Body Infrared Thermometer

User's Manual

Please read this manual before use!

1. Summary of Infrared Thermometer

Thank you for choosing our Infrared Thermometer. The PC868 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, paying 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 above absolute zero temperature emits certain percentage of infrared radiation energy based on its temperature. The amount of the radiation energy and the distribution of the wavelength have very closely relationship. When human forehead' s temperature in 36-37℃, it emits wavelength 9-13um of infrared radiation. Based on this principle, according to the relationship between surface forehead temperature and human forehead' s temperature, we are able to measure the human forehead' s actual temperature through measuring surface forehead 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 reach of children. For accidental swallow of battery or other component, please consult the doctor at once.
- Don' t throw the battery into fire.

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 dissemble the device by yourself.
- Before measuring forehead temperature, make sure the hair re-moved, sweat dried.
- After you do some exercise, eating and bathing, you should stay still indoor about 30 minutes before measurement.
- To make the measurement data reliable and stable, when ambient temperature varies a lot, the thermometer should be placed indoors for about 30 minutes before using.
- When we measure somebody continuously, the temperature should be measured every minute, if you need to measure yourself Continuously for a short time, there are some slight errors when you read the temperature ,which is a normal phenomenon. At this time, we should choose the average. We recommend that you measure yourself continuously maximum of three in a unit of time, and because the temperature of the human will conduct to the thermometer, it may affect the accuracy of measurement.
- There is no absolute standard about the temperature of the human, 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.
- Do not measure the site of forehead temperature if that patients has trauma on forehead.
- Do not measure if that patient is treated with certain drug therapies.
- Do not immerse the device into water or any other liquid, and not directly sunlight exposure.
- Do not use a mobile or mobile or cordless hone near the thermometer when measuring.
- Body temperature may increase in the drug within the effort time limit. Please don’ t measure.

• In order to ensure the accuracy of measurement data, please don' t take measurement of body temperature in strong electro-magnetic interference environment (such as microwave, high frequency equipment operation environment).
• Do not disassemble, repair, or modify the unit.
• This thermometer only a personal device, please do not user with others.
• Not touch the battery output when measuring.
• The thermometer must be stored according to the technical specifications.
• The materials (ABS) of expect contact with patient had passed the ISO 10993-5 and ISO 10993-10 standard test, no toxicity, allergy and irritation reaction. The are compliance with the MDD requirements. Based on the current science and technology, other potential allergic reactions are unknown.
• The patent is an intended operator. The patient can measure, read data and replace battery under normal circumstances and maintain the device and its accessories according to the user manual.
• The device is not intended for PATIENT transport outside a healthcare facility.

Recommendations

1) Don' t use this thermometer for other purposes.
2) It is forbidden to leave the product exposed to any chemical solvent, direct sunshine or high temperature.
3) Don' t expose the thermometer under direct sunlight long time so as not to damaged the battery.
4) Do not measure while talking on the phone.
5) Please report to MANUFACTURER if any unexpected operation or events occur.

3. Intended use

This thermometer is intended with non-contact to measurement forehead temperature at home or hospital, including anyone, such as infants, children and adults.
For the safety reason, children or the baby' s temperature must be measured by parent or adults.

4. Temperature measurement mode and range description

The infrared thermometer has the following measurement mode:
1) Forehead temperature measurement mode -- measure the skin surface of human forehead' s temperature accurately, take the place of traditional mercury thermometer and electrical thermometer.
2) Object temperature measurement mode – you can measure the surface temperature of object, such as ambient, bathwater and milk temperature etc.

Normal temperature range for different measuring position

Measuring position	Normal temperature (℃)	Normal temperature (℉)
Anus	36.6-38.0	97.9-100.4
Oral	35.5-37.5	95.9-99.5
Armpit	34.7-37.3	94.5-99.1
Forehead	35.8-38.0	96.4-100.4

Normal forehead temperature range for different ages

Ages	Normal temperature (℃)	Normal temperature (℉)
0-2 years old	36.4-38.0	97.5-100.4
3-10 years old	36.1-37.8	97.0-100.0
11-65 years old	35.9-37.6	96.6-99.7
> 65 years old	35.8-37.5	96.4-99.5

NOTE: The normal temperature and difference between the different body parts is individual. The define yours, measure your temperature for a least 2 weeks at the same ear canal, forehead position and time.
NOTE: When consulting your physician, communicate that the infrared thermometer PC868 temperature is a temperature measured which position, note the individual' s normal infrared thermometer PC868 temperature range as additional reference.
NOTE: Because the forehead temperature is affected obviously by the external environment (eg: environment, air convection and skin tone, etc),we advice that you take the forehead temperature only as reference.

