

LINKTEMP[®]

Non-contact Infrared Thermometer

User Manual



Links Medical Products Inc.®

REF

LMP001

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Product Description

LinkTemp® is a professional grade thermometer that measures body (forehead), surface and room/ambient temperature instantly and accurately. The **LinkTemp** Non-contact Infrared Thermometer can be used as a non-invasive screening tool in a multi-patient environment.

Intended Use

LinkTemp is a non-contact, infrared thermometer intended to measure forehead temperature in a professional healthcare environment.

Product Features

- Infrared sensor accurately reads body temperature 1.2" to 2" (3 to 5 cm) from forehead
- Large, 2-color LCD with highly accurate 1/100 degree reading
- Stores the last 32 temperature readings
- Audible voice function (English & Spanish)
- Visual/audible alarm for high temperature readings
- Temperature displays in either Fahrenheit or Celsius
- Performs up to 100,000 readings

Safety Precautions

Follow the maintenance advice specified in this instruction manual.

- This device must only be used for the purposes described in this instruction manual.

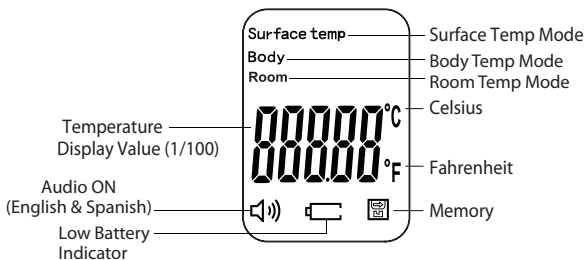
- This device must only be used in an ambient temperature range of between 50°F - 104°F (10°C - 40°C).
- Always keep device in a clean, dry area.
- Do not expose the thermometer to electric shocks.
- Do not expose the thermometer to extreme temperature conditions.
- Do not use this device in relative humidity higher than 85%.
- Do not touch the infrared sensor glass with your fingers.
- Clean the infrared sensor glass with a cotton swab lightly moistened with 90% isopropyl alcohol.
- Follow the manufacturer's recommended cleaning and disinfecting instructions.
- Do not expose the thermometer to sunlight or to water.
- Do not drop the thermometer.
- Do not attempt to repair this device yourself.
- The device is not suitable for use in the presence of flammable anesthetic mixtures with oxygen or nitrous oxide.
- The device does not require calibration.
- The device is not repairable and contains no user serviceable parts.
- Modification of the thermometer is prohibited and will invalidate the warranty.
- Remove batteries if thermometer will not be used for a long period of time.
- Check that the thermometer functions safely and is in proper working condition before each use.
- Contact the manufacturer for assistance or reporting.
- Keep the thermometer out of reach of children and pets.

The LinkTemp Non-contact Infrared Thermometer is pre-set at the factory.

It is not necessary to calibrate the device when starting it up. However, in order to obtain reliable results, you are advised to allow the thermometer to acclimate to room/ambient temperature for 15 to 20 minutes before using each time there is a significant change in environmental temperature. It is also important to allow a 3 to 5 second interval between measurements.

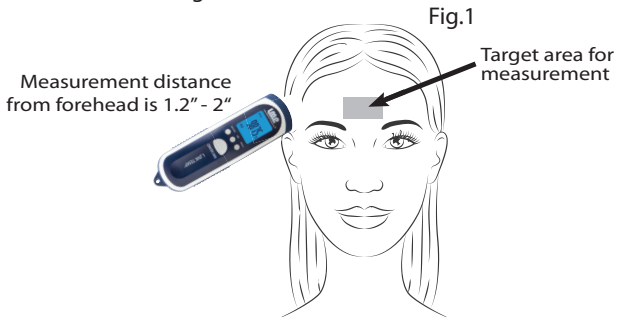
Using the Thermometer





Taking a Measurement

1. Press ON/SCAN button to power on the thermometer. When the device is ready, the LCD screen will turn blue.
2. Position the thermometer between 1.2" to 2" (3 to 5 cm) from the patient's forehead. (Fig.1)



NOTE: Move hair out of the way before taking a measurement.

NOTE: If the forehead area is or has been covered with sweat, makeup or a hat, first clean and dry the forehead area before taking a measurement.

3. Press ON/SCAN button to take measurement.
4. A measurement will be displayed on the LCD screen.
 - To repeat the process, return to step 2.
 - Allow 3 to 5 seconds between measurements.
5. The thermometer automatically turns off after 30 seconds of inactivity.

