Reference thermometer
Model CTP5000

Applications

- Reference thermometer for measuring very accurate temperature in a range of -196 … +660 °C
- Reference thermometer and a precision instrument for testing, adjusting and calibrating temperature measuring instruments in factories and calibration laboratories
- Comparative calibration in dry well calibrators, tube furnaces and liquid baths

Special features

- Temperature range: -196 ... +660 °C
- High stability
- Low drift, long service life
- Bare wires, DIN connector or SMART plug

Reference thermometer model CTP5000

Description

The CTP5000 provides a full range platinum resistance thermometers (PRTs) for use in every application from standards calibration to site temperature measurement. If the 'off the shelf' range will not suit the needs the thermometers can be supplied custom manufactured to almost any specification.
WIKA also provide a range of standards resistors for use when calibrating platinum resistance thermometers.

Using calibrated probes with a precise thermometer there is a choice between storing the calibration data into the memory of the instrument or if using ASL SMART probes for ease of convenience, the calibration is stored in an electronic memory chip located in the connector. Therefore moving the SMART probe between channels or instruments is easy as the calibration data is stored in the SMART-probe connector, no need to enter the calibration data into the instrument channel now being used.

For calibration, the test items and the standard thermometer are brought to the same temperature in a temperature conditioning unit.
As soon as a stable temperature is reached, the test items are read or their output signals are measured (resistance, thermoelectric voltage, standard signal) and compared with the standard thermometer.

Using this comparison method, the measuring uncertainty can be considerably reduced because not only the display of the temperature conditioning unit is taken into consideration.

Specifications	Model CTP5000-170
Temperature range	-196 … +170 °C
Resistance at 0 °C	100 Ω
Temperature coefficient	0.00385
Recommended measurement current	1 mA
Sheath material	Metal alloy
Probe diameter	d = 6 mm
Probe length	l = 350 mm (immersion depth max. 300 mm)
Cable length	2 m
Cable connection	Bare wire, DIN plug or SMART connector

Specifications	Model CTP5000-200
Temperature range	-50 … +200 °C
Resistance at 0 °C	100 Ω
Temperature coefficient	0.00385
Recommended measurement current	0.5 mA or 1 mA
Sheath material	Stainless steel
Probe diameter	d = 3 mm,
Probe length	l = 30 mm
Cable length	3 m
Cable connection	Bare wire, DIN plug or SMART connector

Specifications	Model CTP5000-250
Temperature range	-50 … +250 °C
Resistance at 0 °C	100 Ω
Temperature coefficient	0.00385
Recommended measurement current	0.5 mA or 1 mA
Sheath material	Stainless steel
Probe diameter	d = 6 mm
Probe length	l = 350 mm (immersion depth max. 300 mm)
Cable length	2 m
Cable connection	Bare wire, DIN plug or SMART connector

Specifications	Model CTP5000-450
Temperature range	-70 … +450 °C
Resistance at 0 °C	100 Ω
Temperature coefficient	0.00385
Recommended measurement current	0.5 mA or 1 mA
Sheath material	Stainless steel
Probe diameter	d = 6 mm
Probe length	l = 350 mm (immersion depth max. 300 mm)
Cable length	2 m
Cable connection	Bare wire, DIN plug or SMART connector

Specifications	Model CTP5000-651
Temperature range	-189 … +650 °C
Resistance at 0 °C	100 Ω
Temperature coefficient	0.003925
Recommended measurement current	0.5 mA or 1 mA
Sheath material	Fused silica
Probe diameter	d = 7 mm
Probe length	l = 450 mm (immersion depth max. 350 mm, min. 200 mm)
Cable length	2 m
Cable connection	Bare wire, DIN plug or SMART connector

Specifications	Model CTP5000-652
Temperature range	-70 … +650 °C
Resistance at 0 °C	100 Ω
Temperature coefficient	0.00385
Recommended measurement current	1 mA
Sheath material	Metal alloy
Probe diameter	d = 6 mm
Probe length	l = 450 mm (immersion depth max. 400 mm)
Cable length	2 m
Cable connection	Bare wire, DIN plug or SMART connector

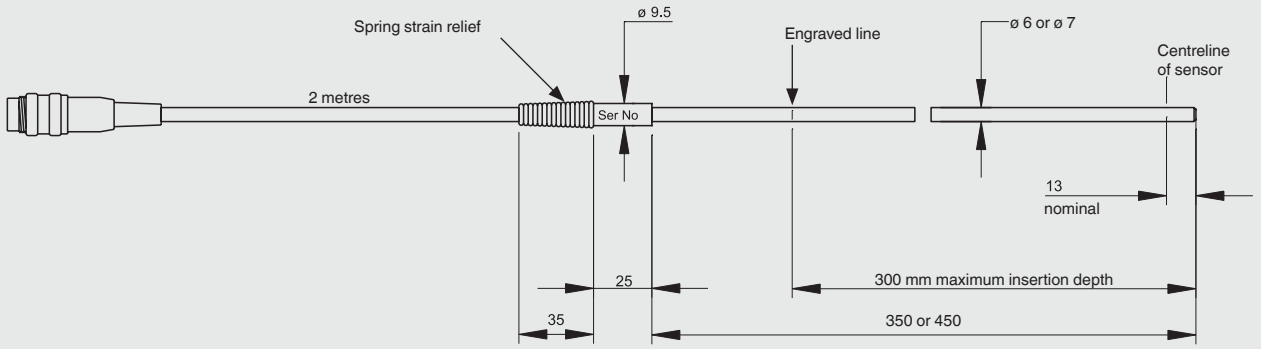
Specifications	Model CTP5000-T25
Temperature range	-189 … +660 °C
Resistance at 0 °C	25 ±0.5 Ω
Temperature coefficient	0.003925
Recommended measurement current	1 mA
Sheath material	Fused quartz
Probe diameter	d = 7 mm
Probe length	l = 480 mm (recommended immersion depth 300 mm)
Cable length	4 m
Cable connection	gold plated spare terminals

