



ADC Adtemp 433 Non-Contact Infrared Body Thermometer Instruction Manual

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ADC Adtemp 433 Non-Contact Infrared Body Thermometer



A Special Thank You

Thank you for choosing the ADC® Adtemp™ 433 Non-Contact Thermometer. We're proud of the care and quality that goes into the manufacture of each and every item that bears our name. Only the finest materials are used to assure you of a timeless instrument designed for optimal performance.

You'll quickly appreciate the results, for you now own one of the finest non-contact thermometers that money can


















buy. With proper care and maintenance, your ADC Adtemp 433 is sure to provide you with many years of dependable service. The information and instructions that follow will allow you to make the most of your ADC product.

Please read this booklet thoroughly before attempting to use your new thermometer.

Thank you for your patronage.

It is indeed our pleasure to serve you.

Symbols

	WARNING: The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death.
	CAUTION: The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data.
	Refer to operating instructions
	Storage Temperature
	Storage Humidity
	This device complies with Part 15 of the FCC (Federal Communications Commission) rules
	Recyclable
IP22	Protected against solid foreign objects of 12.5mm diameter or greater. Protected against vertically falling water drops when the device is tilted up to 15°.
	Restriction of hazardous substances compliant
	Serial number
	Dispose of this device in accordance with local or national regulations
	Do not throw away. Intended for multiple use.
	Storage atmospheric pressure
	Manufacturer
	European authorized representative
	Indicator of measurement result
	Lot number
	Meets essential requirements of European Medical Device Directive 93/42EEC

INTRODUCTION / INTENDED USE

Intended use

The Adtemp Non-Contact Infrared Thermometer is a clinical-grade device intended for the intermittent measurement of human body temperature in people of all ages. It can also be used to measure the temperature of objects.

Please note, this manual refers to the person whose temperature is being measured as the “patient.” “Clinician” refers to the person taking the measurement.

GENERAL WARNINGS AND CAUTIONS

Warning and caution statements may appear on the thermometer, its packaging, shipping container, or in

this instruction manual.

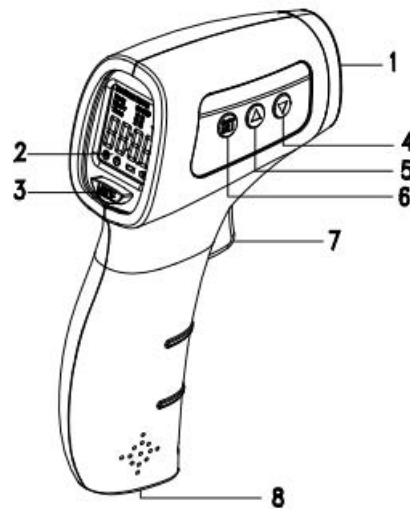
This thermometer is safe for patients and clinicians when used in accordance with the instructions and warning and caution statements included in this manual. Before using the thermometer, users must familiarize themselves with the general safety information included below. Specific warnings and cautions are also found throughout this manual.

- This product is designed to measure human body temperature at the forehead or the surface temperature of objects. Do not use it for any other purpose. Warning: Failure to review and adhere to the recommendations in this manual could result in personal injury or affect the accuracy of the thermometer itself.
- The infrared sensor can absorb heat from the measurement site, which may impact reading accuracy. For best results, please allow about five seconds between measurements.
- Keep this thermometer and its batteries out of the reach of children.
Do not allow children to take their temperature with this thermometer unattended.
- Dispose of this thermometer and its batteries in accordance with local or national regulations for electronic waste.
- When replacing the batteries, always replace both batteries and ensure that they are of the type and specification indicated in this manual. Observe the correct polarity when inserting new batteries.
- Do not use rechargeable batteries. The use of rechargeable batteries may compromise the performance of this device.
- Remove the batteries when the device will not be used for an extended period of time.
- If battery leakage occurs, fully clean the battery compartment using personal protective equipment prior to re-use.
- Observe proper measurement distance, starting between 5 cm to 15 cm (2" to 6") from the patient's forehead. This is essential for measurement accuracy.
- Do not modify or disassemble this device without prior authorization.
- Ensure the thermometer lens is clean and intact prior to use and after measurement is complete.
- Avoid touching the lens directly with your fingers.
- Do not expose the thermometer to extreme temperatures or humidity levels. Do not expose to direct sunlight.
- The thermometer is not waterproof; do not immerse in water or any other liquid.
- Avoid dropping the device or exposing it to heavy shock or vibration.
- Do not autoclave. Follow only the cleaning procedures described in this manual.
- Stop using this device if it operates erratically or if the display malfunctions.
- Contact ADC or your local ADC representative for any assistance with this device. Refer to the warranty section of this manual for contact details.
- When the ambient temperature of the thermometer changes too much, such as moving the thermometer from one place of lower temperature to another place of higher temperature, allow the thermometer to remain in a room for 30 minutes where the temperature is between 59°F to 104°F (15°C to 40°C).
- Wherever possible, take measurements at the same area of the forehead. Temperatures measured at different measurement sites (e.g., on the temples, on opposite sides of the head) can vary considerably.
- Head coverings that cover the forehead, perspiration, or hair may affect the accuracy of measurements.
- Avoid exposing the device to external heat sources or holding the thermometer for an extended period of time as this can impact accuracy. Do not point the thermometer directly at known heat sources other than the patient.
- If measuring human forehead temperature, select "body" mode; for measuring objects, select "surface" mode.
- Do not store or use near strong electrostatic or strong magnetic fields.

