Electric thermometer TO-200

User Manual

Soft Touch Underarm Thermometer

Thank you for purchasing our product. Before using it, please read through this manual carefully for tips on safe and proper handling. After reading this manual, be sure to store it in a place for easy access when needed for reference.

Usage Precautions

Read carefully before use.

This User Manual is provided to ensure safe and proper use of the product, and to prevent harm or damage to people or property through the use of various pictures. Please check over the content carefully.

Symbol examples

- ! This is the DO symbol
- ⃠ This is the DO NOT symbol
- ⚠ This is the CAUTION symbol (includes WARNING and DANGER)

⚠ WARNING	Handling the product contrary to these warnings could result in death or serious injury.

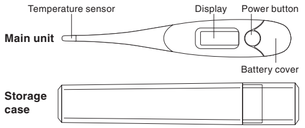
- ! Self-diagnosis or treatment based on measurement results can be dangerous.
  Instead, be sure to consult with a medical professional.
  Self‑diagnosis can worsen a sickness in some cases.
- ! Store in an area out of reach from toddlers or infants.
  Also, do not let a child use this product unattended.
  If a child uses this product unattended, it may result in injury.
- ⃠ This thermometer is exclusively for underarm use.
  Do not use it to take measurements anywhere else on the body (such as in the ear).
  Also, do not use this product for anything other than taking a human temperature. Otherwise, accurate results cannot be obtained. Doing so may damage the ear, etc.
- ! Be sure the power is on, and wipe the temperature sensor with a cloth etc. dampened with sanitary alcohol to make sure it is clean before use.
- ⃠ Do not take measurements while the product is wet.
  Accurate measurements cannot be taken in that state.

⚠ CAUTION	This symbol indicates that mishandling can lead to physical injury or property damage.

* Property damage refers to significant damage to house, household property, livestock, or pets.

- ! Do not subject the temperature sensor to significant shock by excessively shaking, bending, or dropping this product.
  Also, be sure to prevent the tip from poking an eye.
  Failure to do so could cause an accident or malfunction.
- ! Keep the battery out of reach from toddlers or infants.
  Failure to do so may result in a toddler or infant swallowing the battery. If the battery is swallowed, immediately seek medical assistance.
- ! If battery liquid leaks into your eye, immediately rinse it out with a large volume of clean water. Failure to do so may lead to blindness or other injury. Be sure to receive treatment from a medical professional.
- ! If battery liquid leaks onto your skin or clothing, immediately rinse the area with a large volume of clean water.
  Failure to do so may result in injury.
- ! When replacing the battery, be sure that + and – are in the proper position. Failure to do so may result in leakage, heat increase, or explosion, and damage the product.
- ⃠ Do not use this product in areas with strong static electricity or radio waves.
  Doing so could cause inaccurate temperature measurement or malfunction.
- ⃠ Do not dispose of battery in fire.
  Doing so may cause an explosion.
- ⃠ This device is not fully waterproof.
  Do not let water etc. soak into the internals.
  Doing so could cause inaccurate temperature measurement or malfunction.
- ⃠ Do not attempt to modify, disassemble, or repair this product.
  Doing so could cause inaccurate temperature measurement or malfunction.

Part Names



Included accessories

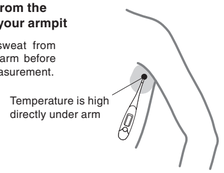
- Battery (alkaline button cell LR41 x 1, for operation check: unit internals)
- Storage case
- User Manual with warranty (this paper)
- Attached document (back, right side of this paper)

The proper way to use a thermometer

If the thermometer's temperature sensor is not placed correctly, accurate temperature values may not be obtainable.

● Measure from the center of your armpit

Wipe any sweat from under your arm before taking a measurement.



● Insert the thermometer from below at an angle, and hold it securely in place between arm and body

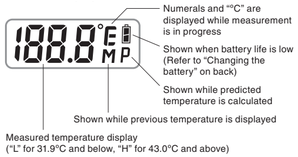
Lightly hold your arm down to keep the thermometer fixed to your armpit.

