

CLETEF-786

CE 0482

 CLEVER CHOICE *Duo*<sup>™</sup>  
Ear & Forehead  
Thermometer

**Infrared Thermometer  
Instruction Manual**

 Simple Diagnostics<sup>®</sup>

## **Introduction**

Thank you for choosing the Clever Choice Duo™ Ear & Forehead Thermometer, by Simple Diagnostics.

The infrared thermometer CLETEF-786 can be used to read body temperature by measuring the ear or forehead temperature, and is suitable for both adult and children.

NOTE: temperature of children below 3 months cannot be accurately measured with the Ear testing mode.

Please read the instructions carefully before using the product, and put it in a safe and secure place for future reference.

## **Contents**

1. The Advantages of Clever Choice Duo™ .....	1
2. Necessary Safety Instructions .....	2
3. Product Design .....	4
4. How to Use Forehead Mode .....	5
5. How to Use Ear Mode .....	5
6. Sound and Backlight Information .....	7
7. Display and Operation Instructions .....	8
8. Cleaning and Disinfection .....	11
9. Maintenance .....	11
10. Replacing the Batteries .....	12
11. Troubleshooting.....	12
12. Technical Specifications.....	14
13. After-Sale Service .....	15
14. Security Type .....	15
15. Authorized European Representative .....	15
16. Symbols.....	16
17. Declaration .....	16
18. EMC Information-Guidance and Manufacture's Declaration .....	16



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communications equipment and the CLETEF-786 Infrared Thermometer.			
The CLETEF-786 Infrared Thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CLETEF-786 Infrared Thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CLETEF-786 Infrared Thermometer as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = \left[ \frac{3.5}{V_1} \right] \sqrt{P}$	80 MHz to 800 MHz $d = \left[ \frac{3.5}{E_1} \right] \sqrt{P}$	800 MHz to 2,5 GHz $d = \left[ \frac{7}{E_1} \right] \sqrt{P}$
0.01	/	0.12	0.23
0.1	/	0.38	0.73
1	/	1.2	2.3
10	/	3.8	7.3
100	/	12	23
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.			

### 1. The Advantages of Clever Choice Duo™

Dual mode (forehead temperature and ear temperature)  
 Thanks to dual mode design, you are free to take body temperature by detecting the infrared heat given off by the forehead or eardrum, The forehead temperature measurement range is from 89.6°F to 108.0°F (32°C to 42.2°C) .The ear temperature measurement range is from 32.0°F to 212.0°F (0°C to 100.0°C) .  
 The product consists of ABS plastics, temperature sensor, Infrared temperature measuring element, microcomputer controlled circuit, LCD , backlight and buzzer.

#### Convenient for use

- Special ergonomic design to facilitate operation.
- No inconvenience would be caused to your daily life. It's available for measurement when your children's sleeping.
- It provides comfortable user experience compared with anus thermometer for children, rapid reading and simple operation compared with mouth thermometer.

#### Memory recall

A maximum of 20 previous readings is available to help you track the changes of your body temperature.

#### Safe and hygienic

- Compared to mercury thermometer, there is no danger of breaking the glass or swallowing mercury.
- It is completely safe for children to use.

#### Fever warning

- After a reading, the backlight will appear green, orange, or red to indicate presence and severity of a fever. When the temperature is more than or equal to 38.0°C/100.4°F, there will be 6 short double and half beeps and the reading will flicker with orange backlight for 5 seconds. This indicates that you may have a fever. Please consult your doctor if you are not sure. If fever is worse, the backlight will appear red.

#### Extensive clinical data of hospital

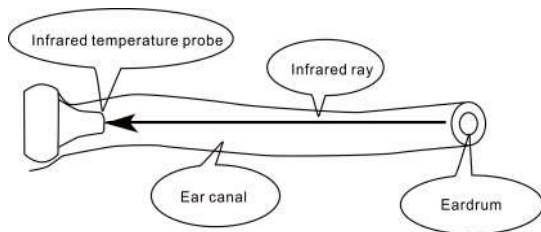
The cooperation with designated hospitals is subjected to precise clinical verification, with the support of extensive clinical data and professional medical experts.

### Application scope






The thermometer takes human body temperature for clinical or household use. It applies to all age groups and those who are suffering from a fever. (Ear temperature mode should not be used for children below 3 months)


### Operating principle

The infrared temperature sensor detects infrared energy emitted by the eardrum. A built-in lens focuses the collected energy, which is converted into a temperature reading by the thermopiles and measurement circuits.



