Model: IT-122

FOREHEAD THERMOMETER

USER MANUAL

Version:01/2015

CONTENTS

1. Introduction and classification

IT-122 is a non contact infrared thermometer that measures the temperature of human body by using the principle of receiving infrared. When using, it is only required to align the detection window with the forehead to measure the body temperature quickly and accurately.

Product Classification:

2. Basic principle

Any object with a temperature above absolute zero emits infrared radiation wavelength and the wavelength transmitted by human body is 5~13um. According to this principle, it is possible to determine the human body temperature from the forehead temperature or object temperature by selecting the appropriate measuring mode of the device.

3. Product features

- With stable and reliable Germany high precision infrared Sensors
- Good performance of environment temperature adaptability. Capability of using in a complex environment
- One key operation for Body temperature and Object temperature
- Capacity of storing 32 measurements
- Measuring unit: Optional for Celsius (℃) / Fahrenheit (℉)
- Automatic shutdown and power-saving functions
- Highbrightness large size LCD screen.

4. Technical parameters

Measurement method	Non-Contact	
Effective distance	5cm ～15cm	
Measurement Mode	Body Mode	32.0°C~42.9°C(89.6°F~109.2°F)
	Surface Mode	0°C~100°C(32°F~212°F)
Measurement Accuracy	Body Mode	±0.2°C/0.4°F
	Surface Mode	±1.0°C/°F
Display resolution	0.1°C/°F	
Operating environment	10°C ~ 40 °C (61° F to 95 ° F) ≦80% moisture condensation	
Storage condition	- 25°C~55°C (-13°F to 131°F) ≦90% moisture condensation	
Power supply	DC3V (2 AA batteries)	
Power consumption	When off ≦ 10 mw	
	When measuring ≦30 mw	
Auto power off	In 30 seconds	
Dimensions	88mm * 45 mm *153 mm(length x width x height)	

Weight	About 130 g (including battery)
Warranty	1 year from the date of purchasing. Please keep the purchase vouchers to facilitate future maintenance. The distributor has the choice of repairing and replacement. The guarantee does not apply if the problem follows a misuse resulting from not reading the manual , accident,misuse or unintended product opening attempt. Leave the label bearing the serial number(S / N) of the product to facilitate traceability
CE 0434	Product complies with the European Directive on medical devices MDD 93/42/ EEC

5. Shape structure

6. Description of function keys and symbol shown on LCD display

Button Name	Function Definition
°C / °F MODE	Adjust ° C / ° F, enter setup mode
	Increase the backlight function, for using in the night
+	Adjust the Settings of parameters
–	Adjust the Settings of parameters
Measuring key	Power on or take the temperature

Symbol name	Symbol	Definition
Sound indication		Sound prompt (buzzer)
		Buzzer to shut down, no prompt
Measuring mode	Body temp	body temperature mode
	Surface temp	The object temperature measurement model
Temperature unit	°C	Celsius degree
	°F	Fahrenheit degree
Display value	888.8	Temperature value
Backlight		Backlit LCD display
Memory symbol	LOG	Record the latest 32sets memories
laser lamp		Displays the opening/closing laser
Battery		Indicates low battery status

7.Settings

This product provides 5 function settings which is temperature units, sound indication switch, temperature deviation and measuring mode. Measuring mode setting is set by the mode switch key. Other settings are set in the menu.

The Settings menu table is as follows:

Menu	Function	–	+	Default Value	Remarks
F1	Temperature alarm point	Reduce to 0.1°C	Increase of 0.1 ° C	38°C	Scope of 37 °C ~ 42.9 °C
F2	Offset	The downward	The upward	0.0°C	The range

		migration of 0.1 ° C	migration of 0.1 ° C		-2° C ~2 °C
F3	Indication switch	close	open	open	Press"+"/"—" to select
F4	Measuring mode	object	human body	human body	Press"+"/"—" to select

Temperature alarm point Setting: **F1**

Press the conversion key, the screen shows **F1**.The current alarm temperature value is as figure 7.1. Press "+"to increase 0.1°C, press "—"to reduce 0.1°C as Figure 7.2

Figure 7.1

Figure 7.2

Temperature offset Settings: **F2**

Press the conversion key, the screen show **F2**.The current offset temperature value is as figure 7.3. Press "+"to increase 0.1°C, press "—"to reduce 0.1°C as Figure 7.4. The range of the offset value is -2 ° C~ 2 ° C

Figure 7.3

Figure 7.4

Sound indication switch Settings: **F3**

Press the conversion key, the screen shows **F3**.The current sound prompt symbol is as Figure 7.5 . Press "+"to switch "**ON**", press "—" to switch "**OFF**"as Figure 7.6

Figure 7.5

Figure 7.6

Measurement mode: **F4**

Press the conversion key,the screen shows **F4**.The current measuring mode is as Figure 7.7. Press "+"to show "body", press "—" to show "surf" as Figure 7.8.

