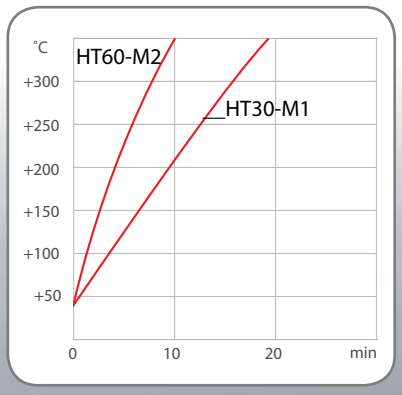
FORTE HT60-M2

Order No.	9 800 062	
Model	**HT60-M2**	
Working temperature range °C	+70 … +400	
Temperature stability °C	±0.01 … ±0.1	
Cooling capacity kW, max. (Water +20 °C)	-	
Heating capacity kW	7	
Pump capacity Flow Rate/Pressure	l/min	14 … 18
	bar	0.8 … 1.2
Filling volume min. liters	2	
Power requirement V/Hz	3 x 400 / 50	
Dimensions Circulator cm	W x L x H 23 x 23 x 58	
Dimensions Control unit cm	W x L x H 25 x 25 x 18	

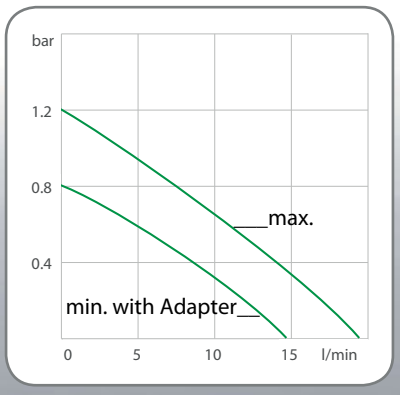
FORTE HT60-M3

Order No.	9 800 063	
Model	**HT60-M3**	
Working temperature range °C	+70 … +400	
Temperature stability °C	±0.01 … ±0.1	
Cooling capacity kW, max. (Water +20 °C)	-	
Heating capacity kW	6	
Pump capacity Flow Rate/Pressure	l/min	14 … 18
	bar	0.8 … 1.2
Filling volume min. liters	2	
Power requirement V/Hz	3 x 208 / 60	
Dimensions Circulator cm	W x L x H 23 x 23 x 58	
Dimensions Control unit cm	W x L x H 25 x 25 x 18	

Heat-up time
Bath fluid: Thermal H350



Pump capacity
Bath fluid: Thermal H350



FORTE HT with cooling unit

For working temperatures from +40 °C to +400 °C.

The FORTE HT models with C.U. Cooling unit are suitable for temperature control tasks at +40 °C and above. Running tap water through the cooling unit permits rapid cool-down across the entire temperature range. As a result, exothermic reactions can be immediately compensated, especially at high temperatures.

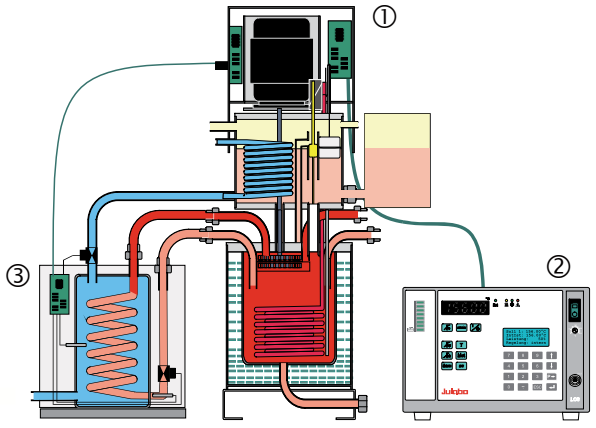
Additional benefits of models with C.U. cooling unit:

- Controlled cooling water supply for temperature applications from +40 °C
- High cooling capacity up to 15 kW
  (at +20 °C cooling water and +300 °C oil temperature)
- Rapid cooling
- Rapid temperature control i. e. of exothermic reactions

FORTE HT with cooling unit

FORTE HT high temperature circulators are designed for applications that require very high temperatures, as high as +400 °C. The closed design of FORTE HT avoids oil vapor contamination even at high temperatures. These units have automated heat-up, filling, and degassing features.

