

Non-contact Infrared thermometer

Please read the guide carefully before use and keep it well.
For American please refer to “°F”; for European please refer to “°C”.



User's Manual

1. Summary of Non-Contact Infrared Thermometer

Thank you for choosing our Non-Contact Infrared Thermometer. The Non-Contact Infrared Thermometer is used to measure an objects temperature based on the relationship between temperature and measurable infrared radiation. Simply aim the unit’s probe toward the surface to be measured to obtain a quick and accurate temperature. To ensure proper use, please be sure to read this user manual carefully. Also, please pay close attention to the safety precautions.

- In order to use this product correctly, please read the user manual before use.
- In order to properly use this product, please carefully read the full text of this manual before using, in particular the “safety precautions” section.
- Please keep the instructions on the side for easy checking.

Basic Principles:

All objects with a temperature above absolute zero emit a certain amount of infrared radiation energy based on the object’s temperature. The amount of radiation energy is closely related to the wavelength distribution. When a person’s forehead temperature is 96.8-98.6°F(36-37°C) ahrenheit, it emits a wavelength of 9-13 um of infrared radiation. Based on this principle, we are able to measure a person’s actual body temperature just by measuring the forehead’s surface temperature.

2. Safety Precautions

Warning

- Use of this thermometer is not intended as a substitute for consultation with your physician. It is dangerous for user to perform a self-evaluation and self-treatment based on the measuring result. Be sure to follow doctor’s instruction.
- Keep the thermometer out of the reach of children. If the battery or any other component is swallowed, immediately call a poison center or doctor.
- Do not dispose of the battery in fire. Must be recycled or disposed properly.

Notice

- The device is precision instrument, don’t drop, tramp or impose any vibration or impact on the thermometer.
- Do not touch the lens of the probe with your fingers, and do not disassemble the device by yourself.
- Before measuring temperature, please make sure the area is clear of hair or moisture (i.e. sweat).
- If you plan on measuring your temperature after exercising, eating, or bathing, please rest in a room temperature area for about 30 minutes prior to measuring the temperature for accurate results.
- For reliable and stable measurement data, please have the device placed in a room temperature area for at least 30 minutes prior to using.
- To measure temperature continuously over a duration of time, please make sure to have at least 1 minute intervals between each measurement. Temperature measurements may vary slightly, hence it is recommended that

- you measure at least three consecutive times and then take the average of the temperatures.
- There is no absolute standard about the temperature of a person, so please try to collect the recording of Individual temperature in the usual, as a reference for having a fever or not.
- Do not measure the sites of scarred tissue or tissue compromised by skin disorders, because sensing body temperature from sites of scarred tissue or tissue compromised by skin disorders can lead to not accurate temperature readings.
- Do not measure in places where there are scars or fresh wounds (especially on the head).
- Do not measure if that patient is treated with certain drug therapies.
- Do not measure when the measured sites (forehead) is exposed to direct sunlight, fireplace heat, cold compress therapies, air conditioner flow. If you are under these cases, please leave the status and wait for 30 minutes to measure.
- Do not immerse the device into water or any other liquid, and do not directly expose it to the sun.
- Make sure the measuring distance is between 1-6cm when measuring.
- Do not use a mobile or cordless phone near the thermometer when measuring.
- Do not measure after using drugs or medicationi, due to the fact that drugs and medicine can have impacts on the temperature of the body.
- In order to ensure the accuracy of measurement data, please don’t take measurement of body temperature in strong electromagnetic interference environments (such as microwave, high frequency equipment operation environment).

3. Intended use

This non-contact thermometer is intended to measure forehead temperature at home or at a hospital for all people, from infants to adults.

4. Temperature Measurement Modes and Range Description:

It is used to measure the temperature of the forehead of the human body, and it can also be used to measure the temperature of the surface of objects.

5. Feature

High reliability

This product has passed the life and reliability test manufacturers internal, mean time to failure is≥1000h.

