

for working temperatures from +50 °C to +300 °C

These units are designed specifically for applications in calibration laboratories and conform to the requirements specified by DIN ISO 9001:2000.

Calibration baths include a constant level temperature chamber. The circulating pump transports the bath fluid through the overflowing temperature chamber to the circulator bath. The following values are achieved while a constant liquid level is maintained:

- Highest temperature stability to ±0.005 °C

Temperature values (reproducible to 0.01°C) are set via the splash-proof keypad and are clearly visible on the bright VFD COMFORT-DISPLAY.

Up to 3 frequently required setpoint temperatures can be stored and recalled any time.

Simultaneous indication of 3 temperature values!

Using the precision Pt100 reference sensor it is possible to have the reference temperature displayed. Based on this, additional calibration certificates according to ISO and DKD can be issued.

Display resolution 0.01 °C across the temperature range!

Additional benefits

- Ease of operation
- Low noise level
- Compact design



- Removable circulator with temperature chamber



- Temperature chamber with uniform overflow

Temperature uniformity
Bath fluid: JULABO Thermal H

At °C	SE-8K	SE-14K
+100	0.01 K	0.005 K
+150	0.02 K	0.008 K
+200	0.03 K	0.008 K
+250	0.03 K	0.008 K

Applications

Calibration of temperature sensors, measuring devices and thermometers, that needs to be carried out in regular intervals according to national and international standards.



SE-8K

SE-14K

JULABO Order No.	JULABO Model	Working temp. range °C	Temperature stability °C	Heating capacity kW ¹⁾	Pump capacity Flow rate l/min. Pressure bar	Bath opening Usable bath depth cm	Filling volume liters	Dimensions W x L x H cm	Weight kg
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Calibration Baths

Technical features (see fold-out page)



9 250 508	SE-8K	+50 ... +300	±0.005	3	22-26	0.4-0.7	dia. 12 / 17	8	22 x 46 x 47	16
9 250 514	SE-14K	+50 ... +300	±0.005	3	22-26	0.4-0.7	dia. 12 / 31	14	22 x 46 x 61	20

¹⁾ At voltage 230V/50-60Hz

for working temperatures from -30 °C to +200 °C with refrigeration unit

Reference temperature can be measured and permanently displayed via an adapted highly accurate digital sensor (patented).

VFD COMFORT-DISPLAY



Using the reference sensor, the large display can be set via keypad to display the reference temperature!

- ① Reference temperature
- ② Setpoint temperature
- ③ Actual temperature

Outstanding and new!
Only offered by JULABO.

Save the extra costs of purchasing a highly accurate digital thermometer!
(details see page 40)

Accessory included with all models:

- 8 970 246** Bath cover with openings and Viton® sleeves:
2 x 3 mm, 2 x 4 mm and 2 x 6 mm inner dia.



FK30-SE

FK31-SE

Accessories

- 8 981 002** Precision Pt100 reference sensor 180 x 4 mm dia.
9 660 003 FL300 recirculating cooler for models SE-8K and SE-14K

Viton® sleeves

Order No.	for sensor
8 930 602	2 mm dia.
8 930 603	3 mm dia.
8 930 604	4 mm dia.
8 930 605	5 mm dia.
8 930 606	6 mm dia.
8 930 608	8 mm dia.

JULABO Order No.	JULABO Model	Working temp. range °C	Temperature stability °C	Heating capacity kW ¹⁾	Cooling cap. kW (Bath fluid: Ethanol) 20 0 -20°C	Pump capacity Flow rate / Pressure l/min. bar	Bath opening Usable bath depth cm	Filling vol. liters	Dimensions W x L x H cm	Weight kg
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Calibration Baths with integrated refrigeration unit

Technical features (see fold-out page)



9 250 627	FK30-SE	-30 ... +200	±0.005	2 / 1	0.46 0.34 0.15	22-26 0.4-0.7	dia. 12 / 17	14	32 x 45 x 79	33
9 250 628	FK31-SE	-30 ... +200	±0.005	2 / 1	0.46 0.34 0.15	22-26 0.4-0.7	dia. 12 / 31	24	32 x 45 x 91	39

¹⁾ At voltage 230V/50Hz / 115V/60Hz

Precision Pt100 reference sensor (Order No. 8 981 002)

This special sensor for calibration technology provides
 • **integrated measuring electronics and RS232 connection**

The sensor is inside a high quality stainless steel tube and is suitable for use with the JULABO calibration baths.