## 2. Necessary Safety Instructions

-  The device is not for use with newborn babies.
-  The device is not a continuous monitoring device.
-  CLETEF-786 is not waterproof. Please do not douse it with water or other liquids. Cleaning and disinfection procedure shall be in comply with the instructions specified in "cleaning and storage"
-  Please do not use the product if the temperature sensor or the infrared thermometer shows any sign of damage. Do not try to repair the product if it is damaged. Please contact Simple Diagnostics Customer Service.
-  CLETEF-786 consists of precision parts. No replacement shall be provided for damage due to intense shock or vibration. Do not twist the infrared thermometer and the temperature sensor.

			<p>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).<sup>b</sup></p> <p>Field strengths from fixed RF transmitters, as determined by an Electromagnetic site survey, a should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>Interference may occur near equipment marked with the following symbol:</p> 
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NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.  
NOTE 2 These guidelines may not apply in all situations. Electromagnetic 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 CLETEF-786 Infrared Thermometer is used exceeds the applicable RF compliance level above, the CLETEF-786 Infrared Thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the CLETEF-786 Infrared Thermometer.
- b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

**Recommended separation distances between portable and mobile RF communications equipment and the EQUIPMENT or SYSTEM - for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING**

Recommended separation distances between portable and mobile RF

IEC 61000-4-2	±8 kV air		synthetic material, the relative humidity should be at least 30 %.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

### Operating Conditions

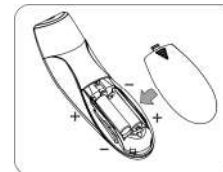
Temperature: 10°C to 40°C  
Humidity: 15%-95%RH, non-condensing  
Atmospheric pressure: 86kPa to 106kPa

### Storage and Shipping Conditions

Temperature: -20°C to 55°C  
Humidity: 0-95% RH, non-condensing  
Atmospheric pressure: 50kPa to 106kPa

### Battery Installation

Put the two AAA batteries into battery compartment in correct polarities.  
Push the battery cover horizontally along the arrow to close.



### Notes:

- ☆ If you using the thermometer for the first time, please pull out the Plastic sheet .
- ☆ Battery polarities should be correct. Otherwise, the device may be damage.
- ☆ Please remove the batteries if the thermometer will not be used for a prolonged time.

### Warnings



Please keep this infrared thermometer away from children



This thermometer is not a substitute for Medical Assistance

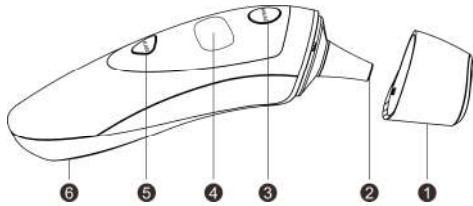


The infrared thermometer is not waterproof, Keep it away from water.

### Guidance and manufacturer's declaration – electromagnetic immunity –for EQUIPMENT and SYSTEM that are not LIFE-SUPPORTING

Guidance and manufacturer's declaration – electromagnetic immunity			
The CLETEF-786 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the CLETEF-786 Infrared Thermometer should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the CLETEF-786 Infrared Thermometer, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = \left[ \frac{3.5}{V_1} \right] \sqrt{P}$ $d = \left[ \frac{3.5}{E_1} \right] \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = \left[ \frac{7}{E_1} \right] \sqrt{P} \quad 800 \text{ MHz to } 2.5 \text{ GHz}$

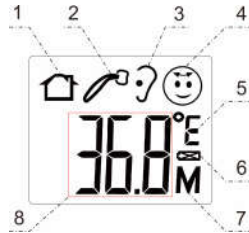
### 3. Product Design



- (1) Probe cover (put the cover on when using forehead mode)
- (2) Probe (take off the cover when using ear mode)
- (3) Head button
- (4) LCD display screen
- (5) Ear button
- (6) Battery cover

### Display description

1. Ambient temperature
2. Ready for measurement
3. Ear mode
4. Forehead mode
5. Temperature unit (°C/ °F)
6. Low power indicator
7. Memory mode
8. Temperature value



- ACCOMPANYING DOCUMENTS.
- Portable and mobile RF communications equipment can affect CLETEF-786 Infrared Thermometer
- The CLETEF-786 Infrared Thermometer should not be used adjacent to or stacked with other equipment.

### Guidance and manufacturer's declaration – electromagnetic emission –for all EQUIPMENT AND SYSTEMS








Guidance and manufacturer's declaration – electromagnetic emission		
The CLETEF-786 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the CLETEF-786 Infrared Thermometer should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The CLETEF-786 Infrared Thermometer 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.
RF emissions CISPR 11	Class B	The CLETEF-786 Infrared Thermometer 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.