A wide range of measurement

Body measurement mode: the measurement range: 89.6°F – 109.2°F (32°C - 42.9°C)
Object temperature measurement mode: the measurement rang: 32°F - 212°F (0°C - 100°C)

High accuracy

This product has passed the European Union and Chinese the infrared thermometer performance standards for measuring clinical requirements, measuring clinical repeatability is no more than ±0.5°F (0.3°C)

Smart User Interface and Design

When the measured body temperature is below 89.6°F (32°C), the LCD will display the "Lo" prompt. If the measured body temperature is above 109.2°F (42.9°C), the the LCD will display the "Hi" prompt. When operating environment exceed the design specifications, LCD will display the Err prompt. When the thermometer battery power is insufficient, it has low voltage icon. Has the hardware self-test function, when hardware malfunction is detected, the Err will display prompts.

Power saving function

There is no operation after the thermometer is turned on or after the temperature measurement, the thermometer automatically enter standby state in 30s±5S.

Memory storage function

The design of 32 groups of data storage and query function, can save measurement mode and temperature measurement of your value for query.

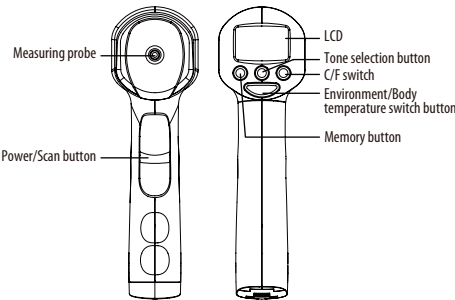
Two-color backlight indication function

Object temperature measuring mode: Green backlight indicator
Body temperature measurement mode:

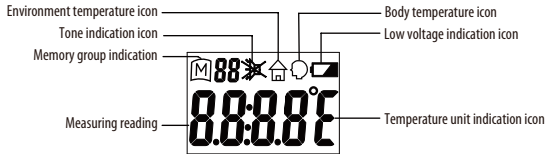
- 89.6°F - 99.5°F(32°C) -37.5°C): Green Backlight
- 99.7°F - 109.2°F(37.6°C - 42.9°C): Red Backlight
- "Lo" or "Hi" prompt: Green Backlight

6. Overall Description

Main component including



LCD display description



7. Operation Instruction

Preparation

1) Check battery

Replace the batteries to ensure power supply if there is low voltage icon for the thermometer.

2) Check thermometer

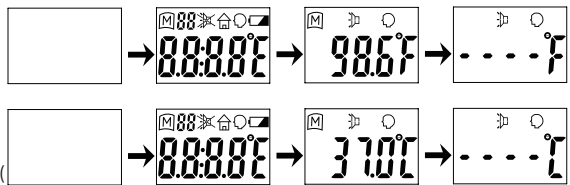
When you press the “power and scan” button, the system will self test its software and hardware. If there are problems, LCD will display “Err” symbol. Also, please check if the sensor laser is dirty or if there are any damaged parts prior to use.

- 3) In order to get accurate measurement results, put the thermometer in the measurement environment for 30 minutes.
- 4) Unexpected fluctuations in the ambient room temperature may decrease the accuracy of the measured results. When the thermometer.
- 5) When measuring forehead temperature, make sure the measured area is clean and cleared or hair in order to ensure the accuracy.

Instruction for use

(1) forehead measurement

Place the temperature probe at the center of the forehead, keeping a distance of 1~6cm, then press [Power/Scan], the sound of [beep] is heard after about 1 second and the measurement is finished, LCD display measurement results.As below



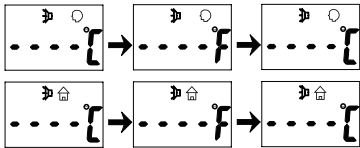
- If the ambient temperature exceeds the range of 10-40.0°C, the thermometer shows Err;
- If the measured human temperature value is higher than 42.9°C, it shows Hi; If the measured temperature is lower than 32°C, Lo is shown.
- If 32.0°C≤ temperature ≤ 37.5°C, green backlight lights up;If 37.6°C≤ temperature ≤ 42.9°C, red backlight lights up;When red backlight lights up are accompanied by the continuous "BE..BE.."Sound, measurement completed, the screen will show the measured temperature value.

