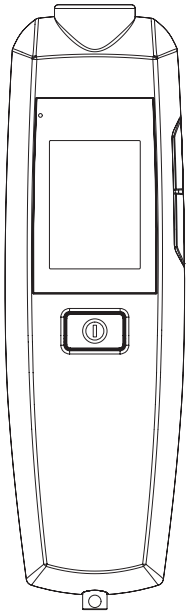
Part no.	XXX-XXXXXXX-XXX
Product name	機器說明書
Spec	L148*W105mm/模造紙80P/黑/共112頁/膠裝
Designer	Emily
Color	■ K 100 ■ K 80

ri-thermo® sensioPRO
ri-thermo® sensioPRO+

Non-contact Thermometer / Berührungsloses Thermometer
Thermomètre sans contact / Termómetro sin contacto
Termometro senza contatto / Бесконтактный термометр



Operation Instructions / Bedienungsanleitung /
Mode d'emploi / Instrucciones de uso /
Istruzioni per l'uso / Инструкция по эксплуатации

English

TABLE OF CONTENTS

INTRODUCTION

Thank you for choosing ri-thermo® sensioPRO / ri-thermo® sensioPRO+ non-contact 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 on the forehead instantly and accurately. This thermometer delivers a body temperature reading from the thermal radiation emitted from the forehead without contact to the body.

Before using this product, please read the following contents thoroughly and carefully.

INTENDED USE

ri-thermo® sensioPRO / ri-thermo® sensioPRO+ non-contact thermometer is intended for the intermittent measurement and monitoring of human body temperature from the forehead. The device is intended for use of all ages for professional use by one with a good understanding of the operation instruction.

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 shown on LCD.

NOTE:
The thermometer does not emit any infrared signal.

CONTENTS

- Meter
- Operation Instructions
- Batteries

IMPORTANT SAFETY INSTRUCTIONS

READ THIS BEFORE USING AND KEEP THESE INSTRUCTIONS

The following basic safety precautions should always be taken.

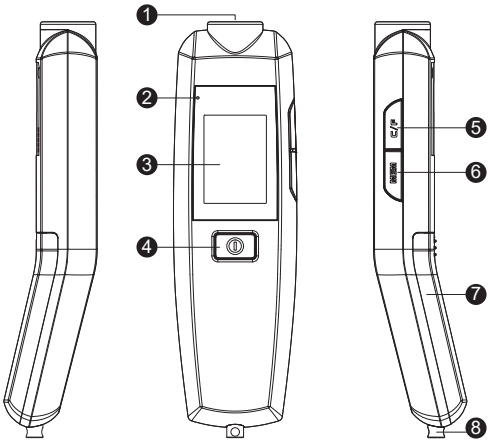
1. Close supervision is necessary when the thermometer is used by, on, or near children or handicapped persons.
2. Use the thermometer only for the intended use described in this manual.
3. Do not use the thermometer if it is not working properly, or if it has suffered any damage.
4. Keep the sensor end clean and free of debris. See Maintenance section for instructions.
5. Do not use ethylene oxide gas, heat, autoclave, or any other harsh methods to sterilize the device.
6. If coming from an environment of warmer or cooler temperature or after a period of exertion, allow the user and the thermometer to acclimate to room temperature for 20 minutes prior to taking a measurement.
7. As the body site for measurement may be affected by sweat, oil and the surrounding temperature, the reading shall be taken as a reference only.
8. Do not use in presence of flammable anesthetic mixtures.
9. Do not use accessories which are not supplied or recommended by the manufacturer. Do not try to modify the device to prevent any dangers.
10. Proper maintenance is essential to the longevity of your device. This thermometer has been calibrated at the factory. If you follow the instructions, you don't need to adjust it regularly. However, if you are concerned about the accuracy of measurement, please contact the local customer service or place of purchase for help.
11. Always contact the manufacturer or the manufacturer’s representative to report unexpected operation or event. Do not try to fix it by yourself.
12. When using the thermometer, stay away from electromagnetic radiation, such as the mobile in use.

13. Do not expose the device to strong electrostatic fields or strong magnetic fields to avoid affecting the measurement accuracy.
14. Use of this device adjacent to or stacked with other device should be avoided because it could result in improper operation.
15. Keep probe covers out of reach of children. The small parts detached from the device may result children choking from inhaling or swallowing.
16. Do not try to maintain the device while it is in use.

CAUTIONS AND WARNINGS

- Always operate the thermometer in an operating temperature range 10°C to 40°C (50°F to 104°F), and relative humidity between 30% to 85%.
- Always store the thermometer in a cool and dry place: temperature between -20°C to 60°C (-4°F to 140°F) and relative humidity between 30% to 85%.
- Avoid direct sunlight.
- This thermometer is not intended to substitute for a consultation with your physician.

