

# Hand-held thermometer, precision version Model CTH6500 Model CTH6510, ATEX version

WIKA data sheet CT 55.10



for further approvals  
see page 2-3

## Applications

- Calibration of thermometers
- Temperature measurement for the purposes of quality assurance
- Measurements in service and maintenance applications
- Long-term monitoring and online documentation

## Special features

- High accuracy of 0.03 K with Pt100
- One- and two-channel versions
- Connection possibilities for various probe types
- Intrinsically safe version Ex ib IIB T4 Gb



Hand-held thermometer model CTH6500

## Description

The all-purpose model CTH6500 hand-held thermometer, for superior mobile temperature measurement, is notable for its precision, flexibility and ease of handling.

In addition to Pt100 resistance thermometers, it can also process signals from typical thermocouples. Thus temperatures from -200 ... +1,500 °C (-328 ... +2,732 °F) can be measured.

The explosion proof version is only for measuring Pt100 resistance thermometers available.

Through its high accuracy of 0.03 K in ranges from -100 ... +150 °C (-148 ... +302 °F), this instrument can also be used as a reference instrument in biotechnology, pharmaceutical and food industries. The CTH6500 is thus also ideal for all service and maintenance tasks.

Low-drift measuring amplifiers ensure small measurement errors, while easy-to-use adjustment features considerably simplify adjustments and calibrations:

- Calibration by code for fast setting of standard probes via identification numbers

- Physical calibration of probe and display at one, two or three different temperatures

In this way it is possible to reduce measuring errors to a minimum and ensure a high display accuracy.

### Additional fields of application

The instrument has been primarily designed for temperature measurement, though it can, with the appropriate probes, also be used for:

- Humidity measurement with a combined temperature-humidity probe
- Flow measurement from 0.1 ... 40 m/s with a vane sensor

The calibration and adjustment possibilities above are also applicable to these measurement parameters.

## Specifications

Hand-held thermometer	Model CTH6500	Model CTH6510
<b>Probe types</b>	Pt100, thermocouples, humidity, flow	Pt100
<b>Measuring inputs</b>	1 or 2	1 or 2
<b>Measuring ranges</b>		
Pt100	-200 ... +600 °C (-392 ... +1,112 °F)	Pt100 -200 ... +600 °C (-392 ... +1,112 °F)
Thermocouples	-200 ... +1,500 °C (-392 ... + 2,732 °F)	-
Humidity	0 ... 100 % r. h.	-
Flow	0 ... 40 m/s	-
<b>Accuracies</b>		
Resistance thermometer type Pt100	0.03 K for -50 ... +199.99 °C (-58 ... +394.98 °F) 0.05 K for -200 ... -50.01 °C (-328 ... -58.02 °F) otherwise 0.05 % of reading	0.03 K for -50 ... +199.99 °C (-58 ... +394.98 °F) 0.05 K for -200 ... -50.01 °C (-328 ... -58.02 °F) otherwise 0.05 % of reading
Thermocouple types K, J, L, N and T	0.2 K for 0 ... 200 °C (32 ... 392 °F) 0.5 K for 200 ... 1,000 °C (392 ... 1,832 °F) 1 K above 1,000 °C (1,832 °F)	-
Thermocouple types R and S	1 K + 0.1 % of reading	-
Humidity	1.5 % r. h.	-
Flow	0.5 % of full-scale value	-

Digital indicator	
<b>Display</b>	
Screen	Large 4 1/2-digit 2-line LC display with backlighting
Resolution	0.01 K up to 200 °C, then 0.1 K
<b>Functions</b>	
Measuring rate	4/s ("fast"); 1/s ("slow")
Memory	Min/Max
Functions via key press	Min/Max memory, Hold, Tare, Zero-point adjustment
Real-time clock	integrated clock with date
<b>Voltage supply</b>	
Power supply	DC 9 V battery or rechargeable battery
Battery life	approx. 20 hours of operation with battery
<b>Permissible ambient conditions</b>	
Operating temperature	0 ... 40 °C (32 ... 104 °F)
Storage temperature	-10 ... +50 °C (14 ... 122 °F)
<b>Communication</b>	
Interface	USB via interface cable
<b>Case</b>	
Material	impact-resistant ABS plastic, transparent screen
Dimensions (L x W x H)	200 x 93 x 44 mm (7.87 x 3.66 x 1.73 in)
Weight	350 g (0.77 lbs.)

