

# Hand-held thermometer Model CTH7000

WIKA data sheet CT 55.50

## Applications

- Precision thermometer for very accurate temperature measurements in a range of -200 ... +962 °C
- 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 ... +962 °C
- Stability: < 0.005 °C per year
- Dual inputs measuring platinum resistance thermometers (PRTs) and thermistors single or differential measurement
- High long-term stability

## 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



Hand-held thermometer model CTH7000

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, depending on thermometer probe	
<b>Accuracy</b>		
Resistance thermometers	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

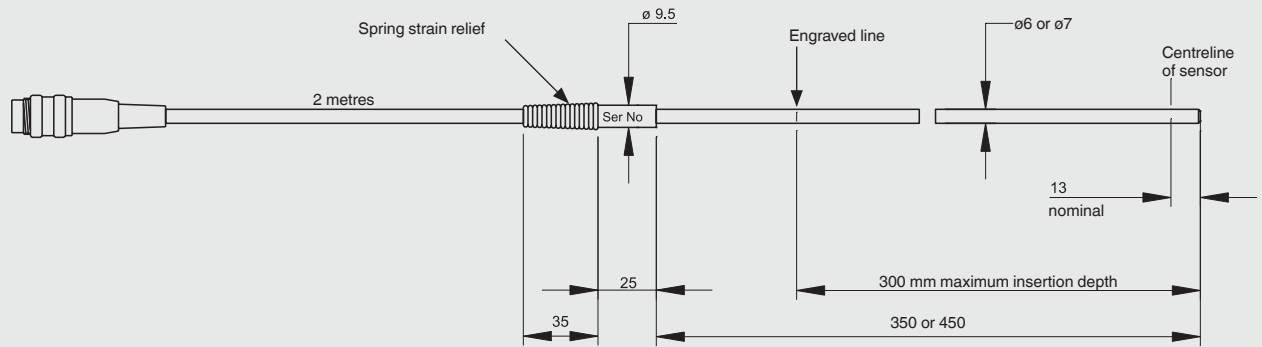
Digital indicator	
<b>Display</b>	
Screen	Large 4 1/2-digit two-line LCD screen with backlighting
Resolution	0.001 °C
<b>Functions</b>	
Memory	approx. 8,000 values
Functions via key press	Statistical analysis: Min/Max, average and standard deviation, Hold, Zero, one-shot measurement, measurement log
Real-time clock	integrated clock with date and year
<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	15 ... 25 °C
Storage temperature	-20 ... +50 °C
<b>Communication</b>	
Interface	USB
<b>Case</b>	
Dimensions	232 x 97 x 53 mm (L x D x W)
Weight	500 g

CE conformity, certificates	
<b>CE conformity</b>	
EMC directive	2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (portable test and measuring equipment)
<b>Certificates</b>	
Calibration	Standard: 3.1 calibration certificate per DIN EN 10204 Option: DKD/DAkkS calibration certificate
Recommended calibration interval	1 year (depending on the conditions of usage)

Approvals and certificates, see website

## Temperature probes

### Resistance thermometer



### Resistance thermometer (immersion probe)

### Temperature range

Pt100, d = 6 mm, l = 350 mm

-50 ... +250 °C

Pt100, d = 6 mm, l = 350 mm

-70 ... +450 °C

Pt100, d = 6 mm, l = 450 mm

-70 ... +650 °C

### Resistance thermometer



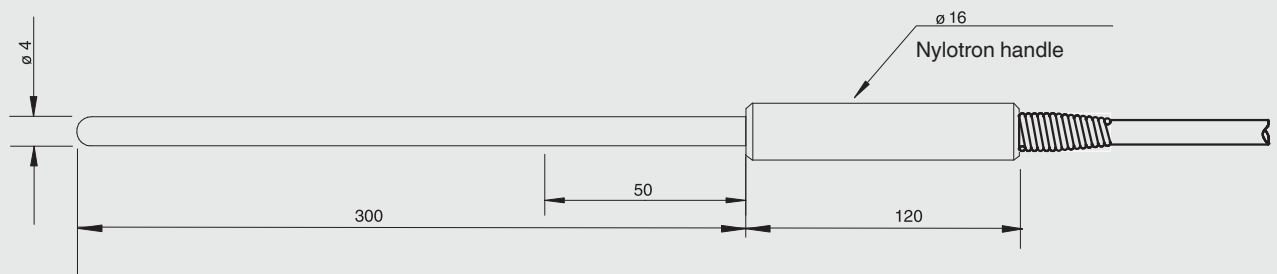
### Probe type (immersion probe)

