TH50Z Multi-function Infrared Thermometer

Specifications
- Temperature measurement range: Forehead / Ear mode: 34.2-42.2°C (93.2-108°F), Surface mode: -22-80°C (-7.6-176°F)
- Operating temperature range: 10-40°C (50-104°F)
- Storage temperature range: It should be stored at room temperature between -20-50°C, RH ≤ 85%
- Transportation temperature shall be less than 70°C, RH: 95%

- Accuracy:
  - For ear mode: +/-0.2°C (0.4°F) within 35.5-42°C (95.9-107.6°F), +/-0.3°C (0.5°F) for other range.
  - For forehead mode: +/-0.2°C (0.4°F) within 35-39°C (95.4-102°F), +/-0.3°C (0.5°F) for other range.
  - For surface mode: +/-0.3°C (0.5°F) within 22-42.2°C (71.6-108°F), others +/-4% or +/-2°C (4°F) whichever is greater.
- Fever alarm & Memory locations under "Ear/Forehead mode" (with each measurement date/time/mode icon)
- 3 color LED Fever Indicator
- Real time clock, °C / °F Switch mode
- Battery: one lithium cell battery (CR2032 *1pcs)
- This thermometer converts the ear/forehead temperature to display its "oral equivalent."
- There is no gender and age limitation for using infrared thermometer.
- This is not an AP or APG product.

Functions

Real Time Clock
- The real time clock will be recorded with the memory function and help you to recognize each measurement result. (It includes the 12/24 Format_Hour_Minutes_Date.)

Room Temperature
- Suitable ambient temperature is important for the baby and patient, the thermometer always help you recognize the room temperature.
  - Setting "Real time clock" first to enable this function. After power off, room temperature will be shown on the screen with icon.
  - Please see the "Use of the thermometer" section to learn how to get the correct room temperature.

Forehead / Ear Temperature
- The thermometer has been designed for practical use. It's not meant to replace a visit to the doctor. Please also remember to compare the measurement result to your regular body temperature. Please consult with doctor if you have health concerns.
  - Please see the "Use of the thermometer" section to learn how to measure the body temperature.

Surface Mode
- The surface mode shows the actual, unadjusted surface temperatures, which is different from the body temperature. It can help you to monitor if the object temperature is suitable for the baby or patient, for example the baby's milk.
  - Please see the "Use of the thermometer" section to learn how to measure the object temperature.

Stopwatch
- The thermometer built the stopwatch function to help you to monitor the heartbeat since heartbeat is one of the healthy indexes for people.
  - Please see the "Use of the Stopwatch" section to learn how to measure the heartbeat result.

Fever Alarm
- If thermometer detects a body temperature ≥37.5°C, there will be a long beep sound followed by three short beep sound to warn the user for potential fever.

Zone Indicator
- Under ear or forehead mode, if thermometer detects a body temperature< 37.5°C, there will be " Green" light signal; if temperature ≥ 37.5°C and < 38.0°C, there will be "Yellow" light signal; if temperature ≥ 38.0°C, there will be "Red" light signal.

Memory Locations
- There are total 9 sets memories for body measurement. Each memory also records the measurement result.
  - When in power on, Press the "ON/MEM" button to see the temperature stored with date/time/mode icon.

°C / °F Switch
- In "power off" mode (The LCD only shows the date, time and room temperature). Press and hold the "FID switch button" then immediately press and release the "ON/MEM" button. After 3 seconds, icon "°C" will be switched to icon "°F". (You may use the same way to switch back to "°C")

Real time clock setting
1. Power on: Press the "ON/MEM" button. The thermometer is ready for use after hearing two beep sounds.
2. Press and hold the "ON/MEM" button for 5sec. When you see the icon starts flashing, it indicates that you are in the setting screen.(see the following figure.)
3. Press the "FOREHEAD" button to make the "24" icon flash. This indicates that you are in the 12/24-hour setting screen. Press the "FOREHEAD" button to set 12/24-hour Format from "24"(24-hour) to "12"(12-hour).
4. Press "ON/MEM" button to move the flashing in the sequence shown below to select our settings:
   - [hour]→[minutes]→[year]→[month]→[day]→leave the setting screen
5. While the hour, minutes, year, month, day setting is flashing, use "FOREHEAD" button to change it.