The figure shows the major components of high temperature circulators, with complete separation of circulator ①, control electronics ②, and C.U. cooling unit ③.



FORTE HT30-M1-C.U.

Order No.	**9 800 035**	
Model	**HT30-M1-C.U.**	
Working temperature range °C	+40 … +400	
Temperature stability °C	±0.01 … ±0.1	
Cooling capacity kW, max. (Water +20 °C)	15	
Heating capacity kW	3	
Pump capacity Flow Rate/Pressure	l/min	14 … 18
	bar	0.8 … 1.2
Filling volume min. liters	2	
Power requirement V/Hz	230 / 50 or 230 / 60	
Dimensions Circulator cm	W x L x H 43 x 23 x 58	
Dimensions Control unit cm	W x L x H 25 x 25 x 18	

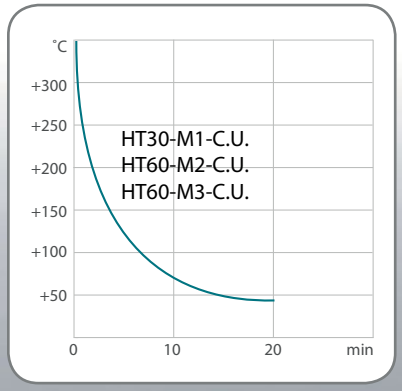
FORTE HT60-M2-C.U.

Order No.	**9 800 065**	
Model	**HT60-M2-C.U.**	
Working temperature range °C	+40 … +400	
Temperature stability °C	±0.01 … ±0.1	
Cooling capacity kW, max. (Water +20 °C)	15	
Heating capacity kW	7	
Pump capacity Flow Rate/Pressure	l/min	14 … 18
	bar	0.8 … 1.2
Filling volume min. liters	2	
Power requirement V/Hz	3 x 400 / 50	
Dimensions Circulator cm	W x L x H 43 x 23 x 58	
Dimensions Control unit cm	W x L x H 25 x 25 x 18	

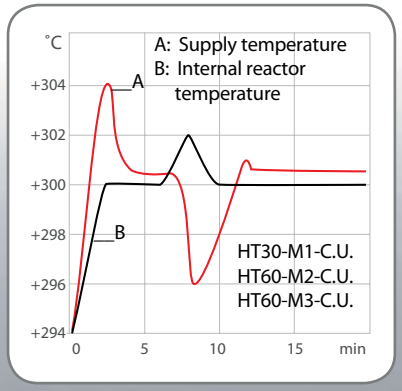
FORTE HT60-M3-C.U.

Order No.	**9 800 066**	
Model	**HT60-M3-C.U.**	
Working temperature range °C	+40 … +400	
Temperature stability °C	±0.01 … ±0.1	
Cooling capacity kW, max. (Water +20 °C)	15	
Heating capacity kW	6	
Pump capacity Flow Rate/Pressure	l/min	14 … 18
	bar	0.8 … 1.2
Filling volume min. liters	2	
Power requirement V/Hz	3 x 208 / 60	
Dimensions Circulator cm	W x L x H 43 x 23 x 58	
Dimensions Control unit cm	W x L x H 25 x 25 x 18	