APPEARANCE AND KEY FUNCTIONS



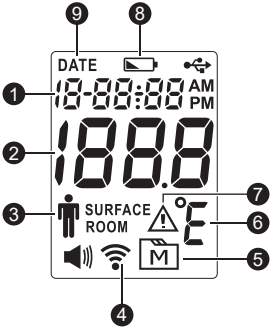
1. Probe
2. Bluetooth Indicator (ri-thermo® sensioPRO+ only)
3. Display Screen
4. On / Scan Button
5. °C / °F Button
6. MEM Button
7. Battery Cover
8. Lug

HINTS ON TAKING TEMPERATURES

1. As with other thermometers, you may observe slight variations in consecutive measurements. It is recommended that you take 3 temperature readings and use the highest one for the following situations:
   - Infants younger than 3 months old.
   - Children younger than 3 years old and who have a compromised immune system and the presence / absence of fever is critical.
   - When you are learning to use the thermometer.

2. Do not take a reading while the patient is moving and / or talking. Wait 30 minutes after any of the following situations before taking a measurement:
   - When the body site for measurement has been covered.
   - After the patient has been exercising, swimming, or taking a bath.
   - When the patient has been exposed to extreme temperature.
3. To take accurate readings, the ear must be free from excess earwax build-up.

DISPLAY SCREEN

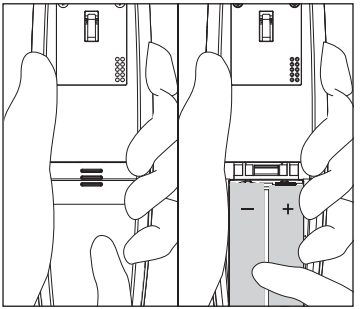


1. Date / Time
2. Temperature reading
3. Body temperature indicator
4. Bluetooth symbol (ri-thermo® sensioPRO+ only)
5. Memory mode
6. Temperature unit
7. Error warning
8. Low battery indicator
9. Date indicator

REPLACING THE BATTERY

The thermometer comes with two 1.5 V AA alkaline batteries. The meter will display " " to alert you when the meter power is getting low. If " " and " " appear both, please follow the steps below to replace new batteries immediately.

1. Remove the battery cover as the arrow direction accordingly. (Figure 1)
2. Remove the old batteries and replace with two 1.5V AA size alkaline batteries. (Figure 2)
3. Close the battery cover. If the batteries are inserted correctly, you will hear a “beep” afterwards.



(Figure 1) (Figure 2)

NOTE:

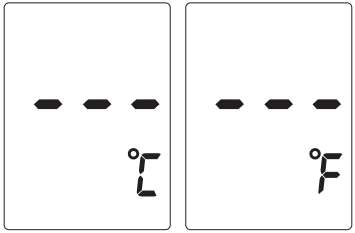
- Although the thermometer works when " " appears, we still recommend that you change the batteries to obtain an accurate result.
- Remove the batteries if stored for a long period of time.
- The batteries should be kept away out of child’s reach. If they are swallowed, promptly see a doctor for help.

CHANGING UNIT OF MEASUREMENT

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

STEP 1. Press the ⏻ to turn on the thermometer first.

STEP 2. Press the °C / °F button to select. Press the ⏻ to begin the measurement or keep the meter in idle for 30 seconds to automatically turn it off.



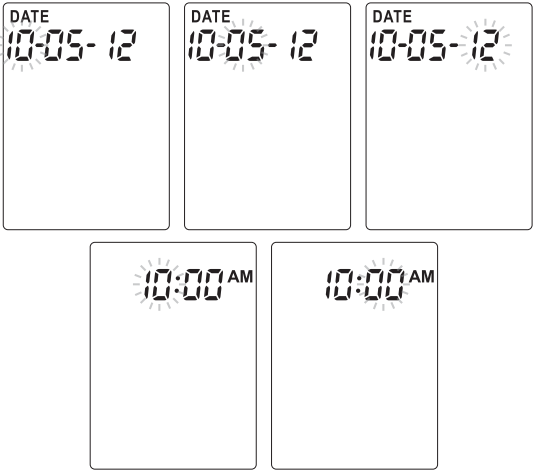
SETTING THE THERMOMETER

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

STEP 1. When the thermometer is off, press the MEM button for 2 seconds to enter the setting mode.