## Approvals

Logo	Description	Country
	<b>EC declaration of conformity for CTH6500</b> EMC directive 2004/108/EC EN 61326-1:2006 emission (group 1, class B) and interference immunity (portable test and measuring equipment)	European Community

Logo	Description	Country
 	<b>EC declaration of conformity for CTH6310</b> <ul style="list-style-type: none"> <li>■ EMC directive 2004/108/EC EN 61326-1:2013 emission (group 1, class B) and interference immunity (portable test and measuring equipment) EN 60079-0:2012 EN 60079-11:2012</li> <li>■ ATEX directive 94/9/EC - Ex i Category II 2 G, ignition protection type Ex ib IIB T4 Gb</li> </ul>	European Community
	<b>EAC</b> Electromagnetic compatibility	Eurasian Economic Community
	<b>GOST</b> Metrology/measurement technology	Russia
	<b>KazInMetr</b> Metrology/measurement technology	Kazakhstan
	<b>MTSCHS</b> Commissioning approval	Kazakhstan
	<b>Uzstandard</b> Metrology/measurement technology	Uzbekistan

## Certificates

Certificate	
<b>Calibration</b>	Standard: 3.1 calibration certificate per DIN EN 10204 Option: DKD/DAkkS calibration certificate
<b>Recommended recalibration interval</b>	1 year (dependent on conditions of use)

Approvals and certificates, see website

## Temperature probes

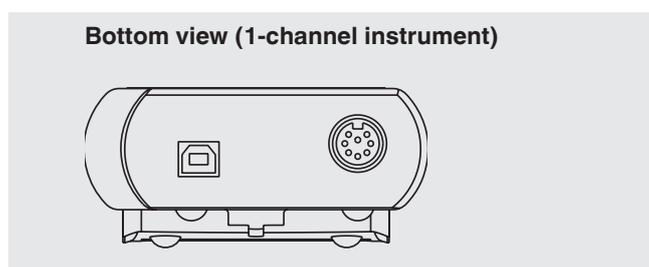
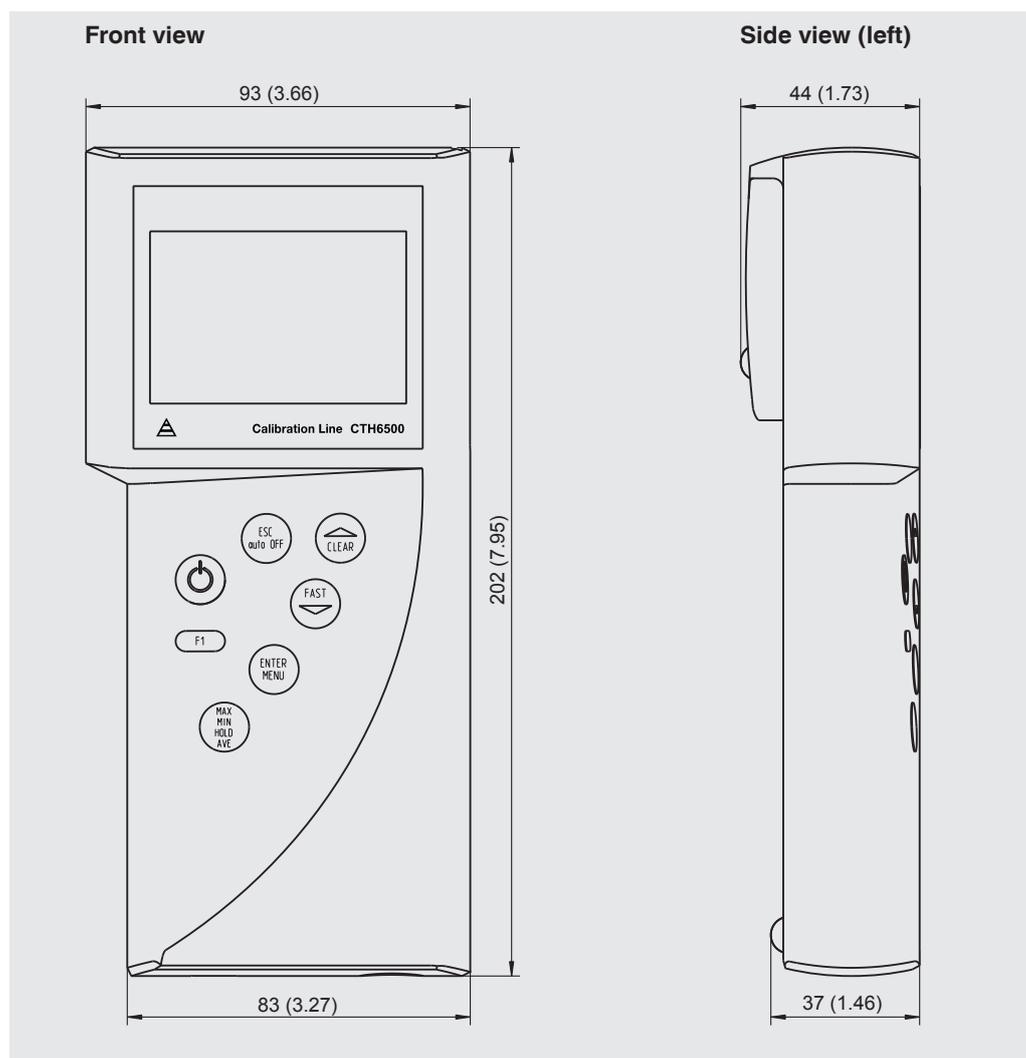
Standard probe (immersion probe)	Temperature range	
	°C	°F
Pt100, d = 3 mm, l = 150 mm (d = 0.12 in, l = 5.91 in)	-200 ... +450	-392 ... +842
Pt100, d = 3 mm, l = 300 mm (d = 0.12 in, l = 11.81 in)	-200 ... +450	-392 ... +842
Pt100, d = 6 mm, l = 300 mm (d = 0.24 in, l = 11.81 in)	-200 ... +450	-392 ... +842
TC K, d = 3 mm, l = 300 mm (d = 0.12 in, l = 11.81 in)	-200 ... +1,100	-392 ... +2,012
TC K, d = 3 mm, l = 500 mm (d = 0.12 in, l = 19.69 in)	-200 ... +1,100	-392 ... +2,012



