



APPROVED

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Non-contact
Forehead Thermometer

User Manual

NCT2 Series

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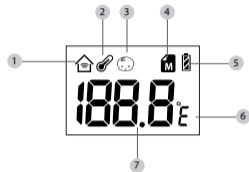
Introduction

- Thanks for choosing the Kinetik Non-contact Forehead Thermometer. Before using this product, please read the user manual carefully.
- Please keep this user manual for later reference.

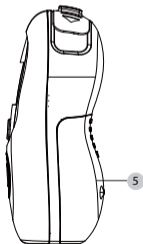
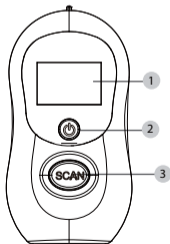
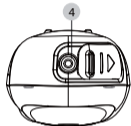
Parts

Product Structure :

1. LCD Display
2. ON/Memory Button
3. Scan Button
4. Sensor Lens
5. Battery Cover
6. Protective Cap



1. Room Temperature Mode
2. Surface Measurement Mode
3. Body Measurement Mode
4. Memory
5. Battery
6. Temperature Unit
7. Temperature Reading



Safety Precautions

Warning marks and symbols are indicated for safe and proper use of this product and prevention of any injury to you and others.

See Table below for description of warning marks and symbols.



Read the instructions (actual symbol colours are white on a blue background.)



WARNING - Means a possibility of personal injury if the thermometer is not used correctly.



NOTICE - Means a possibility of personal injury or property damage *if the thermometer is not used correctly*. Property damage refers to any damage to house, family property, domestic animal or pet.



ATTENTION - This symbol indicates a notice with the actual detail expressed in words or figures within or beside the symbol.



PROHIBITED - This symbol indicates that the action is forbidden. The actual details are expressed in words or figures within or beside the symbol.



MUST OBSERVE - This symbol indicates that the action is obligatory. The actual details are expressed in words or figures within or beside the symbol.



This symbol indicates that this product is a Type BF device.

Safety Precautions



WARNING



MUST OBSERVE

It is not advisable for users to make a self-diagnosis or administer self treatment based on the temperature results obtained. If in doubt always seek medical attention.

- A self - diagnosis may result in deterioration of the condition.

Do not touch or blow the infrared sensor.

- A dirty infrared sensor may lead to reading inaccuracy.
- Always fully close the protective cap when not in use to keep the infrared sensor clean.

If necessary, clean the infrared sensor carefully with a cotton swab or soft cloth moistened with alcohol.

- Cleaning with toilet tissue or paper towels may scratch the infrared sensor, leading to reading inaccuracy.

Keep the thermometer out of reach of children.

- If a child accidentally swallows a battery, please consult a doctor immediately.

Do not take a measurement following any outdoor activities.

- Any immediate reading taken after an outdoor activity in cold or hot weather, may cause reading inaccuracy.

Condition the thermometer at room temperature for 30 minutes before taking a reading.

- Failing to do so may lead to reading inaccuracy.

The Non-contact forehead thermometer is not waterproof, avoid any liquid immersion, including alcohol and water.

Safety Precautions



NOTICE



PROHIBITED

Do not use the non-contact forehead thermometer for purposes other than those for which it was designed.

Do not drop, stand on or subject the non-contact forehead thermometer to vibration or impact.



ATTENTION

Dispose batteries with care. Do not incinerate used batteries.

Safety Precautions

- Use the NCT2 Thermometer in the draught-free environment, at a constant temperature of between 10°C and 40°C (50°F and 104°F)
- Do not take a temperature reading if the person is sitting in a draught or if the subject has:
 - Been outside, exercised or had excessive movement.
 - Moved from another area that was at a different temperature than the room where the thermometer is located.
 - Had the forehead covered by clothing or other types of protective headwear that might affect the temperature of the forehead artificially.
 - Recently had a bath or shower, hair drier etc.
- In all the above scenarios, wait a few minutes for the forehead temperature to stabilise before taking a measurement.
- It is important to always aim the thermometer at the same area ideally in the center of the forehead and keep the thermometer perpendicular to the forehead.
- The temperature reading is of the area where the thermometer is pointed. It is very important to make sure that this area is not covered by anything including hair or eyebrows. If necessary brush away any hair from the forehead but remember, this must be done a few minutes before taking the temperature.
- When taking a temperature, remember it is possible there will be an unknown variance in temperature due to the presence of oils, make-up or excess skin in the elderly.
- The forehead temperature reading can be affected by:
 - Heavy sweating
 - Superficial wounds
 - Injuries

Safety Precautions

- Do not use the thermometer on a sweaty forehead as the temperature reading will be inconsistent.
- The sensor is located at the end of the device and is the most delicate part of the thermometer. It must be kept clean, crystal clear and intact. Any dirt or debris will interfere with the temperature reading.
- Do not use the thermometer in direct contact with the ear or other parts of the body.
- When taking the surface temperature of liquid.
 - Mix the liquid thoroughly beforehand. The temperature taken is based on a single area of the surface of the liquid so may not be representative of the entire volume of liquid present. Extreme caution should be taken and if in doubt use additional temperature measurement methods.
 - Do not submerge the thermometer.
 - Ensure that condensation has not built up on the lens, as condensation will have an effect on the accuracy of liquid surface temperature readings.
 - Make sure that the thermometer is held 1-3cm away from the single area of the liquid that has to be measured.
 - Ensure that the thermometer is in the correct temperature measurement mode.