### Temperature range

Pt100, d = 3 mm, l = 30 mm

-50 ... +200 °C

### NTC thermistor



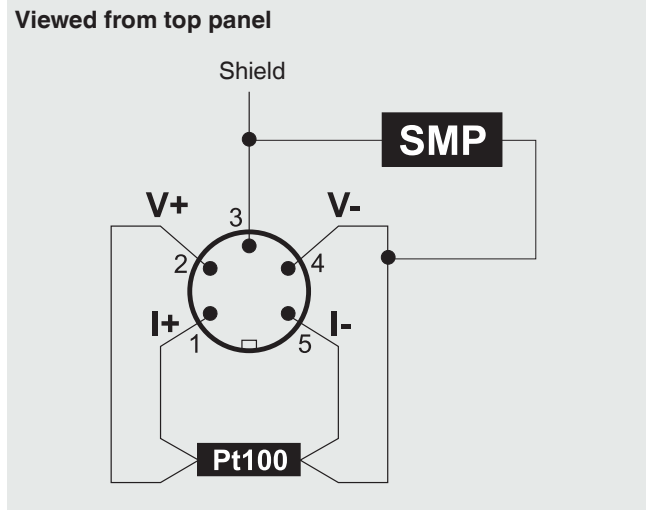
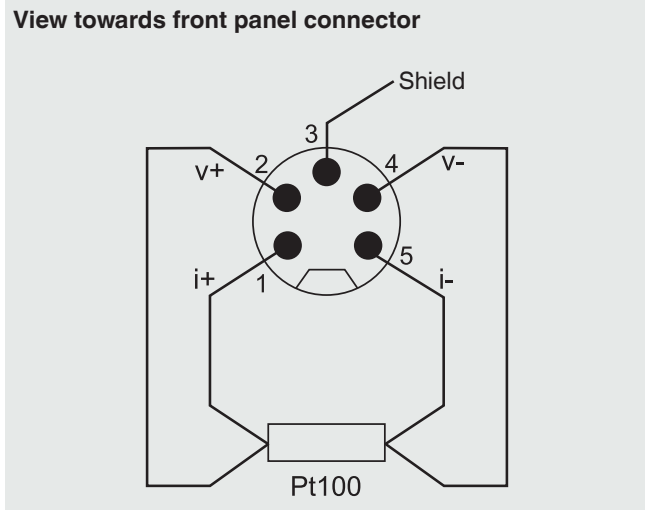
### Probe type (immersion probe)

### Temperature range

NTC thermistor R25 = 10 K $\Omega$ , d = 4 mm, l = 300 mm

-50 ... +125 °C

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



### 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

### 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 LCD screen is your direct link to the instrument, presenting you with the measurement results and information or menus to set and control the instrument.










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

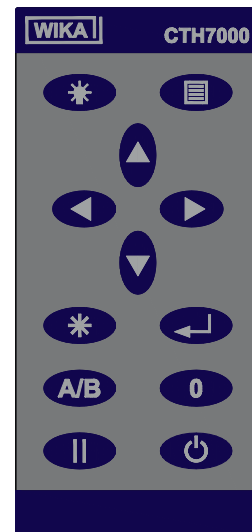


- 1 2 Connection ports for temperature probe inputs
- 2 USB connection port for PC
- 3 Keypad
- 4 Large LCD display

## 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

### 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

## Scope of delivery

- Model CTH7000 hand-held thermometer incl. battery charger and USB cable
- 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

### Software

- ULog

## Ordering information

Model / Probe at input 1 / Connection input 1 / Probe at input 2 / Connection input 2 / Calibration / Software / Carrying case / Additional order information

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**WIKAL Alexander Wiegand SE & Co. KG**  
Alexander-Wiegand-Straße 30  
63911 Klingenberg/Germany  
Tel. (+49) 9372/132-0  
Fax (+49) 9372/132-406  
E-mail [info@wika.de](mailto:info@wika.de)  
[www.wika.de](http://www.wika.de)