Calibration Baths
Models CTB9210, CTB9220, CTB9430, CTB9441

Applications

- Calibration in laboratories and in control and instrumentation workshops
- Calibration of short temperature sensors, especially in the pharmaceutical and food industries
- Simultaneous calibration of several sensors

Special Features

- Fuzzy logic for high stability and high-speed heating or cooling
- Large screen/user interface with full text display and user-friendly menu navigation
- 6 different user languages possible

Calibration Bath Model CTB9441

Description

Calibration in baths
WIKA calibration baths are an ideal controlled temperature source for the calibration of temperature sensors in the workshop as well as the laboratory.
For calibration, the test specimens and the standard thermometer are brought to the same temperature within the bath.

As soon as a stable temperature is reached, the temperature of the test specimens is read or their output signals measured and compared with the standard thermometer.
In order to achieve small measurement uncertainties, a temperature control unit guaranteeing homogeneous spatial temperature distribution over the calibration range is required. These requirements are met by the CTB9200 and CTB9400 series baths.
However, it is not just the bath that is important, but also the bath fluid used. To ensure homogeneous temperature distribution, the selected fluid should have a high thermal conductivity and low viscosity. Moreover, the fluid should be inert, have a low vapour pressure, should not decompose chemically, not burn, and should maintain its properties over a wide temperature range.

In practice, silicone oils have given good results. A small selection can be found on Page 4.

Temperature ranges from -40 °C to +250 °C
The calibration baths are available in four models:

- Models CTB9210 and CTB9220 for 40 °C to 250 °C
- Model CTB9430 for -30 °C to +200 °C
- Model CTB9441 for -40 °C to +150 °C

Typically, the instruments are used in calibration laboratories and in control and instrumentation workshops.

Easy to use
The calibration baths are housed in temperature-controlled tanks with a usable depth of 200 mm. The maximum immersion depth for the test specimens of 200 mm reduces heat dissipation errors, resulting in smaller measurement uncertainties.
The large LCD graphic display shows the required operating steps in plain text. Menu items are selected by pressing the keys to the side of the display, which correspond to the respective functions. For international use, the user can choose from 6 different user languages.

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Calibrations Bath Model CTB9220

Calibrations Bath Model CTB9430 and Model CTB9441

Mode of operation

The calibration baths are equipped with electric resistance heating for producing high temperatures.
For cooling, the CTB9430 and CTB9441 models are also equipped with compressor cooling.
The powerful, combined pressure and vacuum pump produces very fast, uniform mixing of the medium.

Operation

The baths are distinguished by a large LCD graphic display, displaying all the required operating steps in plain text. The simple menu navigation allows intuitive operation.
Several user languages are available: the user can choose from German, English, French, Spanish, Italian and Japanese.
The individual menu items are selected by pressing keys that are arranged laterally from the display and whose functions are directly assigned.
The set and actual temperatures can be read simultaneously, to the nearest 0.01 K, from the display. If desired, an external resistance thermometer can also be connected and its value displayed.
The set temperature value can be input directly via the screen and keys.

Standard functions

- Fuzzy logic control
- Self-regulating recirculation pump
- Visible and audible alarm
- Continuous display of date and time
- Low and high temperature limits can be entered
- Error Identification System (FIS)
- Control sensor and external sensor monitoring

Options

- Multi-function thermostat head with extended performance range:
  - Increased heating power (only with models CTB9210 and CTB9220)
  - 3-point adjustment option
  - Control timer
  - RS-485 interface
- Cover with mounting fixtures
- Power supply AC 115 V, 60 Hz or AC 220 V, 60 Hz
- Mains connecting cable for Switzerland
- Mains connecting cable for USA/Canada

Technical Data			Model CTB9210	Model CTB9220
Temperature range		°C	40 ... 250	
Stability		K	0.01 (using water at 70 °C)	
Gradients		K	0.01	
Display resolution		°C	0.01	
Display units			°C, °F, K available	
Available user languages			German, English, French, Spanish, Italian, Japanese	
Volume		Litres	approx. 7	approx. 12
Bath opening		mm	130 x 100	140 x 220
Bath depth		mm	200	
Dimensions, W x D x H		mm	250 x 380 x 500	340 x 380 x 500
Weight (empty)		kg	12	13
Power supply		VAC/Hz	230/50 ... 60 or 115/60	
Standard thermostat head				
Interface			RS-232-C	
Functions			1-point adjustment function	
Power consumption	at 230 VAC	VA	2100	
	at 115 VAC	VA	1250	
Heating power	at 230 VAC	VA	2000	
	at 115 VAC	VA	1200	
Heating time	at 230 VAC, oil	min	20 from 25 °C to 200 °C	40 from 25 °C to 200 °C
Multi-function thermostat head				
Interface			RS-232-C and RS-485	
Functions			3-point adjustment function and control timer	
Power consumption	at 230 VAC	VA	3100	
	at 115 VAC	VA	1250	
Heating power at 230 VAC		VA	3000	
	at 115 VAC	VA	1200	
Heating time	at 230 VAC, oil	min	15 from 25 °C to 200 °C	25 from 25 °C to 200 °C

