

# Hand-held thermometer Model CTH7000

WIKA data sheet CT 55.50



for further approvals  
see page 2

## Applications

- Precision thermometer for very accurate temperature measurements in a range of  $-200 \dots +962 \text{ }^{\circ}\text{C}$  ( $-328 \dots +1,764 \text{ }^{\circ}\text{F}$ )
- Reference instrument for testing, adjusting and calibrating temperature measuring instruments in factories and calibration laboratories
- Self-contained, complete system also suitable for on-site measurements/calibrations

## Special features

- Temperature range:  $-200 \dots +962 \text{ }^{\circ}\text{C}$  ( $-328 \dots +1,764 \text{ }^{\circ}\text{F}$ )
- Stability:  $< 0.005 \text{ }^{\circ}\text{C}$  per year
- Dual inputs measuring platinum resistance thermometers (PRTs) and thermistors single or differential measurement
- High long-term stability



Hand-held thermometer model CTH7000

## Description

The model CTH7000 hand-held thermometer is a high performance 2-channel thermometer for Pt100 and thermistor probes. The hand-held thermometer CTH7000 is a step up in measurement accuracy with a battery power.

The CTH7000 can handle all needs, with accuracies and resolutions normally associated with a bench top thermometer. Two inputs give direct temperatures from Pt100 or thermistor probes or can display the temperature difference between them. Measurements can be logged directly to memory or, use the USB port to control and data log with the PC.

The CTH7000 will display a statistical analysis of measurements, with average value, min and max values and standard deviation. Because the CTH7000 will display in ohms as well as temperature, it can even be used to calibrate

one probe against another. Most instruments require to enter calibrated probe data into memory to optimise measurement accuracy, which can mean a lot of data entering if you change probes regularly.

With ASL's SMART connector on the probes, you only need to store the data once - in the connector! The calibration data stays with the probe - permanently. The probe can even be used on another CTH7000 without any further action. The SMART connector saves time and reduces error. If you have existing calibrated or uncalibrated probes, no problem, CTH7000 automatically registers if a probe is SMART or normal.

## Specifications




### Model CTH7000

Hand-Held thermometer		
Probe types	Pt100 and Pt25 resistance thermometers, NTC thermistors	
Measuring inputs	2	
Data entry format	ITS 90 and CVD for calibrated probes; or EN 60751 for uncalibrated probes	
<b>Measuring ranges</b>		
Probe current	DC 1 mA (Pt100); Auto-select 1 mA, 10 $\mu$ A and 3 $\mu$ A for thermistors	
Temperature range	-200 ... +962 °C (-328 ... +1,764 °F), depending on thermometer probe	
<b>Accuracy</b>		
Resistance thermometers <sup>1)</sup>	0.015 K	
NTC thermistors	0 ... 400 $\Omega$	$\pm 0.006 \Omega$
	400 $\Omega$ ... 50 k $\Omega$	$\pm 0.01$ % of reading
	50 ... 400 k $\Omega$	$\pm 0.02$ % of reading

1) The accuracy in K defines the deviation between the measured value and the reference value. (Only valid for indicating instruments.)

Digital indicator		
<b>Display</b>		
Screen	Large 4 1/2-digit two-line LC display with backlighting	
Resolution	0.001 °C	
<b>Functions</b>		
Memory	approx. 8,000 values	
Functions via key press	Statistical analysis: Min./Max. average and standard deviation, Hold, Zero, one-shot measurement, measurement log	
Real-time clock	integrated clock with date	
<b>Voltage supply</b>		
Power supply	Nickel-Metal Hydride (Ni-MH) rechargeable battery Charging socket built-in low battery indicator	
Battery life	approx. 20 hours of operation	
<b>Permissible ambient conditions</b>		
Operating temperature	0 ... 40 °C (32 ... 104 °F)	
Storage temperature	-20 ... +50 °C (-4 ... +122 °F)	
<b>Communication</b>		
Interface	USB	
<b>Case</b>		
Dimensions (L x D x W)	232 x 97 x 53 mm (9.13 x 3.82 x 2.09 in)	
Weight	500 g (1.1 lbs)	