Ensuring an accurate measurement

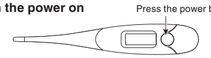
- ⃠ Do not take a temperature for 30 minutes after eating/drinking, exercise, or bathing.
  * Otherwise, accurate results cannot be obtained.
- ⃠ Do not use this product in areas with an ambient temperature of lower than 10°C or higher than 40°C.
  * Otherwise, accurate results cannot be obtained.
- ⃠ Do not take measurements soon after waking up, or wait any less than 30 minutes after excessive movement.
  * Excessive movement after waking up will cause a rise in body temperature, which can lead to fluctuating results.

How to measure body temperature

Main unit display description



① Turn the power on



A beep sounds, and all display digits are shown. (About 2 seconds)

The previous temperature value is then displayed. "M" is displayed in the lower right corner, indicating the previous temperature value saved to memory. (About 2 seconds)

② Once "L" is displayed, take measurement

"L" is then displayed, "°C" starts to blink, and the "P" icon is displayed which indicates predicted temperature.

At this point, temperature measurement can be performed. Place the temperature sensor under your armpit to take a temperature.

For predicted temperature

After about 30 seconds have passed, the notification buzzer will sound as "beep beep beep," "°C" will display solid, and predicted temperature measurement is complete.

* Results displayed for about 3 minutes.
* If the "measurement complete" buzzer sounds in a "beep beep beep beep, beep beep beep beep" pattern, it is indicating a result higher than 37.8 °C was measured.
* If measurement is not taken properly, or there is a change in blood circulation etc., results may not be accurate.

For actual temperature

Even if the "predicted temperature complete" buzzer sounds, temperature measurement will continue.
Once 3 minutes have passed from completion of predicted temperature, "°C" will blink, and actual temperature measurement will begin.
Once "beep beep beep" sounds, "°C" will display solid, and actual temperature measurement is complete.

* The time required for actual temperature measurement is generally 8 to 9 minutes from when measurement starts.

③ Check temperature result

Press the power button to turn it off.

* If the "measurement complete" buzzer sounds in a "beep beep beep beep, beep beep beep beep" pattern, it is indicating a result higher than 37.8 °C was measured.
* The measured temperature will remain in memory when starting up again later.

④ Turn the power off and keep in storage case

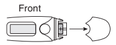
* This thermometer is designed to beep and turn off automatically once 12 minutes have elapsed from the time it is turned on. However, to save battery life, please press the power button to turn the product off right after use.

Changing the battery

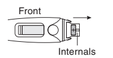
- This product has an operation check battery installed, but it may have a short lifespan.
- If battery life is low and voltage decreases, a " " icon will blink on the display when starting a measurement, which means you will no longer be able to take measurements.
- If you have determined the battery life is low, promptly replace it with a new battery. Be sure not to leave it in its current state. Doing so may cause leakage and damage the product.
- When disposing of a used battery or product, be sure to comply with local ordinances as specified in your area.

Changing the battery

① Remove the battery cover.

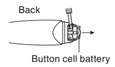


② Slide the thermometer's internals outward about 5 mm.



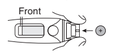
⚠ Do not pull with too much force at this stage. Doing so could cause damage.
⚠ Never touch the circuit board.

③ Use a precision flathead screwdriver or similar instrument with a thin tip, sliding it into the back side of the thermometer, and prying out the battery to remove it.

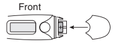


⚠ Since the battery is securely inserted, be sure not to pinch your finger when removing it with a toothpick, etc.

④ Secure the thermometer's internals with your finger and thumb, then insert the new battery with its plus side facing the front.



⑤ Press the internals back in place, and slide on the battery cover.

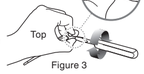


* If the battery cover is difficult to remove, try the following method. Use a flathead screwdriver with a tip approximately 3 to 5 mm in width.

1. Place the thermometer on a table with good grip, and secure it with the power button facing upward (Figure 1).

2. Use your index finger to hold the battery cover with its seam facing downward, then slip the flathead screwdriver into the gap between the battery cover and thermometer (Figure 2).

