

Escali[®]

PRODUCT
MANUAL

Non-contact Infrared Forehead Thermometer

Model # BT503



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In order to use the product safely, please be sure to read the following instructions before use. Please keep the product manual to consult, and refer to at any time.

This product is powered by 3V, please use two AAA batteries. This product is only used for temperature measurement, not for disease diagnosis. Please follow a doctor's advice.

Scope of Application

The body temperature of a subject is displayed by measuring the thermal radiation from the center of the forehead.

Properties of Product

Product performance measurement error: $\leq \pm 0.4^{\circ}\text{F}$ ($\pm 0.2^{\circ}\text{C}$).

Fast measuring: less than 1 second.

Easy to use: one button measurement.

Non-contact: infrared forehead measurement, no contact with human skin to avoid cross infection.

Over-temperature tip: set the over-temperature tip freely.

Usage: up to 100,000 measurements.

Large screen display: large screen LCD backlight display, easy to read in a dark setting.

Storage data: 5 sets of measurement data are stored for easy analysis, and comparison.

Settings modification: Settings parameters can be modified.

Product Characteristics

1. Shock-proof type: internal power equipment.
2. According to the degree of shock prevention: BF type application part.
3. According to the degree of protection against harmful liquid intake: common equipment.
4. According to the safety level of flammable anesthetic gas mixed with air or mixed with oxygen or nitrous oxide: equipment that cannot be used in the presence of flammable anesthetic gas.
5. Operating mode: continuous running mode.
6. The thermometer does not have the application part of protection against defibrillation discharge effect.
7. The thermometer has no signal input and output.
8. Rated voltage of the equipment: DC 3V.
9. Non-permanent installation of equipment.
10. Electromagnetic compatibility: GB 4824 classification; Group I, Class B equipment.

Contraindications

Does not apply

Special Storage Conditions and Methods

Product must be kept in a clean and dry place.

Do not place the product where there is an electric shock.

Do not store the product in extreme environments where the temperature exceeds 131°F (55°C) or below -5°F (-20°C), and the humidity exceeds 93%.

Technical Index

Normal Working Conditions:	50°F (10°C) ~ 104°F (40°C) Relative Humidity: ≤ 85% Atmospheric pressure: 70kpa - 106kpa
Power Supply Voltage:	DC 3V (two AAA batteries);
Product Size:	149mm x 77mm x 43mm (length x width x height)
Host Weight:	172g (excluding electric pool)
Body Temperature Measurement Range:	89.6°F-109.2°F (32.0°C-42.9°C)
Accuracy:	±0.4°F (±0.2°C) Accuracy Within: 95°F-107.6°F (35°C-42°C): ±0.4°F (±0.2°C) Accuracy Outside of 95°F-107.6°F (35°C-42°C): ±0.54°F (0.3°C)
Power Dissipation:	< 450mw
Measuring Distance:	3cm-5cm
Automatic Shutdown:	15s

Product Description and Shape

This product is composed of an infrared temperature sensor, probe cover, display unit, power supply circuit, and measuring circuit. The infrared temperature sensing method is used to measure the temperature display. Included: Manual, No.7 ne certificate card, two AAA batteries.

Physical features:

1. Infrared detector
2. LCD (liquid crystal display)
3. Down button
4. Up button
5. Set button
6. Measurement switch
7. Battery cover



Product Care

- This product does not have parts for users to repair or debug. This manual does not provide the circuit diagram, and component list.
- Follow the maintenance recommendations in this manual.
- This product is suitable for professional or family use.
- Please keep this product out of reach from children.
- The ambient temperature of this product must be between 50°F (10°C) - 104°F (40°C).
- The product must be kept clean, and stored in a dry place.
- The infrared detector located on the front of this product is fragile.
- Do not touch the infrared detector with your finger.
- Do not expose the infrared detector to sunlight or immerse in water.
- Do not drop the product.
- If there are any issues, please contact the seller and do not repair the product by yourself.
- This unit is a metering product. It is recommended to check the accuracy with the manufacturer, or a qualified third-party organization annually.
- Do not use the product in an electromagnetic interference environment.
- Please dispose of the product or batteries according to local laws, and regulations.