Cool-down time
Bath fluid: Thermal H350



Reaction compensation
5 liter reactor | Bath fluid: Thermal H350



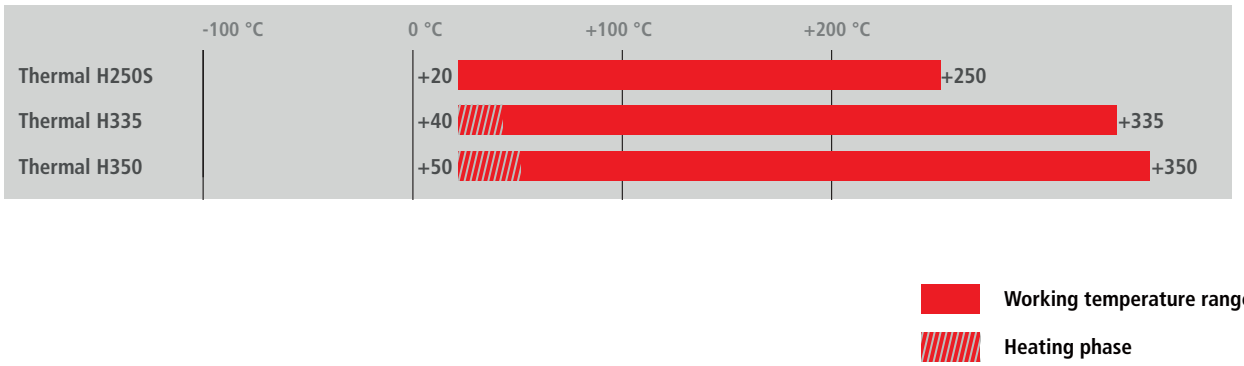
JULABO Thermal bath fluids

JULABO Thermal bath fluids are carefully selected and long-term tested. They are perfectly suited for temperature control tasks in temperature control systems and guarantee safe and reliable operation. Choosing the right thermal bath fluid is very important for achieving optimal temperature control results. The viscosity, oxidation behavior and thermal conductivity of our thermal bath fluids are designed especially for use with JULABO temperature control instruments.

Advantages

- Broad temperature ranges
- Low viscosity
- High stability
- Good thermal conductivity
- Almost odorless
- Low corrosiveness
- Low toxicity
- Long life

Working temperature range



JULABO Thermal bath fluids based on silicone …
… are chemically inert substances which do not affect metals like iron, copper, zinc, aluminum, chrome or nickel. Compared to other fluids, JULABO Thermal fluids have an extraordinarily high dielectric strength. When properly stored, the fluids will last for 12 months and longer as they are not susceptible to climatic influences.

JULABO Thermal bath fluids based on water-glycol …
… (monoethyleneglycol with anti-corrosion additives) have excellent thermal characteristics and a low viscosity. In addition, they provide anti-freeze protection, i.e. they can be applied at temperatures below the freezing point of water.

More information on JULABO Thermal bath fluids …
… in our brochure ‚Thermal Bath Fluids' at www.julabo.com.

Thermal H250S

Order No. 5 liters	**8 940 133**
Order No. 10 liters	**8 940 132**
Suitable for	FORTE HT
Working temperature range °C	+20 … +250
Flash point °C	+230
Fire point °C	+264
Viscosity, (kinematic at +20 °C) mm^2/s	22.3
Density (at +20 °C) g/cm^3	0.95
Pour point °C	-70
Boiling point °C	+424
Ignition temperature °C	+385
Color	light brown

Thermal H335

Order No. 5 liters	**8 940 131**
Order No. 10 liters	**8 940 130**
Suitable for	FORTE HT
Working temperature range °C	+40 … +335
Flash point °C	+184
Fire point °C	+190
Viscosity, (kinematic at +20 °C) mm^2/s	131
Density (at +20 °C) g/cm^3	1.01
Pour point °C	-32
Boiling point °C	+340
Ignition temperature °C	+373
Color	light yellow

Thermal H350

Order No. 5 liters	**8 940 111**
Order No. 10 liters	**--**
Suitable for	FORTE HT
Working temperature range °C	+50 …+350
Flash point °C	+200
Fire point °C	+235
Viscosity, (kinematic at +20 °C) mm^2/s	48.3
Density (at +20 °C) g/cm^3	1.04
Pour point °C	-34
Boiling point °C	+371
Ignition temperature °C	+450
Color	clear

