

ForaCare Suisse AG

Thermometer FAQ



Version: Rev 4.1
Release date: 08 July 2019
Editor: Dean Chiu

Table of contents

General Thermometer Questions

Q1. What are the general features of FORA's thermometer?	4
Q2. How accurate is FORA's thermometer?.....	6
Q3. What is the normal body temperature?.....	8
Q4. What are the temperatures for all ages?.....	9
Q5. Why is my measurement too low or high?.....	9
Q6. Why the temple is the best place for forehead measurement?.....	10
Q7. What is Fever?.....	10
Q8. What is the measurement place and displayed temperature range in FORA's thermometer?.....	10
Q9. Are there any restrictions on FORA's thermometer use?.....	11
Q10. What are some suggestions for taking the temperature in the ear for infrared thermometers?.....	12
Q11. What are some suggestions for taking the temperature on the forehead (skin-surface) for infrared thermometers?.....	13
Q12. What are some suggestions for taking the temperature on the foot (only with IR19)?.....	14
Q13. What are some suggestions for taking the temperature of an object for infrared thermometers?.....	15
Q14. What are some suggestions for taking the temperature in the oral for digital thermometers?.....	15
Q15. What are some suggestions for taking the temperature in the axillary for digital thermometers?.....	16
Q16. What are some suggestions for taking the temperature in the rectal for digital thermometers?.....	16

Q17.What is that mean when you hear the beep sound in digital thermometer?.....16

Cleaning and Care

Q18. What should I use to clean and care for my FORA infrared thermometer?..... 16

Q19.What should I use to clean and care for my FORA digital thermometer?..... 17

Common Troubleshooting

Q20. Why do I get different readings from the left and right ear? Which ear should I measure?..... 18

Q21. Why do I get different temperature for continuous measurement? Sometimes in normal, sometimes in lower, sometimes in higher temperature..... 18

Q22. Which factors can influence the temperature measurement with a healthy person?..... 18

Q23. The Common Error Messages in FORA's infrared Thermometer..... 19

Q24. The Common Abnormal Reasons from FORA's infrared thermometer..... 24

Data Transmission Features of the FORA thermometer

Q25. Which models of FORA's thermometers have the data transmission function?..... 24

Q26. What are the accessories needed to perform data transmission with IR21 and IR20?..... 25

Q27. How is the data transmission performed with IR21, IR20 and IR20 professional?..... 25

Q28. What is the Bluetooth transmission information on software development in IR21, IR20 and IR20 professional?..... 27

General Thermometer Questions:

Q1: What are the general features of FORA's Thermometer?

Infrared Thermometers:



Name	Diamond NEXUS	Diamond NEXUS ECO	Diamond NEXUS MINI	IR10	IR16
Use	Forehead/ Skin-Surface	Forehead/ Skin-Surface	Forehead/ Skin-Surface	Forehead/ Skin-Surface	Ear/Forehead/ Non-Contact
°C and °F	✓	✓	✓	✓	✓
Beeper	✓	✓	✓	✓	✓
Memory	20	20	20	20	10
LCD Backlight	✓	✓	✓		
Surface Measurement	✓	✓	✓		
Auto-Sensing Measurement	✓				
Power Source	AAA × 2	AAA × 2	CR2032 × 1	CR2032 × 1	CR2032 × 1
Battery Life	1000	1000	1000	1000	1000
Data Connection					
Clinical Validated	✓	✓	✓	✓	✓



Name	IR18	IR19	IR20	IR21	IR20 Professional	IR42
Use	Ear	Foot/Forehead/ Skin-Surface	Ear	Ear/Forehead	Ear	Forehead/ Skin-Surface
°C and °F	✓	✓	✓	✓	✓	°C
Beeper	✓	✓	✓	✓	✓	✓
Memory	10	10	10	10	10	30
LCD Backlight			✓	✓	✓	✓
Surface Measurement		✓				✓
Auto-Sensing Measurement						
Power Source	CR2032 × 1	CR2032 × 1	AAA × 2	AAA × 2	AAA × 2	AAA × 2
Battery Life	1000	1000	1000	1000	1000	3000
Data Connection			Bluetooth/ Cable	Bluetooth/ Cable	Bluetooth/ Cable	
Clinical Validated	✓	✓	✓	✓	✓	✓

Digital Thermometers:



Name	10s/ 60s Digital Thermometer (MT Series)
Use	Oral/Rectal/Axillar
°C and °F	✓
Beeper	✓
Memory	Last Reading
LCD Backlight	
Surface Measurement	✓
Auto-Sensing Measurement	
Power Source	LR41 or SR31
Battery Life	1000
Data Connection	
Clinical Validated	✓

Q2: How accurate is FORA's thermometer?

