ByFloProducts

Infrared Forehead Thermometer

Thanks for buying and using this product, please read this manual carefully before use.

User manual

PG-IRT1602

Contents

Safety & Caution:

- The warning signs and illustrations indicated in the manual are intended to allow you to use this product safely and correctly. It will prevent any harm to yourself and others.
- The meaning of Warning signs and Illustrations are as follow:

Legends	
●	This mark means warning things (the things that you have to follow)
⚠	It means general warning
⊘	This mark means prohibited things (not allowed)
⊘	This mark means prohibited disassembly
🖈	Type BF Applied part
	Water resistance, moisture resistance
	It means that you need to read the manual carefully before use
	It means the package of this unit can comply with the requirements of green environmental protection.
♻	It means that the material of this product, or product itself is made of renewable material, so we can recycle this product
🗑	Do not dispose this product in the garbage.
IP Classification: IP22	

⚠ Warning	
• Please ask your doctor to explain the measured value of body temperature. • The product is only used for human body temperature measurement. • Please do not use this product for purposes other than body temperature measurement. • Don't use a mobile phone while using this product. • Please do not use equipment that generates electromagnetic fields near the product.	●
• Please do not disassemble or repair this device by yourself. • Please do not bend or stretch the device. • Please do not hit or drop this product.	⊘

- This unit is only to be used for human body temperature measurement. It cannot be used for disease diagnosis, emergency or continuous measurement in surgery.
- Children under 12 years of age require adult supervision to use this product.
- The patients cannot make a medical diagnosis and treat themselves on the base of measurement results. They must follow their doctors' instructions.

🚫

If you use or store this product beyond the range of specified temperature and humidity, it may not reach the original performance specification.

Usage environment: Temperature from +10°C to +40°C
　　　　　　　　　Humidity: from 15% RH to 93%RH
Storage environment: Temperature: from -25°C to +55°C
　　　　　　　　　　　Humidity: from 0% RH to 93%RH

Product Description

Intended use: Infrared Forehead Thermometer intended to measure the human body temperature on the forehead.

Scope of application: It is suitable for displaying the body temperature of the measured object by measuring the heat radiation on the forehead.

Features:

1. Non-touching type infrared measurement.
2. Three-Color backlight display: Green, Orange and Red
3. Nine sets of memory.
4. The measurement can be changed from degree Fahrenheit °F to Celsius °C (defaulted to Celsius °C)
5. Instant results within one second.
6. The sound can be turned on or off.
7. The machine has an idle time of 30 seconds and then turns off automatically.

Warning:
The measurement results of this unit at any time is only a reference. It can not replace the medical diagnosis of a professional doctor. If you have any questions about the individual temperature measurement result, please take instructions from a qualified doctor.

Use Caution Items

⚠ **Warning**

- It is very dangerous for patients to diagnose and treat on their own, based on the measurement results. So please be sure to follow your doctor's instructions.
- Self-diagnosis may lead to a worsening condition of the patient.
- Please do not touch with your hands or blow on the infrared sensor.
- When the infrared sensor is damaged or dirty, it may cause abnormal measurement results.
- If there is a temperature difference between the storage site and the measurement site, please place the device at room temperature for about 30 minutes before use. Or it may result in incorrect measurements.
- Please keep this product out of the reach of children. If a child swallows accidentally the battery or the transparent cover, please contact your doctor immediately.
- When measuring the body temperature, please do not get close to the air conditioning, as this may the accuracy of the measurement.
- Before using the thermometer, check for stains, fog or water on the infrared sensor glass. Use a cotton swab dipped in 75% alcohol to gently wipe the infrared sensor glass.
- If you wipe it with toilet paper or facial tissue, it will scratch the infrared sensor and may cause an incorrect measurement.
- If the product suffers mechanical damage there is a possibility the the the measurement will not be accurate.
- If the product touches the water or is accidentally immersed in water, please fully dry before use. Pay close attention to the surface of the sensor, which should be clean by using cotton swab.
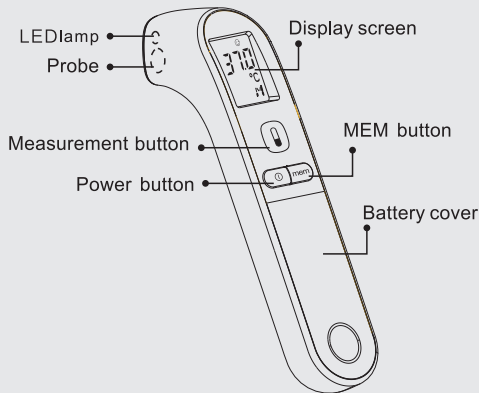
Caution:

- When measuring the body temperature, the product must be aligned at the center of the forehead at 3-5cm to measure.