### Guidance and manufacturer's declaration – electromagnetic immunity –for all EQUIPMENT and SYSTEMS

Guidance and manufacturer's declaration – electromagnetic immunity			
The CLETEF-786 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the CLETEF-786 Infrared Thermometer should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment- guidance
Electrostatic discharge (ESD)	±6 kV contact	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with



## 16. Symbols

Symbol	Description
	Type BF applied part.
	Attention must be paid.
	Information about a manufacturer, such as name and address.
	Please read the instructions carefully.
	Waste electrical materials should be sent to a dedicated collection point for recycling.
 Warning	A personal injury or thermometer damage may occur if the thermometer is not correctly used.
 Attention	Inaccurate reading or thermometer damage may occur if the thermometer is not correctly used.

## 17. Declaration

EMC of this product complies with IEC60601-1-2 standard.

The materials which the user can come into contact have no toxicity and no action on tissues comply with ISO10993-1, ISO10993-5 and ISO10993-10.

## 18. EMC Information-Guidance and Manufacture's Declaration



### CAUTION:

- CLETEF-786 Infrared Thermometer needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided for in the

## 4. How to Use Forehead Mode

### ■ Rapid measurement

1. As shown in Figure A, put the cover on the probe, and position the thermometer at the center of the forehead, just above the eyebrow. Ensure that the thermometer is in contact with the forehead.
2. Press and release the **Head** button. The temperature will be displayed on the screen instantly.

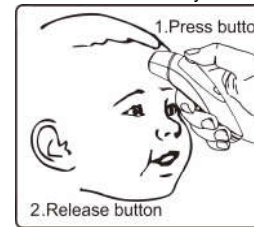


Figure A

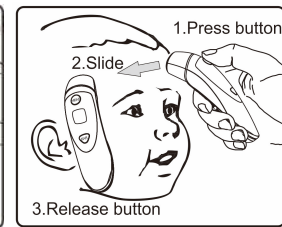


Figure B

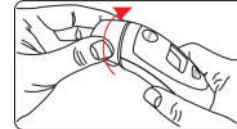
### ■ Continuous measurement (more accurate)

As shown in Figure B, press and hold the **Head** button, slide the thermometer across the forehead from one temple to the other and then release the button. The temperature will display on LCD screen.

**Note:** During continuous measurement the LCD displays the current read temperature value about every 0.5 seconds and then shows the maximum temperature value at the end.

## 5. How to Use Ear Mode

1. Gently remove the sensor/probe cover to reveal the ear probe.

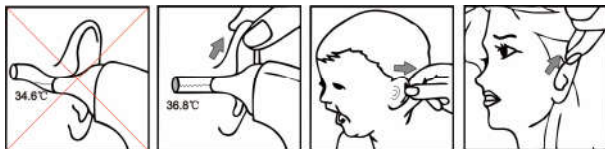


2. Insert the ear probe into the ear canal. Ensure that the sensor is pointer towards the eardrum.
3. Press and release the **Ear** button. The temperature will be displayed on the screen instantly. You can take another measurement when the backlight is off.

**Note:**

Children under 1 year: Pull their ear straight back.

Children aged 1 year to adult: Pull the ear up and back.

**To Avoid Inaccurate Readings:**

1. Make sure that there is no dirt in or on the temperature sensor
2. Use the device indoors, or with no strong winds.
3. Make sure there is no sweat on the forehead.
4. Make sure the ear canal is clean.
5. Hold still and keep calm during measurement.
6. If Clever Choice Duo™ is moved to an area with a different ambient temperature, wait 30 minutes before testing.
7. If the patient moves to a room with a different ambient temperature, it is suggested to wait at least 10 minutes to test.
8. Do not hold the unit for too long, as it is highly sensitive to heat.

Low-battery Alert	The low-battery symbol is displayed if the power voltage is lower than 2.51 V±0.15V.
Automatic Power-off	The thermometer automatically powers off if it is not used within 10±1 seconds.
Outer dimensions (mm)	146.5×40×52.4
Weight (g)	Thermometer (with batteries): 85.0 g
Liquid Ingress Protection	IPX0
The date of production	See the label
Life	5 years


The infrared thermometer has been tested and conforms to the standard ASTM E1965-98. ASTM laboratory accuracy requirements in the display range of 96.8°F to 102.2°F (36°C-39°C) for ear canal IR thermometers is ±0.4°F (±0.2°C) and for skin IR thermometers is ±0.5°F (±0.3°C). Note that for mercury-in-glass and electronic thermometers, the requirement per ASTM Standards E667-86 and E1112-86 is ±0.2°F (±0.1°C).