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Download our new brochure at

www.julabo.com

External Pt100 sensors

Order No.	Description	Suitable for
8 981 003	200 x 6 mm dia., stainless steel, 1.5 m cable	FORTE HT
8 981 006	20 x 2 mm dia., stainless steel, 1.5 m cable	FORTE HT
8 981 010	300 x 6 mm dia., stainless steel, 1.5 m cable	FORTE HT
8 981 017	200 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	FORTE HT
8 981 015	300 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	FORTE HT
8 981 013	600 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	FORTE HT
8 981 016	900 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	FORTE HT
8 981 014	1200 x 6 mm dia., stainless steel/PTFE coated, 3.0 m cable	FORTE HT
8 981 020	M+R in-line Pt100 sensor, 2 fittings M16x1 male	FORTE HT
8 981 103	Extension cable 3.5 m for Pt100 sensor	FORTE HT

Accessories for FORTE HT

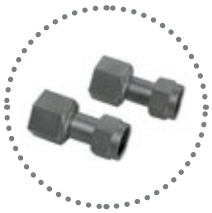
Order No.	Description	Suitable for
9 790 100	C.U. cooling unit	FORTE HT
8 970 802	Adapter for pump pressure reduction (0.8 bar)	FORTE HT
8 970 811	Level indicator (with sight glass)	FORTE HT
8 970 435	Handle for stand rod attachment	FORTE HT
8 970 801	Expansion vessel (1 liter)	FORTE HT
8 980 125	Extension cable 5 m (control electronics for HT circulator)	FORTE HT
8 980 704	Solenoid valve for cooling water with 2 m tubing 8 mm inner dia.	FORTE HT (without C.U. cooling unit)

Metal tubing

Order No.	Description	Suitable for
Metal tubing flexible, triple insulated, -100 °C to +350 °C		
8 930 209	0.5 m Metal tubing, 2 fittings M16x1 female	FORTE HT
8 930 210	1.0 m Metal tubing, 2 fittings M16x1 female	FORTE HT
8 930 211	1.5 m Metal tubing, 2 fittings M16x1 female	FORTE HT
8 930 214	3.0 m Metal tubing, 2 fittings M16x1 female	FORTE HT
Metal tubing flexible, insulated, -50 °C to +200 °C		
8 930 220	0.5 m Metal tubing, 2 fittings M16x1 female	FORTE HT
8 930 221	1.0 m Metal tubing, 2 fittings M16x1 female	FORTE HT
8 930 222	1.5 m Metal tubing, 2 fittings M16x1 female	FORTE HT
8 930 223	3.0 m Metal tubing, 2 fittings M16x1 female	FORTE HT

Accessories for connecting metal tubing

8 970 443	Adapter M16x1 male to M16x1 male	FORTE HT



Adapters / Valves / Connectors, etc.

Order No.	Description	Suitable for
8 970 457	Shut-off valve for loop circuit (-30 °C ... +200 °C), M16x1	FORTE HT
8 970 490	2 Collar nuts M16x1 female	FORTE HT
8 970 442	2 Elbow fittings 90°, M16x1 female/male, side length 2x54 mm	FORTE HT
8 970 448	2 Elbow fittings 90°, M16x1 female/male, side length 2 x 54 mm / 2 x 120 mm	FORTE HT
8 890 004	2 Adapters M16x1 female to NPT 1/4" male	FORTE HT
8 890 005	2 Adapters M16x1 female to NPT 1/4" female	FORTE HT
8 890 006	2 Adapters M16x1 female to NPT 3/8" male	FORTE HT
8 890 007	2 Adapters M16x1 female to NPT 3/8" female	FORTE HT
8 890 008	2 Adapters M16x1 female to NPT 1/2" male	FORTE HT
8 890 009	2 Adapters M16x1 female to NPT 1/2" female	FORTE HT
8 890 010	2 Adapters M16x1 male to NPT 1/4" female	FORTE HT
8 891 008	1 Adapter M16x1 male to BSP 1/2" female	FORTE HT
8 891 009	1 Adapter M16x1 male to BSP 3/4" female	FORTE HT
8 890 011	2 Adapters M16x1 female to tube 1/4" male	FORTE HT
8 890 012	2 Adapters M16x1 female to tube 3/8" male	FORTE HT
8 890 013	2 Adapters M16x1 female to tube 1/2" male	FORTE HT
8 890 024	2 Adapters M16x1 female to M16x1 female	FORTE HT