Figure 7.7

Figure 7.8

Press the backlit function key in the measuring mode, the backlight is green. And press the infrared sensor icon, the icon shows on the screen. And press 3 times, the LED off. Press the 4th times, the infrared sensor off.

⚠ **Prompt**

1. The temperature model is used to measure the body temperature which is comes from the dynamic compensation of environment temperature and human body forehead temperature.
2. The object temperature model is measuring the surface of the object and of temperature the forehead .The value cannot be represented as the actual body temperature.
3. According to the environment temperature, measuring distance, the differences of the skin and other factors. The temperature difference can be adjusted by the offset setting to compensate the differences. The adjustment value is from -2°C to 2°C.

   For example: The thermometer test body temperature is36.2°C,but the actual body temperature is 37.0°C. Then press into F2,simply enter 0.8in the F2 and so the device will apply this correction on each measurement

8. Measuring method

8.1 Body temperature measurement.

- Press the measuring key to power on and the screen display the single backlight,all symbols show on the screenthen beep 2 times to finish the self checking. the screen. display the latest memory value and into the measuring state
- Make sure the measuring mode is body temp mode.
- Align the thermometer probe with the forehead, the effective distance is 5 15cm. Press the measuring key,the temperature shows on the screen after a beep in 0.5s as Figure 8.1. If the temperature exceed threshold value (defaultis 38°C),there will be an alarm.

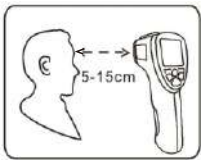

Figure 8.1

- The thermometer will automatically power off after 30s when idle

⚠ **Prompt**

1. Keep the probe and inner cavity clean before measuring
2. Use the thermometer in a stable temperature environment. If the environment temperature, changes so much for example from outdoor to indoor. Please put the thermometer and wait for about 10 minutes before measuring.
3. Don't measure body temperature after measuring extremely high or low temperature, put the device for 10 minutes before measuring
4. Put the device for 5 minutes before measuring when the measured person from big temperature difference environments
5. Try to avoid using the thermometer when drying, drenching water, sweating, and making up. Don't measure the temperature after doing sports, washing and dinner before 30 minutes.

8.2 The object temperature measurement

- Press the measuring key to power on and go to the measuring mode
- Make sure on the upper screen is not body temp mode but the surface temp mode
- Align the thermometer probe with the forehead, the effective distance is 5-15cm. Press the measuring key, the temperature shows on the screen after a beep in 0.5s.
- The thermometer will power off automatically after finishing the measurement after 30s without operation

⚠ **Prompt**

1.The function is measuring objects' surface temperature but not represent the internal temperature of the objects.

2.Different materials of emission rate might be different. Please refer to the material emissivity, this product default emissivity is 0.95.Emissivity is different, the measured temperature and real temperature deviation. The stainless steel materials, for example, measure the temperature will be much lower than the actual temperature, please avoid scald.

8.3. Exceed the temperature measuring range.

Body temperature mode

When the display the measured value is lower than 32°C ,the LCD will show **LO** and beep alert.
When the measured value is higher than 42.9 ° C, the LCD will show **Hi** and beep alert.

The object temperature mode:

When the measured value is lo wer than 0°C the LCD will show **LO** and beep alert.
When the measured value is higher than 1 00°C , the LCD will show **Hi** and beep alert.

⚠ **Prompt**

When the environment temperature is lower than 10 °C or higher than 40 °C, the measurement accuracy cannot be sure

9. Replacement of batteries

Open the battery cover, remove the old battery. Put in 2 new AA batteries, take care the direction of the electrodes

⚠ **Prompt**

1, When don't not use the device for a long time, please take out the battery to prevent leakage. It is forbidden to put waste battery in the fire.

2, According to local regulations, properly handle the waste batteries, avoid pollution.

10. Maintenance and matters needing attention

Please keep the sensors and probes inner cavity clean, otherwise it will affect the accuracy.

