

**TQC POCKET INFRARED THERMOMETER**

TE1004

MANUAL

**1 PRESCRIBED USE**

The product is designed for non contact temperature measurement on suitable objects/surfaces.

Operate the device only in dry environment; the contact with moisture has to be avoided.

**2 FEATURES**

Measuring range:	-30°C to +270°C, -22°F to 518°F
Sample rate:	approx. 1 measurement per second
Accuracy:	±2.5% of the display or ±2°C/4°F
Emission ratio:	0.95 (fixed default, not changeable)
Distance ratio:	6:1 (e.g. at 60cm distance: 10cm diameter)
Auto Power Off:	After approx. 7-8 seconds
Operation and environmental conditions:	0°C to 50°C (+32°F to +122°F), relative air humidity max. 80% (not condensing)

**3 SAFETY INSTRUCTIONS**

- Keep the product out of reach of children.
- Due to inaccuracy of the temperature measurement, which is possible under certain conditions, the "actual" temperature can deviate from the values displayed on the LCD. This is why the product must not be applied, if very precise measurement values are required (e.g. melting or boiling points, chemical reactions or the like).
- Never point the laser either directly or (due to reflecting surfaces) indirectly at the eyes.



**LASER RADIATION CAN CAUSE IRREPAIRABLE DAMAGE TO THE EYES. BE EXTREMELY CAREFUL WHEN MEASURING NEAR HUMANS OR ANIMALS.**

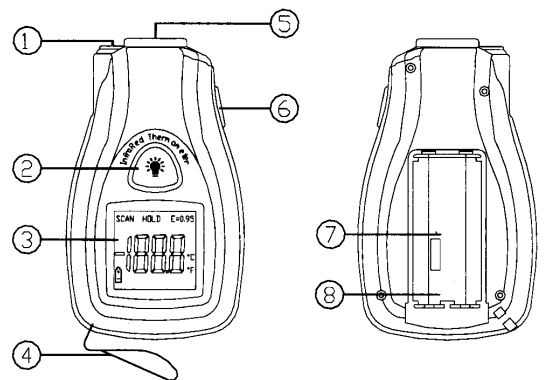
**4 INSERTING/REPLACING BATTERIES - CHANGE-OVER °C/°F - BATTERY NOTES**

- Carefully open the battery compartment on the bottom side of the IR thermometer.
- There is a small switch in the battery compartment, via which you can select the desired temperature unit (°C or °F).
- Then insert two AAA batteries into the battery compartment, observing the proper polarity. The respective figure in the battery compartment will help you to do this.
- Close the battery compartment.
- If no indication appears on the display during the activation of the measuring procedure or, if the IR thermometer immediately switches off, while trying to switch the laser on, please replace the batteries with new ones.

- Please do observe the following notes when handling the batteries:
- Keep batteries out of reach of children.
- Do not let batteries lie around openly. There is the risk of batteries being swallowed by children or pets. In such case, seek immediate medical care.
- Leaking or damaged batteries might cause acid burns when getting into contact with skin, so use suitable protective gloves.
- Make sure that batteries are not short-circuited or thrown into fire. There could be danger of explosion!
- Never dismantle batteries!
- Always replace an entire battery pack, don't mix empty batteries with full ones. Don't mix batteries with accumulators.

## 5 CONTROL ELEMENTS

- 1 Outlet opening for the laser beam
- 2 Backlight button
- 3 LC Display
- 4 Carrying strap
- 5 Opening for IR sensor
- 6 "MEAS" button for activation of the measuring procedure and laser sight
- 7 °C/ °K switch
- 8 Battery compartment



## 6 FUNCTIONALITY

IR thermometers measure the surface temperature of an object. The sensor of the device analyzes the emitted and reflected heat radiation of the object measured, and converts this information into a temperature value. In the case of any damages which are caused due to failure to observe these operating instructions, the guarantee will expire. We do not assume liability for resulting damages! Nor do we assume liability for damage to property or personal injury, caused by improper use or the failure to observe the safety instructions. The guarantee will expire in any such case!

Laser radiation can cause irreparable eye damage. When measuring near humans or animals, switch the laser beam off.

## 7 TEMPERATURE MEASUREMENT

Aim the opening of the IR sensor at the object or surface to be measured and press the button "MEAS". The red laserpoint becomes visible. The temperature will be measured and displayed as long as the button is kept pressed ("SCAN" appears on the display). After button release, the last measured value will be displayed on the LC display ("HOLD" appears on the display).

After about 7-8 seconds the IR thermometer will automatically turn off.

Please bear in mind that the object/surface to be measured is larger than the measuring spot ("Distance to spot ratio", D/S). In the case of this IR thermometer, the distance to spot ratio is 6:1. This means that e.g. at the IR sensor's distance of 60cm to the surface, the measuring spot has a diameter of approximately 10cm. And at the distance of 120cm, the diameter of the measuring spot is about 20cm. The temperature displayed on the IR

thermometer is, in this case, an average temperature of this measuring spot! Due to the arrangement in the housing, the distance from the laser spot to the centerline of the measuring spot is about 13mm. To achieve precise measurement values, the object must be at least twice as large as the measuring spot (if necessary, reduce the distance from the IR thermometer to the object).

## 8 TIPS & NOTES

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- When measuring extremely high and low temperatures, (e.g. 0°C and 200°C), a pause of half an hour between the measurements should be done. This pause is necessary for cooling down of the IR sensor. Otherwise the displayed temperature values can deviate from the actual ones.
- Please clean the surface of the IR sensor with a clean, soft brush or a vacuum cleaner.
- The emission ratio (for the IR thermometer it has been preset at 0.95) specifies energy radiation characteristics of a material. The higher this value, the more radiation (heat radiation) a material can emit.
- Many materials have a value which is close to the preset value of "0.95" of the IR thermometer. Metal or shiny surfaces have a low emission ratio. This results in imprecise measurement values during the measuring procedure.
- Applying an adhesive tape (or, if possible, varnishing with a faint black paint) could help to get more precise values.
- It is not possible to measure the temperature through a glass plate. In such a case you will just get the temperature of the glass plate itself.

## 9 BATTERIES AND ENVIRONMENTAL NOTES

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As an end user you are legally obligated (Battery regulation) to dispose of used batteries and accumulators correctly; it is not permitted to dispose of used batteries/accumulators in the domestic refuse! Thus, you comply with your legal obligations and make your contribution to environmental protection. Batteries/accumulators containing harmful substances are marked with the following symbols which point out that they are not allowed to be disposed of in the domestic refuse. The markings for hazardous heavy metals are: Cd = Cadmium, Hg = Mercury, Pb = Plumb (the marking is on the battery/accumulator under the dust bin symbols painted left). You can return used batteries/accumulators free of charge to any collecting point in your local authority, or in any store where batteries/accumulators are sold.

## 10 DISCLAIMER

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The right of technical modifications is reserved.

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