The accuracy requirement of FORA's thermometer is specified in ASTM E1965-98.

Infrared Thermometers:

1. **IR10** and **IR18:**

(1) $\pm 0.2^{\circ}\text{C}$ ($\pm 0.4^{\circ}\text{F}$) for the range of 36.0°C to 39.0°C (96.8°F to 102.2°F)

(2) $\pm 0.3^{\circ}\text{C}$ ($\pm 0.5^{\circ}\text{F}$) for the range of $< 36.0^{\circ}\text{C}$ (96.8°F) or $> 39.0^{\circ}\text{C}$ (102.2°F)

2. IR19:

$\pm 0.3^{\circ}\text{C}$ ($\pm 0.5^{\circ}\text{F}$) for the range of 35.0°C (96.8°F) ~ 41.0°C (102.2°F)

3. IR16, IR20, IR20 Professional and IR21:

(1) $\pm 0.2^{\circ}\text{C}$ ($\pm 0.4^{\circ}\text{F}$) for the range of 36.0°C to 39.0°C (96.8°F to 102.2°F)

(2) $\pm 0.3^{\circ}\text{C}$ ($\pm 0.5^{\circ}\text{F}$) from 34.0°C to 35.9°C (93.2°F to 96.6°F)

(3) $\pm 0.3^{\circ}\text{C}$ ($\pm 0.5^{\circ}\text{F}$) from 39.1°C to 42.2°C (102.4°F to 108.0°F)

4. Diamond NEXUS, Diamond NEXUS ECO and Diamond NEXUS MINI:

For Body Mode:

(1) $\pm 0.2^{\circ}\text{C}$ ($\pm 0.36^{\circ}\text{F}$) from 36.0°C (96.8°F) to 39.0°C (102.2°F)

(2) $\pm 0.3^{\circ}\text{C}$ ($\pm 0.54^{\circ}\text{F}$) from 32.0°C (89.6°F) to 35.9°C (96.6°F)

(3) $\pm 0.3^{\circ}\text{C}$ ($\pm 0.54^{\circ}\text{F}$) from 39.1°C (102.4°F) to 43.0°C (109.4°F)

For Object Mode:

$\pm 1^{\circ}\text{C}$ ($\pm 2^{\circ}\text{F}$) from 0°C (32°F) to 100°C (212°F)

5. FORA IR42

For Forehead:

(1) $\pm 0.2^{\circ}\text{C}$ ($\pm 0.36^{\circ}\text{F}$) from 35.0°C (95.0°F) to 42.0°C (107.6°F)

(2) $\pm 0.3^{\circ}\text{C}$ ($\pm 0.54^{\circ}\text{F}$) from $<35.0^{\circ}\text{C}$ (95.0°F) or $>42.0^{\circ}\text{C}$ (107.6°F)

For Object Surface Mode:

$\pm 1^{\circ}\text{C}$ ($\pm 2^{\circ}\text{F}$)

Digital Thermometers:

1. MT series: MT80, MT81, MT82, MT83, MT84, MT85 and MT86:

(1) $\pm 0.1^{\circ}\text{C}$ ($\pm 0.2^{\circ}\text{F}$) for the range of 35.0°C to 39.0°C (95.0°F to 102.2°F)

(2) $\pm 0.2^{\circ}\text{C}$ (0.3°F) in other range

Q3: What is the normal body temperature?

A widely accepted medical concept is that the normal body temperature for a healthy adult is approximately 98.6°F / 37.0°C . The origin of this concept is generally credited to independently conducted research by two different groups in the 19th century—Becquerel and Breschet, followed 33 years later by Wunderlich. Later, the study “Sunnd-Levander M et al. 2002” in which findings of normal temperature means and ranges for males and females are summarized in Table 1. The temperature can be monitored at different sites, with the choice of site resulting in certain trade-offs in terms of convenience and reliability. Being an internal measurement, rectal temperature is very reliable and it is usually considered the “gold standard”, although it is the least convenient. Oral temperature closely parallels rectal temperature in terms of amplitude and acrophase.

