

microlife®



FR1MF1-B  
(NC150 BT)  
Non Contact Thermometer

EN → 1

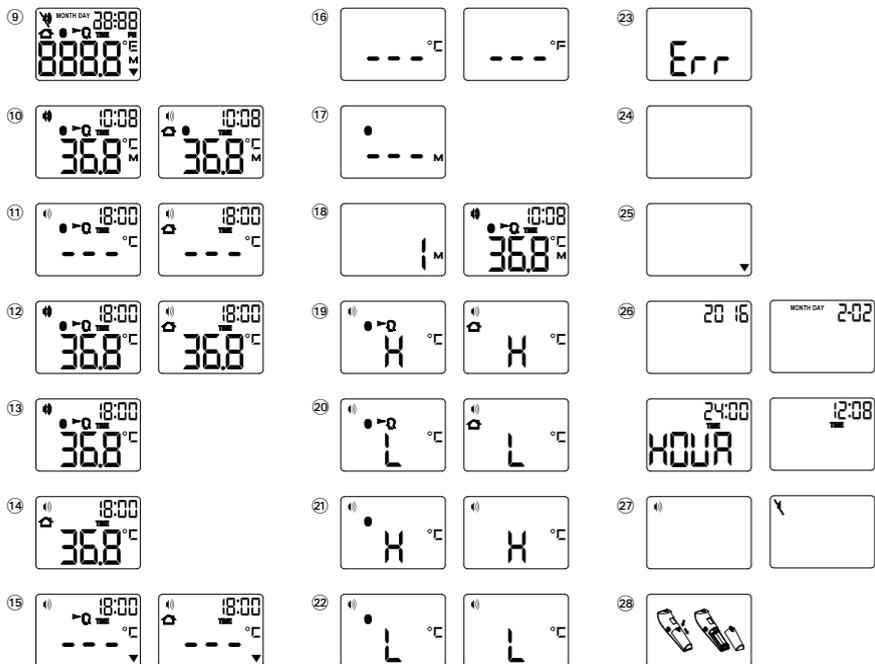
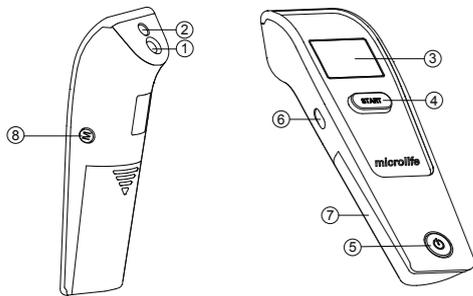


IB NC 150 BT EN 4720

Microlife FR1MF1-B(NC150 BT)



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Made in China



## Microlife Non Contact Thermometer FR1MF1-B(NC150 BT)

EN

- ① Measuring sensor
- ② Tracking light
- ③ Display
- ④ START button
- ⑤ ON/OFF button
- ⑥ Mode switch
- ⑦ Battery compartment cover
- ⑧ M-button (memory)
- ⑨ All segments displayed
- ⑩ Memory
- ⑪ Ready for measuring
- ⑫ Measurement complete
- ⑬ Body mode
- ⑭ Object mode
- ⑮ Low battery indicator
- ⑯ Changing between Celsius and Fahrenheit
- ⑰ Recall mode
- ⑱ Recall the last 30 readings
- ⑲ Measured temperature too high
- ⑳ Measured temperature too low
- ㉑ Ambient temperature too high
- ㉒ Ambient temperature too low
- ㉓ Error function display
- ㉔ Blank display
- ㉕ Flat battery
- ㉖ Date/Time
- ㉗ Beeper function setting
- ㉘ Replacing the battery

 Read the instructions carefully before using this device.

 Type BF applied part

This Microlife thermometer is a high quality product incorporating the latest technology and tested in accordance with international standards. With its unique technology, this device can provide a stable, heat-interference-free reading with each measurement. The device performs a self-test every time it is switched on to always guarantee the specified accuracy of any measurement. This thermometer has been clinically tested and proven to be safe and accurate when used in accordance to the operating instruction manual.

Please read through these instructions carefully in order for you to understand all functions and safety information.

