

## Micro calibration bath

### Models CTB9100-165, CTB9100-225

WIKA data sheet CT 46.30

#### Applications

- Calibration in the pharmaceutical industry and in the food industry
- Calibration of short temperature sensors on site
- Simultaneous calibration of several sensors

#### Special features

- Two ranges: -35 ... +165 °C and 40 ... 225 °C, optional 255 °C
- Large tank of Ø 60 x 150 mm free depth
- Short response time of the bath temperature
- Continuously adjustable stirrer



Model CTB9100-165 micro calibration bath

## Description

#### Range of applications

The new WIKA micro calibration baths are the perfect complement to the series CTD9100 and CTD9300 dry-well calibrators.

In dry-well temperature calibrators, as a result of their low insertion depth and the resulting heat conduction errors, short sensors lead to a significant increase in measurement uncertainty. Even when comparing the test items with an external reference thermometer, they can not be too short. Once the stem length drops below 70 mm, a micro-bath is definitely preferable to a dry-well temperature calibrator.

If several sensors are calibrated at the same time, the micro-bath has additional advantages: Thermometers of different stem tube diameters can be calibrated together, without the need to provide exactly the correct inserts.

This is particularly advantageous for calibration on-site, if the diversity of variants of test items and their stem tube diameters is large or not known.

#### For temperature ranges of -35 ... +255 °C

The CTB9100 micro calibration baths are available in two versions:

- CTB9100-165 for -35 ... +165 °C
- CTB9100-225 for 40 ... 225 °C; optional 255 °C

The instruments are typically used in the pharmaceutical industry and in the food industry, particularly for on-site calibration.

#### Easy to use

The series CTB9100 micro calibration baths operate with temperature-controlled liquid tanks with a useable working range of Ø 60 x 150 mm depth.

The calibration temperature, adjusted simply using two buttons on the controller, can be very quickly controlled. The actual and set temperature are displayed simultaneously on a large 4-digit, high-contrast digital display. Thus reading errors are virtually eliminated. The maximum immersion depth of the test items of 150 mm reduces the heat conduction errors and thus leads to smaller measurement uncertainties.

## Specifications CTB9100 series

	Model CTB9100-165	Model CTB9100-225
Temperature range	-35 ... +165 °C	40 ... 225 °C, optional 40 ... 255 °C
Accuracy	±0.2 K	±0.3 K
Stability	±0.05 K	±0.05 K
Display resolution	0.1 °C	0.1 °C
Heating time incl. stabilisation <sup>1)</sup>	approx. 45 min from 20 to 160 °C	approx. 10 min from 20 to 225 °C
Cooling time incl. stabilisation <sup>1)</sup>	approx. 30 min from +20 to -20 °C	approx. 30 min from 225 to 50 °C
Immersion depth	150 mm	150 mm
Volume	Approx. 0.6 litres	Approx. 0.6 litres
Tank dimensions	Ø 60 x 165 mm	Ø 60 x 165 mm
<b>Voltage supply</b>		
Power supply	AC 100 ... 240 V, 50/60 Hz	AC 230 V, 50/60 Hz (AC 115 V, 50/60 Hz) <sup>2)</sup>
Power consumption	375 VA	1,000 VA
Power cord	for Europe, AC 230 V	for Europe, AC 230 V
<b>Communication</b>		
Interface	RS-485	RS-485
<b>Case</b>		
Dimensions	215 x 305 x 425 mm (W x H x D)	150 x 270 x 400 mm (W x H x D)
Weight	12 kg	7.9 kg

1) The reference thermometer with which the measurements are performed has a diameter of 6 mm.

2) AC 115 V power supply must be specified on the order, otherwise an AC 230 V one will be delivered.

## CE conformity and certificates

### CE conformity

EMC directive 2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)

### Certificate

Calibration Standard: 3.1 calibration certificate per DIN EN 10204  
Option: DKD/DAkkS calibration certificate

Recommended calibration interval 1 year (dependent on the use)

Approvals and certificates, see website

Accessories	Model CTB9100-165	Model CTB9100-225
DC 200.05 silicone oil: -40 ... +130 °C, FP* = 133 °C	from -35 ... +130 °C, very well usable	not recommended
DC 200.10 silicone oil: -35 ... +160 °C, FP* = 163 °C	from -35 ... +160 °C, well usable	not recommended
DC 200.20 silicone oil: 10 ... 220 °C, FP* = 232 °C	not recommended	from 40 ... 225 °C, well usable
DC 200.50 silicone oil: 25 ... 250 °C, FP* = 280 °C	not recommended	from 80 ... 255 °C, well usable