Table 1 Normal temperature means and ranges from a Systematic review of the literature (1935-1998)				
	Oral	Rectal	Tympanic	Axillary
Normal body temperature mean and range (males)	98.0°F(96.3-99.9) 36.7°C(35.7-37.7)	98.6°F(98.1-99.5) 37.0°C(36.7-37.5)	97.7°F(95.9-99.5) 36.5°C(35.5-37.5)	
Normal body temperature mean and range (females)	97.2°F(91.7-100.6) 36.2°C(33.2-38.1)	98.6°F(98.2-98.8) 37.0°C(36.8-37.1)	97.9°F(96.3-99.5) 37.0°C(36.8-37.1)	
Normal body temperature mean and range (males and females combined)				97.3°F(95.9-98.6) 36.3°C(35.5-37.0)

Adapted from: Sunnd-Levander M, Forsberg C, Wahren LK. Normal oral, rectal, tympanic and axillary body temperature in adult men and women: a systematic literature review. Scand J Caring Sci 2002; 16: 122-128.

Q4: What are the temperatures for all ages?

The body's ability to regulate temperature changes as you get older. In general, older people have more difficulty conserving heat. They're also more likely to have lower body temperatures.

Babies and children. In babies and children, the average body temperature ranges from 36.6°C (97.9°F) to 37.2°C (99°F).

Adults. Among adults, the average body temperature ranges from 36.1°C (97°F) to 37.2°C (99°F).

Adults over age 65. In older adults, the average body temperature is lower than 36.2°C (98.6°F).

Q5: Why is my measurement too low or high?

Dirty lens and ambient temperature might affect the measurement. If the lens is dirty, please follow the manual's instruction to clean lens with cotton swab. Besides, we

recommend user to place thermometer indoor for 30 minutes to adapt to temperature and get the correct measurement.

Q6: Why the temple is the best place for forehead measurement??

The temporal artery connects to heart via the carotid artery, and it is shallow artery which closes to skin surface. Therefore, we can learn the central body temperature by measuring the skin surface over the temporal artery; also, it is user-friendly measurement. This is where the design concept of forehead thermometer comes from.

Q7: What is Fever?

Fever indicates that the body temperature is higher than normal. This symptom may be potentially 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.**

Generally speaking, in adult, fever is an **oral temperature above 38°C (100.4°F)** or a **rectal or ear temperature above 38.3°C (101°F)**. Besides, A child has a fever when his or her **rectal temperature is 38°C (100.4°F)** or higher.

Q8: What is the measurement place and displayed temperature range in FORA's Thermometer?

Infrared Thermometers:

Product Name	Using Pace	Displayed Temperature Range
IR10	Ear	Ear: 0°C to 50°C (32°F to 122°F)

(Non-contact)	Forehead/Skin-Surface Object/ Room Temp	Forehead/ Skin-Surface: 0°C to 50°C (32°F to 122°F) Object/Room Temp: 0°C to 50°C (32°F to 122°F)
IR16	Ear Forehead/Skin-Surface Object/Room Temp	Ear: 0°C to 50°C (32°F to 122°F) Forehead/ Skin-Surface: 0°C to 50°C (32°F to 122°F) Object/Room Temp: 0°C to 50°C (32°F to 122°F)
IR18	Ear	32 °C to 43°C (89.6°F to 109.4°F)
IR19	Forehead/ (Skin-Surface) Foot	Forehead/ Skin-Surface: 22°C to 44°C (71.6°F to 111.2°F) Foot: 22°C to 44°C (71.6°F to 111.2°F)
IR20	Ear	32°C to 43°C (89.6°F~109.4°F)
IR20 Professional	Ear	32°C to 43°C (89.6°F~109.4°F)
IR21	Ear Forehead/ (Skin-Surface)	Ear: 32°C to 43°C (89.6°F~109.4°F) Forehead/ Skin-Surface: 23°C to 44°C (73.4°F~111.2°F)
Diamond NEXUS	Forehead (Skin-Surface) Object	Forehead/ Skin-Surface: 32°C to 43°C (89.6°F to 109.4°F) Object: 0°C to 100°C (32°F to 212°F)
Diamond NEXUS ECO	Forehead (Skin-Surface) Object	Forehead/ Skin-Surface: 32°C to 43°C (89.6°F to 109.4°F) Object: 0°C to 100°C (32°F to 212°F)
Diamond NEXUS MINI	Forehead/ (Skin-Surface) Object	Forehead/ Skin-Surface: 32°C to 43°C (89.6°F to 109.4°F) Object: 0°C to 100°C (32°F to 212°F)
IR42	Adult Forehead Mode Children Forehead Mode Object Surface Mode	Adult: 32°C to 43°C (89.6°F to 109.4°F) Children: 32°C to 43°C (89.6°F to 109.4°F) Object: 0°C to 100°C (32°F to 212°F)