Battery Installation

Use two AAA batteries. Please note that the positive and negative electrodes of the battery cannot be installed in reverse.

Instructions for Use

The correct use method is the key to measuring accurately; otherwise it may cause measurement errors. As the infrared temperature measurement has serious demand on the surrounding environment, please follow the instructions.

While the thermometer is off, press the "measure switch/trigger" once to power it on. The LCD screen will fully display for 1 second, and "Lo" °C or "Lo" ° F will be displayed to indicate that the machine is in a standby state (if there is no button operation within about 20 seconds of standby, the product will automatically power off).

While on standby (on body mode), point the thermometer towards the center of a forehead 3-5 cm away, and press the "measure switch/trigger" once to capture a temperature. Once the measurement is complete, a beep will sound, and the temperature will be recorded on the LCD.

Tips

1. You must stay still until you hear the beep for measurement completion. The thermometer cannot be moved away from the position of measuring temperature before the measurement is completed. Doing so may cause inaccuracies.
2. When taking the temperature, the product should be pointed to the center of the forehead, above the brow center, and kept vertical. The measuring area should not be covered by hair. The distance between the product and the forehead is recommended to be about 3 – 5 cm.

Note:

If the forehead cannot be used for measurement, use a body surface such as the chest, or abdomen.

3. When a person comes from a place where there is a significant difference of environment temperature, the person being measured should stay in the new environment (where they are being measured) for at least 5 minutes; otherwise the measured result will be affected.

The measurement result will be on the low end if a fever patient's forehead has sweat, or if they have had other quantitative cooling measures; this should be avoided.

If the product is stored in a place where there are environmental temperature differences, it should be placed in the new environment for 20 minutes prior to use.

When taking a measurement, the environment should be stable. Do not take temperature in the outlet of a fan, air conditioner, or any large airflow.

Do not use the product in direct sunlight.

Settings

Switching Modes

Press the "measure switch/trigger" once. When the LCD is lit, press the "SET" button to change between "Body" and "Surface" modes.

High Fever Alarm Temperature Setting

Press the "measure switch/trigger" once. When the LCD is lit, press and hold the "SET" button until you see F-1, and then release the button. Press the "SET" button once until you see F-2. You can now press the UP or DOWN arrow buttons to adjust the target temperature for the fever alarm. Press the "SET" button until the LCD powers off to save your setting. Default setting is 100.4°F (38°C).

Switching Temperature Unit

Press the “measure switch/trigger” once. When the LCD is lit, press and hold the “SET” button until you see F-1, and release the button. Press the “SET” button twice until you see F-3. Once F-3 is on the display you can now press the UP and DOWN arrow buttons to switch between °C and °F. Press the “SET” button until the LCD powers off to save your setting.

Memory Function

Press the “measure switch/trigger” once. When the LCD is lit, press the UP and DOWN arrow buttons to view the history; there are 32 groups of historical records.

Battery replacement:

1. The product requires two AAA batteries, which can be used for about 20,000 times in theory. When the battery symbol on the screen flashes, it indicates that the battery is insufficient, and needs to be replaced.
2. Open the battery cover to replace the batteries, and pay attention to whether the positive and negative electrodes of the batteries are placed in the correct position.
3. Do not use rechargeable batteries! The product does not meet the requirements.
4. If the thermometer is not going to be used for a long period of time, it is recommended to remove the batteries from the thermometer to avoid leakage, and damage to the product.

Warranty

1. From the day of purchase, you will receive a 1-year warranty with the purchase invoice.
2. We will not provide warranty service for the failure caused by the following:
 - (a) failure caused by unauthorized disassembly or modification of products
 - (b) failure caused by accidental drop during use and handling
 - (c) failure due to lack of proper maintenance
 - (d) failure to operate in accordance with the correct instructions in the operating manual
 - (e) failure caused by improper repair by a repair shop not authorized by us, etc.
3. The repair service beyond the warranty scope will be charged according to the regulations.