5. Feature

- Precise non-contact measurements
- User selectable ℃ or °F
- Set alarm temperature value
- Automatic data hold and auto power save
- Automatic selection range and display resolution 0.1℃ (0.1°F)
- 3 colors backlight
- 2 measurement mode: Forehead and surface mode

6. Overall description

1. IR sensor
2. LCD display
3. Mode selection
4. Down button
5. UP button
6. Mode button
7. Measurement Trigger
8. Battery cover

【LCD display description】

1. Surface mode symbol
2. Body mode symbol
3. Digital readout
4. Battery symbol
5. Memory symbol
6. Save data readout
7. Temp. ℃(Celsius)/ ℉(Fahrenheit) scale
8. Buzzer symbol

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 sensor
If have pollution and spray, please clean it. (The cleaning method see the chapter 8 Care and Cleaning for detailed.)
If the sensor' s lens is damaged, please stop using.
3) Check thermometer
When you press the [Power/Scan] button, the system will have self testing of software and hardware. If there are problems, LCD will display "Err" symbol. Check if the sensor laser is dirty, damaged phenomenon.
4) In order to make the accurate measuring result, put the thermometer in the measurement environment for 30 minutes.
5) Accuracy of unexpected fluctuations in ambient temperature may decrease the measurement results. When the thermometer at the same measurement position display at different ambient temperature, or test temperature in front of the air conditioner, it will not be able to obtain accurate results.
6) If you want measure forehead temperature, clean forehead and arrange hair, make sure the forehead is naked and clean, in order to ensure the accuracy of measurement.

【Instruction for use】

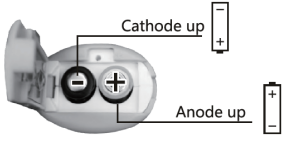
1) Advice for the first use

For stable and reliable results, it is essential to check the infrared thermometer and changes as needed, as follows:

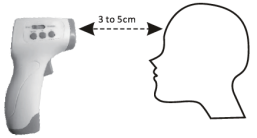
1st step:	Take the temperature of a person using a conventional thermometer, you will get 37.5 ℃ (99.5℉) for instance.
2nd step:	Take the temperature of the same person using the device keeping the 3 to 5cm distance between the thermometer and forehead (take care to remove any obstacle which could alter the measurement (hair, perspiration ….). If you get 37.5 ℃(99.5℉), the device is properly set and ready for use. If you get a lower temperature such as 36.4 ℃(97.5℉), your difference is 1.1℃(2.2℉). You should adjust the temperature on the device and add the difference, i.e.1.1 ℃(2.2℉). To do it, press the MODE button for 2 seconds, the screen displays F1, press MODE button again until you get F3, press UP button in order to add the difference (in our example 1.1 ℃ (2.2℉).
3rd step:	To check, take the temperature again using the product.

2) Use

1. Install batteries



2. For the first use or when inserting new batteries, please wait about 10 minutes for the warm-up of the apparatus.
3. If the device is not used for a long time, once you turn it on again, the device will test the room temperature first and will delay turning on for one or two seconds.
4. Select body mode, aim towards the forehead, form distance of 5cm(2in), press the measuring key, the temperature is displayed immediately, accompanied by a beep sound. Making sure there is no hair, perspiration, cosmetic or cap covered on the forehead.



5.If the measurement temperature is 38.0°C or more (can be setting, refer to sub-clause 3)), the sound should be “be-be-be-be-be” 5 repid sounds.