Digital Thermometers (MT Series):

Product Name	Using Pace	Displayed Temperature Range
MT80	Oral Axillary Rectal	32.0°C ~ 44.0°C (89.6°F~111.12°F)
MT81,MT82, MT83	Oral Axillary Rectal	32.0°C ~ 43.9°C (89.6°F~111.0°F)
MT84 (Flexible Tip)	Oral Axillary Rectal	32.0°C ~ 43.0°C (89.6°F~109.4°F)
MT85 (Flexible Tip)	Oral Axillary Rectal	32.0°C ~ 43.0°C (89.6°F~109.4°F)
MT86 (Flexible Tip)	Oral Axillary Rectal	32.0°C ~ 42.9°C (89.6°F~109.2°F)

Q9: Are there any restrictions on FORA's thermometer use?

All FORA's thermometers are clinically proven to produce accurate temperature measurements. However, please note the following about infrared thermometers:

- (1) The accuracy cannot be ensured for a person who has any deformity of the ear which restricts the thermometer probe from being properly inserted into the ear canal.

- (2) The accuracy cannot be ensured if the thermometer is not clean. Ensure that the probe is clean before taking a measurement.
- (3) The accuracy cannot be ensured if blood or drainage is found in the ear canal.
- (4) Take the temperature from the other ear if ear drops or medications have been placed in one ear.
- (5) For a person who wears ear plugs or hearing aids, remove the device and wait for 15 minutes before taking the temperature.

Q10: What are some suggestions for taking the temperature in the ear for infrared thermometers?

1. Please note that the position of the probe tip during measurement can cause different readings. Stretch your ear canal by pulling your ear backwards and upwards before carefully inserting the thermometer into the ear.
2. As with any other thermometer, you may observe slight variations in consecutive measurements. It is recommended that you take 3 temperature readings and use the highest one in the following situations:
 - (1) Infants younger than 3 months old.
 - (2) Children younger than 3 years old who have a compromised immune system and the presence / absence of fever is critical.
 - (3) If you are learning to use the thermometer.
3. Do not take a reading while eating and /or talking. Wait 30 minutes after any of the following situations before taking a measurement:

- (1) If you have your ear covered.
 - (2) After exercising, swimming, or taking a bath and exposed to extreme temperature.
4. In order to take accurate readings, the ear must be free from excess earwax build-up.

Q11: What are some suggestions for taking the temperature on the forehead (skin-surface) for infrared thermometers?

1. As the forehead (skin-surface) measurement temperature is likely to be affected by sweat, oil and the surroundings, the reading shall only be taken as a reference.
2. If the probe is placed at an angle close to the forehead measurement, the reading will be affected by the surrounding temperature. Babies' skin reacts very quickly to the ambient temperature. Therefore, do not take their temperature with the FORA thermometer during or after breastfeeding, because the skin temperature may then be lower than the internal body temperature.
3. The proper measurement distance in FORA's thermometer is as follows:
 - (1) **IR18, IR20 and IR20 Professional** are not able to do forehead (skin-surface) scans.
 - (2) With **IR10, IR16, IR19 and IR21**, you can perform a forehead (skin-surface) scan within 3 cm. **IR42** can perform a forehead scan within 3 to 7 cm.
 - (3) With **Diamond NEXUX and Diamond NEXUS ECO**, you can perform a forehead (skin-surface) scan within 2 cm.
 - (4) With **Diamond NEXUS MINI**, you can perform a forehead (skin-surface) scan within 5 cm.

