

# tyson bio<sup>®</sup> NC100

NC100 Bluetooth Non-Contact Infrared Thermometer



***User Manual***

## **Dear NC100 Owner :**

Thank you for purchasing the NC100 Bluetooth Non-Contact Infrared Thermometer. Please read this instruction manual first so you can use this thermometer safely and correctly. Please keep this instruction manual for future reference. This innovative medical device uses advanced infrared (IR) technology to measure temperature instantly and accurately on the forehead or object.

## **IMPORTANT SAFETY INSTRUCTIONS READ BEFORE USE**

The following basic safety precautions should always be taken.

1. Close supervision is necessary when the thermometer is used by, on, or near children, handicapped persons or invalids.
2. Use the thermometer only for the intended use described in this manual.
3. Do not use the thermometer if it is not working properly, or if it has suffered any damage.

## **KEEP THESE INSTRUCTIONS IN A SAFE PLACE**

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## BEFORE YOU BEGIN

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### *Cautions and Warnings*

- As with any thermometer, proper technique is crucial to obtaining accurate temperature readings. Please read this manual thoroughly and carefully before using.
- Always operate the thermometer in an operating temperature range 10°C to 40°C (50°F to 104°F), and relative humidity less than 80%.
- Always store the thermometer in a cool and dry place -25°C to 55°C (-13°F to 131°F) and relative humidity less than 95%.
- Avoid direct sunlight.
- Avoid dropping the thermometer, if it happens and you think the thermometer may be damaged, please contact customer services immediately.
- Do not touch the lens.
- Do not disassemble the thermometer.
- Basic safety precautions should always be observed, especially when the thermometer is used on or near children and disabled persons.
- This thermometer is not intended to substitute for a consultation with your physician.
- This thermometer and the subject must remain in a stable environment for at least 30 minutes before measuring the temperature.
- When the measured temperature falls within the fever temperature range of  $\geq 37.8^{\circ}\text{C}$  (100°F) and  $< 43^{\circ}\text{C}$  (109.4°F), as indicated by the red LCD display, please consult with your physician immediately.

### *Restrictions of Use*

This thermometer is clinically proven to produce accurate temperature measurements. However, please be advised that the accuracy cannot be ensured when the thermometer is not clean. Check that the probe is clean before taking a measurement.

## *Intended Use*

NC100 Bluetooth Non-Contact Infrared Thermometer is intended for the intermittent measurement and monitoring of human body temperature from forehead measurement at home. A control measurement using a conventional thermometer is recommended in the following cases:

1. If the reading is surprisingly low,
2. For new-born infants up to 100 days old,
3. For children under three years of age who have a weakened immune system or who react unusually in the presence or absence of fever.

## *How Does It Work*

The thermometer measures the infrared heat generated by the surface of the skin over the vessel and its surrounding tissue. The thermometer then converts it into a temperature value.

### **NOTE:**

The thermometer does not emit any infrared signal.

## *Highlighted Features*

- Non-contact measurement that does not require probe cover, thereby saving cost of replacement.
- Automatically power off if left idle for 60 seconds.
- Memory function allows you to recall previous forehead results up to 32 previous results.
- Easy to read LCD with blue and red backlight in a dark environment.
- Color visible indication of alarm (red) and measurement in progress (blue).
- Measurement within 5 cm.

## Package Content



Thermometer



User Manual



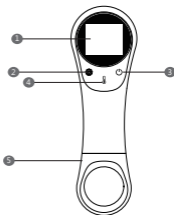
Silicone  
Dust Cover



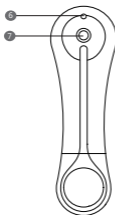
1.5 V AAA  
Alkaline  
batteries x 2

## Meter Overview

Front view

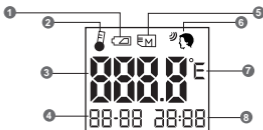


Back view



1. Display Screen
2. Setting Button
3. Power Button
4. Measure / Memory Button
5. Battery Cover
6. Light Indicator
7. Sensor Probe

## Display Mode



1. Low battery indicator
2. Object temperature indicator
3. Temperature reading
4. Date
5. Memory mode
6. Body temperature indicator
7. Temperature unit
8. Time

## Display Mode

**Press setting button once to switch between.**



### 1. Body Mode

- This mode is used to measure the forehead temperature.
- It also provides clock.