Connection plugs

Order No.	Description	Suitable for
8 980 131	External Pt100 connector	FORTE HT
8 980 133	Standby connector 3 pin	FORTE HT
8 980 135	Alarm connector 5 pin	FORTE HT
8 980 136	REG+EPROG connector 6 pin	FORTE HT

PRESTO Highly Dynamic Temperature Control Systems | Process Circulators

Model	Order No.	Working temperature range °C	Display / display resolution	Temp. control	Temperature stabillity °C	Heating capacity kW	Cooling of refrigeration unit	Cooling capacity kW (Medium: JULABO Thermal | Ethanol) in °C					
								+200	+20	0	-20	-30	-40
A30	9 420 300	-30 ... +250	5.7" TFT /±0.01°C	ICC	±0.01 ... ±0.05	2.7	1-st. Air	0.5	0.5	0.4	0.2	0.05	-
A40	9 420 401	-40 ... +250	5.7" TFT /±0.01°C	ICC	±0.01 ... ±0.05	2.7	1-st. Air	1.2	1.2	0.9	0.6	0.3	0.1
W40	9 421 401	-40 ... +250	5.7" TFT /±0.01°C	ICC	±0.01 ... ±0.05	2.7	1-st. Water	1.2	1.2	1.0	0.55	0.3	0.07
A45	9 420 452	-45 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	6	1-st. Air	3.4	3.5	3.3	1.8	1.0	0.3
A45t	9 420 452.T	-45 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	12	1-st. Air	3.4	3.5	3.3	1.8	1.0	0.3
W50	9 421 502	-50 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	6	1-st. Water	7.0	7.5	6.5	3.0	1.8	0.6
W50t	9 421 502.T	-50 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	12	1-st. Water	7.0	7.5	6.5	3.0	1.8	0.6
A80	9 420 801	-80 ... +250	5.7" TFT /±0.01°C	ICC	±0.01 ... ±0.05	1.8	2-st. Air	1.2	1.2	1.2	1.1	1.1	1.1
A80t	9 420 801.T	-80 ... +250	5.7" TFT /±0.01°C	ICC	±0.01 ... ±0.05	3.4	2-st. Air	1.2	1.2	1.2	1.1	1.1	1.1
W80	9 421 801	-80 ... +250	5.7" TFT /±0.01°C	ICC	±0.01 ... ±0.05	1.8	2-st. Water	1.2	1.2	1.2	1.1	1.1	1.1
W80t	9 421 801.T	-80 ... +250	5.7" TFT /±0.01°C	ICC	±0.01 ... ±0.05	3.4	2-st. Water	1.2	1.2	1.2	1.1	1.1	1.1
A85	9 420 852	-85 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	6	2-st. Air	2.8	2.5	2.4	2.4	2.4	2.4
A85t	9 420 852.T	-85 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	15	2-st. Air	2.8	2.5	2.4	2.4	2.4	2.4
W85	9 421 852	-85 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	6	2-st. Water	2.8	2.5	2.4	2.4	2.4	2.4
W85t	9 421 852.T	-85 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.1	15	2-st. Water	2.8	2.5	2.4	2.4	2.4	2.4
W91	9 421 912	-91 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	18	2-st. Water	11	11	11	11	10.5	10.5
W91tt	9 421 912.TT	-91 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	36	2-st. Water	11	11	11	11	10.5	10.5
W91x	9 421 913	-91 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	18	2-st. Water	11	11	11	11	10.5	10.5
W91ttx	9 421 913.TT	-91 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	36	2-st. Water	11	11	11	11	10.5	10.5
W92	9 421 922	-92 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	18	2-st. Water	31	27	20	11	10.5	10.5
W92tt	9 421 922.TT	-92 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	36	2-st. Water	31	27	20	11	10.5	10.5
W92x	9 421 923	-92 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	18	2-st. Water	31	27	20	11	10.5	10.5
W92ttx	9 421 923.TT	-92 ... +250	5.7" TFT /±0.01°C	ICC	±0.05 ... ±0.2	36	2-st. Water	31	27	20	11	10.5	10.5