Use of the thermometer
1. Always make sure the probe is clean, and without damage.
2. Power on: Press "ON/MEM" button.(see figure 1)
3. Mode selection:
   3.1 Ear mode: Press the "Ear" button,you can get the body temperature by ear measurement after hearing two beep sounds. (see figure 1)
3.2 Forehead mode: Press the “FOREHEAD” button, you can get the body temperature by forehead measurement after hearing two beeps sounds. (see figure 2)

3.3 Surface mode: Press and hold the “ON/MEM” button, and press the “FOREHEAD” button one time, you can see the ° icon on your LCD display (see figure 3). In this mode, press the “FOREHEAD” button to get the target surface temperature.

3.4 Stopwatch: Press and hold the “ON/MEM” button, and press the “FOREHEAD” button twice, you can see the ° icon on your LCD display (see figure 4). In this mode, press the “FOREHEAD” button to count by 0.01 sec to 3 minutes.

4. Temperature taking:

4.1 Ear temperature measuring, points for attention:

Remarks: 
- a. It is recommended that you measure 3 times with the same ear. If the 3 measurements are different, select the highest temperature.
- b. To avoid the risk of cross contamination, please clean the probe according to “Care and cleaning” section after each use.
- c. The different temperature varies in healthy persons between different parts of the body can be between 0.2~1°C
- d. Clinical repeatability: 0.19°C (<1 year old), 0.18°C (1~5 years old), 0.18°C (>5 years old)

4.1.1 Gently pull the ear back to straighten the ear canal (Fig.4.1.1) and snugly position the probe into the ear canal, aiming towards the membrane of the eardrum to obtain an accurate reading (Fig.4.1.2).

4.1.2 Press and hold the “Ear” button until you hear a beep sound. Remove the probe from ear and read the temperature measurement on the LCD.

4.2 Forehead temperature measuring, points for attention:

Remarks: 
- a. Forehead temperature is displayed in oral mode. This mode converts the forehead temperature to display its “oral-equivalent” Value.
- b. Before the measurement, please stay in a stable environment for 5mins and avoid exercise, bath for 30mins.
- c. Remember to keep the temple area clean and away from sweat, cosmetics and scar while taking temperature.

4.2.1 The temporal artery is connected to the heart via the carotid artery. It is designed to measure the skin surface around temporal artery, a major artery of the head (Fig.4.2.1).

4.2.2 Attach the thermometer to the required measurement location on the forehead (Fig. 4.2.2). (You can choose left or right temple.)

4.2.3 Press the “FOREHEAD” button, and gently scan around the temple area (Fig. 4.2.3). While scanning, you will hear a beep sound, which indicates you the newest measurement is taking place. Measurement has been completed after two short beeps are heard and the forehead icon stops flashing. The time consuming for measurement might be between 5~8 sec (up to 30sec). It depends on how much time the device needs to get the correct forehead temperature.

4.3 Measuring temperature under surface mode:

4.3.1 When you press the “FOREHEAD” button, you will get the real time temperature immediately. If you press and hold the “FOREHEAD” button, the reading of measurement will be continuous updated.

4.3.2 Applications include temperature measurements for Water, Milk, Cloth, Skin or other object.

* Note: This mode shows the actual, unadjusted surface temperatures, which is different from the body temperature.

4.4 Get the room temperature

4.4.1 Setting “Real time clock” first to enable this function. After power off, room temperature will be shown on the screen with ° icon.

4.4.2 For room temperature, the thermometer should be placed on the table and avoid the direct sunshine or air conditioner flow on.

4.4.3 The room temperature can be reference after 15min later.

5. After measurement:

5.1 Power off. Device will automatically shut off if left idle for more than 1 minute to extend battery life. The LCD will only show the date, time and room temperature.

5.2 Clean the probe after each use to ensure an accurate reading and avoid cross contamination. (See the section of Care and Cleaning for details.)

5.3 Remember to put on the Probe Cap when not in use.

Use of the Stopwatch

1. Press and hold the “ON/MEM” button, and press the “FOREHEAD” button twice for “stopwatch” mode.

2. For start or stop counting, press the “FOREHEAD” button; for reset counting, press the “ON/MEM” button.

3. Press and hold the “ON/MEM” button, and press the “FOREHEAD” button to enter the forehead mode.

4. How to measure the heartbeat? If you count out the number of beating is 18 in 15sec, then you can calculate the heartbeat of patient is 72 times in 1min.