STEP 2. Set the date and time

- Press the MEM or °C / °F button to select the correct month.
- Press the ⏻ to move on the next step.
- Press the MEM or °C / °F button to select the correct day / year / hour / minute.



After the setting is completed, the meter will automatically turn it off.

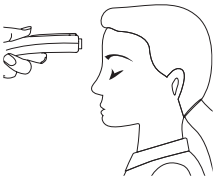
NOTE:
If the meter is idle for 30 seconds during the setting mode, it will switch off automatically.

USING THE DEVICE

STEP 1. Move the probe close to the forehead.

Press and hold the ⏻ .

Make sure the probe is flat and close to the forehead, not at an angle. Perform a forehead measurement with a distance within 3-7 cm.



STEP 2. Read the result.

Release the button. The temperature reading will be displayed with a short beep sound.

NOTE:

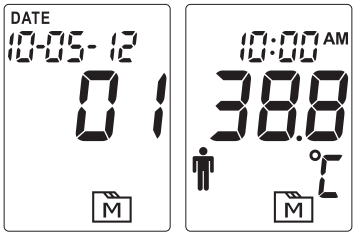
- As the forehead measurement temperature is likely to be affected by sweat, oil and the surroundings, the reading shall be taken as a reference only.
- If the probe is placed at an angle close to the forehead measurement, the reading will be affected by surrounding temperature.
- The thermometer will automatically turn off if left idle for 30 seconds.

RECALLING PAST READINGS

Your thermometer stores 30 most recent readings.

STEP 1. Press the MEM button to enter the memory mode.

Each time you press the MEM button, a result will be displayed in the order of dates (latest result shown first), together with " M " and number (from 1 to 30).



When the memory is full, the oldest result is deleted as the new one added. When the last record is displayed, press MEM button again to return to the first record.

STEP 2. Exit the memory.

Press ⏻ button to return to the measurement mode or keep the meter in idle for 30 seconds in the memory mode, it will switch off automatically.

BLUETOOTH PAIRING (ri-thermo® sensioPRO+ ONLY)

You can transmit your data from the thermometer to compatible devices via bluetooth. Please note that you must complete the pairing between the thermometer and the bluetooth receiver before transmitting data. Pairing mode is automatically active when starting the device. Please note the respective manual of the device you inted to pair.

ABOUT NORMAL BODY TEMPERATURE & FEVER

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.

Body Site Normal Temperature Range[*1]

Oral	normal oral temperature is 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 / Forehead	0.3°C to 0.6°C (0.5°F to 1°F) lower than oral temperature

*1. https://wa.kaiserpermanente.org/kbase/topic.jhtml?docId=tw9223

MAINTENANCE

- The probe is not waterproof. Please wipe with a clean and dry cotton swab to clean the probe on the inside.
- 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.

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
E-1	Appear when environmental temperature is below system operation range.	Put the thermometer under operating temperature range of 10°C to 40°C (50°F to 104°F).
E-2	Appear when environmental temperature is above system operation range.	

	Battery is low.	Please replace batteries as soon as possible.
Lo	The temperature reading is below 22°C (71.6°F).	Please follow this instruction to take a measurement again.
Hi	The temperature reading is above 44°C (111.2°F).	

SYMBOL INFORMATION

SYMBOL	REFERENT	SYMBOL	REFERENT
	Consult instructions for use		Type BF applied part
	Manufacturer		Temperature limit
SN	Serial number		Humidity limitation
	Caution	**IP22**	Resistant to liquid ingress
CE 0123	CE mark	RoHS	RoHS compliance
EC REP	Authorized representative in the European Community		
	This device does not belong to household waste and must be returned to a collection point for recycling electric and electronic devices according to local laws. If it contains batteries, the batteries should be removed and disposed in accordance with locations for separate collection of spent batteries.		

SPECIFICATIONS

Model No.: TD-1241

Dimension & Weight: 161.2mm(L) x 36.1mm(W) x 47.8mm(H), 70.2g (exclude 2 x1.5V AA batteries)

Battery: 2 x 1.5 V AA alkaline batteries

Battery Life: 3000 times

Displayed Temperature Range: 22°C to 44°C (71.6°F to 111.2°F)

Display Resolution: 0.1°C / 0.1°F

Accuracy: Meet the accuracy requirement specified in ASTM E1965-98

- ±0.2°C (±0.4°F) for the range of 35°C to 42°C (95°F to 107.6°F)
- ±0.3°C (±0.5°F) for less than 35°C (42°F) and greater than 42°C (107.6°F)

Temperature Unit: °C (Default) or °F

System Operating Conditions: 10°C to 40°C (50°F to 104°F), 30% to 85% RH (non-condensing), 700 hPa to 1060 hPa