\* FP = Flash point

## Operating elements of the micro calibration baths

The temperature controller of the micro-baths is located on the front panel:

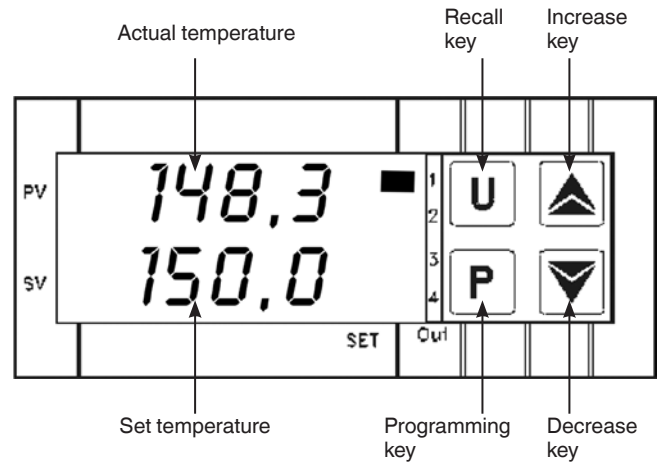
- The actual and set temperatures can be read from the display simultaneously with a definition of 0.1 K.
- Frequently used set points can be entered independently into four memory locations and quickly recalled.
- Individual temperatures can be easily entered via the two arrow keys.

- Potentiometer for a continuous stirrer velocity setting

In the tank there is a removable wire basket, which protects the magnetic stirrer against contact with the test items. Mains connector socket, power switch and fuse holder are located centrally at the front of the underside of the instrument.

## Display and control panel

- Set and actual temperature are displayed simultaneously on a two-line LED display.
- Frequently-used set points can be stored in four memory locations.
- The U-key is used to retrieve stored set temperatures.
- The arrow keys are used to change the set temperature.
- The P-key is used to confirm the changes.



## Series CTB9100 micro calibration baths

Two instruments for the temperature range from -35 ... +255 °C



**Model CTB9100-165 micro calibration bath with lockable cover**

### Model CTB9100-165

#### Temperature range from -35 ... +165 °C

This micro calibration bath is an efficient tool for the calibration of thermometers. It works with Peltier elements and can thus reach test temperatures below ambient temperature. New multistage Peltier elements ensure a good long-term stability and high reliability within the entire working range. Due to its capacity for active cooling, it is often used in biotechnology, pharmaceutical and food industries.



**Model CTB9100-225 micro calibration bath**

### Model CTB9100-225

#### Temperature range from 40 ... 255 °C

The CTB9100-225 is used in the medium temperature range up to 255 °C. It generates its temperature with electrical resistance heating. For cooling down, the fan is run at its highest setting. Thus it is possible to achieve cooling from 255 °C to 50 °C within 30 minutes. In addition to short heating and cooling times, this bath is set apart by its light weight and compact design. It can be used in a wide range of industries.

## Scope of delivery

- Model CTB9100-165 or CTB9100-225 micro calibration bath
- Power cord, 1.5 m with safety plug
- Screw cover
- Operating instructions
- 3.1 calibration certificate per DIN EN 10204

## Options

- Instrument variants for AC 115 V
- Display in Fahrenheit °F
- DKD/DAkkS calibration certificate

## Accessories

- Silicone oil in 1 litre plastic container
- Magnetic stirrer and plastic or metal screw-on cap
- Software package to operate the calibrator
- Serial interface cable with integrated RS-485 to USB 2.0 converter
- Transport case
- Power cord for Switzerland
- Power cord for USA/Canada
- Power cord for UK
- Insert for liquids consisting of: insert with leak-proof cover, sensor basket, magnetic stirrer and lifter, changeover tool (for re-ordering a re-adjustment is necessary)



Temperature micro calibration baths

Fig. left: model CTB9100-165

Fig. right: model CTB9100-225



Insert for liquids

## Ordering information

### CTB9100-165 calibrator

Model / Unit / Protective lead / Software / Insert for liquids / Calibration / Transport case / Serial interface convertor / Power cord / Additional order details

### CTB9100-225 calibrator

Model / Unit / Temperature range / Power supply / Protective lead / Software / Insert for liquids / Calibration / Transport case / Serial interface convertor / Power cord / Additional order details

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**WIKAL**  
WIKAL Alexander Wiegand SE & Co. KG  
Alexander-Wiegand-Straße 30  
63911 Klingenberg/Germany  
Tel. +49 9372 132-0  
Fax +49 9372 132-406  
info@wika.de  
www.wika.de