**Fig. left: combined temperature-humidity probe**  
**Fig. centre: immersion probe**  
**Fig. right: vane flow sensor**

## Dimensions in mm

### Hand-held thermometer, model CTH6500 and CTH6510, ATEX-version



## Features of the hand-held thermometer

- Simple handling
- Large display with dual temperature display and bargraph
- Min/Max value for monitoring of temperature limits
- Mean value function for statistical evaluation
- "Fast mode" for faster measurements up to 4/s
- 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 DE-Graph software
- Data logger (optional)

## Operation

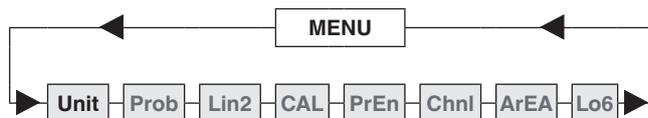
In the **SETUP** menu, a menu point can be selected and altered using the **UP** and **DOWN** keys. **ENTER** and **ESC** are used for confirmation and exit.

The operator menu is intuitively understandable and is subdivided into only two levels:

Main menu for the selection of the basic functions and parameter menu for setting the parameters.



- ① Probe holder
- ② Connection port 1 for temperature probe
- ③ Connection port 2 for temperature probe
- ④ USB connection port for PC
- ⑤ Keyboard
- ⑥ Large LC display



### Main menu for CTH6500

Unit	Prob	Lin2	CAL	PrEn	Chnl	ArEA	Lo6
°C	P	T1-T2	OFF	OFF	OFF	c	OFF
°F	J		oP1	ON	ON	m	ON
m/s	K		oP2				
%rh	L						
g/m <sup>3</sup>	N						
°C td	R						
°F td	S						
Pa	T						
hPa	RH						
m <sup>3</sup> /s	D						
	Pr						
	H						

### Parameter menu for CTH6500

## Scope of delivery

- Model CTH6500 hand-held thermometer incl. 9 V battery or model CTH6510 intrinsically safe hand-held thermometer incl. 9 V battery
- 3.1 calibration certificate per DIN EN 10204
- Choice of temperature probes

## Option

- DKD/DAkkS calibration certificate

## Accessories

### Temperature probes

- Immersion probe
- Penetration probe
- Surface probe
- Moisture/temperature probe
- Customer-specific probes are available on request
- Adapter for thermocouples, DIN on TC miniature connector
- Spare DIN connector for the probe

### Voltage supply

- AC adapter
- 9 V rechargeable battery and charger
- 9 V battery

### Test case

- Transport case, robust
- Case set with rechargeable battery, charger, power supply unit, interface cable and software
- Case set with power supply unit AC 100 ... 260 V, interface cable and software

### Software

- DE-Graph software
- PC adapter cable USB



Service case



Intrinsically safe hand-held thermometer, model CTH6510

## Ordering information

Model / Version / Data logger / Probe at input 1 / Probe at input 2 / Service case / Calibration / Additional ordering information

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