Temperature Mode

The **Link**Temp Non-contact Infrared Thermometer can take body, surface or room/ambient temperature.

1. While the thermometer is turned on, press the MODE button to toggle through the three temperature mode options - BODY, SURFACE or ROOM.

NOTE: When first using the thermometer, the default is set to BODY mode.

NOTE: Measurement ranges for each temperature mode are as follows:

BODY mode: 89.6°F to 109°F (32°C to 42.9°C)



SURFACE mode: 32°F to 140°F (0°C to 60°C)

ROOM mode: 32°F to 104°F (0°C to 40°C)

NOTE: Once the thermometer is powered on, the last temperature mode measured will default as the current temperature mode.

NOTE: Always use the BODY mode to measure core body temperature.

Temperature Unit

While the thermometer is turned on, press the MODE and the  buttons at the same time for 3 seconds, the screen will display F-1. Select the  button for Celsius and MODE button for Fahrenheit. Confirm by pressing MEM button. Then to exit the setting, press MEM button quickly two times.

NOTE: The **LinkTemp** Non-contact Infrared Thermometer default setting is Fahrenheit.



Viewing Data Memory

1. While the thermometer is turned on, press MEM button, which will display the last temperature reading.
2. Press MEM button again to see the next reading stored of the last 32 measurements taken.
3. To exit data memory mode, press ON/SCAN button to go to measurement mode or wait 30 seconds for thermometer to automatically turn off.

Deleting Data Memory

1. While the thermometer is turned on, press MEM button for 3 seconds to delete all data in memory.
2. When data memory is deleted you will see CLR on the screen.
3. To exit deleting data memory mode, press ON/SCAN button to go to measurement mode or wait 30 seconds for thermometer to automatically turn off.


Setting Alarm Temperature


1. While the thermometer is turned on, press the MODE and the  button at the same time for 3 seconds. The screen will display F-1.
2. Press the MEM button one additional time to get F-2. Select MODE button to add 0.1°F or 0.1°C. Select the  button to minus 0.1°F or 0.1°C.
3. Confirm by pressing MEM button.
4. Exit the setting by pressing MEM button again.

NOTE: For temperature unit Fahrenheit, the alarm range is 96.8°F to 109.2°F. If the temperature unit is Celsius, the alarm range is 36°C to 42.9°C.

NOTE: High temperature alarm default setting is 100.4°F (38°C).

Audio Setting

Press the  button to choose audio language type or to shut audio off.

1. While the thermometer is turned on, press the  button to toggle between English (EN), Spanish (SP) and audio off (OFF).
2. To exit audio setting, press ON/SCAN button to go to measurement mode or wait 30 seconds for thermometer to automatically turn off.

High Temperature Alarm

BODY mode


1. If the temperature taken is less than the setting alarm value, the buzzer sends out 1 sound and reports the current temperature in a blue backlit screen. When the temperature is more than or equal to the setting alarm value, the thermometer beeps 5 times and reads

the current temperature in a red backlit screen.


NOTE: High temperature alarm default setting is 100.4°F (38°C).

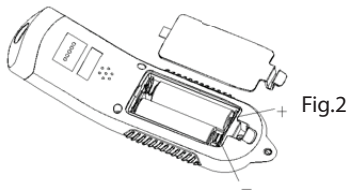
NOTE: When operating the thermometer in a room/ambient temperature less than 50°F (10°C) or more than 104°F (40°C), the BODY and SURFACE temp modes will display an ERR1 message and send out 2 sounds in a blue backlit screen.

Low Battery Detection

If the battery voltage is not more than 2.7V, the **LinkTemp** Non-contact Infrared Thermometer will display the flashed  symbol to remind you to replace both batteries.

Changing the Battery

The **LinkTemp** Non-contact Infrared Thermometer comes with 2 AA alkaline batteries. When the LCD screen displays , both batteries should be replaced. Open the lid on the underside of the thermometer and replace the batteries, taking great care with the correct battery positioning. (Fig.2)



