

Hand-Held Thermometer Model CTH 6450

Test and Calibration equipment

Digital instrument with
temperature sensors

- Thermocouples of type: K, J, N, S, T available
- Differential temperature by means of 2 sensors
- Resolution: 0.1 K or 1 K resp.
- Data logger function
- Min/max alarm
- Correction offset for surface measurement
- Large display
- User-friendly

Service intended

This hand-held portable thermometer is used for mobile testing of temperature or calibration. For example, checking temperature in climatic chambers. Due to the portable design of the instrument it is especially useful for commissioning, maintenance and service in the following fields:

- Service industry
- Instrument and control workshops
- Industry (laboratory, workshop and production)
- Quality assurance
- Calibration laboratories

General features

The **CTH 6450** is a service instrument that may be used for a great variety of different tasks in the fields listed above, with 1 or 2 immersion, penetration or surface probes.

Possible temperature ranges are: for immersion probes:

-200°C to 1150 °C, for penetration probes: -65°C to 1000°C and for surface probes: -65°C to 500°C.

Thermocouples of type K, J, N, S, T acc. to DIN EN 60584 are available. The measured temperature can be displayed in the unit degree Celsius or degree Fahrenheit.

The excellence of the easy-to-use and light-weight instrument is complemented by an extremely ergonomic design.

For safe transport and storage of the instrument and its accessories a rugged service-case is also available. The service-case can be equipped with up to 2 digital instruments of Type CTH 6450 and 2 temperature sensors, or resp. in addition to 1 digital instrument of type CTH 6450 a digital instrument of type CPH 6200 and up to 3 pressure transmitters, so that temperature and pressure can be measured with one set.

The system will be supplied with a factory calibration certificate. On request, a DKD calibration certificate can be supplied, instead.



Please see data sheet PE 84.20 for information about hand-held pressure indicator, model **CPH 6200**

CTH 6450 - Digital instrument for 1 or 2 temperature sensors

The digital instrument is the heart of the hand-held service instrument. It allows the connection of 1 or 2 temperature sensors model CTH 6450. Please, always make sure that the correct thermocouple type is activated over the menu.

Specifications	CTH 6450
Digital instrument	
Sensor connections	2 sensor connections (with Type K thermo-voltage free)
Thermocouples	J, K, N, S, T (as Immersion, Penetration and Surface probe available)
Measuring range	
Type K:(NiCr-Ni)	-199.9 ... +999.9°C or -220 ... +1370°C
Type J:(Fe-CuNi)	-120.0 ... +700.0°C or -200 ... +1100°C
Type N:(NiCrSi-NiSi)	-199.9 ... +999.9°C or -200 ... +1300°C
Type S:(Pt10Rh-Pt)	-50.0 ... +999.9°C or -50 ... +1750°C
Type T:(Cu-CuNi)	-120.0 ... +400.0°C or -200 ... +400°C
Accuracy	(for thermocouples acc. to EN 60584)+/-1digit (at nominal temperature)
Type K:-199,9 ... +999,9°C -220 ... +1370°C	+/-0.03%of m.v. +/-0.05%FS (T>-60°C); +/-0.2%of m.v. +/-0.05%FS (T<-60°C) +/-0.08%of m.v. +/-0.1%FS (T>-100°C); +/-1°C +/-0,1%FS (T<-100°C)
Type J:-120,0 ... +700,0°C -200 ... +1100°C	+/-0.03%of m.v. +/-0.08%FS (T>-80°C); +/-0.2%of m.v. +/-0.08%FS (T<-80°C) +/-0.08%of m.v. +/-0.1%FS (T>-150°C); +/-1°C +/-0,1%FS (T<-150°C)
Type N:-199,9 ... +999,9°C -200 ... +1300°C	+/-0.03%of m.v. +/-0.05%FS (T>-60°C); +/-0.2%of m.v. +/-0.05%FS (T<-60°C) +/-0.08%of m.v. +/-0.1%FS (T>-100°C); +/-1°C +/-0.1%FS (T<-100°C)
Type S:-50,0 ... +999,9°C -50 ... +1750°C	+/-0.05%of m.v. +/-0.08%FS (T>-200°C); +/-1°C +/-0.08%FS (T<-200°C) +/-0.1%of m.v. +/-0.1%FS (T>-200°C); +/-1°C +/-0.1%FS (T<-200°C)
Type T:-120,0 ... +400,0°C -200 ... +400°C	+/-0.03%of m.v. +/-0.1%FS (T>-70°C); +/-0.2%of m.v. +/-0.1%FS (T<-70°C) +/-1°C (T>-100°C); +/-1°C +/-digit (T<-100°C)
Display	large LCD-display to show two 4-digit values and extra-info
Range of display	max. -1999 to 9999 digit, depending on sensors used
Units	°C, °F
Resolution	0.1K or 1K respectively
Temperature drift	0.01%/K
Point of comparison	+/- 0.3K
Nominal temperature	20°C
Working temperature	0 to +50°C
Relative humidity	0 to 95% (non-condensing)
Storage temperature	-20 to +70°C
Key-functions	Min, Max, Hold, Tara(Zero-correction by diff.-measurement)
Power-off function	Device will be automatically switched off if no key is pressed/no interface communication takes place for the time of the power-off delay. The power-off delay can be set to values between 1 and 120 min.; it can also be completely de-activated.
Min/max alarm	The measuring value is constantly monitored for the min. and max. limits set. Alarm is given by integrated horn, display and interface.
Data logger	2 functions: individual value logger (Store) and cyclic logger (Cycle)
Memory space	Store: 99; Cycle: 5400
Cycle time	1 to 3600 seconds
Real time clock	integrated clock with date and year
Power supply	9V battery, type IEC 6F22 (included in scope of delivery) as well as additional power supply pin jack (1.9 mm inside diameter) for external stabilised 10.5 - 12V direct-current voltage (see accessories for suitable power supply)
Charging rate	approx. 3.0 mA
Change battery signal	warning sign and 'bAt'
Interface	serial interface. Connection to RS232-interface via suitable electrically insulated interface
Housing (digital instrument)	impact-resistant ABS, membrane keyboard, transparent panel
Ingress protection	IP 65 (front)
Dimensions	142 x 71 x 26 mm (L x W x D)
EMC / CE-conformity	The CTH 6450 device corresponds to the essential protection ratings established in the regulations of the Council for the Approximation of Legislation of the member countries regarding electromagnetic compatibility (89/336/EWG)
Sensors	
Probes available	Immersion, Penetration and Surface probe
Electrical connection	DIN-plug with silicon cabel
Temperature range	
- Immersion probe	- 200 ... +1150°C
- Penetration probe	-65 ... +1000°C
- Surface probe	-65 ... +500°C
Material wetted parts	Immersion probe: Inconel, Penetration probe: V4A, Surface probe: V4A and Cu-probe-head
Dimensions	see drawings

