Multifunction Temperature Calibrator Model CTM9100-150

Applications

- Testing and calibration of nearly all thermometer types
- Reference instrument for works' laboratories for the calibration of thermometers
- On-site calibration

Special Features

- Multifunction device with four controller parameter sets
- Calibration with an external reference
- Low weight and compact design
- Simple operation

Multifunction Temperature Calibrator Model CTM9100-150

Description

Versatile in application

Nowadays, fast and simple testing of thermometers is a "must", especially when it involves the reliability of operation of plant and machinery.
The CTx9100 family of portable calibrators are particularly suited to local calibration tasks. They are extremely user-friendly. Due to their compact design and their low weight, the devices can be carried and used almost anywhere.

Using a dry-well calibrator or a micro-calibration bath to calibrate either surface thermometers or non-contact thermometers does not reflect the application and can result in false values. In these cases, the CTM9100-150 multifunction temperature calibrator should be used.

With this multifunction temperature calibrator, in the temperature range from -20 to +150 °C, you can cover not only the common functions, but also, with special inserts, this can be used as a surface temperature calibrator and an infrared black-body. Like having four devices in one!

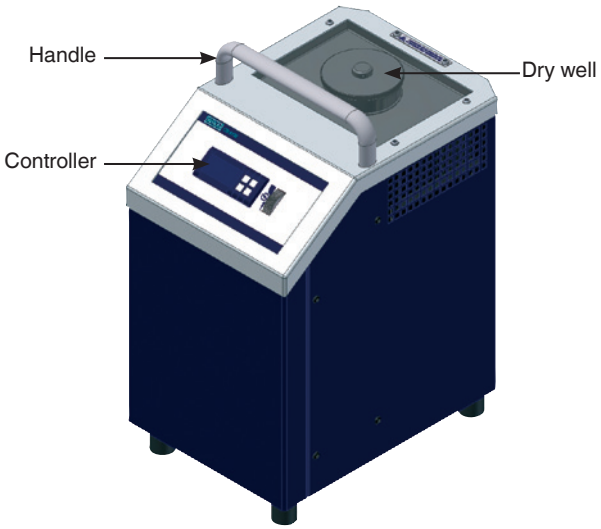
Easy to use

The multifunction temperature calibrator has four applications in one device. The simple instrument design enables fast and simple switching, back and forth, between individual applications. Changing between the four possibilities can be made very easily using one of the four buttons and the toggle switch on the front.

The calibration temperature, adjusted simply using two keys on the controller, can be very quickly controlled.
The actual temperature of the heated block is displayed simultaneously on a large, 2-line, high-contrast LCD display. Thus reading errors are virtually eliminated.

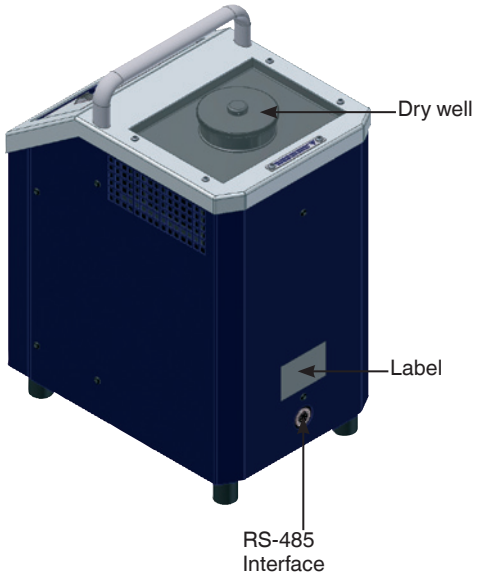
It is possible to calibrate nearly every thermometer with the different inserts and moreover contact (TC, Pt, surface) or non-contact (infrared) thermometers.

Isometric views



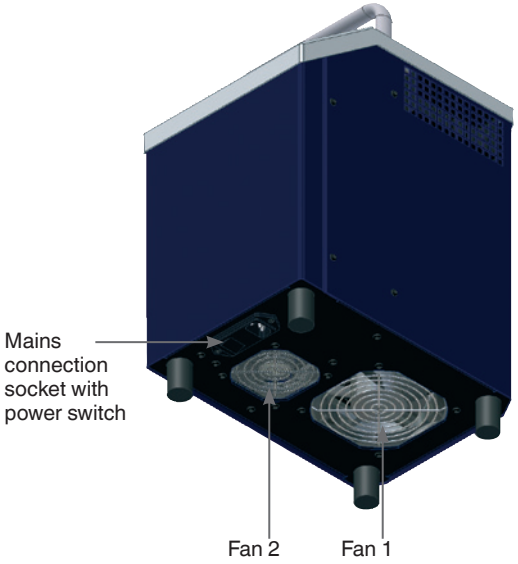
Front and top
On the top of the multifunction temperature calibrator, you will find the dry well access opening for inserting the different inserts.