Indication for Use

The Microlife Non-Contact Infrared Forehead Thermometer, Model FR1MF1-B(NC150 BT) is intended for the intermittent measurement and monitoring of human body temperature. The device is indicated for use by people of all ages in the home

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Name of Purchaser

\_\_\_\_\_

Serial Number

\_\_\_\_\_

Date of Purchase

\_\_\_\_\_

Specialist Dealer

\_\_\_\_\_

**microlife®**

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## 1. The Advantages of this Thermometer

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### Measures in a matter of seconds

The innovative infrared technology allows the measurement without even touching the object. This guarantees safe and sanitary measurements within seconds.

### Multiple uses (wide range of measurement)

This thermometer offers a wide range of measurement from 0.1 - 99.9 °C / 32.2 - 211.8 °F, meaning the unit can be used to measure body temperature or it also has a feature allowing it to be used to measure surface temperature of the following examples:

- Milk surface temperature in a baby's bottle
- Surface temperature of a baby's bath
- Ambient temperature

### Accurate and reliable

The unique probe assembly construction incorporates an advanced infrared sensor, ensuring that each measurement is accurate and reliable.

### Gentle and easy to use

- The ergonomic design enables simple and easy use of the thermometer.
- This thermometer can even be used on a sleeping child without causing any interruption.
- This thermometer is quick, therefore child-friendly.

### Multiple readings recall

Users will be able to recall the last 30 readings with a record of both time and date when entering the recall mode, enabling efficient tracking of temperature variations.

### Safe and hygienic

- No direct skin contact.
- No risk of broken glass or mercury ingestion.
- Completely safe for use on children.

### High temperature alarm

10 short beeps and a red LCD backlight alert the patient that he/she may have a temperature equal to or higher than 37.5 °C.

## Bluetooth® Function

This device connects to the «Microlife Connected Health+» App by using Bluetooth® 4.0 and enables easy monitoring of temperature.

## 2. Important Safety Instructions

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- Follow instructions for use. This document provides important product operation and safety information regarding this device. Please read this document thoroughly before using the device and keep for future reference.
- This device may only be used for the purposes described in these instructions. The manufacturer cannot be held liable for damage caused by incorrect application.
- **Never immerse this device in water or other liquids. For cleaning please follow the instructions in the «Cleaning and Disinfecting» section.**
- Do not use this device if you think it is damaged or notice anything unusual.
- Never open this device.
- A basic physiological effect called vasoconstriction can occur in the early stages of fever, resulting in a cool skin effect. The recorded temperature using this thermometer can, therefore, be unusually low.
- If the measurement result is not consistent with the patient's finding or unusually low, repeat the measurement every 15 minutes or double check the result by another core body temperature measurement.
- This device comprises sensitive components and must be treated with caution. Observe the storage and operating conditions described in the «Technical Specifications» section.
- Ensure that children do not use this device unsupervised; some parts are small enough to be swallowed.
- Do not use this device close to strong electromagnetic fields such as mobile telephones or radio installations. Keep a minimum distance of 3.3 m from such devices when using this device.
- Protect it from:
  - extreme temperatures
  - impact and dropping
  - contamination and dust
  - direct sunlight
  - heat and cold
- If the device is not going to be used for a prolonged period the batteries should be removed.

 **WARNING:** The measurement results given by this device is not a diagnosis. It is not replacing the need for the consultation of a physician, especially if not matching the patient's symptoms. Do not rely on the measurement result only, always consider other potentially occurring symptoms and the patient's feedback. Calling a doctor or an ambulance is advised if needed.

### 3. How this Thermometer measures Temperature

This thermometer measures infrared energy radiated from the forehead as well as objects. This energy is collected through the lens and converted to a temperature value.

### 4. Control Displays and Symbols

- **All segments displayed** (9): Press the ON/OFF button (5) to turn on the unit; all segments will be shown for 1 second.
- **Ready for measuring** (11): When the unit is ready for measuring, the «°C» or «°F» icon will keep flashing while the mode icon (body or object) will be displayed.
- **Measurement complete** (12): The reading will be shown on the display (3) with the «°C» or «°F» icon and the mode icon steady. The unit is ready for the next measurement as soon as the «°C» or «°F» icon is flashing again.
- **Low battery indicator** (15): When the unit is turned on, the «▼» icon will keep flashing to remind the user to replace the batteries.

