Hand-held thermometer, precision version
Model CTH6500
Model CTH65I0, ATEX version

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.

Data sheets showing similar products:
Hand-held thermometer; models CTH6300, CTH63I0; see data sheet CT 51.05

Specifications

Hand-held thermometer	Model CTH6500	Model CTH65I0
Probe types	Pt100, thermocouples, humidity, flow	Pt100
Measuring inputs	1 or 2	1 or 2
Measuring ranges		
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	-
Accuracies		
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	
Display	
Screen	Large 4 1/2-digit 2-line LC display with backlighting
Resolution	0.01 K up to 200 °C, then 0.1 K
Functions	
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
Voltage supply	
Power supply	DC 9 V battery or rechargeable battery
Battery life	approx. 20 hours of operation with battery
Permissible ambient conditions	
Operating temperature	0 ... 40 °C (32 ... 104 °F)
Storage temperature	-10 ... +50 °C (14 ... 122 °F)
Communication	
Interface	USB via interface cable
Case	
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	Land
CE	**EU declaration of conformity for CTH6500** EMC directive EN 61326 emission (group 1, class B) and interference immunity (industrial application)	European Community

Logo	Description	Land
CE Ex	**EU declaration of conformity for CTH65I0** ■ EMC directive EN 61326 emission (group 1, class B) and interference immunity (industrial application) ■ ATEX directive - Ex i Zone 1 gas [II 2G Ex ib IIB T4 Gb] T4 at 0 ... 40 °C	European Community
EAC	**EAC** Electromagnetic compatibility	Eurasian Economic Community
	GOST Metrology, measurement technology	Russia
	KazInMetr Metrology, measurement technology	Kazakhstan
-	**MTSCHS** Permission for commissioning	Kazakhstan
	Uzstandard Metrology, measurement technology	Uzbekistan

Certificates

Certificate	
Calibration	Standard: 3.1 calibration certificate per DIN EN 10204 Option: DKD/DAkkS calibration certificate
Recommended recalibration interval	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

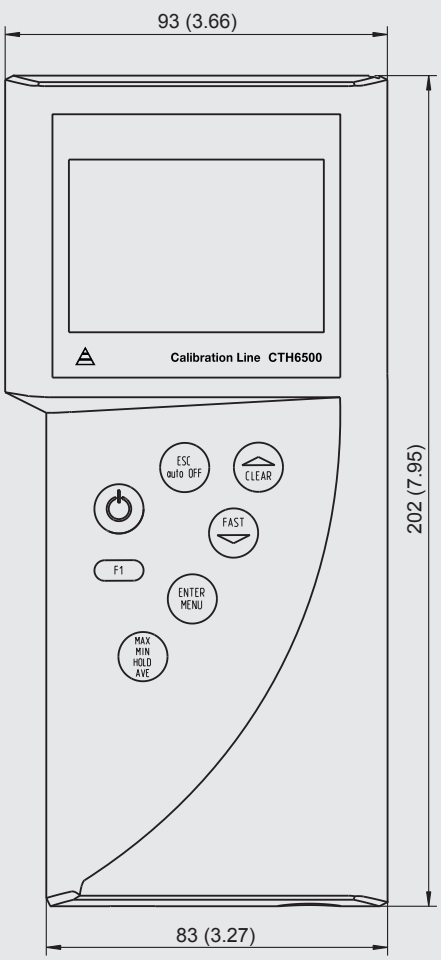
Section through the combined temperature-humidity probe

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

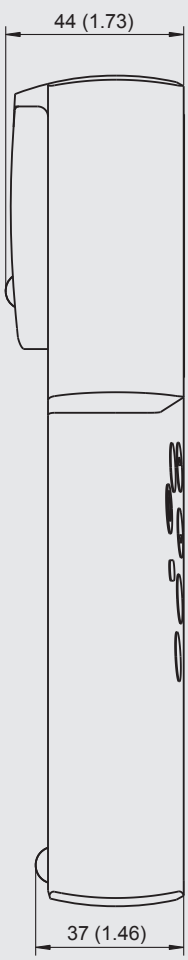
Dimensions in mm (in)

Hand-held thermometer, model CTH6500 and CTH65I0, ATEX-version

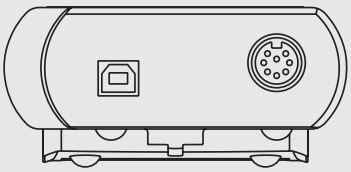
Front view



Side view (left)



Bottom view (1-channel instrument)



Features of the hand-held thermometer

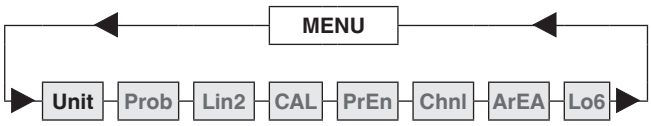
- Simple handling
- Large display with dual temperature display and bargraph
- Min/Max value for monitoring of temperature limits
- Mean value function for statistical evaluation
- “Fast mode” for faster measurements up to 4/s
- Selectable channel can be switched off to improve the clarity of the display data
- Recording and visualisation of temperature cycles with the help of the DE-Graph software
- Data logger (optional)

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

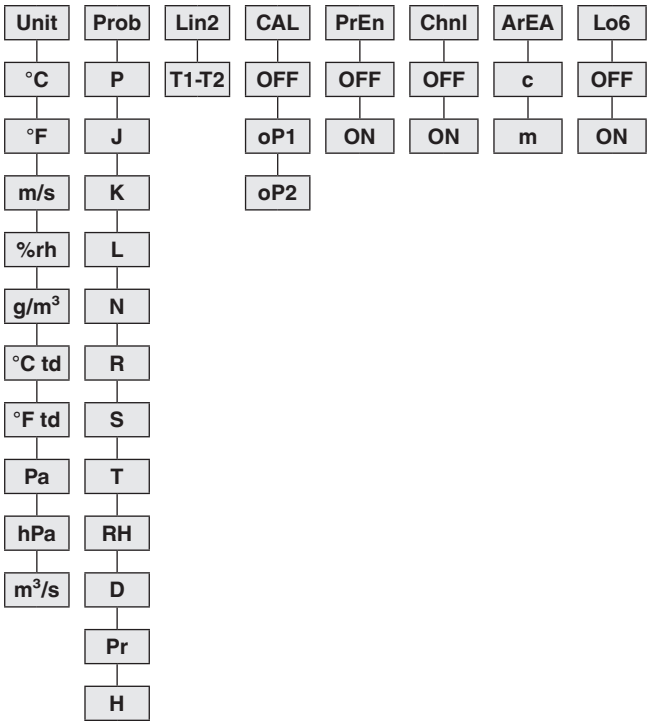
Operation

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.



Main menu for CTH6500



Parameter menu for CTH6500

Scope of delivery

- Model CTH6500 hand-held thermometer incl. 9 V battery or model CTH65I0 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 CTH65I0

Ordering information

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

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