Technical Specifications

Device Type	Non-contact infrared thermometer
Measurement Distance	1.2 to 2 inches (3 to 5 cm) from forehead
Measuring Range	Body temperature: 89.6°F to 109°F (32°C to 42.9°C) Surface temperature: 32°F to 140°F (0°C to 60°C) Ambient temperature: 32°F to 104°F (0°C to 40°C)
Display Type	Large, 2-color LCD with 1/100 degree reading
Display Resolution	0.1°F (0.1°C)
Accuracy	89.6°F to 94.8°F=±0.6°F (32°C to 34.9°C=±0.3°C) 95°F to 107.6°F=±0.4°F (35°C to 42°C=±0.2°C) 107.8°F to 109.2°F=±0.6°F (42.1°C to 42.9°C=±0.3°C)
Operating Temperature	50°F to 104°F (10°C to 40°C)
Operating Humidity	Up to 85% non condensing
Storage Temperature	-4°F to 131°F (-20°C to 55°C)
Storage Humidity	Up to 95% non condensing
Pressure Altitude	700 hPa - 1060 hPa
Consumption	≤ 450 mW
Memory	Stores last 32 readings
Automatic Power Off	30 seconds after last measurement
Batteries	2 AA batteries
Unit Weight	3.48 oz without batteries
Unit Size	6.81" x 2.05" x 1.77" (173 x 52 x 45 mm) in L x W x H
Warranty	18 months


NOTE: The **LinkTemp** Non-contact Infrared Thermometer can take temperature readings below 89.6°F or above 109.2°F (32°C or above 42.9°C) but precision is not guaranteed outside of this range.


NOTE: The **LinkTemp** Non-contact Infrared Thermometer was conceived for professional use and should provide approximately 100,000 readings.


Product Maintenance


- The infrared sensor is the most important and fragile part of the thermometer. Take care when using, storing or cleaning.
- Clean and/or disinfect the thermometer according to your facility's infection control protocol.
- Clean infrared sensor glass with cotton swab dampened with 90% isopropyl alcohol solution.
- Please dispose of batteries properly.
- Remove the battery when thermometer is not used for an extended period of time.
- Do not expose the thermometer to water or excessive sunlight.
- Any impact to the thermometer may damage the product.


Cleaning and Disinfecting Instructions

 CAUTION: Never submerge the thermometer in water or any other liquid.

 CAUTION: Never use abrasive cleaning agents, thinners or benzene for cleaning and never immerse the instrument in water or other cleaning liquids.

 CAUTION: Never insert a sharp object into the scanner area or any other open surface on the thermometer.

 CAUTION: Do not use unapproved cleaning or disinfection agents. Use of these agents may cause damage to components.

 CAUTION: Do not use chemicals other than isopropyl or ethyl alcohol on the lens.

Cleaning the Sensor Window

Periodically, slightly moisten a cotton swab or cloth with isopropyl (90% minimum) alcohol and gently wipe the surface of the lens using a side-to-side (not circular) motion. Avoid touching the lens except when cleaning is required.

Cleaning & Disinfecting the Thermometer

It is recommended to disinfect the **LinkTemp** thermometer prior to first use.

The **LinkTemp** thermometer is compatible with most common disinfection chemicals products. It can be subject to the following exposures with no degradation in safety or efficacy.

- 1/100 1% Bleach
- Alcohol prep pads

Disinfection should be carried out as per standard facility procedures. No special precautions or procedures are required for the **LinkTemp** thermometer.

If you have any questions, please contact our customer service department at (888) 425-1149.

Accessories Included

- User manual: 1 pc
- AA alkaline batteries: 2 pcs
- Lanyard: 1 pc
- Quick reference guide: 1 pc

Guidelines and Compliance

This device complies with the EU Directive 93/42/EEC concerning medical products, the ISO 80601-2-56 and the European Standard EN60601-1-2 and is subject to particular precautions with regard to electromagnetic compatibility.

Classification

1. Internally powered ME equipment
2. Type BF applied part
3. IP22
4. Continuous operation

Troubleshooting

If you have problems while using the **LinkTemp** Non-contact Infrared Thermometer, please refer to the following guide to help resolve the problem. If the problem persists, please contact our customer service department at (888) 425-1149.

1. The **LinkTemp** Non-contact Infrared Thermometer can display temperature in either Fahrenheit or in Celsius.

2. Under BODY mode:

- When the measured value is $< 89.6^{\circ}\text{F}$ (32°C), the thermometer beeps once and reads **Lo**.
- When the measured value is $\geq 89.6^{\circ}\text{F}$ (32°C) and $<$ the setting alarm temperature (factory default setting is 100.4°F (38°C)), the thermometer beeps and reads the temperature.
- When the measured value is \geq setting alarm temperature (factory default setting is 100.4°F (38°C)) and $\leq 109.2^{\circ}\text{F}$ (42.9°C), the thermometer beeps 5 times and reads the temperature in a red backlit screen.
- When the measured value is $> 109.2^{\circ}\text{F}$ (42.9°C), the thermometer beeps 5 times and reads **Hi**.