### 5. Setting Date, Time and Beeper Functions

#### Setting the date and time

1. After the new batteries are fitted, the year number flashes in the display (26). You can set the year by pressing the START button (4). To confirm and then set the month, press the M-button (8).
2. Press the START button (4) to set the month. Press the M-button (8) to confirm and then set the day.
3. Follow the previously mentioned instructions to set the day, 12 or 24 hour mode, hours and minutes.
4. Once you have set the minutes and pressed the M-button (8), the date and time are set and the time is displayed.

 If no button is pressed for 20 seconds, the device automatically switches to ready for measuring (11).

 **Cancel time setup:** Press the ON/OFF button (5) during time setup. The LCD will show Date/Time icons with «--:--». After that press the ON/OFF button (5) to start the measure-

ment. If no further action is taken within 20 seconds, the device will automatically turn off.

 **Change current date and time:** Press and hold the M-button (8) for approx. 3 seconds until the year number starts to flash (26). Now you can enter the new values as described above.

#### Setting the beeper

1. When the device is switched off, press and hold the ON/OFF button (5) for 5 seconds to set the beeper (27).
2. Press the ON/OFF button (5) again to either turn the beeper on or off. The beeper is activated when the beeper icon (27) is not crossed-out.

 If no button is pressed for 5 seconds, the device automatically switches to ready for measuring (11).

### 6. Changing between Body and Object Mode

For changing from body to object mode, slide the mode switch (6) at the side of the thermometer downwards. For switching back to body mode, slide the switch up again.

### 7. Directions for Use

#### Measuring in body mode

1. Press the ON/OFF button (5). The display (3) is activated to show all segments for 1 second.
2. When the «°C» or «°F» icon is flashing, a beep sound is heard and the thermometer is ready for measuring (11).
3. **Aim the thermometer at the center of the forehead with a distance of no more than 5 cm.** Please remove any hair, sweat or dirt from the forehead before measuring to improve the accuracy of the readings.
4. **Press the START button (4) and ensure that the activated blue tracking light is aimed at the center of the forehead.** After 3 seconds a long beep will verify the completion of measurement.
5. Read the recorded temperature from the LCD display.

#### Measuring in object mode

1. Follow steps 1-2 above, then aim the thermometer at the center of the object you want to measure with a distance of no more than 5 cm. Press the START button (4). After 3 seconds a long beep will verify the completion of measurement.
2. Read the recorded temperature from the LCD display.

## NOTE:

- **Patients and thermometer should stay in similar room condition for at least 30 minutes.**
- Don't take a measurement while or immediately after nursing a baby.
- Don't use the thermometer in high humidity environments.
- Patients should not drink, eat or exercise before/while taking the measurement.
- Don't move the measurement device from the measuring area before hearing the termination beep.
- 10 short beeps and a red LCD backlight alert the patient that he/she may have a temperature equal to or higher than 37.5 °C.
- Always take the temperature in the same location, since temperature readings may vary according to locations.
- Doctors recommend rectal measurement for newborn infants within the first 6 months, as all other measuring methods might lead to ambiguous results. If using a non contact thermometer on those infants, we always recommend verifying the readings with a rectal measurement.
- In the following situations it is recommended that three temperatures are taken with the highest one taken as the reading:
  1. Children under three years of age with a compromised immune system and for whom the presence or absence of fever is critical.
  2. When the user is learning how to use the thermometer for the first time until he/she has familiarized himself/herself with the device and obtains consistent readings.
  3. If the measurement is surprisingly low.
- **Readings from different measuring sites should not be compared as the normal body temperature varies by measuring site and time of day**, being highest in the evening and lowest about one hour before waking up.