TEMPERATURE TAKING HINTS

- Before take the temperature, please fix the forehead hair to prevent measured deviation.
- The sweat on head or cosmetic can affect the accuracy of measurement, please maintain the cleanness of the forehead when measuring.
- It is normal that there may be temperature difference depending on various skin types and color, since different skin type will reflect different voltage of infrared ray.
- Don’t use the thermometer outdoors.

6. Select object mode for measuring room temperature, surface temperature etc.

TEMPERATURE TAKING HINTS

- For heat-insulated object, please don’t measure the surface.
- For the hot liquid, please do not directly measure the surface, because the hot steam fog can condense in the sensor lens and cause the measurement deviation.

3) Setting operation

	Mode code	Function	Operation step
1	F1	Set ℃/℉ scale	Press MODE button for 2 seconds, the screen will display F1 on the bottom right, press UP or DOWN button can change temperature unit for℃or℉.
2	F2	Set alarm temp.	Press MODE button for 2 seconds, the screen display F1, press MODE button to get F2, select UP to increase the threshold by 0.1℃ (0.1℉), DOWN to reduce it by 0.1℃(0.1℉). The alarm threshold default value is 38.0℃(100.4℉).
3	F3	Set difference	Press MODE button for 2 seconds, the screen display F1, press two times to get F3, select UP to increase the difference by 0.1℃(0.1℉), DOWN to reduce it by 0.1℃(0.1℉). In the case of seasonal or environmental changes a verification and adjustment should be carried out. Note: This function is only effective body.
4	F4	Set buzzer on/off	Press MODE button for 2 seconds, the screen display F1, press 3 times to get F4. Select UP to turn on the buzzer, press DOWN to stop it.

5	Measurement mode	There are 2 measurement modes for this device. That is forehead, surface. It is able to take the body temperature of human beings, take the temperature of an area or an object, a food, a liquid or a room.	
		Forehead mode	Put the mode selection button on the left, measurement range 32.0 to 43.0℃(86.0 to 109.4℉).
		Surface mode	Put the mode selection button on the right, measurement range 0 to 100℃(32.0 to 212.0℉).
6	3 colors backlight	In body mode, the device is able to judge whether a fever or not by different color of backlight: 32.0 to 37.4℃(86.0 to 99.3℉) – Green 37.5 to 37.9℃(99.5 to 100.2℉) – Orange 38.0 to 43.0℃(100.4 to 109.4℉) – Red In surface mode, the backlight always keeps green.	
7	Data memory	Date memory automatically after temperature measurements, which will display at the right corner of LCD. Press UP or DOWN button to display the last temperature measurement.	

-- Range of alarm temperature
When into the "F-2" mode, the range of settable alarm temperature is from 37.6℃(99.7℉) to 43.0℃(109.4℉).
-- Range of temperature difference
When into the "F-3" mode, the range of settable temperature difference is from 5℃(9℉) to -5℃(-9℉).
Note: F-3 mode is only for professional doctor and nurse use!

4) Temperature measuring

--Taking Temperature in Forehead Temperature Mode (Adjusted Mode)

1. Setup the measurement mode to "Body mode" (the setup step see the above "2) Function Setup mode";
2. Make sure the distance between thermometer and forehead is 3-5cm, and press the button of [Power/Scan] directly to measure the forehead temperature .
3. When you hear one beep sound, the LCD will show the result.

TEMPERATURE TAKING HINTS

- Before take the temperature, please fix the forehead hair to prevent measured deviation.
- The sweat on head or cosmetic can affect the accuracy of measurement, please maintain the cleanness of the forehead when measuring.
- It is normal that there may be temperature difference depending on various skin types and color, since different skin type will reflect different voltage of infrared ray.
- Don't use the thermometer outdoors.

NOTE:

1. When measuring, if the environment exceed the 10-40℃ range will be showing Err;
2. If the measured temperature result is < 32.0℃, the LCD will be showing Lo;
3. If the measured temperature result is >43.0℃, the LCD will be showing Hi;
4. If the measured temperature result is ⩾38.0℃, the buzzer will be send out "Beep—Beep—Beep", a long one and two short ones.
5. We recommend measurement for 3 times to reference, and keep the interval between the two measurements by 5 minutes at least.