3. While holding it as described in Step 2, turn the screwdriver clockwise to remove the battery cover (Figure 3).



Specifications

Brand name	Electric thermometer TO-200
Certification number	# 227AKBZX00022000
Temperature measurement range	32.0°C to 42.9°C "L" icon displayed for temperatures of 31.9°C and below "H" icon displayed for temperatures of 43.0°C and above
Measurement accuracy	±0.1°C (when actual temperature is measured during thermobath) When ambient temperature is 10°C to 40°C
Temperature display	3-digit digital + °C display, 0.1°C intervals
Notification buzzer	When predicted/actual temperature measurement ends
Measurement value memory	Saves previously measured value to memory
Electric shock protection	Internal power device: Type BF
Temperature sensor	Thermistor
Battery used	Alkaline button cell battery LR41 x 1 (1.5 VDC)
Temperature conditions for usage	10°C to 40°C
Temperature and humidity for storage	–10°C to 60°C, 30% to 90% RH
External dimensions and weight	140 (H) x 22 (W) x 12 (D) mm Weight: 13 g (including button cell battery)
Battery life	Approx. 2 years (with new battery used 10 minutes per day)
Type	Electric thermometer for general use
System	Integrated prediction/temperature sensing
Waterproof level	Partial water resistance

* Please note that product specifications may change due to improvements, etc. without prior notice.

If something doesn't seem right

● Will not power on/display shows a " "

Cause	Solution
Is the battery power low?	Replace with a new battery Refer to "Changing the battery"
Is the battery positioned incorrectly?	Correctly reinsert the battery Refer to "Changing the battery"

● Temperature measures lower than expected

Cause	Solution
Are you sweating?	Wipe off any sweat and measure again
Is the temperature sensor being used correctly?	Refer to "The proper way to use a thermometer"
Measurement time may have been too short	Please switch from predicted temperature to actual temperature

● Temperature measures higher than expected

Cause	Solution
The temperature sensor may have heated up for some reason	Cool down the temperature sensor, turn on the power, and confirm that an "L" is displayed, then take another measurement

● Measurement values are inconsistent, seem random

Cause	Solution
Did you change the thermometer position for each measurement?	Refer to "The proper way to use a thermometer"
Did you take a measurement right after eating/drinking, exercising, bathing, etc?	Refer to "Ensuring an accurate measurement"

● The end beep sounds right after starting to measure temperature

Cause	Solution
The temperature sensor may be uncalibrated	Refer to "The proper way to use a thermometer"

Product Care & Storage

Be sure to keep the thermometer clean at all times.

- After use, soak a soft cloth or cotton in sanitizing alcohol or warm water, then wring it out and use it to gently wipe the temperature sensor. (Be careful not to let liquid enter the seam between the battery cover and main unit.)
- Be sure to protect against the following issues. Failure to do so could result in product malfunction.
  - The battery cover does not provide protection from water. Do not wash the product while fully assembled.
  - Do not use paint thinner or benzine to clean off dust or debris.
  - Do not attempt to disinfect the thermometer's temperature sensor by soaking it in alcohol or hot water (50 °C or more) for a long period of time.
  - Do not wash this product while fully assembled, or use ultrasonic cleaning.

Keep the thermometer in its storage case when not in use.

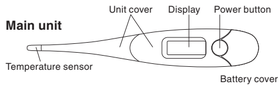
- Be sure the product is fully dry before storing, and keep away from the following areas.
  - Damp areas
  - High temperature, high humidity areas, areas exposed to direct sunlight, dusty areas, next to a heater, areas with high salt content in the air
  - Areas on a slope, areas where vibration or shock may occur
  - Areas where chemicals are stored, or corrosive gas is produced
- When storing this product for a long period of time, be sure to remove the battery.

WARNING
- Do not let a child use this product unattended.

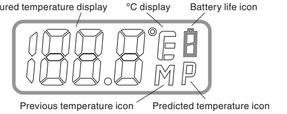
DO NOT
- Do not use this product for anything other than taking a human temperature.
- Self-diagnosis or treatment based on measurement results can be dangerous. Instead, be sure to consult with a medical professional.

[Shape, structure, and principle]

Main unit



Display



<Display content>
- Measurement value display:
  Shows the maximum temperature measured
  "L" is displayed for temperatures of 31.9°C and below
  "H" is displayed for temperatures of 43.0°C and above
- Previous temperature icon:
  Shows the previously measured temperature
- °C display icon:
  Shows measured temperature in degrees Celsius
- Battery life icon: Shows when battery life is low
- Predicted temperature icon:
  Shows while predicted temperature is calculated

<Product dimensions and weight>
- Dimensions: L140 mm, W22 mm, D12 mm
- Weight 13 g (including button cell battery)

<Electrical rating>
- Rated voltage: 1.5 VDC
- Power: Alkaline button cell battery (LR41)
- Format type for electric shock protection:
  Internal power device
- Applied part type for electric shock protection:
  Type BF applied part

<Principle>
A thermistor on the temperature sensor applies properties that change the electric resistance value, then arithmetic processing is performed for changes in resistance value using an integrated circuit to measure equilibrium body temperature. Finally, the measured value is shown on the body temperature display.