Normal body temperature ranges:

- Axillar: 34.7 - 37.3 °C / 94.5 - 99.1 °F
- Oral: 35.5 - 37.5 °C / 95.9 - 99.5 °F
- Rectal: 36.6 - 38.0 °C / 97.9 - 100.4 °F
- Microlife FR1MF1-B(NC150 BT): 35.4 - 37.4 °C / 95.7 - 99.3 °F

## • **Changing between Celsius and Fahrenheit**

This thermometer can display temperature readings in either Fahrenheit or Celsius. To switch the display between °C and °F, simply turn OFF the unit, **press and hold** the START button  for 5

seconds; after 5 seconds, the current measurement scale («°C» or «°F» icon) will flash on the display . Change the measurement scale between °C and °F by pressing the START button . When the measurement scale has been chosen, wait for 5 seconds and the unit will automatically enter the «ready for measuring» mode.

## **9. How to recall 30 readings in Memory Mode**

This thermometer can recall the last 30 readings with a record of both time and date.

- **Recall mode **: Press the M-button  to enter recall mode when the power is off. The memory icon «M» will flash.
- **Reading 1 - the last reading **: Press and release the M-button  to recall the last reading. Number «1» and a flashing «M» are displayed.
- **Reading 30 - readings in succession**: Press and release the M-button  consecutively to recall the last 30 readings in succession.

Pressing and releasing the M-button  after the last 30 readings have been recalled will resume the above sequence from reading 1.

## **10. Bluetooth® Function**

This device can be used in conjunction with a smartphone running the «Microlife Connected Health+» App. The measurement results will be automatically transferred via Bluetooth®.

### **Downloading the «Microlife Connected Health+» App**

Download «Microlife Connected Health+» App for free from Google Play™ (Android) or App Store (iOS) and install it on your smartphone.

### **How the Bluetooth® Function works**

The Bluetooth® function on your device will automatically turn on and will be ready to connect with the «Microlife Connected Health+» App after the device is switched on. Your device will automatically upload the data once it is connected to the smartphone.

### **Bluetooth® Icon Indicator**

The Bluetooth® icon indicator on your device, located in the middle left portion of the display, is designed to provide information about the connection between your device and smartphone.

## NOTE:

- The Bluetooth® function is enabled: The Bluetooth® icon indicator  appears steady on the display.

- The Bluetooth® icon indicator  flashes, when connecting with a device or uploading data to the device.
- The Bluetooth® function is automatically switched off during measurement; after measurement the device will switch it on and upload the data to the «Microlife Connected Health+» App.

### App Tutorial

To access the tutorial, select «Tutorial» in the menu of the «Microlife Connected Health+» App (located in the upper left corner on the screen).

## 11. Error Messages

- **Measured temperature too high** : Displays «H» when measured temperature is higher than 43 °C / 109.4 °F in body mode or 99.9 °C / 211.8 °F in object mode.
- **Measured temperature too low** : Displays «L» when measured temperature is lower than 34 °C / 93.2 °F in body mode or 0.1 °C / 32.2 °F in object mode.
- **Ambient temperature too high** : Displays «H» and  when ambient temperature is higher than 40.0 °C / 104.0 °F.
- **Ambient temperature too low** : Displays «L» and  when ambient temperature is lower than 15.0 °C / 59.0 °F in body mode or lower than 5.0 °C / 41.0 °F in object mode.
- **Error function display** : The system has a malfunction.
- **Blank display** : Check if the batteries have been inserted correctly. Also check polarity (<+> and <->) of the batteries.
- **Flat battery indicator** : If only «▼» icon is shown on the display, the batteries should be replaced immediately.

## 12. Cleaning and Disinfecting

Use an alcohol swab or cotton tissue moistened with alcohol (70% Isopropyl) to clean the thermometer casing and the measuring sensor. Ensure that no liquid enters the interior of the device. Never use abrasive cleaning agents, thinners or benzene for cleaning and never immerse the device in water or other cleaning liquids. Take care not to scratch the surface of the sensor lens and the display.

## 13. Battery Replacement

This device is supplied with 2 new, long-life 1.5V, size AAA batteries. Batteries need replacing when this icon «▼»  is the only symbol shown on the display.

Remove the battery cover  by sliding it in the direction shown.

Replace the batteries – ensure correct polarity as shown by the symbols in the compartment.

 Batteries and electronic devices must be disposed of in accordance with the locally applicable regulations, not with domestic waste.

## 14. Guarantee

This device is covered by a **5 year guarantee** from the date of purchase. During this guarantee period, at our discretion, Microlife will repair or replace the defective product free of charge. Opening or altering the device invalidates the guarantee.