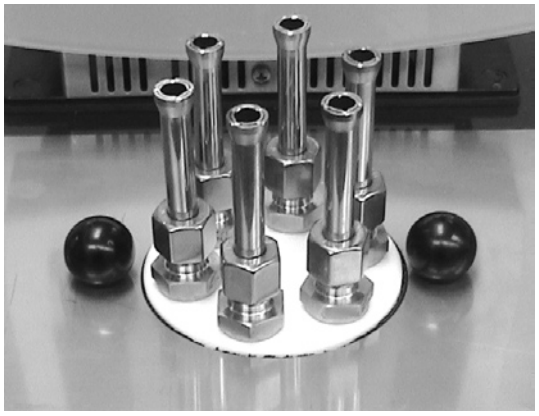
Technical Data			Model CTB9430	Model CTB9441
Temperature range		°C	-30 ... +200	-40 ... +150
Stability		K	0.01 (using water at 70 °C)	
Gradients		K	0.01	
Display resolution		°C	0.01	
Display units			°C, °F, K available	
Available user languages			German, English, French, Spanish, Italian, Japanese	
Volume		Litres	approx. 12	approx. 15
Bath opening		mm	140 x 220	150 x 290
Bath depth		mm	200	
Dimensions, W x D x H		mm	400 x 510 x 770	400 x 510 x 770
Weight (empty)		kg	46	45
Power supply		VAC/Hz	230/50 or 220/60	
Heating power	at 230 VAC	VA	2000	
Heating time	at 230 VAC	min	40 from 25 °C to 200 °C	30 from 25 °C to 150 °C
Cooling power	at 20 °C	W	800	1000
	at 0 °C	W	620	750
	at -20 °C	W	450	400
Cooling time	at 230 VAC, alcohol	min	30 from +20 °C to -20 °C	40 from +20 °C to -30 °C
Standard thermostat head				
Interface			RS-232-C	
Functions			1-point adjustment function	
Multi-function thermostat head				
Interface			RS-232-C and RS-485	
Functions			3-point adjustment function and control timer	

Scope of delivery

- Calibration bath
- 1.5 m mains cable including plug with earthed plug/ shockproof plug
- Cover
- Operating manual in German and English

Accessories

- Silicone oils in 10-litre plastic container
- Cover including mounting fixtures



Cover including mounting fixture

Accessories	Model CTB9210	Model CTB9220	Model CTB9430	Model CTB9441
Silicone oil DC 200.05: -40 … +130 °C, FP = 133 °C	not recommended		not recommended	from -40 ... +130 °C readily usable
Silicone oil DC 200.10: -35 … +160 °C, FP = 165 °C	not recommended		from -30 to +160 °C readily usable	from -35 to +150 °C readily usable
Silicone oil DC 200.20: 10 … 220 °C, FP = 230 °C	from 40 to 220 °C readily usable		from 10 to 200 °C readily usable	not recommended
Silicone oil DC 200.50: 25 … 250 °C, FP = 275 °C	from 40 to 250 °C readily usable		from 25 to 200 °C readily usable	not recommended
Positioning device	X	X	X	X
Replacement cover	X	X	X	X
RS-232 interface cable	X	X	X	X

Products and Services within our Testing and Calibration Technology Program

- DKD calibration services for pressure
- Repair of calibration units of all makes
- Portable pressure measuring devices for testing and calibration tasks
- Precision pressure measuring units and pressure controllers
- Primary standards for pressure
- Testing technology system solutions
- DKD calibration services for temperature
- Temperature dry well calibrators
- Calibration baths and furnaces
- Temperature measuring instruments for testing and calibration tasks
- Precision thermometers
- Primary standards for temperature
- Consulting and seminars

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