Temperature meter
EMT-302
User's manual

Version18.01

1. Safety rules

- read these instructions before use

- ensure working conditions (power supply, humidity, temperature) in accordance with the specifications

- the device complies with the requirements of PN-IEC 1010-1 for safety The device complies with the requirements of PN-IEC 1010-1 for safety of electrical equipment for measurement, control and laboratory use.   as well as the requirements of the EMC directive for electromagnetic compatibilityj

2. Device characteristics

EMT-302 is a single range digital instrument designed for absolute temperature measurements, adapted for cooperation with two thermoelectric sensors type K according to PN-EN 60584-1. The measurement result is a linear function of temperature. The meter has electronic temperature compensation of the cold ends of the thermocouple.

3. Dane techniczne

product	type of sensor	indication range (°C)	indication range (°F)
EMT-302	**K**	**-200 ... 1360**	**-200 ... 1999**

Digital readout .... LCD backlit

Accuracy (for ambient temperature 23±5°C)

- for temperatures -200 ... -93°C .... ±0,3% of reading ±5°C

- for temperatures -93 ... 1000°C .... ±0,3% of reading ±1°C

- for temperatures 1000 ... 1360°C .... ±0,5% of reading ±1°C

- for temperatures -200 ... 1832°F .... ±0,3% of reading ±2°F

- for temperatures 1832 ... 1999°F .... ±0,5% of reading ±5°C

Additional error dependent on ambient temperature

- for ambient temperatures <18°C i >28°C .... 0,1 basis error / 1°C

Resolution of readings

- for temperatures 0 ... ±200 .... 0,1°C / 0,1°F

- for temperatures >200 .... 1°C / 1°F

Sensor inputs .... miniature sockets PN-EN 50212

Sampling frequency .... 1 time per second

Case .... 150 x 72 x 35 mm (235g), IP30

Power supply ....6 x 1.5V AAA batteries

- battery life .... 200 hrs with alkaline batteries

Operating temperature / max. relative humidity .... 0...+50°C / 80% RH non-condensing
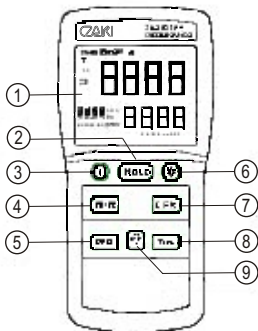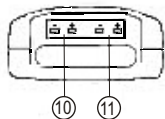
Signaling (messages on the display)

- measurement range exceeded .... **OL**

- sensor not connected or defective .... **OL**

4. meter functions

- Celsius or Fahrenheit temperature scale
- automatic switch off of the power supply after 30 min.
- internal memory with a capacity of 150 results
- temperature display retention
- display of maximum, minimum and average values

Description of the meter's buttons

① LCD display

   main display - reading T1, T2 or T1-T2

   lower display - reading T1, T2, MAX, MIN, AVG

   small display - 24 hour clock

② **HOLD** button - pressing **HOLD** stops the

   or releases the value of the measured temperature

③ ① power on/off button

④ **MX/MN** button - registration of measured value

   Minimum **MN**, maximum **MX** or average **AVG**

   counted down on the clock from the moment the button is used.

   Pressing and holding the **MX/MN** button for 1 sec will exit the mode.

⑤ **OFFSET** button - zeroing the readings. Subsequent measurements are displayed in relation to the

   forced zero (offset). Pressing the button again exits this function.

⑥ ☼ button - backlight on/off switch (automatically switched off after 1 min.).

⑦ **C/F/K** button - selection of Celsius, Fahrenheit or Kelvin temperature scale.

⑧ **Time** button - enable countdown in minute-second (min:sec) or

   Hour-minutes (hour:min). Holding the button for 1 sec turns the timer off.

⑨ **T1 T1-T2 T2** button - selection of the main and lower display

⑩ T1 socket for temperature sensor connection

⑪ T2 socket for temperature sensor connection

5. temperature measurement and handling of the meter

- connect the temperature sensors to sockets **T1** and **T2** and turn the power on with the ① button
- set the desired functions on the meter **C/F/K** **T1/T2/T1-T2** **MX/MN** **HOLD** **OFFSET** **Time**
- place the measuring tips of the temperature sensors in the measured objects and read the indications on the display
- after finishing the measurements, turn off the meter

Battery replacement

Discharge of batteries is signaled by the **BT** sign on the display. Batteries are placed in a container on the back of the meter. The container is closed with a single screw. Do not use the meter with discharged batteries.

Checking the meter

Short the terminals of the sensor input, the meter should show the ambient temperature.

6. Equipment

- meter
- 6 x 1.5V AAA batteries
- instruction manual with warranty card

Additional accessories

To work with the EMT-302 temperature meter, we offer the following exemplary types of temperature sensors equipped with MT-K plug (sensor catalog is available at www.czaki.pl):

TP-101 ... TP-104
universal, general purpose

TP-105
universal with replaceable measuring element

TP-111 ... TP-113
liquid temperature measurement

TP-121 ... TP-123
surface temperature measurement

TP-125 ... TP-127
surface temperature measurement

TP-131 ... TP-132
temperature measurement of soft pastes

TP-141 ... TP-142
gas temperature measurement

TP-201 ... TP-206
sheathed thermocouples