### 2. Object Mode

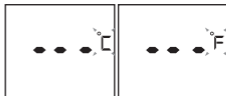
- This mode is used to measure the object temperature.
- It also provides clock.

## Select the Temperature Unit

This meter provides two measurement units used for indicating the body/object temperature, °C or °F, for your preferred selection.




1. Press Power button to turn ON the meter. Press Setting Button for 3 seconds to enter the screen.



2. Press Measure / Memory Button to toggle between °C or °F.
3. Press Setting Button to exit.


## Replacing the Battery

The thermometer comes with two 1.5 V AAA alkaline batteries. The meter will display "  " to alert you when the meter power is getting low. Please follow the steps below to replace new batteries immediately.



1. LCD side facing upwards.
2. Press the end link upwards and remove it.
3. Remove old batteries and replace with two 1.5 V AAA alkaline batteries. Follow the correct position of positive "+" and negative "-" as indication.
4. Insert and press the end link downwards into the main unit.

### NOTE:

1. Although the thermometer works when "  " appears, we still recommend that you change the batteries to obtain an accurate result.
2. Remove the batteries if planned to store for a long period of time.
3. The batteries should be kept away out of child's reach. If they are swallowed, promptly see a doctor for help.



## Setting the Thermometer

You will need to set time for first-time use or after replacing the batteries.



### 1. Entering the setting mode

Start with the meter ON, press Setting Button for 5 seconds to enter the setting mode.

20 18



12-10



12-08



12-08 20:58



12-08 20:58

### 2. To set the date and time

Press Measure / Memory Button to select the correct year. Press Setting Button to confirm and move to the next step. The same step for month/day/hour/minute settings.

Setting is all completed. Press Setting Button to exit the setting mode.

## DETAILED INFORMATION

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### *About Normal Body Temperature and Fever*

The temperature on the forehead and temple area differs from the internal temperature, which is taken orally or rectally. Vasoconstriction, an effect which constricts the blood vessels and cools the skin, can occur during the early stages of a fever. In this case, the temperature measured by the NC100 Bluetooth Non-Contact Infrared Thermometer may be unusually low. If the measurement therefore does not match the patient's own perception or is unusually low, repeat the measurement every 15 minutes. As a reference, you can also measure the internal body temperature using a conventional oral or rectal thermometer.

Body temperature can vary from one individual/ person to next. It also varies by location on the body and time of day. Below shows the statistical normal ranges from different sites. Please keep in mind that temperatures measured from different sites, even at the same time, should not be directly compared. Fever indicates that the body temperature is higher than normal. This symptom may be caused by infection, overdressing or immunization. Some people may not experience fever even when they are ill. These include, but are not limited to, infants younger than 3 months old, persons with compromised immune systems, persons taking antibiotics, steroids or antipyretics (aspirin, ibuprofen, acetaminophen), or persons with certain chronic illnesses. Please consult your physician when you feel ill even if you do not have fever.

Table\*1 Body Site Normal Temperature Range

Oral	0.6°C (1°F) or more above or below 37°C (98.6°F)
Rectal/ear	0.3°C to 0.6°C (0.5°F to 1°F) higher than oral temperature
Axillary (armpit)	0.3°C to 0.6°C (0.5°F to 1°F) lower than oral temperature

\*1. Body Temperature at WebMD;

website: <http://firstaid.webmd.com/body-temperature>  
retrieved at 2010 Jan 7.

## PERFORM THE TEST

### Using the Device

As a Body Temperature Thermometer



**1. Press Power Button to turn on the meter.**

When °C or °F blinks, temperature can be measured.



**2. Press Setting Button to select Body Mode.**

If you started with Object Mode.



**3. Move the probe close to the forehead.**

Make sure the probe is flat, with 5 - 10 cm distance from the center of forehead.



**4. Press Measure/ Memory Button to read the result.**

The meter will take measurement automatically.

The reading is shown together with blue backlight and 1 long beep.

**5. Next Reading.**

About 3 seconds afterwards (when a short beep is heard), °C or °F blinks again, and next temperature measurement can be taken.