## Approvals

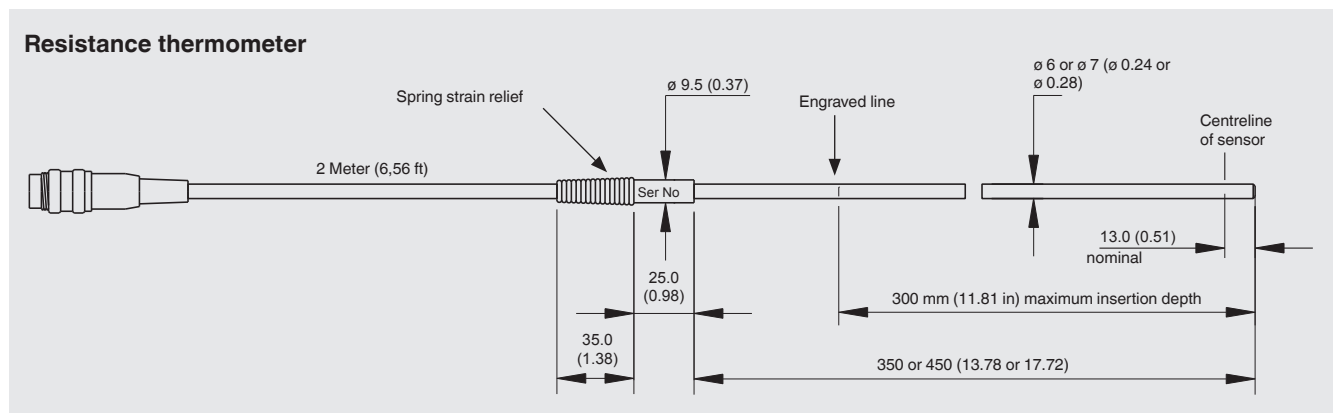
Logo	Description	Country
	EAC EMC directive	Eurasian Economic Community
	KazInMetr Metrology, measurement technology	Kazakhstan
-	MTSCHS Permission for commissioning	Kazakhstan
	UkrSEPRO Metrology, measurement technology	Ukraine

## Certificates

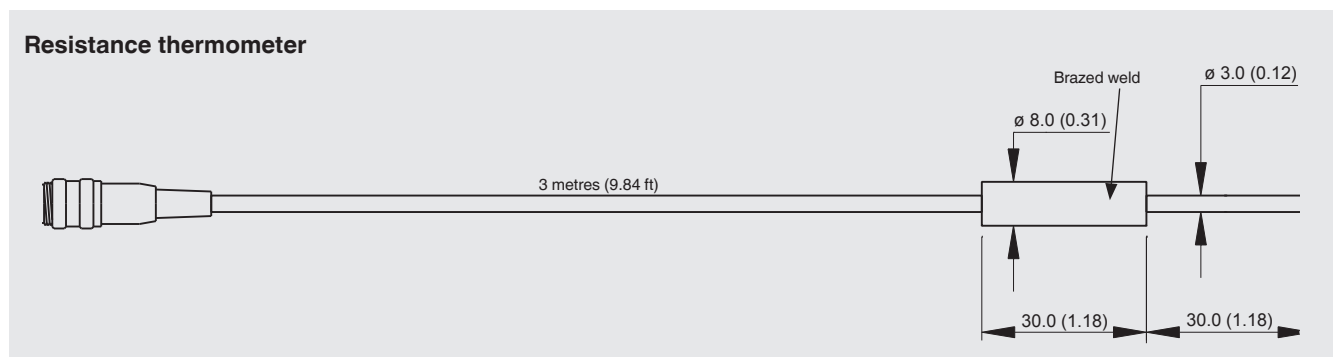
Certificate	
Calibration	Standard: without certificate Option: 3.1 calibration certificate per DIN EN 10204 or DKD/DAkKS/UKAS calibration certificate
Recommended recalibration interval	1 year (dependent on conditions of use)

Approvals and certificates, see website

## Temperature probes (immersion probe)

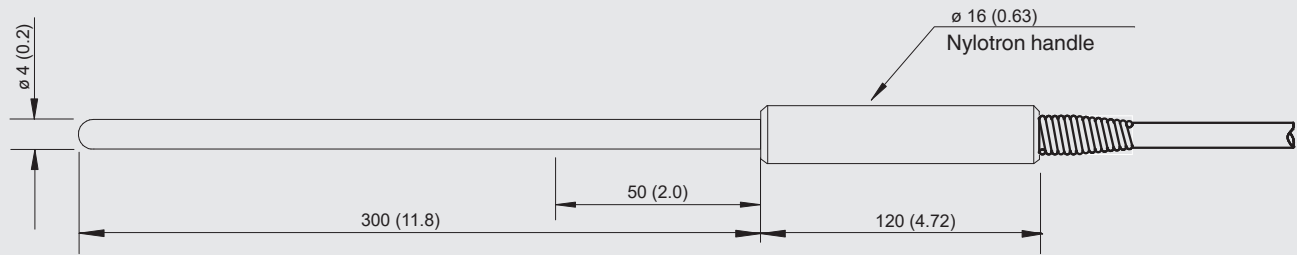


Model	Dimensions	Temperature range	Detector length
CTP5000-250	Pt100, d = 6 mm, l = 350 mm Pt100, d = 0,24 in, l = 13,78 in	-50 ... +250 °C (-58 .. +482 °F)	25 mm (0.98 in)
CTP5000-450	Pt100, d = 6 mm, l = 350 mm Pt100, d = 0,24 in, l = 13,78 in	-80 ... +450 °C (-112 .. +842 °F)	25 mm (0.98 in)
CTP5000-651	Pt100, d = 7,5 mm, l = 450 mm (125 mm Griff) Pt100, d = 0.30 in, l = 17,72 in (4,92 in Griff)	-189 ... +650 °C (-308 .. +1,202 °F)	50 mm (1.97 in)