--Taking Temperature in Surface Temperature Mode (Direct Mode)

1. Setup the measurement mode to "Surface mode" (the setup step see the above "2) Function Setup mode";
2. Aim the probe tip at the object which will be measured.
3. Press [Power/Scan] button, then the measurement completed. It will show the measurement data after a "bi" sound.
4. If the measured temperature is higher than 100℃ , display "Hi". If the measured temperature is below 0℃,display "Lo".

TEMPERATURE TAKING HINTS

- For heat-insulated object, please don't measure the surface.
- For the hot liquid, please do not directly measure the surface, because the hot steam fog can condense in the sensor lens and cause the measurement deviation.

5) Automatic shutdown

If you do nothing after the temperature measurement completed and 15 seconds later, the thermometer will automatically shutdown.

6) Memory function

In the power-on state, press the Up/Down button into memory query mode, the LCD will be showing the recorded values or " ---- " symbol if not record accompanied with memory M symbol. The PC868 can restore up to 99 sets data. the query interface can display memory serial number, body mode and recorded temperature values.

Remark: The temperature result of surface mode can not be saved. And the abnormal body temperature result can not be saved too (such as Lo, Err or Hi).

7) Backlight function

The backlight will be according to the different measuring temperature to lighting different color. The detailed as below table:

Measuring temperature	Backlight	Lighting time
< 37.5℃	Green backlight	7s
37.5 to 37.9℃	Orange backlight	7s
≥38.0℃	Red backlight	7s
Remarks: This specification of this table only for the factory default state. If the user into the setup mode to setting the orange or red backing temperature, then will compliance with the setting result.		

8) Restore the factory default function
Press the [Setup] button for 5s to restore the factory default status. The factory default setup is "℃" and "Body measurement" mode.
9) Battery installment and replacement
1. When the quantity of electric charge is not sufficient, the icon of low battery will appear on the lower part of the screen. Though the battery still can be used, it would be perfect to replace it.
2. When the quantity of electric charge of the battery is lower than the minimal value, "Lo" symbols will be displayed on the screen, and battery icon flashes and the sound of "Beep" is sent out. Unless you change a new battery, you can not use the thermometer to conduct measurement.
3. Operation of changing battery.
4. Take out the old battery: Open the battery cap; put 2 new AAA batteries on with correct cathode direction into the battery seat.

Notice:

- Please observe the related national laws of disposing the abandoned battery and don' t litter to the garbage can.
- Please take out the battery if the device is not used for long periods of time.
- Please don' t put the battery in the fire.

To protect the environment, dispose of empty battery at your retail store or at appropriate collection sites according to national or local regulations.

8. Care and cleaning

- Probe tip (lens) is a most precise part in the thermometer. Please keep clean and entirety in order to assure the accuracy of figure.
- 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 used clean the probe and lens as follows:
- Very gently wipe the surface with a cotton swab or soft cloth moistened with alcohol. After the alcohol has completely dried out.
- 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:

- Don not use abrasive cleaners.
- Don' t use other non-recommended methods to perform disinfect.
- Non-waterproof, don' t use the abrasive cleaner to clean the product, don' t drop the thermometer in the water or the other 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 questions, 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. 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.

11. Storage

1) Don' t put the thermometer under the sunshine, high temperature and moist environment or someplace which maybe get in touch with fire or is vulnerable to vibration.
2) Take out the battery if don' t use the device in a long time.

12. Accessories

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

Quantity	Parts
1pc	PC868 device
2pcs	AAA battery
1pc	User Manual

13. 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 it correct.
The thermometer show the symbol "Hi"	Temperature hampered by an air flux.	Please leave the status and wait for 30 minutes to measure. Re-measure according to the manual.
	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 43.0℃;	
	In the object measurement mode: --Temperature readings too close together. -- The object temperature is higher than 100℃. Hi: Higher than 100.0℃;	
The thermometer show the symbol "Lo"	The hair and sweat prevent the temperature achievement.	
	Temperature hampered by an air flux.	
	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 32.0℃	
	In the object measurement mode: -- The measuring distance is too far. -- Have water vapor condenses on the lens. Lo: Less than 0℃	
	The ambient temperature is beyond of range of measurement (10℃-40℃)	Keep the thermometer in the room Whose Temperature is (10℃-40℃) 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
	Lower battery, however you can't use it	Replace the new battery.