Q12: What are some suggestions for taking the temperature on the foot (only with IR19)?

1. Sit in a comfortable chair.
2. Take temperature measurement in the morning after you have been out of bed for at least 5 minutes. Remove any socks or stockings prior to taking the readings. If you have been active (walking, etc.) let your feet rest for 5 minutes prior to taking measurements.
3. Hold the thermometer in your hand and turn it on by pressing the ON/MEMORY button, the thermometer beeps and displays the last measurement.
4. You will be taking a minimum of six temperature measurements on different sites ON EACH FOOT as shown below. Start on site 1, perform a foot measurement with a contact measurement. Press and release the Scan button. Do not remove until the thermometer beeps.



5. Read the result and record it in the book on site 1 on your log sheet.
6. Continue to take and record the measurements of the remaining five sites on your right foot and then move to your left foot and take and record all six measurements.
7. The thermometer will automatically turn off if left unused for more than 30 seconds.
8. When you have completed taking and recording all 12 measurements on the

bottom of your feet, take a few minutes to review the data on your log sheet.

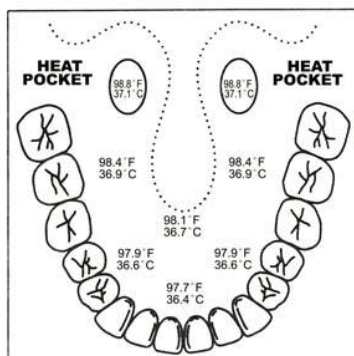
9. Compare the measurements taken from the same sites between your feet. If you have a reading on one foot that is greater than the same site on the other foot by more than 2.2 °C (4°F), this indicates that you may have a “hot spot”. This has the potential of becoming a more serious problem such as a foot ulcer. Contact your physician for advice as soon as possible.

Q13: What are some suggestions for taking the temperature of an object for infrared thermometers?

Make sure the detecting sensor is flat and close to the object, not at an angle. Perform an object measurement with a distance within 2 cm (in **Diamond NEXUX** and **Diamond NEXUX ECO**), within 3 cm (in **IR10** and **IR16**) and within 5 cm (in **Diamond NEXUX MINI** and **IR42**).

Q14: What are some suggestions for taking the temperature in the oral for digital thermometers?

Place the probe tip under the tongue as near as possible to the heat pocket.



Q15: What are some suggestions for taking the temperature in the axillary for digital thermometers?

Wipe the underarm with a dry towel and place the probe tip under the arm so the tip is touching the skin with the thermometer perpendicular to the body. Position the arm across the chest so the probe tip is well covered by the arm.

Q16: What are some suggestions for taking the temperature in the rectal for digital thermometers?

Apply a water-soluble lubricant to the probe cover. Gently insert the probe (MAXIMUM 1/2") into the rectum.

Q17: What is that mean when you hear the beep sound in digital thermometer?

We should take the probe away from the measurement part when we hear the beep sound. That is to say, when the user uses the thermometer in the right way, the thermometer will give a stable temperature of human body. Detecting the temperature from mouth, underarm or rectal is the right place for use. When the probe has detected the temperature becomes stable, the beeper will response, normally, the user will take the probe away the body to read the display. The temperature will not change again. In technically, the IC design of the thermometer decides that it will keep working after beeping. The beeper will response even though the IC still keep working, once the user take the device away from the human body, the readout will stop.

Cleaning and Care

Q18: What should I use to clean and care for my FORA infrared thermometer?

1. Keep the probe clean, as earwax and grease buildup may affect the

measurement.

2. The probe tip is the most delicate part of the thermometer. It has to be clean and intact to ensure accurate readings. The lowing reading is usually caused by the dirty probe. Gently wipe the probe surface with a cotton swab. Take care not to scratch the surface of the probe lens and the display.
3. 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.
4. Store the thermometer in a suitable and dry location as shown in the table below. Make sure it is free from dust and away from direct sunlight.