**13. After-Sale Service**

The device is under warranty for one year since the date of acquisition. Application for repairing should be presented during the warranty period. The damage caused by improper use is not under warranty scope. Batteries and packaging are not under warranty scope as well.

**14. Security Type**

Anti-electric shock type: internally powered equipment.

Anti-electric shock degree:  Type BF applied part.

**15. Authorized European Representative**

Wellkang Ltd  
Suite B, 29Harley Street, LONDON,

## 12. Technical specifications

Product Name	Clever Choice Duo™ Infrared Thermometer
Product Model	CLETEF-786
Applicable standard	ASTM E 1965/EN 12470-5
Power Supply Mode	Internal power supply
Operating Voltage	DC 3V
Battery Model	AAA x 2
Battery Life	Alkaline dry battery for around 20,000 measurements
Operating Mode	Continuous operating
Display	Segment LCD
Measure time	About 1 second
Latency Time	About 3 second
Measuring Range	Ear temperature:0.0°C–100.0°C (32.0°F–212.0°F) Forehead temperature:32.0°C–42.2°C (89.6°F–108.0°F)
Accuracy (Laboratory)	Ear temperature ±0.2°C (±0.4°F) from 36.0°C-39.0°C/96.8°F-102.2°F ±0.3°C (±0.5°F) from 32.0°C-35.9°C/89.6°F-96.7°F ±0.3°C (±0.5°F) from 39.1°C-42.2°C/102.3°F-108.0°F  Forehead temperature ±0.3°C (±0.5°F) from 32.0°C-42.2°C/89.6°F-108.0°F
Resolution	0.1°C (0.1°F)
Memory	20 temperature readings

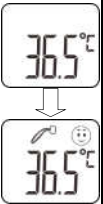
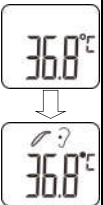


## 6. Sound and Backlight Information

No.	Range	Sounds	Backligh	Meaning
Ear temperature mode				
1	0-37.4°C 32.0°F-99.4°F	a long beep	Green	Acceptable
2	37.5°C-37.9°C 99.5°F-100.3°F	a long beep	Yellow	Elevated
3	38.0°C-100.0°C 100.4°F-212.0°F	6 short double and half beeps	Red	Possible high fever
Forehead temperature mode				
4	32.0□-37.4□ 89.6□-99.4□	a long beep	Green	Acceptable
5	37.5□-37.9□ 99.5□-100.3□	a long beep	Yellow	Elevated
6	38.0□-42.2□ 100.4□-108.0□	6 short double and half beeps	Red	Possible high fever

### Notes:

- When the temperature is less than or equal to 37.4°C/99.4□, there will be a long beep with green backlight. This indicates that the temperature is normal.
- When the temperature is between 37.5°C/99.5□ to 37.9°C/100.3□, there will be a long beep with yellow backlight for 3 seconds. This indicates that the temperature is a little high. It should be noted.
- When the temperature is more than or equal to 38.0°C/100.4□, there will be 6 short double and half beeps and the reading will flicker with red backlight for 5 seconds. This indicates that you may have a fever. Please consult your doctor if you are not sure.

## 7. Display and Operation Instructions

Screen Display	Operating Instructions Displayed State	Sound and backlight
<i>Measuring Forehead Temperature</i>		
	Position the thermometer at the center of the forehead above the eyebrow. With the thermometer touching the forehead, press and release the <b>Head</b> button. The temperature will be displayed on the screen. You can also press and hold the <b>Head</b> button to measure temperature continuously.	See the table of "Sound and Backlight Information"
<i>Measuring Ear Temperature</i>		
	Insert the thermometer ear probe into the ear canal. Press and release the <b>Ear</b> button. The temperature will be displayed on the screen.	See the table of "Sound and Backlight Information"
<i>Out of Range Display</i>		
	The measured value exceeds 212 °F/100°C in ear temperature mode. The measured value exceeds 108.0 °F/42.2°C in forehead temperature mode.	3 short beeps with red backlight for 3 seconds.
	The measured value falls below 32.0°F/0°C in ear temperature mode. The measured value falls below 89.6°F/32.0°C in forehead temperature mode.	3 short beeps with green backlight for 3 seconds.

"ErC" is displayed.	This error occurs when data is being read from or written into the memory, or the temperature correction is not complete.	Contact us.
The temperature reading is lower than the typical body temperature range.	The lens of the temperature probe is dirty.	Clean the lens using a cotton swab.
	The distance between the temperature probe and the target is too large.	Move the thermometer closer to the target.
	The thermometer was used within 30 minutes of being in a cold environment.	Wait 30 minutes after the thermometer has been moved into the current ambient temperature.
The temperature reading is higher than the typical body temperature range.	The temperature probe is faulty.	Contact us.