Model	Dimensions	Temperature range	Detector length
CTP5000-200	Pt100, d = 3 mm, l = 30 mm Pt100, d = 0.12 in, l = 1.18 in	-50 ... +200 °C (-58 .. +392 °F)	6 mm (0.24 in)

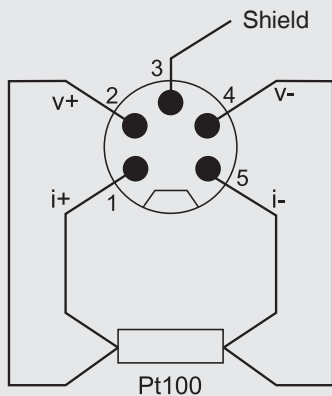
## NTC thermistor



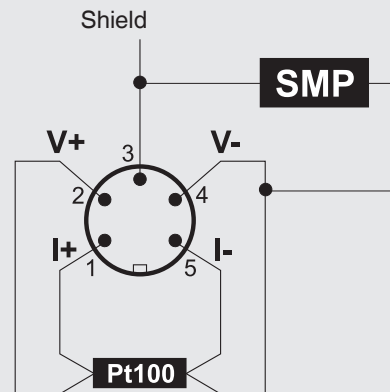
Model	Dimensions	Temperature range
CTP5000-K10	NTC thermistor R25 = 10 K $\Omega$ , d = 4 mm, l = 300 mm NTC thermistor R25 = 10 K $\Omega$ , d = 0.2 in, l = 11.8 in	-50 ... +125 °C (-58 ... +257 °F)

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

View towards front panel connector



Viewed from top panel



## Options

### With 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 instrument without any further action.

The SMART connector saves time and reduces error. If there are existing calibrated or uncalibrated probes, no problem, CTH7000 automatically registers if a probe is SMART or normal

### Connection ports for inputs

There are two input channels; two 5-pin DIN input-sockets are located at the rear of the instrument. These are designed to take either platinum resistance thermometer (PRT) or thermistor probes. Channel A is colour-coded red. Channel B is colour-coded blue.



2 connection port for temperature probe inputs

## Features of the hand-held thermometer

- Simple handling
- Large display with dual temperature display
- Min./Max. value for monitoring of temperature limits
- Mean value function for statistical evaluation
- Selectable channel can be switched off to improve the clarity of the display data
- Recording and visualisation of temperature cycles with the help of the ULog software
- Data logger

The large graphic LC display is your direct link to the instrument, presenting you with the measurement results and information or menus to set and control the instrument.

The LC display is designed for viewing without any reflections under normal lighting. A backlight is provided in case of darker ambient conditions.

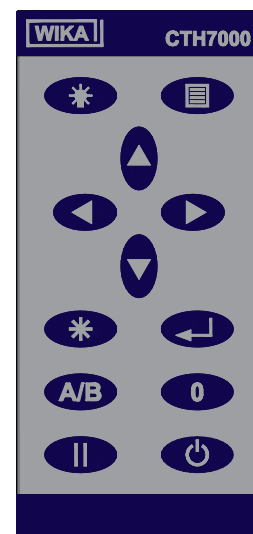


- ① 2 Connection ports for temperature probe
- ② USB connection port for PC
- ③ Keypad
- ④ Large LC display

## Operation

The keys are used to select the various menu options. Generally, no more than two menu levels are used. A few (infrequently used options) require three menu levels. Operation is simple once you are familiar with instrument.

Key	Function
	Menu display
	Backlight
	Up arrow
	Down arrow
	Left arrow
	Right arrow
	Clear (view statistics)
	Enter
A/B	A/B channel select
0	Zero (offset) reading
	Hold reading
	ON/OFF



Keypad of CTH7000

## Scope of delivery

- Model CTH7000 hand-held thermometer incl. battery charger, USB cable and software ULog
- 3.1 calibration certificate per DIN EN 10204
- Choice of temperature probes

## Option

- DKD/DAkkS calibration certificate
- UKAS calibration certificate

## Accessories

### Temperature probes

- Immersion probe
- Customer-specific probes are available on request

### Voltage supply

- Replacement battery charger with multiple power plugs
- Spare battery pack to clip onto rear of CTH7000

### Test case

- Transport case, robust

## Ordering information

Model / Probe at input 1 / Connection input 1 / Probe at input 2 / Connection input 2 / Calibration / Transport case / Version / Further approvals / Additional order information

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