FORTE HT High Temperature Circulators

Model	Order No.	Working temperature range °C	Setting / display resolution °C	Temperature control	Temperature stability external °C	Heating capacity kW
HT30-M1	9 800 031	+70 ... +400	0.01	ICC	±0.01 ... ±0.1	3
HT60-M2	9 800 062	+70 ... +400	0.01	ICC	±0.01 ... ±0.1	7
HT60-M3	9 800 063	+70 ... +400	0.01	ICC	±0.01 ... ±0.1	6
HT30-M1-C.U.	9 800 035	+40 ... +400	0.01	ICC	±0.01 ... ±0.1	3
HT60-M2-C.U.	9 800 065	+40 ... +400	0.01	ICC	±0.01 ... ±0.1	7
HT60-M3-C.U.	9 800 066	+40 ... +400	0.01	ICC	±0.01 ... ±0.1	6

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-60	-80	Pump Type ⚙ Gear ◔ Centrifugal	Pump Pressure bar	Pump Flow rate l/min	Pump connections male	Viscosity max. cSt.	Process volume min. (active heat exchanger volume) liters	Internal usable expansion volume liters	Classification acc. to DIN 12876-1	Power requirement V / Hz / A	Cooling water connection w. barbed fitting for tubing ½" ID Inch	Noise level (distance 1 m) dbA	Cooling water consumption l/min
-	-	◔	0.5	25	M24x1.5	50	2.4 (1.4)	1.5	III (FL)	230/50/15	-	54	-
-	-	◔	0.3 ... 1.7	16 ... 40	M24x1.5	50	3.5 (1.7)	2.7	III (FL)	230/50-60/16	-	55	-
-	-	◔	0.3 ... 1.7	16 ... 40	M24x1.5	50	3.5 (1.7)	2.7	III (FL)	230/50-60/16	G 3/4"	53	1
-	-	◔	0.48 ... 3.2	35 ... 76	M30x1.5	50	7.5 (3.5)	7.5	III (FL)	3 x 400/50/13	-	69	-
-	-	◔	0.48 ... 3.2	35 ... 76	M30x1.5	50	7.5 (3.5)	7.5	III (FL)	3 x 400/50/22	-	69	-
-	-	◔	0.48 ... 3.2	35 ... 76	M30x1.5	50	7.5 (3.5)	7.5	III (FL)	3 x 400/50/16	G 3/4"	65	8 .. 12
-	-	◔	0.48 ... 3.2	35 ... 76	M30x1.5	50	7.5 (3.5)	7.5	III (FL)	3 x 400/50/25	G 3/4"	65	8 ... 12
0.65	0.1	◔	0.3 ... 1.7	16 ... 40	M24x1.5	50	3.9 (1.7)	5.6	III (FL)	230/50/16	-	68	-
0.65	0.1	◔	0.3 ... 1.7	16 ... 40	M24x1.5	50	3.9 (1.7)	5.6	III (FL)	3 x 400/50/16	-	68	-