Notice

- When measuring the forehead temperature, you should first remove the hat or arrange the hair on the forehead to prevent the influence of measurement.
- Sweat or cosmetics on the forehead will affect the measurement accuracy. Please keep the forehead clean during measurement.
- Be careful not to shine LED light into the subject's eyes during measurement.

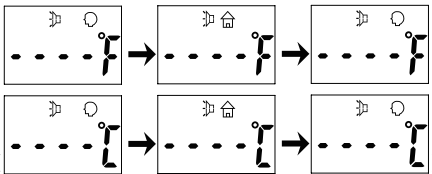
(2) Measurement unit selection

After starting up, press the [C/F switch button] to select the unit of measurement.As below



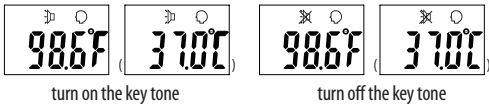
(3) Measurement mode selection

Press [Environment/Body temperature switch button] to select the object or human body temperature measurement mode.As below



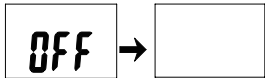
(4) Sound selection

In the power-on state, press [Tone selection button] to turn off or on the prompt tone.As below



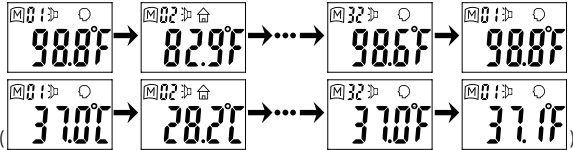
(5) Automatic shutdown

If there is no action more than 30 seconds after the temperature measurement, the thermometer will automatically count into the standby state with no display on the screen.



(6) Memory function

In the power-on state, press the "M" into memory query mode, the device can restore up to 32 memory data. the query interface can display memory serial number, model and temperature measurement. The device will show the latest the memory data when you enter into the memory query state every time (i.e., memory 1), then press the M key again to switch a series of measurement data, memory number will start from 1, 2,... 32 and the screen will show the corresponding number value.



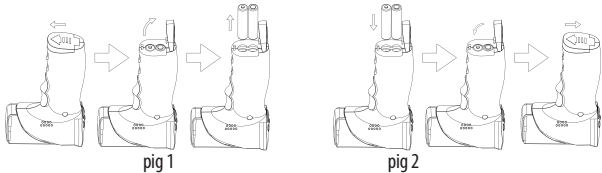
When the memory data is over 32 group, the system will replace the latest data(the serial number is 32) and so on.

(7) Battery installment and replacement

After starting up the thermometer, the thermometer will automatically check for the batteries' power. If the battery power is too low, the screen will display a low symbol" . If the battery has been detected to be not able to be used normally, the screen will flash the low symbol the automatically turn off after 3 flashes prompting the user to replace the batteries with new ones.

Battery replacement:

- (1) Open the battery case and take out the old ones.
- (2) Put the new battery to the slot and keep it fixed well, please pay attention to the electrode and don't make a mistake, then cover the case to finish the battery replacement.



Notice:

Please observe the related national laws of disposing the old batteries and do not throw directly into the trash. Please take out the batteries if the device is not used for long periods of time. Please don't put the batteries in fire. We recommend that you choose batteries from well-known brands, to obtain the basic performance and safety guarantees.