14. Specifications

Device name	Infrared Thermometer
Model	PC868
Measurement mode	Forehead and object temperature modes
Power supply	d.c.3V, 2 pcs AAA battery
Measuring range:	For forehead temperature: 32.0-43.0℃ For object surface temperature: 0-100℃
Measuring accuracy: (At laboratory conditions)	for forehead temperature: ± 0.2 during 35. 5℃ -42.0℃; ± 0.3 during 32.0℃ -35.4℃ and 42.1℃ -43.0℃
Clinical repeatability:	Within ±0.3℃
Resolution of display	0.1℃/0.1°F
Operation condition	10-40℃, Relative humidity 15-85%, 70-106KPa
Storage condition	-25-50℃, Relative humidity ≤95%, 70-106KPa
Size	149(L)×95(W)×45(H)mm
Weight	Approx. 145g(including battery)
High body temperature hint	≥38℃
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
Product life	5 years
Software version	V1.0
Note: Not intended to be sterilized. Not for use in an OXYGEN RICH ENVIRONMENT	

*The above specifications are subject to change without prior notice.

15. Standard list

Shenzhen PACOM Medical Instruments Co., Ltd declares that the PC868 complies with following applicable standards:

EN 980	Symbols for use in the labeling of medical devices
EN 1041	Information supplied by the manufacturer with medical devices
EN 60601-1	Medical electrical equipment Part 1: General requirements for basic safety and essential performance
EN 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 60601-1-6	Medical electrical equipment – Part1-6: General requirements for basic safety and essential performance – Collateral standard: Usability
EN 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 home healthcare environment
EN 12470-5	Clinical thermometers – Part 5: Performance of infra-red ear thermometers (with maximum device)
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
EN 62304	Medical device software - Software life-cycle processes
EN 62366	Medical devices – Application of usability engineering to medical devices
EN ISO 10993-1	Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process

16. Disposal

Dispose of the device in accordance with the regulation applicable at the place of operation. Dispose of at public collection point in the EU countries – 2002/96/EC WEEE Directive.
If you have any queries, please refer to the local authorities responsible for waste disposal.

NOTES:

- Handing 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.
Dispose of at public collection point in the EU countries – 2006/66/EC Directive.

17. Normalized symbols

	Follow operating instructions
	BF type applied part
	Disposal in accordance with Directive 2002/96/EC (WEEE)
CE 0598	Complies with the European Medical Device Directive (93/42/EEC and amended Directive 2007/47/EC. Notified Body is SGS FIMKO YO.
	Manufacturer information: The manufacturer is: Shenzhen PACOM Medical Instruments Co., Ltd.
EC REP	Authorized representative in the European Community. The European representative is: Shanghai International Holding Corp. GmbH (Europe)
IP22	IP code of the device: this device's grade of against ingress of solid foreign objects -- ≧ 12.5mm diameter (and the against access to hazardous parts with finger); the grade of waterproof is dripping (150 tilted).
LOT	Batch code
	Date of manufacture

18. EMC DECLATION

1) The digital thermometer needs special precautions regarding EMC and needs to be installed and put into service according to the MEC information provided in the ACCOMPANYING DOCUMENTS.
2) Wireless communications equipment such as wireless home network devices, mobile phones, cordless telephones and their base stations, walkie-talkies can effect this equipment and should be kept at least a distance d=3.3m away from the equipment. (Note: As indicated in Table 6 of IEC 60601-1-2:2007 of ME EQUIPMENT, a typical cell phone with a maximum output power of 2W yields d=3.3m at an IMMUNITY LEVEL of 3V/m).

19. Guarantee

We grant you a lifetime guarantee after the date of purchase for one year. Any damage caused by improper handling shall not be covered by the guarantee. Batter and packaging are also excluded from the guarantee. All other damage claims excluded. A guarantee claim must be submitted with the purchase receipt. Please pack your defective instrument well and send with sufficient postage to the distributor.

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