Product Name	Storage Temperature	Operation Temperature	Storage/Operation Humidity
IR10	-20°C to 50°C (-4°F to 122°F)	10°C to 40°C (50°F to 104°F)	95% RH or less
IR16	-25°C to 55°C (-13°F to 131°F)		
IR18	-20°C to 60°C (-4°F to 140°F)		
IR19	-20°C to 60°C (-4°F to 140°F)		
IR20	-20°C to 60°C (-4°F to 140°F)		
IR20 professional	-20°C to 60°C (-4°F to 140°F)		
IR21	-20°C to 60°C (-4°F to 140°F)		
IR42	-20°C to 60°C (-4°F to 140°F)		85% RH or less
Diamond NEXUS	-25°C to 55°C (-13°F to 131°F)	16°C to 40°C (60.8°F to 104°F)	95% RH or less
Diamond NEXUS ECO			
Diamond NEXUS MINI			
	-20°C to 50°C (-4°F to 122°F)		

Q19: What should I use to clean and care for my FORA digital thermometer?

Before and after each test, clean the digital thermometer. Use a soft slightly moist cloth to clean the thermometer casing and the measurement tip. For disinfecting wipe the thermometer with 70% ethyl alcohol. Never use abrasive cleaning agents, thinners or benzine for cleaning and never immerse the instrument in water or other cleaning liquids. Take care not to scratch the surface of the LCD.

Note: Please don't immerse the thermometer into water or other liquid on purpose. If water accidentally splashes on the device, please simply dry the device with any clean cloth before taking measurement. It won't affect the accurate of the measurement.

Common troubleshooting:

Q20: Why do I get different readings from the left and right ear? Which ear should I measure?

The temperature of the left and right ear may be different. This could be due to earwax, dirt, individual variations in the ear canal and your measurement techniques (thermometer probe cannot be properly inserted into the ear canal and the tympanic membrane is approached).

You can either measure the left or right ear, but please always measure using the same ear.

Q21: Why do I get different temperature for continuous measurement? Sometimes in normal, sometimes in lower, sometimes in higher temperature




The user and thermometer need to adapt to ambient temperature. The rapid temperature change may cause the inaccurate measurement. Before the measurement for user, please stay in a stable environment for 5 minutes and avoid exercise, bath for 30 mins. For thermometer, we recommend user to place thermometer indoor for 15 minutes to adapt to temperature and get the correct measurement.

Q22: Which factors can influence the temperature measurement with a healthy person?


- A. The person's individual metabolism
- B. Age (body temperature is higher in babies and small children and falls with increasing age. Greater temperature fluctuations occur faster and more often in children)
- C. Clothing
- D. The outside temperature
- E. The time of day (body temperature is lower in the morning and increases during the day towards evening)




Q23: The Common Error Messages in FORA's infrared Thermometer.

1. Room temperature is below.....




Thermometer	Message	What it means	What to do
IR10/IR16/ IR18/IR19/IR20/IR20 Professional/IR21		Room temperature is below 10°C.	Put the thermometer under operating temperature range of 10°C to 40°C (50°F to 104°F)
Diamond NEXUX/ Diamond NEXUX ECO		Room temperature is below 16°C.	Put the thermometer under operating temperature range of 16°C to 40°C (60.8°F to 104°F)
Diamond NEXUX MINI		Room temperature is below 16°C.	Put the thermometer under operating temperature range of 16°C to 40°C (60.8°F to 104°F)

2. Room temperature is above.....


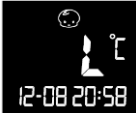
Thermometer	Message	What it means	What to do
IR10/IR16/ IR18/IR19/IR20/IR20 Professional/IR21		Room temperature is above 40°C	Put the thermometer under operating temperature range of 10°C to 40°C (50°F to 104°F)



Diamond NEXUX/ Diamond NEXUX ECO		Room temperature is above 40°C	Put the thermometer under operating temperature range of 16°C to 40°C (60.8°F to 104°F)
Diamond NEXUX MINI		Room temperature is above 40°C	Put the thermometer under operating temperature range of 16°C to 40°C (60.8°F to 104°F)
IR42		The ambient temperature is outside of the operating temperature range.	Only operate the thermometer within an ambient temperature range of 10°C to 40°C.

3. Room temperature is out of range


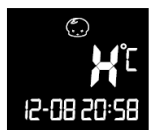


Thermometer	Message	What it means	What to do
IR42	  	The ambient temperature is outside of the operating temperature range.	Only operate the thermometer within an ambient temperature range of 10°C to 40°C.