0.65	0.1	◔	0.3 ... 1.7	16 ... 40	M24x1.5	50	3.9 (1.7)	5.6	III (FL)	230/50/16	G 3/4"	64	2
0.65	0.1	◔	0.3 ... 1.7	16 ... 40	M24x1.5	50	3.9 (1.7)	5.6	III (FL)	3 x 400/50/16	G 3/4"	64	2
2.2	0.4	◔	0.48 ... 3.2	35 ... 80	M30x1.5	50	9.5 (5)	7	III (FL)	3 x 400/50/18	-	69	-
2.2	0.4	◔	0.48 ... 3.2	35 ... 80	M30x1.5	50	9.5 (5)	7	III (FL)	3 x 400/50/31	-	69	-
2.2	0.4	◔	0.48 ... 3.2	35 ... 80	M30x1.5	50	9.5 (5)	7	III (FL)	3 x 400/50/18	G 3/4"	69	2 ... 6
2.2	0.4	◔	0.48 ... 3.2	35 ... 80	M30x1.5	50	9.5 (5)	7	III (FL)	3 x 400/50/31	G 3/4"	69	2 ... 6
8	2	◔	0.5 ... 3.0	26 ... 80	M38x1.5	50	28 (16)	40	III (FL)	3 x 400/50/43	G 3/4"	74	16 ... 43
8	2	◔	0.5 ... 3.0	26 ... 80	M38x1.5	50	28 (16)	40	III (FL)	3 x 400/50/76	G 3/4"	74	16 ... 43
8	2	⚙	0.8 ... 5.5	18 ... 70	M38x1.5	70	28 (16)	40	III (FL)	3 x 400/50/46	G 3/4"	74	16 ... 43
8	2	⚙	0.8 ... 5.5	18 ... 70	M38x1.5	70	28 (16)	40	III (FL)	3 x 400/50/76	G 3/4"	74	16 ... 43
8	2	◔	0.5 ... 3.0	26 ... 80	M38x1.5	50	28 (16)	40	III (FL)	3 x 400/50/43	G 3/4"	74	16 ... 43
8	2	◔	0.5 ... 3.0	26 ... 80	M38x1.5	50	28 (16)	40	III (FL)	3 x 400/50/66	G 3/4"	74	16 ... 43
8	2	⚙	0.8 ... 5.5	18 ... 70	M38x1.5	70	28 (16)	40	III (FL)	3 x 400/50/46	G 3/4"	74	16 ... 43
8	2	⚙	0.8 ... 5.5	18 ... 70	M38x1.5	70	28 (16)	40	III (FL)	3 x 400/50/66	G 3/4"	74	16 ... 43

Integrated cooling unit C.U.	Cooling capacity (Water, +20 °C) kW, max.	Pump capacity Pressure bar	Pump capacity Flow rate l/min.	Pump connections male	Filling volume liters	Filling volume expansion vessel liters	Classification acc. to DIN 12876-1
-		0.8 - 1.2	14 - 18	M16x1	2	1.6+0.9	III (FL)
-		0.8 - 1.2	14 - 18	M16x1	2	1.6+0.9	III (FL)
-		0.8 - 1.2	14 - 18	M16x1	2	1.6+0.9	III (FL)
yes	15	0.8 - 1.2	14 - 18	M16x1	2	1.6+0.9	III (FL)
yes	15	0.8 - 1.2	14 - 18	M16x1	2	1.6+0.9	III (FL)
yes	15	0.8 - 1.2	14 - 18	M16x1	2	1.6+0.9	III (FL)