Suggestions:

- Tell your doctor you measured your body temperature with a forehead thermometer.
- Please treat this product gently. Do not shake it.
- Please do not disassemble, repair or modify this product.
- Please do not allow any liquid (such as alcohol or water) to enter the product. The thermometer is not water-resistant.
- The product must be kept clean and in a dry place.
- You can not repair the product yourself. If you have any issues, contact the supplier.
- Please do not use the thermometer where there is electromagnetic interference.
- Please dispose of this product according to local laws and regulations at the end of its service life.

Product Layout

LEDlamp
Probe
Display screen
Measurement button
MEM button
Power button
Battery cover

Screen Display

Indication to be measured
Forehead temperature measurement
Measurement result display
Objects measurement
Sound symbols
Temperature unit (℉ or °C)
Power mark
Memory storage
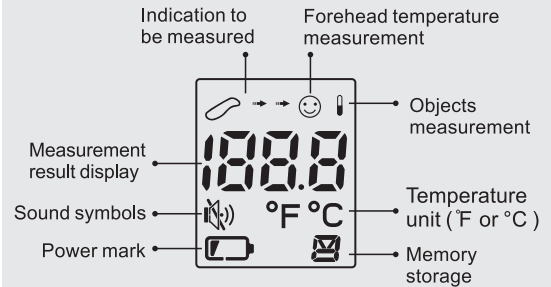
Battery Installation

1. Press the battery cover to open it.
2. Insert two 1.5V AAA batteries. It is recommended to use alkaline batteries. Insert the batteries according to the correct positive and negative poles.

Remove the battery cover by applying pressure
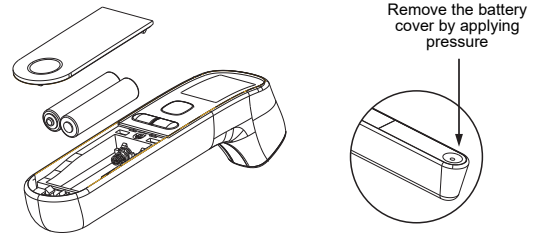
Low Battery Caution:

When the battery voltage is low, the LCD displays "LO". Replace the batteries.

Warning:

If you will not be using this product for a long time, please remove the batteries.
The liquid leakage of the batteries will harm the product; as well as pollute our environment. It is recommended to use alkaline batteries.
Dispose of batteries responsibly.

1- Sound Function: Turn On/Off

When the device is On, press the "mem" key to set the sound to On or Off.

Press "mem" button. The LCD screen will show 🔊 and you will hear a short beep.

To turn the sound Off, press "mem" button again, 🔊 will change into 🔇.

2- Switching from °C to °F

When the device is Off , press the "mem" button for six seconds. You can now switch between Fahrenheit degree (°F) and Celsius degree (°C).

Wait for 8 seconds to turn off the product automatically or press the power button .

3- Memory Storage Function

When the device is Off, press "mem" button. You will see the last 9 measurement values. The device will turn off automatically, or press the power button.

4- Back Light Display

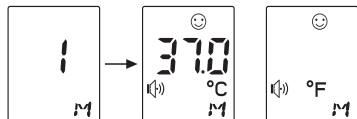When the measured temperature is below 34°C (93.2°F), the screen will read LO on a **RED** backlight.

When the measured temperature is 34-37.1°C (93.2-98.8°F), the screen will display a **GREEN** backlight.

When the measured temperature is 37.2-38.1°C (98.9-100.5°F), the screen will display an **ORANGE** backlight.

When the measured temperature is 38.2-43.0°C (100.6-109.4F), the screen will display a **RED** backlight.

When the measured temperature is above 43.0°C (109.4°F), the screen will read HI on a **RED** backlight.

1- Forehead Temperature Measurement

- Press the power button to start the thermometer
- Aim the thermometer to the center of the forehead with a distance of 1.18-2in (3-5cm).
- Press the temperature button to take the temperature.
- Once you hear the beep, the temperature will be displayed.