Setting Up Your Non-contact Forehead Thermometer

Preparation :



1. Insert batteries before use (see page 12).
2. For accurate reading, condition the thermometer at room temperature for 30 minutes before use.
3. An unexpected change in ambient temperature is likely to reduce the reading accuracy. Any attempt to perform temperature measurement in front of an air conditioning unit will result in inaccurate readings.
4. Do not take a temperature check immediately after exercise or bathing.


Using Your Non-contact Forehead Thermometer


Operation

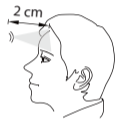
- Forehead measurement mode 

○ Operation of temperature measurement

1. Press  button to power on , all icons will be shown on the display. After a double beep sound, the thermometer is ready to measure.
2. Open the protective cap and hold the thermometer from 2cm before the center of your forehead. Press the  button. The scan is complete when a triple beep is heard.

 Note : Please open the protective cap fully before use and close fully after use.
Failure to do so may lead to inaccurate readings.

-  Note :
- Displayed forehead temperature is the same as the oral temperature. This mode converts forehead temperature to the corresponding oral temperature.
 - Before measuring, please put the thermometer in a stable environment for 5 minutes. Avoiding using the product within 30 minutes after eating, exercise or taking a shower.










Using Your Non-contact Forehead Thermometer

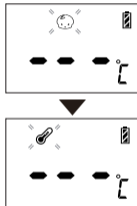
- While measuring, please keep your forehead clean. If there is any sweat or make up, please clean first. Avoid measuring areas that contain scar tissue.
- Always close the probe cap after measuring.


● Surface measurement mode

This mode displays actual and unadjusted temperature, and is different from body measurement mode. It helps monitor object temperatures and is suitable for measuring baby milk or the water temperature of a bath.

○ Operation of measuring temperature


1. Press  button to power on, all icons will be shown on the display. After double beep sound, the thermometer is ready to measure.
2. Press and hold  then press the  button, forehead mode  will change to surface mode  .
3. Point at and press the  button to display the temperature of an object. Pressing and holding the  button, gives a continuous measurement.




 Note : This mode displays actual and unadjusted temperature, and is different from body measurement mode.

Using Your Non-contact Forehead Thermometer

Other operations

- Room temperature mode 



- Operation of measuring temperature

1. Press  button to power on, all icons will be shown on the display. After a double beep sound, the thermometer is ready to measure.
2. When there is no operation for 60 seconds, the device will automatically enter room temperature mode. In this mode, the room temperature will be shown on the display.





- Memory function mode 

- Thirty forehead measurements can be stored in the memory.


Surface measurements cannot be stored.





1. In standby, press  . The first stored memory will be displayed. Press  again to review subsequent stored results.

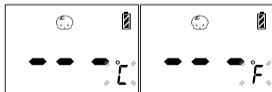
- Deleting stored memories

1. Press the  button to enter memory mode.
2. Press and hold the  for 8 seconds until the display reads  , then press the  button to delete all memories. Three long beeps confirms the memory has been deleted. This process cannot be undone.

Note : Memory function is only for forehead measurement.

- Changing from  to 

- When completely off, press and hold  , and press  for four seconds to change from  to 



Using Your Non-contact Forehead Thermometer

! Note : Memory function is only for forehead measurement.

○ The default measurement is \bar{E}

● Power off

To fully switch off, press and hold the  button for seven seconds.

Changing the batteries

● The product uses AAA 1.5v x 2.

1. Open the battery cover and insert 2 x AAA batteries and replace the battery cover.

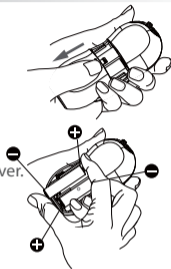
! Note :

- Insert AAA batteries observing the correct polarity.
- Please dispose of waste batteries for recycling according local regulations.

! Warning : Always keep batteries out of reach from babies and children.

Maintenance and Storage

- Always close the protective cap when not in use. Failure to do so will affect accuracy.
- The probe lens is the most delicate part of the thermometer, if cleaning is necessary please clean carefully to avoid damage.
- Please use 70% alcohol cotton pad or soft cotton cloth to clean the probe lens and wait for the probe to dry.
- Keep the product dry and keep it away from any liquid and the direct sunlight.
- Storage temperature is between -10°C to 50°C and relative humidity is $\text{RH} \leq 95\%$.
- Please don't immerse the product into any liquid.
- Do not hold the thermometer for too long as it will affect thermometer accuracy.