Cooling water differential pressure bar	Integrated programmer steps	External Pt100 sensor connection	Analog inputs / outputs	Digital interfaces			Permissible ambient temperature °C	Dimensions W x L x H cm	Weight net kg	Model
				RS232, SD-Card,USB, Ethernet, alarm output	RS485 Profibus	2nd external Pt100 sensor				
-	8 x 60	yes	Accessory	yes	Accessory	-	+5 ... +40	25 x 59 x 62	62	**A30**
-	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	33 x 59 x 67	79	**A40**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	33 x 59 x 67	78	**W40**
-	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	53 x 66.5 x 126	210	**A45**
-	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	53 x 66.5 x 126	210	**A45t**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	53 x 66.5 x 126	210	**W50**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	53 x 66.5 x 126	210	**W50t**
-	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	43 x 65 x 126	164	**A80**
-	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	43 x 65 x 126	167	**A80t**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	43 x 65 x 126	159	**W80**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	43 x 65 x 126	164	**W80t**
-	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	61 x 108 x 125	365	**A85**
-	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	61 x 108 x 125	365	**A85t**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	61 x 84.5 x 125	335	**W85**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	61 x 84.5 x 125	335	**W85t**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W91**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W91tt**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W91x**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W91ttx**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W92**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W92tt**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W92x**
0.5	8 x 60	yes	Accessory	yes	Accessory	Accessory	+5 ... +40	95 x 127 x 190	870	**W92ttx**

IP Class acc. to IEC 60529	Power requirement V / Hz / A	Dimensions Circulator W x L x H cm	Dimensions Control unit W x L x H cm	Weight net kg	Model
IP21	230/50/15	23 x 23 x 58	25 x 25 x 18	27	**HT30-M1**
IP21	3 x 400/50/11	23 x 23 x 58	25 x 25 x 18	29	**HT60-M2**
IP21	3 x 208/60/18	23 x 23 x 58	25 x 25 x 18	29	**HT60-M3**
IP21	230/50/15	43 x 23 x 58	25 x 25 x 18	35	**HT30-M1-C.U.**
IP21	3 x 400/50/11	43 x 23 x 58	25 x 25 x 18	37	**HT60-M2-C.U.**
IP21	3 x 208/60/18	43 x 23 x 58	25 x 25 x 18	37	**HT60-M3-C.U.**

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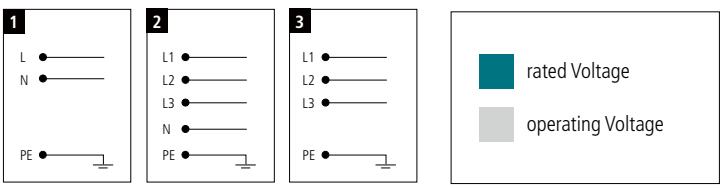
Voltage Options

PRESTO

Model	Rated voltage (V)	Frequency (Hz)	Mains power supply type	Voltage range (V)	Heating capacity at rated voltage (kW)
Single phase units:				180 190 200 210 220 230 240 250 260	
A30	200 - 230	50	1		2.1 - 2.7
	208	60	1		2.3
A40 W40	200 - 230	50-60	1		2.1 - 2.7
	208	60	1		2.3
A80 W80	230	50	1		1.8
	208	60	1		1.5

Model	Rated voltage (V)	Frequency (Hz)	Mains power supply type	Voltage range (V)	Heating capacity at rated voltage (kW)
Three phase units:				180 220 260 300 340 380 420 460 500	
A45 W50	3 x 400	50	2		6
	3 x 230	50	3		6
	3 x 208 - 230	60	3		5.5 - 6
A45t W50t	3 x 400	50	2		12
	3 x 230	50	3		12
	3 x 208 - 230	60	3		10 - 12
A80t W80t	3 x 400	50	2		3.4
	3 x 230	50	3		3.4
	3 x 208 - 220	60	3		2.8 - 3.1
A85 W85	3 x 400	50	2		6
	3 x 230	50	3		6
	3 x 208 - 230	60	3		5.5 - 6
A85t W85t	3 x 400	50	2		15
	3 x 230	50	3		15
	3 x 208 - 230	60	3		12.5 - 15
W91 (x) W92 (x)	3 x 400	50	2		18
	3 x 480	60	3		18
W91tt (x) W92tt (x)	3 x 400	50	2		36
	3 x 480	60	3		36

Mains power supply type



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