4. The measurement is too low and is out of display range:





Thermometer	Message	What it means	What to do
IR10/IR16/ IR18/IR19/IR20/IR20 Professional/IR21		Lo-temperature is below 0°C (32°F)	Review instructions and repeat the measurement.
Diamond NEXUX/ Diamond NEXUX ECO		Lo-temperature < 32°C (89.6°F)	





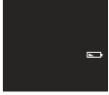




Diamond NEXUX MINI		Lo-temperature < 32°C (89.6°F)	Review instructions and repeat the measurement.
IR42		Lo-temperature < 32°C (89.6°F)	

5. The measurement is too high and is out of display range:

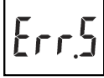





Thermometer	Message	What it means	What to do
IR10/IR16/ IR18/IR19/IR20/IR20 Professional/IR21		Hi-temperature is above 50°C (122°F)	Review instructions and repeat the measurement.
Diamond NEXUX/ Diamond NEXUX ECO		Hi-temperature ≥43°C (109.4°F)	
Diamond NEXUX MINI		Hi-temperature ≥43°C (109.4°F)	
IR42		Measured temperature above the measurement range (above 43°C).	


6. Battery is low and the icon appears on LCD (The thermometer can still be used).

Thermometer	Message	What it means	What to do
IR10/IR16		Battery is low and  appears on LCD.	The thermometer can still be used, but please replace the batteries as soon as possible.
IR18		Battery is low and  appears on LCD.	

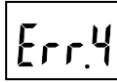
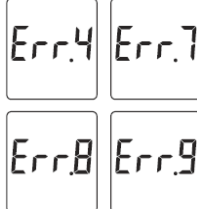


IR19		Battery is low and  appears on LCD.
IR20/IR20 Professional/IR21		Battery is low and  appears on LCD.
Diamond NEXUX/ Diamond NEXUX ECO		Battery is low and  appears on LCD.
Diamond NEXUX MINI		Battery is low and  appears on LCD.
IR42		Low power.

7. Battery is too low for taking measurements.

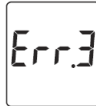
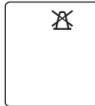
Thermometer	Message	What it means	What to do
IR10/IR16		The battery is too low to measure temperature correctly. No measurements will be taken.	Please replace the batteries immediately.
IR18			
IR19		The battery is too low and the measurement cannot be taken.	
IR20/IR20 Professional/IR21		The batteries cannot provide enough power to take measurements.	
Diamond NEXUX/ Diamond NEXUX ECO		The battery is too low and the measurement cannot be taken.	
Diamond NEXUX MINI			

IR42		No power.	Please replace the batteries immediately.
-------------	---	-----------	---

8. Unknown errors.

Thermometer	Message	What it means	What to do
IR10/IR16/IR18/IR19		Unknown problem with the thermometer.	Please put the thermometer under the operating temperature range of 10°C to 40°C (50°F to 104°F). If the problem persists, please contact FORA's customer service line.
IR20/IR20 Professional/IR21		Unknown problem with the thermometer.	Review the instructions and re-start the measurement procedure. If the above steps do not work. Please contact FORA's customer service line.
Diamond NEXUX/ Diamond NEXUX ECO		If the thermometer is broken or there is an unknown defect.	Please contact the dealer or FORA's service member line.
Diamond NEXUX MINI			

9. Probe cover use reminder.

Thermometer	Message	What it means	What to do
IR20/ IR20 Professional	 	Do not use probe cover while measuring the ear temperature	Please place probe cover into probe again.

Q24: The Common Abnormal Reasons from FORA's thermometer.

Item	Status	Outcome of value	Solution
1	Incorrect and inconsistent measurement techniques.	High variation in temperature readings.	Correct your measurement techniques. Please refer to Q8~Q11 and the owner's manual.
2	Probe lens or probes are dirty.	Lower temperature readings.	Please refer to Q7 and Q16. Gently wipe the probe surface with a cotton swab.
3	Probe lens or probes are defected or broken.	Lower temperature readings.	Please contact with local retailer or FORA's customer service member for repair and replacement.
4	The plastic case of the probe lens is broken.	High temperature readings (the exposure area in probe lens is becoming larger).	Please contact with local retailer or FORA's customer service member for repair and replacement.
5	Wrong Bluetooth pairing name for your thermometer.	The incorrect connecting name is from the defect of the Bluetooth module. The problems caused by a shared I/O PIN, has led to the wrong electronical signal and the wrong pairing name is received.	Please contact with local retailer or FORA's customer service member for repair and replacement.