Measuring range	-40.00 ... +300.00 °C
Measuring accuracy	±0.05 °C +0.05 % of reading (-40.00 to -0.01 °C) ±0.05 °C (0.00 to +100.00 °C) ±0.05 °C +0.05 % of reading (+100.01 to +300.00 °C)
Dimensions	180 x 4 mm, 1 m cable
Immersion depth	90 mm min., 140 mm max.

DKD and ISO Calibration Certificates

When purchasing a JULABO calibration bath YOU decide which certificates you require. We take care of the rest!

YOU obtain the calibration solution including the requested certificate ready for immediate use for calibration services, production, quality assurance, etc.

JULABO Order No.	Description
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Certificates for the calibration of the circulator

8 902 113	ISO-3-point calibration certificate	Calibration at 3 selectable measuring points
8 902 115	ISO-5-point calibration certificate	Calibration at 5 selectable measuring points
8 902 123	DKD-3-point calibration certificate	Calibration at 3 selectable measuring points
8 902 125	DKD-5-point calibration certificate	Calibration at 5 selectable measuring points

Certificates for the calibration of the precision reference sensor

8 902 213	ISO-3-point calibration certificate	Calibration at 3 selectable measuring points
8 902 215	ISO-5-point calibration certificate	Calibration at 5 selectable measuring points
8 902 223	DKD-3-point calibration certificate	Calibration at 3 selectable measuring points
8 902 225	DKD-5-point calibration certificate	Calibration at 5 selectable measuring points

Example: DKD calibration certificate



Example: ISO calibration certificate



Presto® and Magnum 91

– External temperature applications in wide temperature ranges

JULABO offers a sophisticated range of Highly Dynamic Temperature Control Systems on pages 41 to 46.

The systems provide many unique features compared to conventional heating and cooling circulators.

- ▶ **Presto®** is suitable for extended temperature ranges, for example from -40 to +250 °C or from -80 to +170 °C – without the requirement to changing bath fluids.
- ▶ **Presto®** avoids oxidation and ensures prolonged lifetime of the bath fluid.
- ▶ **Presto®** is time-saving: rapid heat-up and cool-down times throughout the entire temperature range, control for unsupervised continuous operation.

- ▶ **Presto®** compensates exothermic and endothermic reactions quickly and with exceptional temperature accuracy.
- ▶ **Presto®** is hydraulically sealed to prevent unpleasant steam and odors.
- ▶ **Presto®** does not allow absorption of air humidity into the bath fluid. This prevents condensation and ice build-up.

Bright VFD COMFORT-DISPLAY

- For actual value, setpoint Resolution 0.01 °C
- Illuminated displays for A: selected pump stage B: filling volume
- Status displays (heating, cooling, etc.)

Remote device 'RD'

- Backlit, 4-line LCD-DISPLAY for user-friendly operation
- Splash-proof keypad for setpoint, actual temperature, pump pressure control
- System status, high/low temperature warning functions with intermittent tone
- Integrated programmer with real time clock for 6 x 60 program steps
- Best reproducibility of all set values



Keypad, splash-proof

- ① Start key for filling process
- ② Key to toggle display from setpoint / actual value
- ③ High temperature cut-off according to DIN 12876-1
- Ⓜ High temperature cut-off for cooled fluid in reservoir

Analog/digital connections

- External Pt100 sensor
- Serial interface RS232 / RS485
- Analog input for external programming
- Standby input for external emergency cut-off
- Connector for external alarm device
- Control cable for remote device 'RD' or 5 m extension cable (accessory)