Operating instructions digital instrument



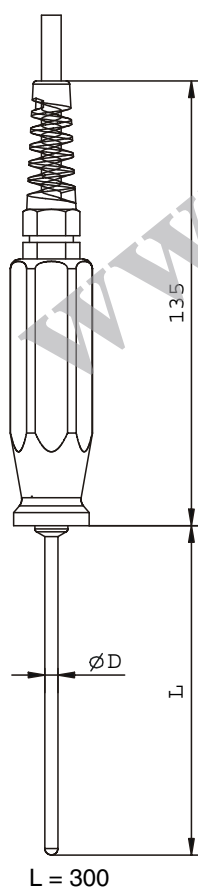
- 1) On/off switch
- 2) and 5) Min/max: Showing the min. or max. memory
- 3) Tara: Calling of tara function (only for DIF-display when working with two sensors)
- 4) Set / Menu: Calling of configuration, switch of displayed value (CH1, CH2, DIF)
- 6) Store / Quit: Calling of hold function resp. calling of logger functions



- a) **Offset arrow:** indicates that zero point offset (offset) is activated
- b) **Corr arrow:** indicates that correction factor is activated
- c) Main display shows, acc. to the arrow above, either the signal of the probe connected to channel 1(CH1) or channel 2 (CH2) or the difference(DIF)
- d) **Warning triangle:** indicates a weak battery, logger full, etc.
- e) Secondary display shows acc. to the arrow below either the signal of the probe connected to channel 1(CH1) or channel 2 (CH2) or the difference(DIF)
- f) **Logger arrow:** indicates that the logger function is activated
- g) **Alarm arrow:** indicates an alarm
- h) **Tara arrow:** indicates that the tare function is activated (only for DIF-display when working with two sensors)

Dimensions in mm

Temperature sensor



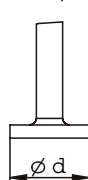
Immersion probe
D=3



Penetration probe
D=3

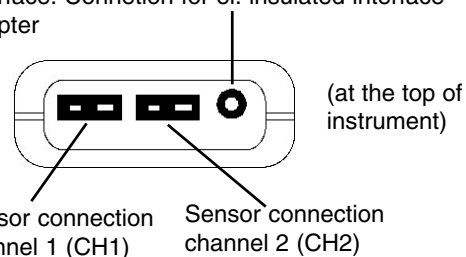


Surface probe d=4
D=1,5



Connections digital instrument

Interface: Connexion for el. insulated interface adapter



Sensor connection
channel 1 (CH1)

Sensor connection
channel 2 (CH2)

The mains adapter socket is located at the left side of the device.

Additional accessories

Please see our price list for power supply (9V battery, plug power pack, accumulator 9V, charging set, etc.), interface adapter and software.

Complete systems:

If required, we supply complete systems in robust carrying cases. For your order, please select the individual components such as digital instrument, temperature sensor, accessories, etc. in accordance with our price list. In cases where an ordering code or the article number is not available, the desired equipment may be specified in the form of a plain text.

www.Laheghi.com

Specifications, components, software, dimensions and materials given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials, components or software may be replaced by others without prior notice.



WIKAI Alexander Wiegand GmbH & Co. KG
Alexander-Wiegand-Straße · 63911 Klingenberg
☎ (0 9372) 132-0 · ☎ (0 9372) 132-406/217
<http://www.wika.de> · E-mail: info@wika.de