Important Notes

- The probe is the most delicate part of the thermometer. Use with care when cleaning the lens to avoid damage.
  - a. After the measurement, please use the cotton swab with the Alcohol (70% concentration) to clean the inside of the probe, including lens and metal parts.
  - b. Allow the probe to fully dry for at least 1 minute.
  - c. Storage temperature range: It should be stored at room temperature between -20~+50°C, RH ≤ 85%
  - d. Keep the unit dry and away from any liquids and direct sunlight.
  - e. The Probe should not be submerged into liquids.

* Note: Please check the device if damaged once it falls. If you can’t make sure of it, please send the complete device to the nearest retailer for recalibration.

- Holding the thermometer too long may cause a higher ambient temperature reading of the probe. This could make the body temperature measurement lower than usual.

Care and cleaning
Battery replacement:

1. Open the battery cover: Insert a pointed object, such as a pen, into battery cover pick hole. At the same time, use thumb to push battery cover out.
2. Hold the device and flip the battery out with a small screwdriver.
3. Insert the new battery under the metal hook on the left side and press the right side of the battery down until you hear a click.
4. Replace the battery cover.

⚠️ Keep the battery away from children. (This device is supplied with one lithium cell (CR2032x1). The positive (+) side up and the negative (-) side pointed down.

Troubleshooting:

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Er 5~9</td>
<td>Error 5~9, the system is not functioning properly.</td>
<td>Unload the battery, wait for 1 minute and repower it. If the message reappears, contact the retailer for service.</td>
</tr>
<tr>
<td>Er 1</td>
<td>Measurement before device stabilization.</td>
<td>Wait until all the icons stops flashing.</td>
</tr>
<tr>
<td>Er 2</td>
<td>The device showing a rapid ambient temperature change.</td>
<td>Allow the thermometer to rest in a room for at least 30 minutes at room temperature: 10°C and 40°C (50°F ~104°F).</td>
</tr>
<tr>
<td>Er 3</td>
<td>The ambient temperature is not within the range between 10°C and 40°C (50°F ~104°F).</td>
<td></td>
</tr>
<tr>
<td>Hi</td>
<td>(1) In ear/forehead mode: Temperature taken is higher than +42.2°C (108°F) (2) In surface mode: Temperature taken is higher than +60°C (176°F)</td>
<td>Please select the target within specifications. If a malfunction still exists, please contact the nearest retailer.</td>
</tr>
<tr>
<td>Lo</td>
<td>(1) In ear/forehead mode: Temperature taken is lower than +34°C (93.2°F) (2) In surface mode: Temperature taken is lower than −22°C (-7.6°F)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Device cannot be powered on to the ready stage.</td>
<td>Change with a new battery.</td>
</tr>
</tbody>
</table>

Warranty:

Warranty: 12 months

Manufacturer Date: as the serial number (please open the battery cover, it is shown on the inside of the device.)

Ex. SN:E912A000001, the first “E” is External, the second number “9” is the manufacture year 2009, the third and the fourth number “12” is the manufacture month, the others is the serial number.

Note: The thermometer is calibrated at the time of manufacture. If at any time you question the accuracy of temperature measurements, please contact the dealers or nearest service address.

Please read the instructions for use BF type applied part
### Symbol Descriptions

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="CE mark and Notified Body Registration Numbers, the requirement of Annex II from Medical Device Directive 93/42/EEC are met." /></td>
<td>Indicates this device is subject to the Waste Electrical and Electronic Equipment Directive in the European Union. To protect the environment, dispose of useless device at appropriate collection sites according to national or local regulations.</td>
</tr>
<tr>
<td><img src="image" alt="Authorized representative in the European community" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Caution" /></td>
<td>Please read the instructions for use</td>
</tr>
<tr>
<td><img src="image" alt="BF type applied part" /></td>
<td>Battery Recycling</td>
</tr>
</tbody>
</table>