The following items are excluded from the guarantee:

- Transport costs and risks of transport.
- Damage caused by incorrect application or non-compliance with the instructions for use.
- Damage caused by leaking batteries.
- Damage caused by accident or misuse.
- Packaging/storage material and instructions for use.
- Regular checks and maintenance (calibration).
- Accessories and wearing parts: Batteries, Probe cover (optional).

Should guarantee service be required, please contact the dealer from where the product was purchased, or your local Microlife service. You may contact your local Microlife service through our website:

[www.microlife.com/support](http://www.microlife.com/support)

Compensation is limited to the value of the product. The guarantee will be granted if the complete product is returned with the original invoice. Repair or replacement within guarantee does not prolong or renew the guarantee period. The legal claims and rights of consumers are not limited by this guarantee.

## 15. Technical Specifications

<b>Type:</b>	Non Contact Thermometer FR1MF1-B(NC150 BT)
<b>Measurement range:</b>	Body mode: 34.0 - 43.0 °C / 93.2 - 109.4 °F Object mode: 0.1 - 99.9 °C / 32.2 - 211.8 °F
<b>Resolution:</b>	0.1 °C / °F
<b>Measurement accuracy (Laboratory):</b>	Body mode: ±0.2 °C, 35.0 ~ 42.0 °C / ±0.4 °F, 95.0 ~ 107.6 °F ±0.3 °C, 34.0 ~ 34.9 °C and 42.1 ~ 43.0 °C / ±0.5 °F, 93.2 ~ 94.8 °F and 107.8 ~ 109.4 °F Object mode: ±1.0 °C, 0.1 ~ 99.9 °C / ±2 °F, 32.2 ~ 211.8 °F
<b>Display:</b>	Liquid Crystal Display, 4 digits plus special icons
<b>Acoustic:</b>	The unit is turned ON and ready for the measurement: 1 short beep. Complete the measurement: 1 long beep (1 sec.) if the reading is less than 37.5 °C / 99.5 °F, 10 short «beep» sounds, if the reading is equal to or greater than 37.5 °C / 99.5 °F. System error or malfunction: 3 short «bi» sounds.
<b>Memory:</b>	30 readings recall in the memory mode with a record of both time and date.
<b>Backlight:</b>	The display light will be GREEN for 1 second, when the unit is turned ON. The display light will be GREEN for 5 seconds, when a measurement is completed with a reading less than 37.5 °C / 99.5 °F. The display light will be RED for 5 seconds, when a measurement is completed with a reading equal to or higher than 37.5 °C / 99.5 °F.
<b>Operating conditions:</b>	Body mode: 15 - 40.0 °C / 59 - 104.0 °F Object mode: 5 - 40.0 °C / 41 - 104.0 °F 15 - 95 % relative maximum humidity
<b>Storage conditions:</b>	-25 - +55 °C / -13 - +131 °F 15 - 95 % relative maximum humidity
<b>Automatic Switch-off:</b>	Approx. 1 minute after last measurement has been taken.
<b>Communication:</b>	Bluetooth® Low Energy 4.0
<b>Compatibility:</b>	iOS: iOS 9.0 or newer Android: Android OS 5 or newer

<b>Battery:</b>	2 x 1.5 V alkaline batteries; size AAA
<b>Battery lifetime:</b>	approx. 1500 measurements (using new batteries)
<b>Dimensions:</b>	141.1 x 43.3 x 36.9 mm
<b>Weight:</b>	90 g (with batteries), 67 g (w/o batteries)
<b>IP Class:</b>	IP22(Protected against solid foreign objects of 12.5 mm diameter and greater. Protected against vertically falling water drops when the device is tilted up to 15°.)
<b>Reference to standards:</b>	ASTM E1965; IEC 60601-1; IEC 60601-1-2 (EMC); IEC 60601-1-11; ISO 80601-2-56
<b>Expected service life:</b>	5 years or 12000 measurements

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications to the product are not approved by Microlife USA and could void the user's authority to operate the equipment under FCC jurisdiction.