8. Cleaning and Care

Probe tip (lens) is a most fragile and sensitive part of the thermometer. Please keep its entirety clean in order to ensure the accuracy of measurement. The probe tip and lens are the most delicate part of the thermometer. It has to be clean and intact to ensure accurate readings. If the thermometer is ever accidentally dirtied, use the following steps to clean the probe and lens:

- Very gently wipe the surface with a cotton swab or soft cloth moistened with alcohol. Wait for the alcohol to completely dry out before using.
- If the lens is damaged, contact the distributor.

Clean the unit body:

- Use a soft, dry cloth to clean the thermometer display and unit body.
- If very dirty, use a soft with alcohol to cleaning.

NOTES:

- Do not use abrasive cleaners.
- Don't use other non-recommended methods to perform disinfection or cleaning.
- This device is not waterproof, do not drop or submerge the device in water or any liquid.

9. Maintenance

- 1) We do not authorize any institution or individual to maintain and repair of the product. If you suspect that the products have any issues, please contact the manufacturer or distributor to handle the case.
- 2) The user must not attempt any repairs to the device or any of its accessories. Please contact the retailer for repair.
- 3) Opening of the equipment by unauthorized agencies is not allowed and will terminate any claim to warranty.

WARNING: No modification of this equipment is allowed!

10. Cleaning Instruction



Before and after each use, clean the thermometers by the solutions listed below are recommended. Please use a disinfectant cloth for cleaning. Do not immerse the whole thermometer into any liquid. Do not sterilize by boiling method, gas or steam autoclave.

Solution	Dilution with water	Method
Ethanol	70-80%	Wipe the probe enclosure and button with the soaked cloth for 30s.
Isopropyl Alcohol	70-90%	As above.
Glutaraldehyde	0.5-2%	As above.

11. Calibration

The thermometer is initially calibrated at the time of manufacture. If this thermometer is used according to the use instruction, periodic re-adjustment is not required. If any time your question the accuracy of measurement, please contact distributor or manufacturer, the contact information see last page.

12. Storage


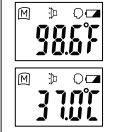
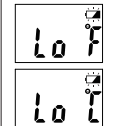
-  1) Don't put the thermometer under direct sunlight, high temperature, moist environments, flammable areas, or areas susceptible to vibration.
-  2) Remove the batteries if the device is not to be used for long durations.

13. Accessories

Only use original accessories. Check that the contents of the delivery are complete.

Quantity	Parts
1pc	Non-Contact Infrared Thermometer
2pcs	AAA batteries
1pc	User Manual

14. Trouble-Shooting


Troubles or error message	Checklists or situation	Countermeasures or solution
No response/ Automatically reset	The batteries are used up?	Replace new batteries.
	Battery in wrong polarity or type?	Take out the batteries and replace new ones.
	Poor battery contact	Take out batteries and reinsert them in the correct orientation
The thermometer show the symbol “Hi”	Temperature hampered by an air flux.	Please leave the area and wait for 30 minutes to measure. Re-measure
	In the forehead measurement mode: --Temperature readings too close together. -- Measured the other object, such as the sunlight, the air from the fireplace. Hi: Higher than 109.2°F (42.9°C);	according to the manual.
	In the object measurement mode: --Temperature readings too close together. -- The object temperature is higher than 212°F (100.0°C). Hi: Higher than 212°F (100.0°C);	
The thermometer show the symbol “Lo”	The hair and sweat prevent the temperature achievement.	according to the manual.
	In the forehead measurement mode: -- The measuring distance is too far. -- Measured the other object, such as the air from the air conditioner. Lo: Less than 32°F (0°C)	
	In the object measurement mode: -- The measuring distance is too far. -- Have water vapor condenses on the lens. Lo: Less than 32°F (0°C)	
	The ambient temperature is beyond of range of measurement (10°C-40°C or 50°F-104°F)	Keep the thermometer in the room Whose Temperature is (10°C-40°C or 50°F-104°F) for 30 minutes
	The sensor or hardware is damaged	Excluding the possibility of temperature allowance first ,then send the device to your dealer for repair
	Low batter, but you can still use it	Keep an eye on power and continue to use.
	Lower battery, however you can't use it	Replace the new battery.