### Guidance and manufacturer's declaration – electromagnetic emissions

The TH5xy series is intended for use in the electromagnetic environment specified below. The customer or the user of the TH5xy series should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Emissions test</th>
<th>Compliance</th>
<th>Electromagnetic environment – guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF emissions</td>
<td>Group 1</td>
<td>The TH5xy series uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.</td>
</tr>
<tr>
<td>CISPR 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF emissions</td>
<td>Class B</td>
<td>The TH5xy series is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.</td>
</tr>
<tr>
<td>CISPR 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmonic emissions</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>IEC 61000-3-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage fluctuations/ flier emissions</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>IEC 61000-3-3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Guidance and manufacturer's declaration – electromagnetic immunity

The TH5xy series is intended for use in the electromagnetic environment specified below. The customer or the user of the TH5xy series should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Immunity test</th>
<th>IEC 60601 test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment – guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted RF</td>
<td>3 Vrms 150 kHz to 80 MHz</td>
<td>Not applicable</td>
<td>Portable and mobile RF communications equipment should be used no closer to any part of the TH5xy series, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</td>
</tr>
<tr>
<td>IEC 61000-4-6</td>
<td></td>
<td></td>
<td><strong>Recommended separation distance</strong></td>
</tr>
<tr>
<td>Radiated RF</td>
<td>3 V/m 80 MHz to 2,5 GHz</td>
<td>3 V/m</td>
<td>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.</td>
</tr>
<tr>
<td>IEC 61000-4-3</td>
<td></td>
<td></td>
<td><strong>Recommended separation distance</strong></td>
</tr>
</tbody>
</table>
| | | | \[d = 1.2 \sqrt{P} \text{ 80 MHz to 800 MHz} \]
| | | | \[d = 2.3 \sqrt{P} \text{ 800 MHz to 2,5 GHz} \]

where \(P\) is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and \(d\) is the recommended separation distance in meters (m).

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.

Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the TH5xy series is used exceeds the applicable RF compliance level above, the TH5xy series should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the TH5xy series.

b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.
Guidance and manufacturer’s declaration – electromagnetic immunity

The TH5xy series is intended for use in the electromagnetic environment specified below. The customer or the user of the TH5xy series should assure that it is used in such an environment.

### Immunity test

<table>
<thead>
<tr>
<th>Emission test</th>
<th>IEC 60601 test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment – guidance</th>
</tr>
</thead>
</table>
| Electrostatic discharge (ESD)          | IEC 61000-4-2         | 6 kV contact     | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
|                                        |                       | 8 kV air          |                                        |
| Electrical fast transient/burst        | IEC 61000-4-4         | 2 kV for power supply lines | Mains power quality should be that of a typical commercial or hospital environment. |
|                                        |                       | 1 kV for input/output lines |                                        |
| Surge                                  | IEC 61000-4-5         | 1 kV line(s) to line(s) | Mains power quality should be that of a typical commercial or hospital environment. |
|                                        |                       | 2 kV line(s) to earth |                                        |
| Intermittent and voltage variations on power supply input lines | IEC 61000-4-11 | <5 % UT ( >95 % dip in UT) for 0.5 cycle | Mains power quality should be that of a typical commercial or hospital environment. |
|                                        |                       | 40 % UT (60 % dip in UT) for 5 cycles |                                        |
|                                        |                       | 70 % UT (30 % dip in UT) for 25 cycles |                                        |
|                                        |                       | <5 % UT ( >95 % dip in UT) for 5 sec |                                        |
| Power frequency (50/60 Hz) magnetic field | IEC 61000-4-8   | 3 A/m            | Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment. |

**NOTE UT is the a.c. mains voltage prior to application of the test level.**

### Recommended separation distances between portable and mobile RF communications equipment and the ME EQUIPMENT or ME SYSTEM

The TH5xy series is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the TH5xy series can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the TH5xy series as recommended below, according to the maximum output power of the communications equipment.

<table>
<thead>
<tr>
<th>Rated maximum output power of transmitter W</th>
<th>Separation distance according to frequency of transmitter m</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>150 kHz to 80 MHz</td>
</tr>
<tr>
<td></td>
<td>$d = 1.2 \sqrt{P}$</td>
</tr>
<tr>
<td>0.01</td>
<td>0.12</td>
</tr>
<tr>
<td>0.1</td>
<td>0.38</td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>100</td>
<td>12</td>
</tr>
</tbody>
</table>

For transmitters rated at a maximum output power not listed above, the recommended separation distance $d$ in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where $P$ is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

**NOTE 1** At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

**NOTE 2** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.