Note: This equipment has been verified 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 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 on and off, the user is encouraged to try to correct the interference by increasing the distance between the product and the affected device, can 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.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Electromagnetic compatibility: This device fulfills the stipulations of the standard IEC 60601-1-2 (EMC).

Technical alterations reserved.

According to the Medical Product User Act a biennial technical inspection is recommended for professional users. Please observe the applicable disposal regulations.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Microlife Corp. is under license. Other trademarks and trade names are those of their respective owners.

Portable and mobile RF communications equipment can affect the device.

NOTE: Do not use this device in the presence of electromagnetic or other interference outside the normal range specified in IEC60601-1-2.

## **16. [www.microlife.com](http://www.microlife.com)**

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Detailed user information about our thermometers and blood pressure monitors as well as services can be found at [www.microlife.com](http://www.microlife.com).

## Appendix

<b>Guidance and manufacturer's declaration – electromagnetic emissions</b>		
<p>The model FR1MF1-B(NC150 BT) is intended for use in the electromagnetic environment specified below. The customer or the user of the model FR1MF1-B(NC150BT) should assure that it is used in such an environment.</p>		
<b>Emissions</b>	<b>Compliance</b>	<b>Electromagnetic environment-- guidance</b>
RF emissions CISPR 11	Group 1	The model FR1MF1-B(NC150 BT) 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 model FR1MF1-B(NC150 BT) 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	N/A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	N/A	

1.

<b>Guidance and manufacturer's declaration – electromagnetic immunity</b>			
The model FR1MF1-B(NC150 BT) is intended for use in the electromagnetic environment specified below. The customer or the user of the model FR1MF1-B(NC150 BT) 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	± 8 kV contact ± 15 kV air	± 8 kV contact ± 15 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 and patient coupled lines	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) and neutral	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % $U_T$ (>95 % dip in $U_T$ ) for 0,5 cycle 40 % $U_T$ (60 % dip in $U_T$ ) for 5 cycles 70 % $U_T$ (30 % dip in $U_T$ ) for 25 cycles <5 % $U_T$ (>95 % dip in $U_T$ ) for 5s	N/A	Mains power quality should be that of a typical commercial or hospital environment. If a dips or an interruption of mains power occurs, the current of the model FR1MF1-B(NC150 BT) may be dropped off from normal level, it may be necessary to use uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE $U_T$ is the a.c. mains voltage prior to application of the test level			

2.

Guidance and manufacturer's declaration – electromagnetic immunity			
The model FR1MF1-B(NC150 BT) is intended for use in the electromagnetic environment specified below. The customer or the user of the model FR1MF1-B(NC150 BT) should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.5 GHz</p>	<p>N/A</p> <p>3 V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the model FR1MF1-B(NC150 BT), including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = \left[ \frac{3.5}{V_1} \right] \sqrt{P}$ $d = \left[ \frac{3.5}{E_1} \right] \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = \left[ \frac{7}{E_1} \right] \sqrt{P} \quad 800 \text{ MHz to } 2.5 \text{ GHz}$ <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 metres (m).b</p> <p>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</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
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.			
<p>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 model FR1MF1-B(NC150 BT) is used exceeds the applicable RF compliance level above, the model FR1MF1-B(NC150 BT) should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the model FR1MF1-B(NC150 BT).</p> <p>b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

**3.**

<b>Recommended separation distances between portable and mobile RF communications equipment and the model FR1MF1-B(NC150 BT)</b>			
<p>The model FR1MF1-B(NC150 BT) is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the model FR1MF1-B(NC150 BT) can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model FR1MF1-B(NC150 BT) as recommended below, according to the maximum output power of the communications equipment.</p>			
Rated maximum output power of transmitter  <b>W</b>	Separation distance according to frequency of transmitter <b>m</b>		
	150 kHz to 80 MHz  $d = [\frac{3.5}{V_1}] \sqrt{P}$	80 MHz to 800 MHz  $d = [\frac{3.5}{E_1}] \sqrt{P}$	800 MHz to 2.5 GHz  $d = [\frac{7}{E_1}] \sqrt{P}$
0.01	/	0.12	0.23
0.1	/	0.38	0.73
1	/	1.2	2.3
10	/	3.8	7.3
100	/	12	23
<p>For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (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.</p> <p>NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.</p> <p>NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			