Non-Contact
INFRARED THERMOMETER

Model:FI01

User`s Manual

Version 1.0

Contents

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1.Product introduction and classification

1321A/1321B infrared thermometer is a thermometer that measures the temperature of human body by using the principle of receiving infrared. When using, it is only require d to align the detection window with the forehead to measure the body temperature quickly and accurately.
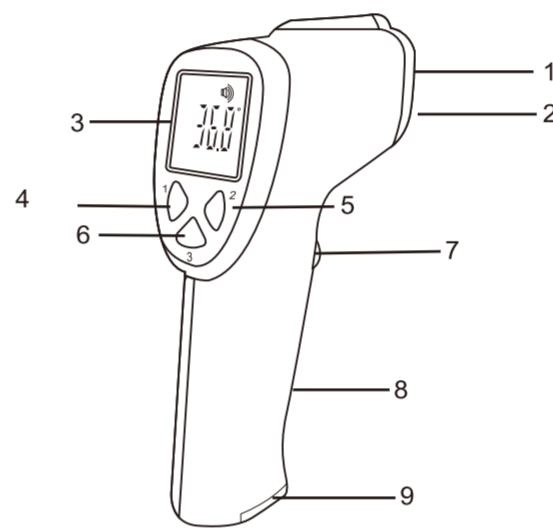
Product classification:

Product Classification ✝ B

2.Basic principle

Any object with its temperature higher than the absolute zero will radiate a certain proportion of infrared energy according to its own temperature. The amount of radiation energy and its distributionby wavelength are closely related to the object surface temperature. In accordance with this principle,the surface temperature of forehead can be measured accurately, and the accurate body temperaturecan be determined and shown by offsetting the difference between the surface temperature of forehead and the actual body temperature

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3.Product features

1. Specially designed for measuring the body temperature, with a dynamic offset for the ambient temperature and body temperature.

2. Exclusively using the infrared probe for temperature measurement, with a high accuracy of measurement and a more stable performance.

3. Providing the function of sound notification (1321A) or voice promotion (1321B) of higher body temperature.

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5. Capable of storing 32 sets of measurement data.

6. 3 colors backlight LCD digital display (Red, Orange, Green)

7. Providing two temperature modes, i.e., Fahrenheit scale and Celsius scale, for selection.

8. Providing the function of auto shutdown to save electric power.

9. Small size, reasonable structure and convenient operation.

10. Selecting the body temperature measurement mode to measure the temperature of any object with its temperature less than 100℃ and its emissivity equal to 0.95.

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4.Technical parameters

Measurement method	Non-contact	
Range	Body	32.0℃~42.9℃ (85.9°F~109.2°F)
	Object	0℃~100℃ (32°F~212°F)
Accuracy	Body	±0.2℃/0.4°F
	Object	±1.0℃/1.8°F
Resolution	0.1℃/°F	
Operating conditions	5.0℃-40.0℃(41.0°F-104.0°F) 15%≤Rh≤90% 70.0kPa-106.0kPa	
Storage condition	-25.0℃-70.0℃(-13.0°F-158.0°F) Rh≤95% 50.0kPa-106.0kPa	
Power supply	d.c. 3V 2 AA alkaline Battery	
Power consumption	When off≤10uW	
	When measurement≤30mW	
Power level indicator	Indication for low power level	
Memory	Automatic recall of 32 memories	
Display	LCD back-lit display	
Reading scale	Celsius or Fahrenheit	
Automatic shut off	In 10 seconds	
Dimensions	161mm x 93mm x 42mm	
Net weight	157g	
Standards	IEC60601-1-2:2014, IEC60601-1:2015+A1:2012+ES偏差, IEC60601-1-11:2015, ISO80601-2-56:2017	

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5.Illustration

1.Laser sight
2.IR Sensor
3.LCD Display
4.Body/Object mode or Minus
5.C/F mode or Add
6.Memory inquiry or Advanced setting
7.Measurement button
8.Handle
9.Battery Cover

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6.Function definition of all icons