Data Transmission Features of the FORA thermometer

Q25: Which models of FORA's thermometers have the data transmission function?

The thermometers which have the data transmission function are IR21 b/c, IR20 b/c IR20 b/c Professional.

Q26: What are the accessories needed to perform data transmission with IR21 and IR20?

Results in memory can be transmitted to a personal computer by either cable or wireless connection for FORA IR21c / IR20c/ IR20c Professional and FORA IR21b / IR20b/ IR20b Professional, respectively. Accessories needed to activate this function are:

- (1) Health Care Software System: a software downloaded from ForaCare's website (www.foracare.ch)
- (2) Interface Cable: an optional accessory for FORA IR21c / IR20c/ IR20c Professional.
- (3) Bluetooth Adapter: an optional accessory for FORA IR21b / IR20b/ IR20b Professional.

Please contact your local customer service for the above accessories.

Q27: How is the data transmission performed with IR21, IR20 and IR20 professional?

1. Transmitting data via Cable (FORA IR21c / IR20c/ IR20c professional)

Step 1 Install Software:

Install Health Care System Software on your computer by following the instructions provided on ForaCare's website.

Step 2 Connect to a Personal Computer:

Connect the interface cable to a serial port on the back of your computer. With the thermometer turned off, connect the interface cable to the data port located at the bottom of the thermometer. Then " PCL " will appear on the display, indicating

that the thermometer is ready to transmit data.

Step 3 Transmit Data:

Follow the instructions provided in the software to transmit data. Results transmitted will include date and time. Remove the cable and the thermometer will automatically turn off.

2. Transmitting data via a Bluetooth Adapter (FORA IR21b / IR20b/ IR20b Professional)

Step 1:

Install the Health Care System Software on your computer by following the instructions provided on ForaCare's website.

Step 2:

Install the Bluetooth Adapter Software.

Step 3:

Reset FORA IR21b / IR20b/ IR20b Professional thermometer.

Step 4:

Pair FORA IR21b / IR20b/ IR20b Professional thermometer with your computer. Select FORA IR21b / IR20b/ IR20b Professional thermometer device code: "FORA-Device" and key in the Bluetooth passkey (PIN): 111111 for pairing.

Step 5:

Connect Bluetooth Serial Port Service: Right click on icon “FORA-Device” and select “connect” and “Bluetooth Serial Port Service” for connection. The results will be transmitted automatically to your computer once you finish taking the temperature. In the meantime, the communication symbol on the thermometer will flash. If you are using the Bluetooth Adapter provided by ForaCare Suisse AG, please follow the installation guide “Bluetooth Easy Card” within the package.

NOTE

- While the thermometer is connected to the PC or the server, it is unable to perform a test.
- We recommend that you use the Bluetooth adaptor provided by ForaCare Suisse AG.

[Q28: What is the Bluetooth transmission information on software development in IR21, IR20 and IR20 professional?](#)

1. The Bluetooth organization has defined different ways to pair V3 and BLE (V4).
2. BT4.0 BLE devices must be paired ‘in app/application’ (Microsoft calls it inbox experience), not like Bluetooth Classic devices which can be paired in OS setting level.

(1) To pair Bluetooth 4.0 Low Energy: BLE device requires ‘in app’ pairing. The pairing function will be offered by the corresponding software application.

(2) To pair Bluetooth 2.0/3.0 Classic: users can pair the devices via OS system

level.

3. The following SDK for IR21, IR20 and IR20 professional, the demo binaries and sample codes are included (please contact us if you need them).
 - (1) FORA Interface Control Document (Bluetooth Protocol Document)
 - (2) PCLink Library SDK (.Net)
 - (3) PCLinkLibrary_Android (Android)
 - (4) iOS folder (iOS sample code)
4. Bluetooth v4 module provides the following GATT service which works like the serial profile in the Bluetooth v3 module.