The LCD flashes as the temperature is being measured.
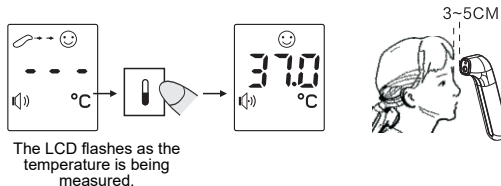
Note: If you do not hear the beep, the measurement hasn't been completed. Do not remove the thermometer away from the forehead until you hear the beep. (If you have deactivated the sound, no beep will be heard)

2- Object Measurement

- Long press the power button for 6 seconds to enter the Object Mode.
- Point the thermometer at the center of the object.
- Press the temperature button to take the temperature.
- Once you hear the beep, the temperature will be displayed.
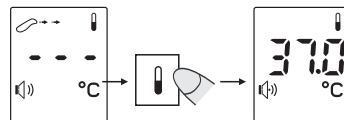
Note: If you do not hear the beep, the measurement hasn't been completed. Do not remove the thermometer away from the forehead until you hear the beep. (If you have deactivated the sound, no beep will be heard)

Product Cleaning Instructions

In order to ensure accurate measurements, it is recommended to clean the device after every use.

Please use a cotton swab to dip 75% alcohol to wipe the thermometer probe and remove any residue.

We recommend you to clean the probe for at least for five seconds.

Then wipe the other components with a soft and dry cloth.

After cleaning, please ensure that there is no visible dirt or residue on your thermometer. Wait 10 minutes before using.

The device can be cleaned for maximum of 40000 times.

Troubleshooting

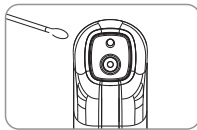| Problem	Reasons	Solutions
When the power is turned on, the screen doesn't display.	The battery is exhausted.	Replace the battery.
	The battery polarity is wrong.	Ensure the battery polarity is the same as the battery case.
The measurement temperature is low.	The measurement position is not correct.	Measure the temperature correctly according to the instructions.
	There may be dirt on the sensor.	Clean the device.
Big temperature fluctuations with continuous measurement.	The measurement interval is too small.	The interval for each measurement should be over 10 seconds.

Screen display	Reasons	Solutions
HI	When the temperature is higher than the measurement range (more than 43.0°C/109.4°F for the forehead mode, and over 93.2°C/199.76°F in the object mode), the screen will display "HI"	1. When the measurement probe is not properly placed on the forehead, or the measuring distance is too far, the measured result may be low.

2. When the measurement probe is dirty, the measured result may be low. Please clean the probe following the previous cleaning instructions. |
Lo	When the temperature is lower than the measurement range (less than 34.0°C/93.2°F for the forehead mode, and below 0°C/32°F in the object mode), the screen will display "Lo".	
Er.H	The limit of the operating environment is 40°C/104°F for this device. When the environment temperature exceeds this temperature, the screen will show the error "Er.H".	When using this product, the environment temperature cannot be higher than 40°C/104°F.
Er.L	The lower limit of the operating environment is 10°C/50°F for this device. When the environment temperature is below this temperature, the screen will show the error "Er.L".	When using this product, the environment temperature cannot be lower than 10°C/50°F.
Err	When the environment temperature changes rapidly for 5 degrees in object mode, the screen will show the error "Err", and the device will automatically shutdown.	When the error "Err" is displayed, place the device in a stable environment, and do not use for 30 minutes.

Product name: Infrared Forehead Thermometer
Model number: PG-IRT1602
Product appearance dimensions: 34×160×50mm
Product weight: about 68g (except battery)
Measuring range: 34.0°C-43.0°C.(93.2℉-109.4°F)
Object temperature: 0°C- 93.2°C (32℉-199.7°F)
Resolution ratio: 0.1°C/°F
Measurement Location: laboratory
Accuracy: (35.0°C~42.0°C)±0.2°C，(95.0°F~107.6°F)
±0.4°F，other temperature ±0.3°C.
Operation temperature: 10.0°C~40.0°C(50.0°F~104.0°F)，
relative maximum humidity: 15%RH~93%RH
Atmospheric pressure: 70kPa~106kPa
Transportation/storage temperature: -25°C~55°C
(−13°F~131°F),
Relative maximum humidity: 0%RH~93%RH
Atmospheric pressure: 50kPa~106kPa
Display screen: LCD display screen, 4 bit numbers and special icons.
Sound: when you turn on the product and ready to measure, a short beep will be heard.
The measurement is finished with a long beep.
System error or fault: short beeps for three times.
Fever alert: short beeps for ten times come with urgency.
Memory: in memory mode, it can record nine temperature numbers.
Automatically shut down: if no operation for 30 seconds, it will shutdown automatically.
Battery: two pieces of 1.5V AAA batteries
(alkaline batteries are recommended to use).
Period of use: five years

