Temperature dry well calibrator
Models CTD9100-COOL, CTD9100-165, CTD9100-450, CTD9100-650

Applications

- Easy on-site calibration
- Power generation
- Measurement and control laboratories
- Machine building

Special features

- Various temperature ranges
- Measurement uncertainties from 0.15 ... 0.8 K
- Compact design
- Simple operation

Temperature dry well calibrator CTD9100-650

Description

Versatile in application

Nowadays, fast and simple testing of thermometers is a "must" when it comes to the operational reliability of machines and plants.

The portable calibrators of the CTD9100 family are particularly suited to local calibration tasks. They are extremely user-friendly. Due to their compact design and their low weight, the instruments can be taken and used almost anywhere.

The new instrument concept brings together a stable heat source with precision Pt100 temperature measurement. This enables industrial temperature sensors to be calibrated even more efficiently.

Regular monitoring of temperature probes helps to recognise failures promptly and shorten downtimes.

Easy to use

The temperature dry well calibrators of the CTD9100 series work with temperature-controlled metal blocks and interchangeable inserts.

The calibration temperature, adjusted simply using two buttons on the controller, can be very quickly controlled.

The actual and set temperature of the heating block can be displayed simultaneously on a large 4-digit, high-contrast LED display. Thus reading errors are virtually eliminated.

Thermometers with different diameters can be fitted into the calibrator using inserts, drilled to suit.

A new block design, with improved temperature homogeneity at the calibrator's lower range, leads to smaller measurement uncertainties. The large insertion length of 150 mm considerably reduces heat dissipation errors.

Data sheets showing similar products:
Temperature dry well calibrator; model CTD9100-1100; see data sheet CT 41.29
Temperature dry well calibrator; model CTD9100-ZERO; see data sheet CT 41.30
Temperature dry well calibrator; model CTD9100-375; see data sheet CT 41.32
Temperature dry well calibrator; models CTD9300-165 and CTD9300-650; see data sheet CT 41.38
Multi-function temperature calibrator; CTM9100-150; see data sheet CT 41.10

Models CTD9100 temperature dry well calibrators

Four instruments for a temperature range from -55 ... +650 °C

Model CTD9100-165 or model CTD9100-COOL temperature dry well calibrator

Operating elements of the temperature dry well calibrator

The calibrator's temperature controller is located on the front panel:

- The actual and set temperatures can be read from the display simultaneously with a definition of 0.01 or 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.

Mains connector socket, power switch and fuse holder are located centrally at the front of the underside of the instrument.

Model CTD9100-450 temperature dry well calibrator

Model CTD9100-COOL
Temperature range from -55 ... +200 °C
and
Model CTD9100-165
Temperature range from -35 ... +165 °C

These calibrators work with Peltier elements and can therefore reach test temperatures below ambient temperature. Due to the feature of active cooling, they are frequently used in the bio-pharmaceutical and food industries. The model CTD9100-165-X calibrator has an enlarged insert with Ø 60 mm. Thus it is possible to calibrate several temperature sensors simultaneously or to calibrate thermometers with various diameters without having to change the sleeve.

Model CTD9100-450
Temperature range from 40 ... 450 °C

The CTD9100-450 is used in the medium temperature range up to 450 °C. It generates its temperature with resistive electrical heating and features an enlarged insert with Ø 60 mm. Thus it is possible to calibrate several temperature sensors simultaneously or to calibrate thermometers with various diameters without having to change the sleeve.

Model CTD9100-650 temperature dry well calibrator

Model CTD9100-650
Temperature range from 40 °C ... 650 °C

This is the high-temperature model. For temperature generation resistive electrical heating is also used.
When it comes to testing at high temperatures, such as for exhaust gases measurements on test benches or in power generation, the model CTD9100-650 is the right choice.

Specifications
CTD9100 Series

	CTD9100-COOL	CTD9100-165
Temperature range	-55 ... +200 °C	-35 ... +165 °C
Accuracy	0.15 ... 0.3 K	0.15 ... 0.25 K
Stability	±0.05 K	±0.05 K
Display resolution	0.01 to 100 °C, then 0.1	0.01 to 100 °C, then 0.1
Gradients, axially [1]	< 0.04 K at 200 °C	< 0.04 K up to 100 °C 0.06 K up to 165 °C
Heating time incl. stabilisation [2]	15 min from 20 to 200 °C	12 min from 20 to 165 °C
Cooling time incl. stabilisation [2]	10 min from +20 to -20 °C	7 min from +20 to -20 °C
Immersion depth	150 mm	150 mm
Insert dimensions	Ø 28 x 150 mm	Ø 28 x 150 mm or Ø 60 x 150 mm
Voltage supply		
Power supply	AC 100 ... 240 V, 50/60 Hz	AC 100 ... 240 V, 50/60 Hz
Power consumption	555 VA	375 VA
Power cord	for Europe, 230 V	for Europe, 230 V
Communication		
Interface	RS-485	RS-485
Case		
Dimensions	215 x 305 x 425 mm (W x H x D)	215 x 305 x 425 mm (W x H x D)
Weight	11 kg	11 kg