**NOTE:**

- As the forehead measurement temperature is likely to be affected by sweat, oil and the surroundings, the reading shall be taken as a reference only.
- If the probe is placed at an angle close to the forehead measurement, the reading will be affected by surrounding temperature. Babies' skin reacts very quickly to the ambient temperature. Therefore, do not take their temperature with the NC100 thermometer during or after breastfeeding, because the skin temperature may then be lower than the internal body temperature.
- If the reading is  $< 32^{\circ}\text{C}$  ( $89.6^{\circ}\text{F}$ ), the display will show together with red backlight and two short beeps.
- If the reading is  $\geq 37.8^{\circ}\text{C}$  ( $100^{\circ}\text{F}$ ) and  $< 43^{\circ}\text{C}$  ( $109.4^{\circ}\text{F}$ ), the display will show together with red backlight and four short beeps.
- The thermometer will automatically turn off if left idle for 60 seconds.

## As an Object Measurement Thermometer



### 1. Press Power Button to turn on the meter.

When °C or °F blinks, temperature can be measured.



### 2. Press Setting Button to select Object Mode.

If you started with Body Mode.



### 3. Move the probe close to the object.

Make sure the probe is flat, not at an angle. with 5 - 10 cm distance from the object.



### 4. Press Measure/ Memory Button to read the result.

The meter will take measurement automatically.

The reading is shown together with blue backlight and 1 long beep.

### 5. Next Reading.

About 3 seconds afterwards (when a short beep is heard), °C or °F blinks again, and next temperature measurement can be taken.

# METER MEMORY

## Recalling the Memory

Your thermometer stores 32 most recent forehead readings



**1. Be sure the thermometer is OFF before recalling this memory.**

**2. Press Measure / Memory Button to enter the memory mode.**



Each time you press the Measure / Memory Button, a result will be displayed in the order of dates (latest result shown first), together with "EM" and number (from 1 to 32).



Backlight in blue or red will appear according to the memory reading.



When the memory is full, the oldest result is deleted as the new one added. When the last record displays on the screen, press Measure / Memory Button again to return to the first record.



**3. Exit the memory.**

Press Power Button to exit the memory or keep the meter in idle for 60 seconds to switch off automatically.

## MAINTENANCE





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### *Care and Cleaning*

- The probe is not waterproof. Please wipe with a clean and dry cotton swab to clean the probe surface.
- The body of the thermometer is not water-resistant. Never put the thermometer under a running tap or submerge it into water. Use a soft and dry cloth to clean it. Do not use abrasive cleaners.
- Store the thermometer in a cool and dry location. Free from dust and away from direct sunlight.

## SYSTEM TROUBLESHOOTING





### Measurement Result

MESSAGE	WHAT IT MEANS
 The display shows a red 'HI' symbol, a red thermometer icon, and a red temperature reading of 43.0°C. The date and time '12-08 20:58' are shown at the bottom. A small icon of a person's head with a hand on their forehead is in the top right corner.	Measured temperature falls outside the displayed temperature range of 32°C to 43°C (89.6°F to 109.4°F), is shown on the display with red backlight. <ul style="list-style-type: none"><li>• Hi-temperature <math>\geq 43^{\circ}\text{C}</math> (109.4°F)</li><li>• Lo-temperature <math>&lt; 32^{\circ}\text{C}</math> (89.6°F)</li></ul>
 The display shows a red 'LO' symbol, a red thermometer icon, and a red temperature reading of 32.0°C. The date and time '12-08 20:58' are shown at the bottom. A small icon of a person's head with a hand on their forehead is in the top right corner.	
 The display shows a blue '36.2' temperature reading, a blue thermometer icon, and a blue temperature unit '°C'. The date and time '12-08 20:58' are shown at the bottom. A small icon of a person's head with a hand on their forehead is in the top right corner.	Measured temperature falls in normal reading, within the range of 32°C to 37.8°C (89.6°F to 100°F), is shown on the display with blue backlight.
 The display shows a red '38.6' temperature reading, a red thermometer icon, and a red temperature unit '°C'. The date and time '12-08 20:58' are shown at the bottom. A small icon of a person's head with a hand on their forehead is in the top right corner.	Measured temperature falls in fever reading, $\geq 37.8^{\circ}\text{C}$ (100°F) and $< 43^{\circ}\text{C}$ (109.4°F), is shown on the display with red backlight.



## Troubleshooting

The table below shows problems you may encounter. All error messages below would be shown together with backlight. Please follow "WHAT TO DO" to resolve problems. If the problem still exists, please call your local dealer for help.