15. Specifications

Device name	Non-Contact Infrared Thermometer
Model	FDIR-V22/IR122
Measurement mode	Forehead and object temperature measurement modes
Measurement site	Forehead temperature
Measuring distance	1-6cm (0.4in – 2.5in)
Power supply	d.c.3V, 2×1.5V AAA batteries
Measuring range	For forehead temperature: 89.6°F – 109.2°F (32.0-42.9°C) For object surface temperature: 32°F-212°F(0-100°C)
Measuring accuracy	For forehead temperature: 35.0°C – 42.0°C ± 0.2°C (95.0°F – 107.6°F ± 0.4°F) Outside this range: ± 0.3°C (±0.5°F)
Clinical repeatability	Within ±0.5°F (±0.3°C)
Resolution of display	0.1°F/0.1°C
Operation condition temperature	Temperature: (50.0 °F - 104.0 °F (10.0 °C - 40.0 °C) Relative humidity: 15 - 95% Atmospheric pressure: 70 kPa - 106 kPa
Transport/Storage condition temperature	Temperature: -13.0 °F - 131.0 °F (-25.0 °C - 55.0 °C) Relative humidity: 15 - 95% Atmospheric pressure: 70 kPa - 106 kPa
Size	149x85x44mm
Weight	110g
High body temperature hint	≥100.4°F (≥38°C)
Grade of waterproof	IP22
Electric shock	Internally powered ME equipment
Applied part	Type BF applied part, including the whole unit
Mode of operation	Continuous operation
Softward Version	V1.0











***The above specifications are subject to change without prior notice.**
Note: ASTM laboratory accuracy requirements in the display range of 96.8 to 102.2°F(36 to 39°C)for this thermometer is ±0.4°F(0.2°C), whereas for mercury-in-glass thermometer, the requirement per ASTM standards E 667-86 is ±0.2°F(0.1°C).

16. DISPOSAL

-  At the end of the product lifecycle, do not throw this product into the normal household garbage, but bring it to a collection point for the recycling of electronic equipment. Waste Electrical and Electronic Equipment can have potentially harmful effects on the environment. Incorrect disposal can cause harmful toxins to build up in the air, water and soil and can be harmful to human health.

- NOTES:**
- Handling of battery and wastes method, please act according to the native law to proceed to handle.
 - Take out the battery if you are not going to use the unit for a long time.
- To protect the environment, dispose of empty battery at your retail store or at appropriate collection sites according to national or local regulations.

17. NORMALIZED SYMBOLS


	Complies with the European Medical Device Directive (93/42/ EEC), Notified Body is SGS Belgium NV.
	Authorized representative in the European Community.
	Attention: see Instructions for use!
	Caution! Consult accompanying documents.
	Type BF applied parts
	Batch code
	IP code of the device: this device's grade of against ingress of solid foreign objects
	Disposal in accordance with Directive 2002/96/EC (WEEE)
	Keep dry
	UP

	Fragile, handle with care
	Stacking layer limit

18. Electromagnetic compatibility information

Guidance and manufacturer's declaration - electromagnetic emissions		
The FDIR-V22 device is intended for use in the electromagnetic environment specified below. The customer or the user of the FDIR-V22 should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR11	Group 1	The device 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 CISPR11	Class B	The FDIR-V22 device 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 IEC61000-3-2	Not applicable	
Voltage fluctuations/ flickeremissions IEC61000-3-3	Not applicable	

Guidance and manufacturer's declaration — electromagnetic immunity			
The FDIR-V22 device is intended for use in the electromagnetic environment specified below. The customer or the user of the FDIR-V22 should assure that it is used in such an environment.			
Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge(ESD) IEC61000-4-2	±6kV contact ±8kV air	±6kV contact ±8kV air	Floors should be wood , concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.