Cleaning methods:

- The surface cleaning: wipe with a clean soft cloth or cotton swab dipped a little medical alcohol or water.
- Probe and sensor inner cavity cleaning: with a clean soft cloth or cotton swab dipped a little medical alcohol gently wipes the probe at the top of the inner cavity or sensors, use after the alcohol completely evaporated.
- Before use, please read the instructions, please make sure the battery has been installed
- Don't put the device into any liquid, or in high or low temperature environment for long.
- No collision, falling and don't mix with sharp objects or disassemble by oneself
- Do not use in strong electromagnetic interference environment.

- Place the thermometer at the position which the child can not touch.
- Suggested practice to get familiar with the measurement methods; try not to change the product factory settings
- The measurement results can not replace the clinical diagnosis.
- No special maintenance to during using, if fault please contact the vendor or manufacturer

11.Trouble shooting

The diagnosis	Disposal measures
The screen shows "Lo" or "Hi"	1, Check the measurement object. Unable to ensure the measurement of the forehead hair, water, sweating, applying cosmetics case 2, Check the temperature offset settings 3 Check the operation environment. Environment changes will greatly influence the measurement. It will not be accurate if the environment temperature change is too big or the thermometer test low temperature target immediately after switch from a high temperature measuring. It's better to use after 10 minutes to achieve a new heat balance. 4.Check the measuring distance(5cm to15 cm)
Buttons have no response	1. To load and unload the battery 2. Check if the setting is in the progress
No display or display abnormal	Unload the batteries and load again
No indication sound	Check if the indication sound is off
Power off when open	Check the battery, loading and unloading battery again

12 Standard comply

Standard comply	EN 60601-1 EN 12470-5
	Type B: The circuits in contact with the patient and can be connected to the ground.
	Waste Electrical and Electronic Equipment (WEEE) Do not dispose with household waste Use the channels available to you
	Read the instructions before use
	Lotus Global.,Ltd 15 Alexandra Road London UK NW8 0DP

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INFORMATION OF ELECTROMAGNETIC COMPATIBILITY

Table 1

Guidance and manufacturer 's declaration-electromagnetic emissions		
The IT-122 is intended for use in the electromagnetic environment specified below.The customer or the user of the IT-122 should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment-guidance**
RF emissions CISPR 11	Group 1	The IT-122 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause and interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The IT-122 is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	N/A	
Voltage fluctuations /flicker emissions IEC 61000-3-3	N/A	

Table 2

Guidance and manufacturer 's declaration-electromagnetic immunity			
The IT-122 is intended for use in the electromagnetic environment specified below.The customer or the user of the IT-122 should assure that it is used in such an environment.			
Immunity test	**IEC60601 test level**	**Compliance level**	**Electromagnetic environment -guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±2,±4,±6kV for Contact discharge ±2,±4,±8kV air discharge	±2,±4,±6kV for Contact discharge ±2,±4,±8kV air discharge	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%

Electrical fast transient/burst IEC 61000-4-4	±2kV for ac. power lines ±1kV for dc. power lines	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations in power supply input lines IEC 61000-4-11	<5%U_T (>95 dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T for 5 s	N/A	Mains power quality should be that of a typical commercial or hospital environment. If the user of the IT-122 requires continued operation during power mains interruptions, it is recommended that the IT-122 be powered from an uninterruptible power supply or a battery
Power frequency (50/60Hz) 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
NOTE U_T is the a.c. mains voltage prior to application of the test level.			

Table 3

Guidance and manufacturer 's declaration-electromagnetic immunity			
The IT-122 is intended for use in the electromagnetic environment specified below. The customer or the user			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment-guidance**
Conducted RF IEC 61000-4-6	3Vrms 150kHz to 80MHz	N/A	Portable and mobile RF communications equipment should be used no closer to any part of the IT-122, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** d=1.2 P

Radiated RF IEC 61000-4-3	3V/m 80kHz to 2.5GHz	3V/m	d=1.2 P 80MHz to 800MHz d=2.3 P 800MHz to 2.5MHz Here 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 form fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance b level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: 
NOTE 1 At 90MHz and 800MHz, 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 IT-122 is used exceeds the applicable RF compliance level above, the IT-122 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the IT-122 b Over the frequency range 150kHz to 80MHz, field strengths should be less than 3V/m.			

Table 4

Recommended separation distances between portable and mobile RF communications equipment and the IT-122			
The IT-122 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the IT-122 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the IT-122 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**		
Rated maximum output power	**150kHz to 80MHz** d =1.2 P	**80MHz to 800MHz** d =1.2 P	**800MHz to** 2.5GHz d =2.3 P
0.01	0.01	0.12	0.23
0.1	0.1	0.38	0.73
1	1	1.2	2.3
10	10	3.8	7.3
100	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 80MHz and 800MHz, 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.