Troubleshooting

The temperature is not displaying.

Solution: Try to replace the current batteries with a brand new set. The battery power could be insufficient to operate the thermometer.

The temperature of part of the human body appears as "Lo" in the same environment.

Solution: The reasons to exclude are as follows:

- (a) The measurement distance is too far. At the time of the measurement, it may be the temperature of the air. The instruction requirement is 3 – 5 cm distance.
- (b) Forehead is covered with hair, has sweat, posted antipyretic paste, has taken antipyretic medicine, or forehead is aimed near strong airflow. To remedy, it is recommended to rest in a stable environment for 5 - 10 minutes before measuring again.

If an individual shows "Lo" in each measurement, try testing the thermometer on multiple others to compare to. Once you have determined that the body temperature of another individual does, or does not appear as "Lo", it can then be judged if the thermometer is functioning normally. The appearance of "Lo" indicates that the surface temperature of the human forehead is very low, which is beyond the display range of the product.

The product is measuring inaccurately.

Solution: During the temperature measurement, you must remain still. Moving the product before measurement completion will cause inaccuracy. Also keep away from any airflow that may disrupt the measurement.

Display appears stuck and does not measure temperature.

Solution: Remove the batteries from the thermometer for 60 seconds, and then re-install the batteries.

Maintenance

- External dirt: Clean the dirt with a soft damp cloth or with a cotton swab with medical alcohol wipes. Be careful to not allow too much water, or alcohol to enter the product which may result in damage.
- Do not touch or press on the internal infrared detector as it is an important device. If it is found dirty, use a cotton swab with 95% alcohol wipes. Do not use 75% disinfecting alcohol on the infrared detector as it will leave traces of water.
- Do not wash the thermometer in water or volatile solvents containing benzene or abrasive.
- Do not place the thermometer in direct sunlight, high temperature, humidity, or dust.
- Use a soft cloth to gently wipe the dirt on the handle after use.
- This product does not need to be sterilized. Please clean and disinfect the body of the thermometer with 75% alcohol before and after use (avoid the infrared detector).
- This product has been strictly calibrated and tested before delivery. Do not carry out any maintenance by yourself. If there is an issue, please contact the manufacturer.

Display Information	Possible Cause
There was no power after pressing the measurement/trigger button	The battery is out of power, please replace the battery; Or the battery is not inserted into the correct position.
	Low battery display, please replace the battery. Requires two AAA batteries.
ErrE	EEPROM malfunction, please contact the manufacturer.
Err	The sensor is not welded well, please contact the manufacturer.
Hi	the measurement result over 42.2°C (108°F)
Lo	The measured result was below 32°C (89.6°F)
ErH	The ambient temperature is too high
ErL	The ambient temperature is too low

Warranty Card
(customer retention)

Type/specification _____
Machine serial number/batch number _____
Purchase date _____
Address _____
Site seal _____
Service telephone _____

Maintenance record	Issue	Maintenance staff
Note	Please show this card when the machine is under warranty.	

The Warranty

I purchased this product and read the following warranty terms carefully to ensure that the product can be effectively reported for repair.

The warranty period of the product is one year. During the warranty period, if the product fails due to poor quality of the original device or has production issues, the company will provide free maintenance and component replacement.

If the following reasons caused the product to be damaged and not operate normally, will not be within the warranty scope:

1. Damage caused by failure to operate and install according to the instruction.
2. All product damage caused by an accident.
3. Repair, modification, or breakage of the product seal sticker without approval of the company.
4. Aging of the shell on the product surface (wear and tear).

After the expiration of the warranty period, users can still get the maintenance service provided by the company, but to pay the corresponding fees.

Escali Corporation

3203 Corporate Center Drive, Suite 150, Burnsville, MN 55306, USA

Escali's liability is limited to two (2) times the cost of the product.

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