Temperature Dry Well Calibrators
Models CTD9100-165 /-450 /-650

Applications

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

Special Features

- Various temperature ranges
- Measurement uncertainties from 0.15 K to 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“, especially if it concerns the reliability of operation of plant and machinery. 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 devices can be taken and used almost anywhere.

Their new equipment concept connects a stable heat source with precise Pt100 temperature measurement. Thus industrial temperature sensors can be calibrated even more efficiently.

Regular monitoring of temperature sensors 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 controlled very quickly. The actual and set temperatures of the heated block are displayed simultaneously on a large, 4-digit, high-contrast LED screen. 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, 150 mm insertion depth considerably reduces stem conduction errors.

Model CTD9100 Temperature dry well calibrators

Three instruments for the temperature range from -35 °C to +650 °C

Model CTD9100-165

Model CTD9100-450

Model CTD9100-650

Temperature dry well calibrator control elements

The calibrator‘s temperature controller is found on the front panel:

- Actual and set temperatures can be read simultaneously with a 0.1 K resolution.
- Up to four frequently-used set values can be stored in memory and retrieved quickly.
- Individual temperatures can be set simply using the two arrow keys.

The mains socket, power switch and fuse holders are found on the underside of the instrument, to the centre and front.

Model CTD9100-165
Temperature range from -35 °C to +165 °C
This calibrator works with Peltier elements and so can also achieve test temperatures below ambient. Due to its capacity for active cooling, it is often used in the biotech, pharmaceutical and food industries.

Model CTD9100-450
Temperature range from 40 °C to 450 °C
The CTD9100-450 is used in the medium temperature range to 450 °C. It generates its temperature through electrical resistance heating. As against the other models, it has an enlarged insert with Ø 60 mm. Thus it can calibrate several temperature sensors simultaneously or be used for the calibration of thermometers with differing diameters, without the need for insert changes.

Model CTD9100-650
Temperature range from 40 °C to 650 °C
This model is for high-temperature applications. It also makes use of electrical resistance heating to generate the temperature.
For high-temperature tests, e.g. with exhaust measurements on test stands or in energy production, the CTD9100-650 is the correct choice.

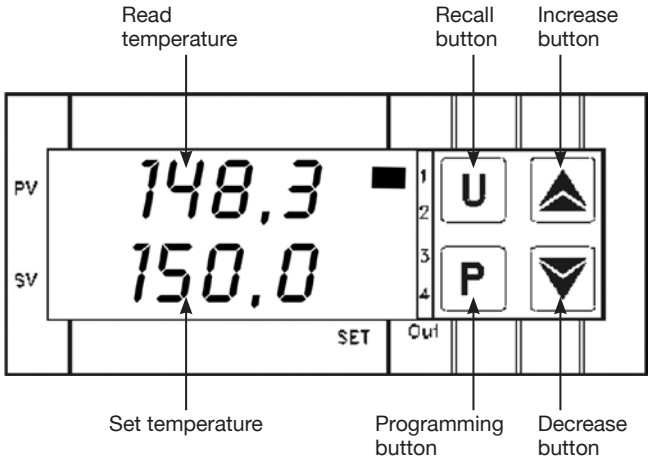
Specifications		CTD9100-165	CTD9100-450	CTD9100-650
Temperature range	°C	-35 ... +165	40 ... 450	40 ... 650
Accuracy	K	0.15 ... 0.25	0.3 ... 0.5	0.3 ... 0.8
Stability	K	± 0.05	± 0.05 at 100 °C ± 0.1 at 450 °C	± 0.05 at 100 °C ± 0.1 at 600 °C
Display resolution	°C	0.1	0.1	0.1
Gradient, axial [1]	K	< 0.04 up to 100 °C 0.06 up to 165 °C	0.05 at 100 °C 0.2 at 450 °C	< 0.2 at 100 °C 0.5 at 600 °C
Heating-up time	minutes	12; from 20 to 165 °C	14; from 20 to 450 °C	28; from 20 to 600 °C
Cooling-down time	minutes	7; from +20 to -20 °C	58; from 450 to 100 °C	60; from 600 to 100 °C
Insertion depth	mm	150	150	150
Insert dimensions	mm	Ø 28 x 150	Ø 60 x 150	Ø 25 x 150
Digital interface		RS-485	RS-485	RS-485
Power supply	AC	100 ... 240 V, 50/60 Hz	230 V, 50/60 Hz	230/115 V, 50/60 Hz [2]
Power consumption	VA	375	2000	1000
Power supply cable		for Europe, 230 V	for Europe, 230 V	for Europe, 230 V
Dimensions, H x D x W	mm	215 x 305 x 425	150 x 270 x 400	150 x 270 x 400
Weight	kg	11	7.5	8

1) In this case gradient is understood to mean the temperature variation in the test well over the first 40 mm from the insert tip
2) A 115 V AC power supply must be specified on the order: otherwise a 230 V AC one will be delivered.

Accessories		CTD9100-165	CTD9100-450	CTD9100-650
Inserts	mm	Ø 28 x 150	Ø 60 x 150	Ø 28 x 150
■ Standard diameters in 0.5mm increments	mm	Ø 1.5 ... 25	Ø 1.5 ... 55	Ø 1.5 ... 25
■ 2 bores	mm	1 x Ø 3.2 und 1 x Ø 6.3		
■ 6 bores	mm	2 x Ø 3.2, 1 x Ø 4.2, 1 x Ø 6.3, 1 x Ø 8.4 and 1 x Ø 9.9	2 x Ø 3.2, 1 x Ø 4.2, 1 x Ø 6.3, 1 x Ø 8.4 and 1 x Ø 9.9	2 x Ø 3.2, 1 x Ø 4.2, 1 x Ø 6.3, 1 x Ø 8.4 and 1 x Ø 9.9
■ 9 bores	mm	-	2 x Ø 8.5, 3 x Ø 6.3, 2 x Ø 4.3 and 2 x Ø 3.2	-
to customer specification		On request	On request	On request
Interface adapter for RS-485 to USB 2.0		X	X	X
Calibration software		X	X	X
Carry case		X	X	X

CTD9100 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 supply

- Temperature dry well calibrator
- Power lead 1.5 m with safety plug
- Insert with 6.5 mm inside diameter
- Insert replacement tools
- Operating instructions in English or German language
- 3.1 calibration report per DIN EN 10 204

Options

- Instrument versions for 115 V AC
- Display in Fahrenheit °F
- DKD calibration certificate

Temperature dry well calibrator Model CTD9100

Accessories

- Calibrator operating software
- Inserts, undrilled and drilled to specification
- Digital interface cable with integral RS-485 to USB 2.0 converter
- Carry case, robust design
- Power lead for Switzerland
- Power lead for USA/Canada

Products and Services within our Calibration Technology Program

- DKD calibration services for pressure
- Repair of all makes of calibration units
- 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
- Temperature dry-well calibrators
- Calibration baths and furnaces
- Temperature measuring instruments for test and calibrating tasks
- Precision thermometers
- Primary standards for temperature
- Consulting and seminars

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