testo

testo 810

Short manual testo 810

① Protection cap: Park position
② Infrared sensor
③ Air/temperature sensor
④ Display
⑤ Control keys
⑥ Battery compartment (on rear)

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Basic settings

Instrument off >press and hold $\textcircled{0}$ 2s > select with $\textcircled{A}$ ($\blacktriangle$), confirm with $\textcircled{Mode}$ ($\longleftarrow$):

Unit of temperature: **°C**, **°F** > Differential temperature Δt: **OFF**, **ON** >
Emissonsfaktor: ε > Auto off-Funktion: **OFF**, **ON**

Switching the instrument on

Press $\textcircled{0}$.

Switching the display light on (for 10s)

Instrument on > press $\textcircled{0}$.

IR measurements

Press and hold $\textcircled{A}$.

Select display mode

Instrument on > select with $\textcircled{Mode}$:

Hold: Readings are held > **Max**: Maximum values > **Min**: Minimum values

Switching the instrument off:

Instrument on >press and hold $\textcircled{0}$ 2s.

Safety and the environment

About this document

> Please read this documentation through carefully and familiarise yourself with the product before putting it to use. Keep this document to hand so that you can refer to it when necessary. Hand this documentation on to any subsequent users of the product.

> Pay particular attention to information emphasised by the following symbols:

> **ℹ** Important.

Avoid personal injury/damage to equipment

> Only operate the measuring instrument properly, for its intended purpose and within the parameters specified in the technical data. Do not use force.

> Never store the product together with solvents, acids or other aggressive substances.

> Only carry out the maintenance and repair work that is described in the documentation. Follow the prescribed steps when doing so. Use only OEM spare parts from Testo.

Protecting the environment

> Take faulty rechargeable batteries as well as spent batteries to the collection points provided for them.

> Send the product back to Testo at the end of its useful life. We will ensure that it is disposed of in an environmentally friendly manner.

Specifications

Functions and use

The testo 810 is an infrared measuring instrument. It is normally used to measure surface temperature, e.g. on heaters and radiators, and to measure the ambient temperature at the same time.

Technical data

Measurement data

· Sensors:
  Infrared sensor,
  NTC temperature sensor
· Parameters:
  °C, °F
· Measuring ranges:
  IR: -30...300 °C, -20...575 °F,
  Air probe: -10...50 °C, 14...122 °F
· Resolutions:
  0.1 °C, 0.1 °F,
· Accuracies
  (Nenntemperatur 22 °C, ±1 Digit):
  Infrared: ±2 °C (-30...+100 °C),
  ±3.6 °F (-22...212 °F),
  ±2 % of reading (rest of range)
  Air probe: ±0.5 °C, ±0.9 °F
· Measuring rate:
  0.5 s
· Optics:
  6 : 1
· Emissivity:
  adjustable from 0.2 to 0.99

Laser

· Class 2
· Power: <1 mW
· Wavelength: 645 to 660 nm
· Standard: DIN EN 60825-1:2001-11

Further instrument data

· Protection class: IP40
· Ambient conditions:
  -10...50 °C, 14...122 °F
· Storage/transport conditions:
  -40...70 °C, -40...158 °F
· Voltage supply:
  2x 1.5 V type AAA
· Battery life:
  50 h (without display light)
· Dimensions:
  119x46x25mm / 4.7x1.8x1.0 in (inc.
  protection cap)
· Weight: 90 g / 3.2 oz (inc. batteries and
  protection cap)

Directives, standards and tests

· EC Directive: 2004/108/EEC

Warranty

· Duration: 2 years
· Warranty conditions: See web page
  www.testo.com/warranty

Product description

At a glance

① Protection cap: Park position
② Infrared sensor
③ Air/temperature sensor
④ Display
⑤ Control keys
⑥ Battery compartment (on rear)

First steps

➣ **Inserting batteries:**

  1 To open the battery compartment, push the battery cover down.

  2 Insert batteries (2x 1.5 V type AAA). Observe the polarity!

  3 To close the battery compartment, push the battery cover back on.

➣ **Basic settings (configuration mode):**

Adjustable functions

· Unit of temperature: **°C**, **°F**
· Differential temperature Δt: **OFF**, **ON**
· Emission factor: ε
· Auto off function: **OFF**, **ON** (instrument switches off automatically if no key is pressed for 10 minutes)

  ℹ The emission factor has a default setting of 0.95. This is ideal for the measurement of non-metals (paper, ceramic, gypsum, wood, paints and varnishes), plastics and foodstuffs.

Because of their low or non-uniform emission factor, bright metals and metal oxides are of only limited use for infrared measurement. Coatings that increase the emission factor, e.g. paint or emission adhesive (0554 0051) must be applied to the object being measured.