Function definition	Icon	Details	
Battery level	🔋	When it is visible	The battery is in low lever, but the thermometer is functional properly. Please replace battery asap
		When it flashes	The battery is exhausted and ther -mometer can not function properly. Please replace battery immediately
		When it is invisible	Battery power is sufficient
Laser	⚠	When it is visible	Laser on (when the machine installed laser head)
		When it is invisible	Laser off (when the machine installed laser head)
Measurement mode	Body temp	Body mode	
	Object temp	Object mode	
Reading scale	°C	Celsius reading	
	°F	Fahrenheit reading	
Reading display	8888	Temperature value	
Memory	M	Memory value	
Beeper/Loudspeaker (1321A) (1321B)	🔊	Beeper on / Voice on	
	🔇	Beeper off / Voice off	

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7.Function definition of all buttons
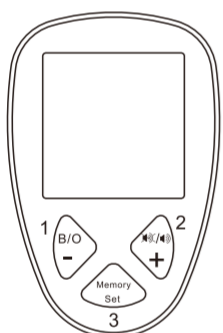
No.	Buttons	Description
1	B/O −	Multifunction button, press shortly to switch measurement mode between human body and object
2	🔊)/🔇) +	Multifunction button, press shortly to turn on/off beeper or voice
3	Memory Set	Multifunction button, uses with button 1 and button 2, press it shortly to inquiry memory data, press testing button to exit. press it for 3 seconds, it enters in advanced setting, uses with button 1 and button 2 as part 7.

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8.Setting

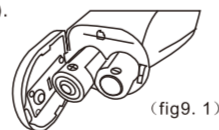| Menu	Function	"−"	"+"	Default	Remarks
F－1	Deviation value setting	Decrease 0.1℃	Increase 0.1℃	0.0℃	object mode is useless
F－2	Alarm value setting	Decrease 0.1℃	Increase 0.1℃	38℃	Effective range: ±3℃
F－3	Reading scale setting	℃	°F	℃	Beeper on/off
F－4	Backlight setting	On	Off	On	Off
F－5	Laser setting	On	Off	Off	only when the laser head is installed

⚠Notice:
1.Temperature under human body mode is obtained from dynamic compensation of environmental temp and forehead surface temp.
2. Object temperature mode is to test surface temperature of an object. The temperature get from forehead under this mode is merely temperature of forehead surface but not body temperature.
3. Deviation setting is able to adjust measurement value from -3.0℃ to 3.0℃ according to testing distance, surrounding temperature, skin difference, etc. Defaulted value is 0.0°C.

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9.Measurement

9.1 Body temperature

● Press measurement button to turn on thermometer and it displays boot screen (fig.9.1). After POST and two beeps, it will display value of room temperature and be ready for measurement (fig.9.2).
● Make sure the thermometer is under body mode.
● Keep distance at 50mm to150mm from upper eyebrows to the probe (fig.9.3). Press measurement button and when it gives a "beep" measurement is finished and value will be displayed (fig.9.4). If measurement value is exceeding alarm value (Defaulted value is 38℃) ,it will gives "bi. bi. bi" as a indication.
● After measurement, if the thermometer is idle in 20 seconds, it will display "OFF" (fig.9.5) and gives a "bi" and shut off automatically.

(fig9.1)　(fig9.2)　(fig9.4)　(fig9.5)

（fig9.3）

9.2 Object temperature

● Press measurement button to turn on thermometer (fig.9.6).
● After measured room temperature make sure the thermometer is under object mode.(fig.9.7).(fig.9.8)
● Keep vertical distance at 50mm to 150mm from object to measu -rement probe. Press measurement button and when it gives a "bi..." measurement is finished and value will be displayed After measurement, if the thermometer is idle in 30 seconds,
● it will display "OFF" (fig.9.9) and gives a "beep" and shut off automatically.

(fig.9.6)　(fig.9.7)　(fig.9.8)　(fig.9.9)

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Notice:

1.Keep the sensor and probe cavity clean before and after use.
2.To ensure the accuracy of measurement, it is recommended to start measurement after ten minutes when carrying the thermometer to a new environment.
3.Wait for 10 minutes to measure body temperature after measuring extremely high temperature or extremely low temperature objects.
4. Wait for 5 minutes to start a measurement when a measuring target (object or human) is from an environment with enormous difference in temperature.
5. Breeze, water, sweating, cosmetic on forehead may affect measurement. Do not measure body temperature in 30 minutes after exercise, bath or meals.