Guidance and manufacturer's declaration. Electromagnetic immunity			
The FDIR-V22 device is intended for use in the electromagnetic environment specified below. The customer or the user of the FDIR-V22 should assure that it is used in such an environment.			
Immunity test	IEC 60501 Test level	Compliance level	Electromagnetic environment - guidance
ConductedRF IEC61000-4-6 Radiated RF IEC 61000-4-3	3V rms 150 kHzto 80 MHz 3V rms 3V/m 3V/m 80 MHz to 2.5 GHz	±6kV contact ±8kV Vair	Portable and mobile RF communications equipment should be used no closer to any part of the FDIR-V22 device, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance. d= 1 . 2 √P d= 1 . 2 √P 80 MHz to 800 MHz d= 2 . 3 √P 800MHz to 2,5MHz 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, 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: 
NOTE 1: At 80MHz and 800MHz frequency, apply the higher frequency. 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 FDIR-V22 device is used exceeds the applicable RF compliance level above, it should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the FDIR-V22.
- b. Over the frequency range 150 KHz to 80 MHz, field strengths should be less than [Vi] V/m.

Recommended separation distances between portable and mobile RF communications equipment and the FDIR-V22 device.			
FDIR-V22 device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the FDIR-V22 device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment(transmitters) and the FDIR-V22 as recommended below, according to the maximum output power of the communication sequipment.			
Rated maximum output power of transmitter/W	Separation distance according to frequency of transmitter/m		
Electrostatic discharge(ESD) IEC61000-4-2	150 KHz to 80 MHz $d=1.2\sqrt{P}$	80MHz to 800 MHz $d=1.2\sqrt{P}$	800MHz to 2,5 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3

10	7.8	7.8	3.3
100	12	12	23
For transmitters rated at a maximum output power not listed above, 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) accordable to the transmitter manufacturer. NOTE 1: At 80MHz and 800MHz frequency, apply the higher frequency. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

19. STANDARD LIST

EN ISO 15223-1	Medical device –symbols to be used with medical device labels, labeling and information to be supplied –Part 1; General requirements
EN 1041	Information supplied by the manufacturer with medical devices
IEC 60601-1	Medical electrical equipment Part 1: General requirements for basic safety and essential performance
IEC 60601-1-11	Medical electrical equipment – Part 1-11: General requirements for basic safety and essential performance – Collateral Standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment
IEC 60601-1-2	Medical electrical equipment -- Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic compatibility - Requirements and tests
EN 12470-5	Clinical thermometers – Part 5: Performance of infra-red ear thermometers (with maximum device)
ASTM E 1965	Standard Specification for Infrared Thermometer for Intermittent Determination of Patient Temperature
IEC 62304	Medical device software - Software life-cycle processes
IEC 62366	Medical devices — Application of usability engineering to medical devices IEC 62366:2007
ISO 80601-2-56	Medical electrical equipment – Part 2-56:Particular requirements for basic safety and essential performance of clinical thermometers for body temperature measurement
ISO 10993-1	Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process

20. GUARANTEE

- We provide one year warranty starting from the date of purchase. Please refer to the following situations that are excluded from the free repair services within the warranty period.
- All damages caused by disassembly and repair of the device by yourselves.
 - All damages caused by dropping the device during usage, or transport.
 - All damages caused by improper usage of the device and not following the instructions on the user manual.

Please contact after-sales service and support and enclose your product purchase receipt while claiming for warranty services.

Location of purchase:

Contact number:

Date of purchase:

Famidoc Technology Co., Ltd.
Add.: No. 212 Yilong Road, Hexi Industrial Zone, Jinxia, Changan Town, Dongguan 523853, Guangdong Province, P.R. China.
Tel.: +86-769-89272488
Fax: +86-769-89272498
Website: www.famidoc.com

Name: Shanghai International Holding Corp. GmbH (Europe)
Add: Eiffestrasse 80, 20537 Hamburg, Germany