Specification

- Size : (L)60 x (W)32 x (H)90 mm
- Battery : 1.5V AAA x 2 pcs
- Memory capacity: 30 measured results
- Enclosure Rating : IP22
- Accuracy : - Forehead mode : $\pm 0.2^{\circ}\text{C}$ for 36.0~39.0, others $\pm 0.3^{\circ}\text{C}$ (0.5°F)
- Surface mode : $\pm 4\%$ of reading or $\pm 3^{\circ}\text{C}$ (5°F) whichever is greater
- Range of measured temperature : - Forehead mode: 32°C to 43°C (89.6°F-109.4°F)
- Surface mode: -9.9°C to 100°C (14.2°F-199.7°F)
- Surroundings mode: temperature range of operational surroundings : 0°C to 100°C (32°F-199.7°F)
- Operational surroundings : 10°C~40°C (50°F~104°F) $\pm 4\%$
relative humidity $\leq 95\%$.
- Battery lifespan : 500 measurements/ 1 year, normal use after activating : 1 year.
- Transport and storage :
 - Range of storage temperature: between -10°C to 50°C (14°F-122°F), relative humidity $\leq 95\%$
 - Transport temperature: -20°C ~ 70°C; relative humidity $\leq 95\%$

CE 0197

The product complies with : ASTM E1965-98 ; EN 60601-1-4:1996; EN 12470-5; EN 60601-1-6:2010; EN 60601-1-2:2007/AC:2010; EN 60601-1 Generic Safety Requirement


EMC Table

Guidance and manufacturer's declaration – electromagnetic emissions		
The NCT2 is intended for use in the electromagnetic environment specified below. The customer or the user of the NCT2 should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The NCT2 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 NCT2 is suitable for use in all establishments, including domestic establishments 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	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

EMC Table

Guidance and manufacturer's declaration – electromagnetic immunity

The NCT2 is intended for use in the electromagnetic environment specified below. The customer or the user of the NCT2 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 Vrms 150 kHz to 80 MHz	Not applicable	<p>Portable and mobile RF communications equipment should be used no closer to any part of the NCT2, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1,2 \sqrt{P}$ $d = 1,2 \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2,3 \sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	<p>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).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range b.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol: </p>

EMC Table

Guidance and manufacturer's declaration – electromagnetic immunity

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. 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 NCT2 is used exceeds the applicable RF compliance level above, the NCT2 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the NCT2.
- b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

EMC Table

Guidance and manufacturer's declaration – electromagnetic immunity

The NCT2 is intended for use in the electromagnetic environment specified below. The customer or the user of the NCT2 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	6 kV contact 8 kV air	6 kV contact 8 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 %.
Electrical fast transient/burst IEC 61000-4-4	2 kV for power supply lines 1 kV for input/output lines	Not applicable	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	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.

EMC Table

Guidance and manufacturer's declaration – electromagnetic immunity

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % UT (>95 % dip in UT) for 0,5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT) for 5 sec	Not applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the NCT2 requires continued operation during power mains interruptions, it is recommended that the NCT2 be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) 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 UT is the a.c. mains voltage prior to application of the test level.			

EMC Table

Recommended separation distances between portable and mobile RF communications equipment and the ME EQUIPMENT or ME SYSTEM

The NCT2 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the NCT2 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the NCT2 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		
	150 kHz to 80 MHz $d = 1,2 \sqrt{P}$	80 MHz to 800 MHz $d = 1,2 \sqrt{P}$	800 MHz to 2,5 GHz $d = 2,3 \sqrt{P}$
0,01	N/A	0,12	0,23
0,1	N/A	0,38	0,73
1	N/A	1,2	2,3
10	N/A	3,8	7,3
100	N/A	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 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.














Problems & Troubleshooting

Message	Solution
Err	The temperature detection circuit is out of operational range, please wait and measure after 30 minutes or more. If the problem persists, please contact the local retailer/agency
Er 1	The frequency of repeat measurements is excessive, please wait 10 minutes and try again.
Er 2	A change in the surrounding temperature is beyond the permitted operational range: please store in 10°C or 40°C (50°F~104°F) indoors for 30 minutes or more and then measure again.
Er 3	The surrounding temperature is beyond permitted operational ranges: please store in 10°C or 40°C (50°F~104°F) indoors for 30 minutes or more and then measure again.
H ₁	(1)In forehead measurement mode, measured temperature is higher than 43°C (109.4°F) (2)In surface/surroundings measurement mode, measured temperature is higher than 100°C (109.4°F)

Problems & Troubleshooting

Message	Solution
	<p>(1) In forehead measurement mode, measured temperature is lower than 32°C (89.6°F)</p> <p>(2) In surface measurement mode, measured temperature is higher than -9.9°C (-14.2°F)</p> <p>(3) In surroundings measurement mode, measured temperature is higher than 0°C (32°F)</p>
	<p>Low voltage warning. When the battery voltage is lower than $2.6V \pm 0.1V$, the low voltage symbol will flash - please change the batteries.</p>

Explanation of Symbols on Unit

Symbol	Referent	Symbol	Referent
	Read the instructions (actual symbol colours are white on a blue background)		Type BF Equipment
	Manufacturer		Collection for electrical and electronic equipment
	CE Mark		Storage Humidity
	Warning		Temperature Limitation
	Caution, consult accompanying documents		Use by
IP22	Classification for water ingress and particulate matter		Serial number
	Authorized representative in the European community		Model Reference



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IP22



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