3. Under the SURFACE TEMP mode:









- When measured value is $< 32^{\circ}\text{F}$ (0°C), the thermometer beeps once and reads **Lo**.
- When the measured value is $\geq 32^{\circ}\text{F}$ (0°C) and $\leq 140^{\circ}$ (60°C), the thermometer beeps once and reads the temperature.
- When the measured value is $> 140^{\circ}\text{F}$ (60°C), the thermometer beeps once and reads **Hi**.

4. Under the ROOM mode:

- When measured value $< 32^{\circ}\text{F}$ (0°C), the thermometer beeps once and reads **Lo**.
- When the measured value $\geq 32^{\circ}\text{F}$ (0°C) and $\leq 104^{\circ}\text{F}$ (40°C), the thermometer beeps once and reads the temperature.
- When the measured value $> 104^{\circ}\text{F}$ (40°C), the thermometer beeps once and reads **Hi**.

Reasons for Lo message display	Advice
Temperature reading is hampered by hair or perspiration.	Make sure there is no obstruction or dampness prior to taking temperature.
Temperature hampered by an air draft or dramatic change in ambient temperature.	Make sure there is no air blowing in the area of use, this could affect the infrared reading.
Temperature readings are too close together and the thermometer did not have time to reboot.	Pause for 3-5 seconds minimum between two readings; a 5 second pause is recommended.
Measuring too far from the forehead.	Take measurements at the recommended distance of 1.2" to 2" (3 to 5 cm) from forehead.
Measuring after cold compress, taking medicine or bathing. The ambient temp < 30°F (0°C).	Make sure measuring environment temperature is higher than 32°F (0°C). If any of these apply, make sure to wait 30 minutes and test again.

Reasons for Hi message display	Advice
Temperature reading exceeds measurement range of 89.6°F to 109.2°F (32°C to 42.9°C).	Make sure there is no hot air blowing in the area of use. If necessary, immediately seek medical attention.
F2 value is set higher than desired.	Reset high alarm temperature setting closer to or at default value of 100.4°F (38°C).
The room/ambient temperature is above 104°F (40°C).	Make sure to operate thermometer between 50°F to 104°F (10°C to 40°C).
The surface temperature exceeds 140°F (60°C).	Temperature reading exceeds measurement range of 32°F to 140°F (0°C to 60°C).


Symbol	Reference
	IEC 60417-5333, Type BF applied part
	IEC 60417-5031 Direct current
IP22	IEC 60529 Ingress protection
	This device shall be disposed of in accordance with natural laws after its useful life.
	Consult Instructions for Use
	Keep dry
	Fragile
	Temperature limits
	Storage humidity limitation

Emc Declaration

Guidance and manufacturer's declaration – electromagnetic immunity			
The "LMP001" is intended for use in the electromagnetic environment specified below. The customer or the user of the "LMP001" should ensure that it is used in such an environment.nt.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered withsynthetic material, the relative humidityshould be at least 30 %.
Electrical fast transient/ burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/ output lines	Not Applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Not Applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions andvoltage variations on power supply input lines IEC 61000-4-11	<5 % UT (>95 % dip in UT) for 0,5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT) for 5 sec	Not Applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the "LMP001" requires continued operation during powermains interruptions, it is recommended that the "LMP001" be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercialor hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration – electromagnetic immunity

The “LMP001” is intended for use in the electromagnetic environment specified below. The customer or the user of the “LMP001” should ensure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the “LMP001”, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	Not Applicable	$d = \left[\frac{3.5}{V_1} \right] \sqrt{P}$ $d = \left[\frac{3.5}{E_1} \right] \sqrt{P}$ 80MHz to 800MHz $d = \left[\frac{7}{E_1} \right] \sqrt{P}$ 800MHz to 2.5 GHz
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	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). 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 Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.
 NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

- a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the “LMP001” is used exceeds the applicable RF compliance level above, the Medical LMP001 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the “LMP001”.
- b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the Medical LMP001

The “LMP001” is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Medical LMP001 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the “LMP001” 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	80 MHz to 800 MHz	800 MHz to 2,5 GHz
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

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer. NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

**THE MANUFACTURER RESERVES THE
RIGHT TO ALTER THE SPECIFICATIONS
OF THE PRODUCT WITHOUT PRIOR
NOTIFICATION.**



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