"Cleaning and Disinfection".








2. Store the thermometer in a dry, dust-free, and well-ventilated place. Ensure that the thermometer is not exposed to sunlight. Ensure that the storage and transportation environments meet these requirements
3. Check whether safety risks exist on a regular basis.
4. Remove the batteries if the thermometer will not be used for more than two months.






### 10. Replacing the Batteries

1. Slide the battery cover off along the marked direction. Put two AAA batteries correctly into the compartment.
2. Remove the batteries if the thermometer will not be used for more than two months.

### 11. Troubleshooting

Symptom	Possible Cause	Solution
The thermometer fails to power on.	The batteries are dead	Replace the Batteries (AAAx2)
	Polarities of the batteries are reversed.	Ensure that the batteries are correctly installed based on the polarity symbols in the battery compartment.
	The thermometer is faulty.	If the warranty period has not expired, contact us.
Only the battery symbol is displayed.	The battery level is low.	Replace the Batteries (AAAx2)
"Er1" is displayed.	The ambient temperature is out of range (less than 10°C/50°F or greater than 40°C/104°F).	Move to an ambient temperature between 10°C/50°F and 40°C/104°F.

Screen Display	Operating Instructions Displayed State	Sound and backlight
<i>Accessing Reading Memory</i>		
	In the power-off state, press and hold the <b>Ear</b> button for 3-5 seconds to enter the recall mode. "- - - M" is displayed.	silence
	Press and release the <b>Ear</b> button, <b>1</b> will be shown, followed by the recorded reading. Press the <b>Ear</b> button again for the next recorded data. <b>2</b> will be shown, followed by the recorded reading. A maximum of 20 temperature readings can be recalled. <b>1</b> represents the newest data.	silence
		
		
		
	If no temperature reading has been taken, only "- - - M" will be displayed.	silence
<i>Clear Memory</i>		
	In the power-off state, press and hold the <b>Ear</b> button for more than 8 seconds to enter the <b>Clear All Memory</b> mode. Release the button and records will be cleared.	A long beep without backlight

Screen display	Operating Instructions Displayed State	Sound and backlight
Switching between °F/°C		
	In power-off state, press and hold the <b>Ear</b> button for 6-7 seconds to enter the temperature switching mode. "°C" or "°F" are flashing. Press the <b>Ear</b> button to switch between °C and °F. The thermometer shut down after 6 seconds, set up successfully.	silence
		
Error information & low battery		
	The ambient temperature is higher than 40.0°C (104.0°F) or lower than 10.0°C (50.0°F).	3 short beeps and yellow backlight for 3 seconds.
	An error occurs when data is being read from or written into the memory, or the temperature correction is not complete. Please contact your supplier.	3 short beeps and yellow backlight for 3 seconds.
	When the battery voltage is lower than 2.51V ± 0.15V, the low battery symbol will appear on the display after turning the device on. Please replace the batteries.	silence
Power Off Mode		
In any mode, if no operation for 10 seconds, the thermometer will power off automatically.		

**Attention:**



You must wait for the backlight to turn off before measuring again.



Electromagnetic interference: contains sensitive electronic

components and should not be used in the presence of large electromagnetic interference, (such as near mobile phones and microwaves)

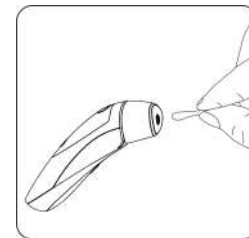


Please dispose of the product and batteries in accordance with local regulation requirements.

## 8. Cleaning and Disinfection

### Cleaning

- Clean the temperature probe with a soft cloth. Clean the lens of the temperature probe with a cotton swab.
- Wipe the thermometer body with a slightly damp soft cloth, and gently dry the body with a piece of tissue paper.



Keep water off the lens during the cleaning process. Otherwise, the lens may be damaged.



The lens may be scratched if it is cleaned with a piece of tissue paper, resulting in inaccurate readings.



Do not clean the thermometer with corrosive cleansers. During the cleaning process, do not touch the lens using hard objects, immerse any part of the thermometer into liquid, or allow liquid to enter the thermometer.

### Disinfection

- Disinfect the thermometer body and the area around the temperature probe with a cloth slightly moistened with 75% medical alcohol.



Do not use hot steam or ultraviolet radiation for disinfection. Otherwise, the thermometer may be damaged or age quickly.

## 9. Maintenance

- After each use, clean the temperature probe as described in