MESSAGE	WHAT IT MEANS	WHAT TO DO
	Appear when environmental temperature is below/above system operation range.	Put the thermometer under operating temperature range of 10°C to 40°C (50°F to 104°F).
	Battery is low and "  " appears on display.	Please replace batteries as soon as possible.
	If the thermometer is broken or affected by EMF.	Please contact the customer service line.

## SYMBOL INFORMATION

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Consult instructions for use



Manufacturer



Serial Number



Caution, consult accompanying documents



CE mark



Authorised Representative in the European Community



Type BF Equipment



Do not use if package is damaged

## SPECIFICATIONS

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Dimensions	185.1mm(L) x 58mm(W) x 29.1mm(H)
Weight	93g (include 2 x 1.5V AAA batteries)
Battery	2 x 1.5 V AAA alkaline batteries
Measuring temperature range	Forehead: 32.0°C to 42.9°C (89.6°F to 109.2°F) Object: 0.0°C to 100.0°C (32.0°F to 212.0°F)
Display resolution	0.1°C/ 0.2 °F
Accuracy	±0.2°C / 0.4 °F (32.0 ~ 42.9°C / 89.6~ 109.2 °F) ±1.0°C / 2.0 °F (0.0 ~ 100.0°C / 32.0 ~ 212.0 °F)
Temperature unit	°C or °F
Operating temperature range	10°C to 40°C (50.0°F to 104.0°F)
Operating humidity	≤ 80% RH non-condensing
Storage temperature range	-25°C to 55°C (-13.0°F to 131.0°F)
Storage humidity	≤ 95% RH non-condensing
Memory capacity	32 measurements

## STATEMENTS AND DECLARATIONS:

1. This product needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided, and this unit can be affected by portable and mobile RF communications equipment.
2. Do not use a mobile phone or other devices that emit electromagnetic fields, near the unit. This may result in incorrect operation of the unit.
3. Caution: This unit has been thoroughly tested and inspected to assure proper performance and operation!
4. Caution: this machine should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, this machine should be observed to verify normal operation in the configuration in which it will be used.

### **Guidance and manufacture's declaration – electromagnetic emission**

The NC100 is intended for use in the electromagnetic environment specified below. The customer of the user of the NC100 should assure that it is used in such an environment.

<b>Emission test</b>	<b>Compliance</b>	<b>Electromagnetic environment – guidance</b>
RF emissions CISPR 11	Group 1	The NC100 use 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 emission CISPR 11	Group B	The NC100 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.

**Guidance and manufacture's  
declaration – electromagnetic immunity**

The NC100 is intended for use in the electromagnetic environment specified below. The customer or the user of NC100 should assure that it is used in such an environment.

<b>Immunity test</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - guidance</b>
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%.
Power frequency (50Hz/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 UT is the a.c. mains voltage prior to application of the test level.

## DISPOSAL

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Adhere to the applicable regulations when disposing of the device.

This product must not be disposed of together with domestic waste.



All users are obliged to hand in all electrical or electronic devices, regardless of whether or not they contain toxic substances, at a municipal or commercial collection point so that they can be disposed of in an environmentally acceptable manner.

Please remove the batteries before disposing of the device/unit.

Do not dispose of old batteries with your household waste, but at a battery collection station at a recycling site or in a shop.

The statements should be displayed in the user manual:  
changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The statements should be displayed in the user manual:  
changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.


## WARRANTY


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- Tyson Bioresearch, Inc. offers a 2 years guarantee on this product excluding batteries. Our company shall repair or replace any Tyson Bio Bluetooth Non-Contact Infrared Thermometer found defective with a new one.
- This warranty does not apply to the performance of a Tyson Bio Bluetooth Non-Contact Infrared Thermometer that has been accidentally damaged, altered, misused, tampered with or abused in any way. In no event shall our company be liable to the purchaser or any other person for any incidental, consequential, or punitive damages arising from or in any way connected with the purchase or operation of Tyson Bio Bluetooth Non-Contact Infrared Thermometer.
- For manufacturer warranty services, purchaser must contact Tyson Bioresearch, Inc. for help.






 Tyson Bioresearch, Inc.


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 [www.tysonbio.com](http://www.tysonbio.com)

## Customer Service

 +886-37-585998 (8:30 ~ 17:30, Monday ~ Friday)

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Schiffgraben 41, D-30175 Hannover, Germany

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