The controller with display and four-key control pad is located at the front.



Rear
At the rear, you will find the rating label with important information about the model and the suitable line voltage and frequency, the individual serial number, the instrument‘s power consumption and the fuse rating.

You will also find the connector for the RS-485 interface here .



Bottom
On the underside of the instrument are housed the mains connection socket and the power switch with its fuse-holder. These are located in the centre. Furthermore, there are two air intakes located on the underside of the instrument.

Specifications		Model CTM9100-150	
Temperature range	°C	-20 ... +150	
		-35 ... +165	Operating as a micro-calibration bath
Accuracy	K	± 0.1	Operating as a micro-calibration bath
		± 0.3	Operating as a dry well calibrator
		± 1	Operating as a infrared black body source
		± 1	Operating as a surface temperature calibrator
Stability	K	± 0.05	Operating as a micro-calibration bath
		± 0.05	Operating as a dry well calibrator
		± 0.2	Operating as a infrared black body source
		± 0.2	Operating as a surface temperature calibrator
Display resolution	°C	0.1 / 0.01	
Heating time		depending upon usage and area of application	
Cooling time		depending upon usage and area of application	
Immersion depth	mm	150	
Insert dimensions	mm	Ø 60 x 170	
Interface		RS-485	
Power supply	AC	230 V, 50/60 Hz	
Power consumption	VA	400	
EMC		Tested to 2004/108/EC, EN 61326 Emission (Group 1, Class B) and immunity (industrial locations)	
Dimensions (W x H x D)	mm	215 x 425 x 305	
Weight	kg	12	

Inserts and their applications

1 2 3 4

1. The insert has several bores into which the thermometer being calibrated and one of the additional customer reference thermometers for comparative calibration can be inserted. The block is either heated or cooled to the dsired calibration temperature. Once the stable temperature has been reached, the temperature probes to be calibrated can be compared with the reference thermometer. The documentation of this comparison represents the calibration.

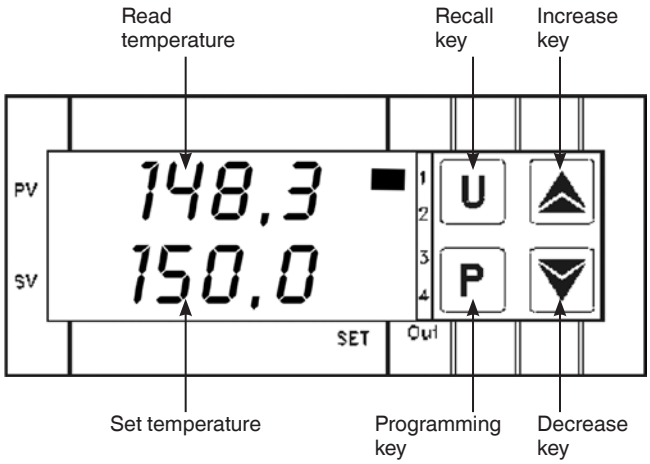
2. Angled thermometers, thick thermometers or thermometers with special designs cannot be calibrated with a dry-well calibrator. For this reason the multifunction temperature calibrator also has the possibility to function as a stirred liquid bath. The liquid is circulated by a magnetic agitator and thus provides very good temperature distribution within the bath. The liquid used is chosen depending upon the desired calibration temperature.

3. The measuring spot of the pyrometer being calibrated must be smaller than the diameter of the infrared insert. The sleeve is particularly important in your design and surface configuration, in order that a defined emissivity is achieved for the measurement.

4. The calibration of surface thermometers is very difficult and not fully defined. Thermometers mounted on surfaces dissipate heat from the surface and create a cold zone on the surface being measured. In the multifunction temperature calibrator, the calibration temperature is created in a specially designed surface insert and an external reference thermometer measures the temperature directly under the surface.

CTM9100 display and control panel

- Set and actual temperature are displayed concurrently on a dual LED display.
- Up to four frequently-used set points can be stored in the instrument memory.
- 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.



Scope of delivery

- Multifunction Temperature Calibrator
- Insert with seven holes:
  Ø 1 x 2 mm, 3 x 3.5 mm, 2 x 4.5 mm, 1 x 6 mm
- Surface insert
- Infrared insert
- Bath liquid and pump
- External reference
- Removal tool
- Power lead
- Operating instruction

Various inserts and accessories for the CTM9100-150

Products and Services within our Calibration Technology Program

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

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