	CTD9100-450	CTD9100-650
Temperature range	40 ... 450 °C	40 ... 650 °C
Accuracy	0.3 ... 0.5 K	0.3 ... 0.8 K
Stability	±0.05 K at 100 °C ±0.1 K at 450 °C	±0.05 K at 100 °C ±0.1 K at 600 °C
Display resolution	0.01 to 100 °C, then 0.1	0.01 to 100 °C, then 0.1
Gradients, axially [1]	0.05 K at 100 °C 0.2 K at 450 °C	< 0.2 K at 100 °C 0.5 K at 600 °C
Heating time incl. stabilisation [2]	14 min from 20 to 450 °C	28 min from 20 to 600 °C
Cooling time incl. stabilisation [2]	58 min from 450 to 100 °C	60 min from 600 to 100 °C
Immersion depth	150 mm	150 mm
Insert dimensions	Ø 60 x 150 mm	Ø 28 x 150 mm
Voltage supply		
Power supply	AC 230 V, 50/60 Hz	AC 230 V, 50/60 Hz [3]
Power consumption	2,000 VA	1,000 VA
Power cord	for Europe, 230 V	for Europe, 230 V
Communication		
Interface	RS-485	RS-485
Case		
Dimensions	150 x 270 x 400 mm (W x H x D)	150 x 270 x 400 mm (W x H x D)
Weight	7.5 kg	8 kg

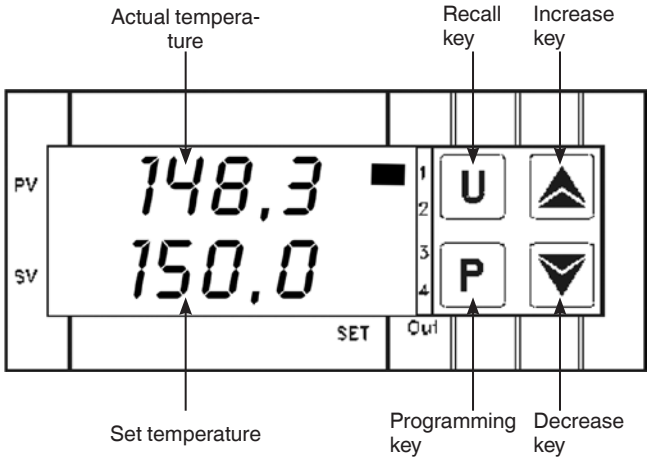
1) The gradient is understood to be the temperature change in the test well over the first 40 mm from the bottom of the sleeve.
2) The reference thermometer with which the measurements are performed has a diameter of 6 mm.
3) Instrument design available with multi-voltage power supply.

Approvals and certificates

CE conformity	
EMC directive	2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)
Certificate	
Calibration	3.1 calibration certificate per DIN EN 10204 Option: DKD/DAkkS calibration certificate

CTD9100 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.



Scope of delivery

- Model CTD9100 temperature dry well calibrator
- Power cord, 1.5 m with safety plug
- Drilled standard insert, dependent on instrument version
- Replacement tools
- Operating instructions
- 3.1 calibration certificate per DIN EN 10204

Options

- Instrument variants with wide-range mains adapter
- Display in Fahrenheit °F
- DKD/DAkkS calibration certificate

Accessories

- Inserts, undrilled and drilled to specification
- 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

Models CTD9100 temperature dry well calibrators

Ordering information

CTD9100-COOL calibrator
Model / Unit / Protective lead / Software / Calibration / Transport case / Serial interface convertor / Power cord / Additional order details

CTD9100-165 calibrator
Model / Sleeve diameter / Unit / Protective lead / Software / Calibration / Transport case / Serial interface convertor / Power cord / Additional order details

CTD9100-450 and CTD9100-650 calibrators
Model / Power supply / Unit / Protective lead / Software / Calibration / Transport case / Serial interface convertor / Power cord / Additional order details

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