Storage / Transport Conditions: -20°C to 60°C (-4°F to 140°F), 30% to 85% RH (non-condensing)

Memory Capacity: 30 measurements

External Output: Bluetooth (ri-thermo® sensioPRO+ only); Frequency: 2.45GHz; Bandwidth: 170MHZ; Modulation: GFSK; ERP: 5.46 dBi

Expected Service Life: 3 years

IP Classification: IP22

REFERENCE STANDARDS

Device Standard:

Device Corresponds to the requirements of the standard for infrared thermometers. ASTM E1965-98, EN ISO 80601-2-56:2017, EN 60601-1-2:2015, EN 60601-1:2006+A12:2014, EN 60601-1-6:2010.

Electromagnetic Compatibility:

Device fulfills the stipulations of the standard EN 60601-1-2.

The stipulations of EU-Directive 93/42/EEC for Medical Devices Class lla have been fulfilled.

Manufacturer's declaration-electromagnetic emissions		
The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that it is used in such an environment.		
Emission test	**Compliance**	**Electromagnetic environment-guidance**
RF emissions CISPR 11	Group 1	The device 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 device 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	

Manufacturer's declaration-electromagnetic immunity			
The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device 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	Contact:±8 kV Air±2 kV,±4 kV,±8 kV,±15 kV	Contact:±8 kV Air±2 kV,±4 kV,±8 kV,±15 kV	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	± 2kV for power supply lines ± 1kV for input/output lines	Not applicable Not applicable	Mains power quality should be that of a typical home and professional environment.
Surge IEC 61000-4-5	± 0.5kV, ±1kV line(s) to line(s) ± 0.5kV, ±1kV,±2kV line(s) to earth	Not applicable Not applicable	Mains power quality should be that of a typical home and professional environment.
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	Voltage dips: 0 % UT; 0,5 cycle 0 % UT; 1 cycle 70 % UT; 25/30 cycles Voltage interruptions: 0 % UT; 250/300 cycle	Voltage dips: Not applicable Not applicable Not applicable Voltage interruptions: Not applicable	Mains power quality should be that of a typical home and professional environment. If the user of the device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery.
Power frequency(50, 60 Hz) magnetic field IEC 61000-4-8 U	30 A/m 50 Hz or 60 Hz	30 A/m 50 Hz and 60 Hz	The device power frequency magnetic fields should be at levels characteristic of a typical location in a typical home and professional healthcare environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			

Manufacturer's declaration-electromagnetic immunity

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

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Conducted RF IEC 61000-4-6	3 Vrms: 0,15 MHz – 80 MHz 6 Vrms: in ISM and amateur radio bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz	Not applicable Not applicable	Portable and mobile RF communications equipment should be used no closer to any part of the device including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Radiated RF IEC 61000-4-3	10 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz	10 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz	Recommended separation distance: $d = 1,2 \sqrt{P}$ $d = 1,2 \sqrt{P}$ 80MHz to 800 MHz $d = 2,3 \sqrt{P}$ 800MHz to 2,7 GHz 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). Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE1 At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE2 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 device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the device.
b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distance between portable and mobile RF communications equipment and the device

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

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.
NOTE1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Manufacturer's declaration-electromagnetic immunity
Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment

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

Test frequency (MHz)	Band [a] (MHz)	Service [a]	Modulation [b]	Maximum power (W)	Distance (m)	IMMUNITY TEST LEVEL (V/m)	Compliance LEVEL (V/m)
385	380 –390	TETRA 400	Pulse modulation [b] 18 Hz	1,8	0,3	27	27
450	430 – 470	GMRS 460, FRS 460	FM [c] ±5 kHz deviation 1 kHz sine	2	0,3	28	28
710	704 – 787	LTE Band 13, 17	Pulse modulation [b] 217 Hz	0,2	0,3	9	9
745							
780							
810	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation [b] 18 Hz	2	0,3	28	28
870							
930							
1 720	1 700 – 1 990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation [b] 217 Hz	2	0,3	28	28
1 845							
1 970							
2 450	2 400 – 2 570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation [b] 217 Hz	2	0,3	28	28
5 240	5 100 – 5 800	WLAN 802.11 a/n	Pulse modulation [b] 217 Hz	0,2	0,3	9	9
5 500							
5 785							

NOTE If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

a) For some services, only the uplink frequencies are included.
b) The carrier shall be modulated using a 50 % duty cycle square wave signal.
c) As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

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For further languages, please visit
https://riester.de/productdetails/d/ri-thermo-sensioPRO

Hardcopies are available on request.

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