1602 Forehead mode:
Clinical bias, Dcb: 0.000
Limits of Agreement, LA：0.267
Clinical Repeatability, σr：0.107
The reference body site: forehead
Measuring site: forehead

Packing parts list
1. Main body
2. Product manual

Appendix 1 Guidance and Manufacturer Declaration Tables

Guidance and manufacturer's declaration--electromagnetic emissions		
The Model PG-IRT1602 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Model PG-IRT1602 Infrared Thermometer should assure that it is used in such an environment.		
Emissions	**Compliance**	**Electromagnetic environment-guidance**
RF emissions CISPR 11	Group 1	The Model PG-IRT1602 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 Model PG-IRT1602 Infrared Thermometer is used in home and it's powered by DC 3V
Harmonic emissions IEC 61000-3-2	N. A.	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	N. A.	

Guidance and manufacturer's declaration – electromagnetic immunity			
The Model PG-IRT1602 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Model PG-IRT1602 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)IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15KV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 KV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m, 50/60Hz	30 A/m, 50/60Hz	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE U_T is the a.c. mains voltage prior to application of the test level			

			Guidance and manufacturer's declaration – electromagnetic immunity

The Model PG-IRT1602 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Model PG-IRT1602 Infrared Thermometer should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms150 kHz to 80 MHz 6 Vrms 150 kHz to 80 MHz outside ISM bandsa	N/A	Portable and mobile RF communications equipment should be used no closer to any part of the Model PG-IRT1602 Infrared Thermometer, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = \left[\dfrac{3.5}{V_1}\right]\sqrt{P}$
Radiated RF IEC 61000-4-3	10 V/m 80 MHZ to 2.7 GHz	10 V/m	$d = \left[\dfrac{3.5}{E_1}\right]\sqrt{P}$ 80MHz to 800MHz $d = \left[\dfrac{7}{E_1}\right]\sqrt{P}$ 800MHz to 2.7GHz 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 metres(m). 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[b] Interference may occur in the vicinity of equipment marked with the following symbol: $\left(\left(\left(\underset{\blacktriangle}{(\cdot)}\right)\right)\right)$

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 The ISM (industrial, scientific and medical) bands between 0,15 MHz and 80 MHz are 6,765 MHz to 6,795 MHz; 13,553 MHz to 13,567 MHz; 26,957 MHz to 27,283 MHz; and 40,66 MHz to 40,70 MHz. The amateur radio bands between 0,15 MHz and 80 MHz are 1,8 MHz to 2,0 MHz, 3,5 MHz to 4,0 MHz, 5,3 MHz to 5,4 MHz, 7 MHz to 7,3 MHz, 10,1 MHz to 10,15 MHz, 14 MHz to 14,2 MHz, 18,07 MHz to 18,17 MHZ, 21,0 MHz to 21,4 MHz, 24,89 MHz to 24,99 MHz, 28,0 MHz to 29,7 MHz and 50,0 MHz to 54,0 MHz.

b The compliance levels in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range 80 MHz to 2,7 GHz are intended to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into patient areas. For this reason, an additional factor of 10/3 has been incorporated into the formulae used in calculating the recommended separation distance for transmitters in these frequency ranges.

c 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 Model PG-IRT1602 Infrared Thermometer is used exceeds the applicable RF compliance level above, the Model PG-IRT1602 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 Model PG-IRT1602 Infrared Thermometer.

d 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 Model PG-IRT1602 Infrared Thermometer

The Model PG-IRT1602 Infrared Thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Model PG-IRT1602 Infrared Thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Model PG-IRT1602 Infrared Thermometer as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = [\dfrac{3.5}{V_1}]\sqrt{P}$	80 MHz to 800 MHz $d = [\dfrac{3.5}{E_1}]\sqrt{P}$	800 MHz to 2.7 GHz $d = [\dfrac{7}{E_1}]\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (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.

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