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⚠Notice:
1.The value under this mode is object surface temperature instead of core temperature.
2.The defaulted infrared emissivity is 0.95. The reading will be deviated from the real temperature according to different emissivity. For example, the reading on stainless steel will be obviously lower than real temperature. BE CAUTIOUS FOR SCALDING.

9.3 Exceeding measurement range
Body mode:
When measurement value is lower than 32.0°C, it displays Lo (fig9.10) and gives "beep.beep.beep.beep".
When measurement value is higher than 42.9°C, it displays Hi (fig9.11)and gives "bi.bi.bi.bi".
Object mode:
When measurement value is lower than 0°C, it displays Lo (fig9.12) and gives "beep.beep.beep.beep".
When measurement value is higher than 100.0 °C, it displays Hi (fig9.13)and gives "bi.bi.bi.bi".

⚠Notice:
When surrounding temperature is lower than 10.0°C or higher than 40.0°C, it displays Err. It's not allowed to measure or accuracy is not assured.

(fig9.10)　(fig9.11)　(fig9.12)　(fig9.13)　(fig9.14)

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10.Battery replacement

● Open the battery lid and take out exhausted battery.
● Put into 2 AA alkaline batteries and close up battery lid. After new battery is installed, thermometer will give"Beep.Beep". If there's no beeps, check if the positive and negative pole is correct (see fig.9.1).

（fig9. 1）

⚠Notice:
1.Take out battery in case the thermometer is not used for long period. Don't put the battery to fire.
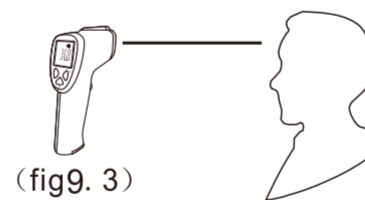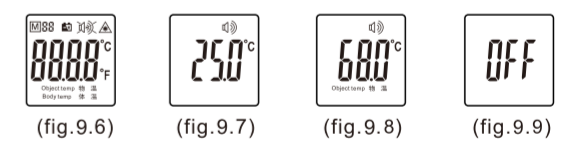2. Dispose battery according to local regulations.

11.Maintenace & tips
● Make sure the sensor and probe cavity is clean otherwise it will affect accuracy. Cleaning method for probe:
1.Use the cotton stick or soft cloth with water or alcohol to wipe the casing.
2.Use the cotton stick or soft cloth with alcohol to wipe the sensor surface or probe cavity gently. Don't use thermometer before alcohol is vaporized.
● Read this manual book thoroughly before use. Make sure battery is well installed.
● It is not allowed to put the thermometer in any liquid or expose to strong sunlight or extremely low temperature.
● Strong crash or hit to the product will cause its damage.
● Do not dismantle this thermometer by yourself.
● Keep the thermometer from children's reach.

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● Do not use the thermometer under circumstance of strong electromagnetic interfere.
● The measurement results are probably fluctuating due to improper measurement ways. Please practice adequate measurements in order to improve your skill.
The measurement results can not supersede a doctor's diagnosis.
● Special maintenance is unnecessary for this thermometer. Please
● contact distributor or manufacturer in case of malfunction.

12.Trouble shooting

Description	Solutions
LCD display "LO"or"HI"	1.Breeze, water, sweating, cosmetic on forehead may affect measurement. 2.Check deviation value setting. Defaulted value is 0.8°C. 3.While if the testing environmental temp changes so enormously or if the thermometer is used directly from high -temp object to very low-temp one, the measurement difference will happen. The thermometer should be kept in a relative stable environment for 10 minutes to get heat balance before starting a new measurement. 4.Ensure measurement distance is 5cm to 8cm.
No response when pressing measurement button	1.Take out and reassemble battery. 2. Check if the thermometer is under menu setup. In procedure of menu setting, thermometer is unable to measure and therefore no response.
No display or improper display	1.Take out battery and install battery again.
No beeper	1.Check if the beeper is switched off.
Shut off right after switching on	1.Check battery level or take out and install the battery again.

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