Certificates	
Calibration	Standard: without certificate Option: 3.1 calibration certificate per DIN EN 10204 or DKD/DAkkS calibration certificate
Recommended calibration interval	1 year (depending on the conditions of usage)

Approvals and certificates, see website

Dimensions in mm

Resistance thermometer

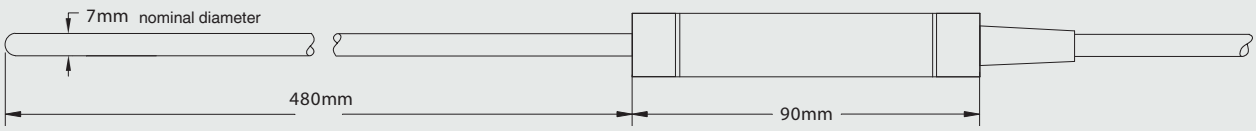


Model	Dimensions	Temperature range
CTP5000-170	Pt100, d = 6 mm, l = 350 mm (without spring strain relief, 100 mm handle)	-196 ... +170 °C
CTP5000-250	Pt100, d = 6 mm, l = 350 mm	-50 ... +250 °C
CTP5000-450	Pt100, d = 6 mm, l = 350 mm	-70 ... +450 °C
CTP5000-652	Pt100, d = 6 mm, l = 450 mm (without spring strain relief, 100 mm handle)	-70 ... +650 °C
CTP5000-651	Pt100, d = 7 mm, l = 450 mm (125 mm handle)	-189 ... +650 °C

Resistance thermometer

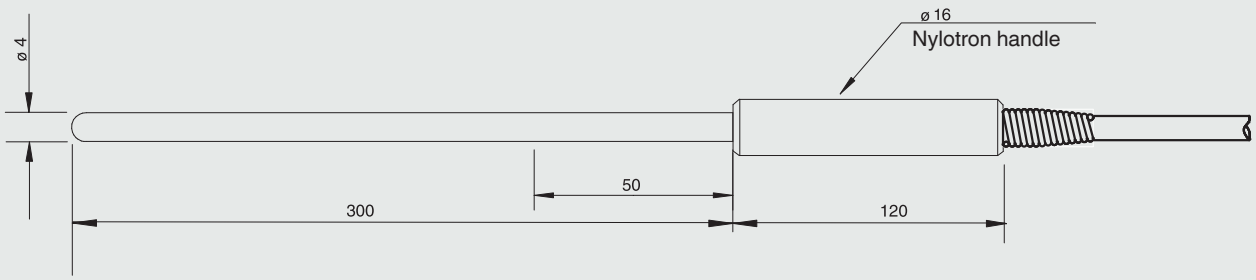
Model	Dimensions	Temperature range
CTP5000-200	Pt100, d = 3 mm, l = 30 mm	-50 ... +200 °C

Resistance thermometer



Model	Dimensions	Temperature range
CTP5000-T25	Pt25, d = 7 mm, l = 480 mm	-189 ... +660 °C

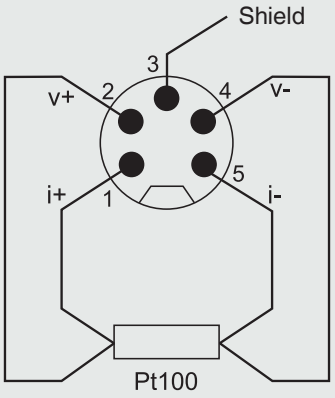
NTC thermistor



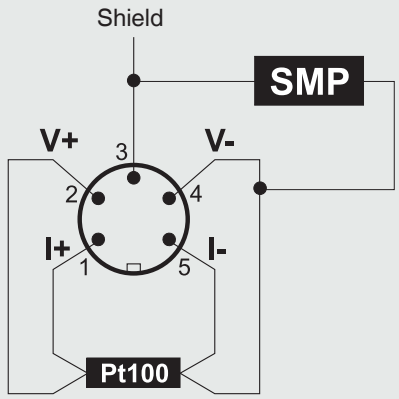
Model	Dimensions	Temperature range
CTP5000-K10	NTC thermistor R25 = 10 KΩ, d = 4 mm, l = 300 mm	-50 ... +125 °C

Resistance thermometer connection, 4-wire (5-pin DIN connector)

View towards front panel connector



Viewed from top panel



Options

With bare wires, DIN plug or SMART plug
With ASL's SMART connector on the probes,storing the data is needed only once - in the connector! The calibration data stays with the probe - permanently. It can even be used on another read-out without any further action.

The SMART connector saves time and reduces error. If there are existing calibrated or uncalibrated probes, no problem, ASL read-outs automatically register if a probe is SMART or normal.

Scope of delivery

- Model CTP5000 reference thermometer according specification

Option

- DKD/DAkkS calibration certificate
  - With calculation of coefficients or
  - With calculation of coefficients as well as additional value table print from K to K
- UKAS calibration certificate

Accessories

Temperature probes
- with DIN plug
- with SMART plug
- Probe extension cable

Test case
- Carrying case, robust

Ordering information
Model / Probe / Connection of the probe / Calibration / Calculation coefficients / Test point for the calibration certificate / Additional order information

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