<Supplementary functions>
Initial operation confirmation notification, real temperature measurement end notification, measured temperature out of range notification, automatic power shutoff function, prediction establishment notification

[Purpose of use, efficacy, and effects]
Temperature sensor is put in contact with parts, body temperature is measured under arm, highest temperature is saved and shown on digital display.

[Item specifications]

- Type : General use
- Format : Integrated prediction/temperature sensing
- Waterproof : Partial water resistant type (according to JIST1140:2014)
- Temperature measurement range : 32.0°C to 42.9°C
  "L" is displayed for temperatures of 31.9°C and below
  "H" is displayed for temperatures of 43.0°C and above
- Measurement accuracy : ±0.1°C (when real temperature measured during thermobath)
- Temperature display : Three-digit digital
- Lowest display unit : 0.1°C
- Highest temperature save function : Saves actual measured maximum temperature value.
- Previous temperature value memory : Saves the previously measured temperature value.

This product is compliant with EMC standards: JIST0601-1-2:2012.

[Operation and usage]
(1) Press the power button.
(2) After a beep sounds, all digital segments are shown on the display. After that, "°C" is displayed in the upper right corner, "M" is displayed in the lower right corner, then "°C" disappears, and the previously measured temperature is displayed for 2 seconds.
(3) "L" is then displayed, "°C" starts to blink, and the "P" icon is displayed which indicates predicted temperature. At this point, temperature measurement can be performed.
(4) Rest the thermometer sensor under your armpit.
  • For predicted temperature:
    A beep will sound to indicate the start of a predicted temperature measurement. After the temperature is measured, another beep will sound to indicate the predicted temperature has been taken. Temperature results will be saved for about 3 minutes.
  • For actual temperature:
    Once the predicted temperature is saved, the predicted temperature icon disappears, and the actual temperature is displayed.
    The "°C" mark goes from blinking to solid, and a beep sounds to indicate that the actual temperature has been taken.
(5) Measured temperature is shown on the digital display.
(6) Press the power button to turn off the thermometer.
(7) If you do not press the power button, the thermometer will turn off automatically about 12 minutes after it was turned on.

[Usage Precautions]
(1) Store this product in an area where young children cannot reach it. When used to take the temperature of a young child, be sure it is done under guardian supervision, so that the temperature sensor will not poke an eye, the battery is not swallowed, etc.
(2) Be sure that ample time has passed after exercising, eating, bathing, etc. before taking a temperature.
(3) Do not bite down on this product.
(4) Do not use this product for anything other than taking a human temperature.
(5) Only use this product under the armpit for taking a temperature.
(6) Make sure the product is not scratched or damaged before use. If something is wrong with it, refrain from use.

[Storage and duration of use]
(1) Do not store under high temperatures, direct sunlight, humid or damp areas, dusty areas, or where corrosive gas is produced.
(2) After use, wipe the temperature sensor with a dry cloth, then store it away clean in its storage case.

[Handling precautions]
(1) Never attempt to modify, disassemble, or repair this product.
(2) The battery cover does not provide protection from water. Do not pour liquid on the battery cover, or submerge the thermometer in water, etc.
(3) Do not disinfect with boiling water.
(4) Do not wash this product while fully assembled, or use ultrasonic cleaning.
(5) Do not subject this product to significant shock by bending or dropping it.
(6) If the ambient temperature is higher than body temperature, be sure to dip the temperature sensor in water to cool it down before using it to measure body temperature.
  Once the beep sounds to indicate measurement is complete, read the resulting number right away.
(7) If battery power is low, a battery level indicator will be shown in the upper right corner of the display.
  Be sure to replace the battery if this occurs.
(8) Refer to the User Manual for instructions on how to replace the battery.

[Duration of use]
Approximate product life: 5 years (self -certified)

[Inspection and maintenance]
(1) Before use, confirm that the product is clean and operates normally (powers on).
(2) Thoroughly wipe off any dirt or debris using a cloth dampened with neutral detergent or alcohol, etc.