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Emission factors of various materials (typical values):

Material (temperature)	ε
Aluminium, bright rolled (170 °C)	0.04
Cotton (20 °C)	0.77
Concrete (25 °C)	0.93
Ice, smooth (0 °C)	0.97
Iron, emery ground (20 °C)	0.24
Iron with casting skin (100 °C)	0.80
Iron with rolling skin (20 °C)	0.77
Gypsum (20 °C)	0.90
Glass (90 °C)	0.94
Rubber, hard (23 °C)	0.94
Rubber, soft grey (23 °C)	0.89
Wood (70 °C)	0.94
Cork (20 °C)	0.70
Radiator, black anodised (50 °C)	0.98
Copper, slightly tarnished (20 °C)	0.04
Copper, oxidised (130 °C)	0.76
Plastics: PE, PP, PVC (20 °C)	0.94
Brass, oxidised (200 °C)	0.61
Paper (20 °C)	0.97
Porcelain (20 °C)	0.92
Black paint, matt (80 °C)	0.97
Steel, heat-treated surface (200 °C)	0.52
Steel, oxidised (200 °C)	0.79
Clay, burnt (70 °C)	0.91
Transformer paint (70 °C)	0.94
Brick, mortar, plaster (20 °C)	0.93

1 When switching the instrument on, press and hold ⏻ until
▲ and ← appear on the display (configuration mode).
  - The adjustable function is displayed. The current setting flashes.
2 Press ⏻ (▲) several times until the desired setting flashes.
3 Press (Mode) (←) to confirm the input.
4 Repeat steps **2** and **3** for all functions.
  - The instrument changes to measuring mode.

Using the product

➤ **Switching the instrument on:**

  › Press ⏻.

   - Measuring mode is opened.

➤ **Switching the display light on:**

  ✓ The instrument is switched on.

  › Press ⏻.

   - The display light goes out automatically if no key is pressed for 10 seconds.

➤ **IR measurements:**

> Laser radiation! Do not look into the laser beam.
> Laser class 2.

🛈 To ensure correct readings:

  · Keep temperature and humidity sources which may falsify the measurement (e.g. hands) away from the sensor.
  · Keep the lens clean and do not measure with foggy lenses.
  · Keep the measuring range (the range between the instrument and the object being measured) and the surface of the object free of obstacles. There must be no particles of dust or dirt, no humidity (rain, steam) and no gases.
  · If the ambient temperature changes (change of location, e.g. measurement indoors/outdoors), the instrument must be allowed to equalise for aprox. 15 minutes.
  · The instrument has a lens (90 % value) of 6:1 (distance : measuring surface) + Opening diameter of the sensor (10mm / 0.39 in):

Distance	Diameter of meas. surface	Distance	Diameter of meas. surface
10cm	3cm	4 in	1.06 in
60cm	11cm	25 in	4.56 in
100cm	18cm	40 in	7.06 in
200cm	35cm	80 in	13.72 in

  › Press and hold ◉.

   - ⚠ flashes in the display. The laser dot marks the centre of the measuring surface.

   - When IR measurement has been completed (release ◉), the instrument changes to the **Hold** display view and the readings are held.

➤ Changing the display view:

Adjustable views
- **Hold**: Readings are held.
- **Max**: Maximum values since the instrument was last switched on or last reset.
- **Min**: Minimum values since the instrument was last switched on or last reset.

> Press 🔘 several times until the desired view appears.

➤ Resetting Max/Min values:

1 Press 🔘 several times until the desired view appears.

2 Press 🔘 and hold until **----** appears.

3 Repeat steps **1** and **2** for all values that are to be reset.

➤ Switching the instrument off:

> Press 🔘 and hold until the display goes out.

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Maintaining the product

➢ **Changing batteries:**

1 To open the battery compartment, push the battery cover down.

2 Remove used batteries and insert new batteries (2x 1.5 V type AAA). Observe the polarity!

3 To close the battery compartment, push the battery cover back on.

➢ **Cleaning the housing:**

❯ Clean the housing with a moist cloth (soap suds) if it is dirty. Do not use aggressive cleaning agents or solvents!
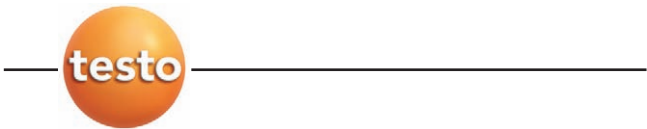
Tips and assistance

Questions and answers

Question	Possible causes/solutions
Hi or **Lo**	· Readings outside the measuring range (too high, too low): Keep to the permitted measuring range.
▭	· Residual capacity <10 min: Change batteries.

If we could not answer your question, please contact your dealer or Testo Customer Service. For contact data, see back of this document or web page www.testo.com/service-contact