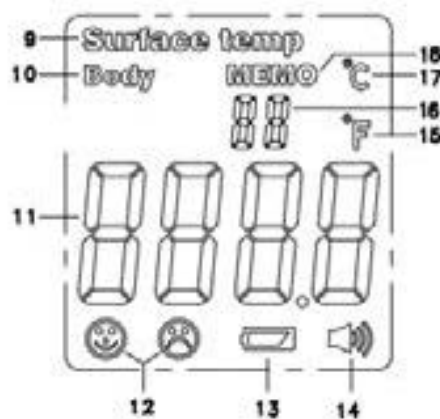
- This product is intended for use as a screening tool in the home, in small commercial or industrial settings (e.g., offices, factories, warehouses, restaurants, retail shops, movie theaters) and in medical settings.
- Avoid taking temperature measurements for at least 30 minutes after physical activity, bathing, swimming, consuming food or beverages, or spending time outdoors.
- If using for high-volume, rapid mass screenings, it is recommended that the unit be allowed to rest for up to 30 seconds

USING THE THERMOMETER

Controls and Features



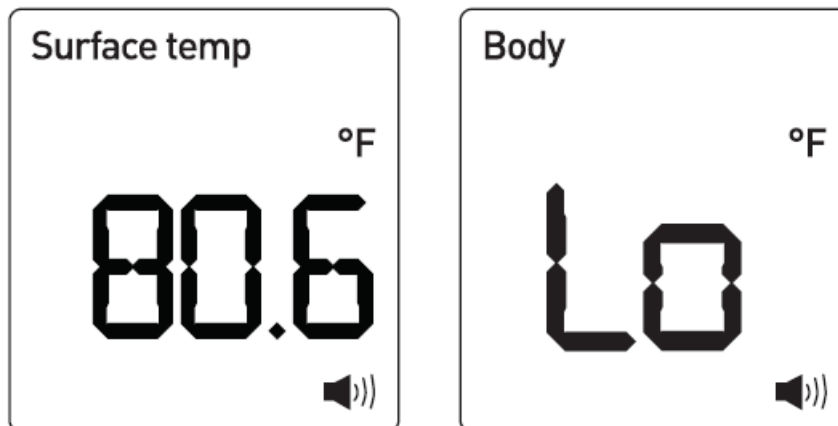
LCD Screen/Display



1. IR sensor
2. Liquid crystal display (LCD)
3. MODE button
4. Down Arrow button
5. Up Arrow button
6. SET button
7. On/Measure button
8. Battery cover
9. Surface mode
10. Body mode
11. Data indicator

12. Indicator of measurement result
13. Low-battery indicator
14. Volume on/off indicator
15. Fahrenheit
16. Memory number
17. Celsius
18. Memory indicator

Selecting a Scan Mode



With the power on, press the Mode button to switch between body mode and surface mode. Body mode is used for measuring human body temperature. Surface mode is used to measure an object's surface temperature. (The factory default is "body" mode.)

TAKING A MEASUREMENT

1. Turn on the thermometer by pressing the On/Measure button. The thermometer will perform a self-test with all segments displayed for two seconds, followed by three consecutive beeps. When ready to measure the display will look like this:
2. If needed, press the Mode button to change between body mode and surface mode.
3. Position the thermometer about 2" to 6" (5 cm to 15 cm) from the center of the patient's forehead with the sensor aimed between the eyebrows.
4. Press and release the On/Measure button to start measurement. The unit will beep once when the measurement is complete. The backlight color will display green, yellow, or red depending upon the reading obtained.

Green: $\leq 99.2^{\circ}\text{F}$ (37.3°C)

Yellow: 99.3°F to 100.5°F (37.4°C – 38.0°C)

Red: $\geq 100.6^{\circ}\text{F}$ (38.1°C)

Note:

- For best results, please allow about five seconds between measurements. If using for high-volume, rapid mass screenings, please allow a 30-second rest every five to ten measurements. These precautions will prevent the infrared sensor from absorbing heat from the measurement site, which can affect accuracy.
- If the patient's skin is covered with hair, perspiration, or dirt, clean the area and wait 10 minutes before taking a measurement.
- Ensure that the thermometer is held firmly during measurement and that the patient does not move until the

measurement is complete. Patient movement can impact the measurement.

MEMORY FUNCTION

The unit retains the last 50 readings. The newest reading will occupy memory cell 1, the oldest, memory cell 50.

To recall previous readings:

1. With the power off, press the up “▲” or down “▼” button to view the history of measured values. The display will indicate whether the reading was a body or surface temperature measurement.
2. An empty memory cell shows “—°C” or “—°F”.

Note: Once 50 measurements are in memory each new measurement will overwrite the oldest.

To delete readings from memory:

With the power on, press and hold the up “▲” or down “▼” button multifunction key until the display shows “CLR.” The device will sound a long beep, which means that all stored temperature readings have been cleared.

Note: All readings (body and surface) will be cleared when deleting readings from memory.

ADJUSTABLE SETTINGS

The Adtemp 433 has three adjustable settings:

F1 Temperature Scale F/C

1. With the instrument on, press the SET button until the display reads F1.
2. Press the up “▲” or down “▼” button to move between Celsius and Fahrenheit scale.
3. Press the SET button to confirm the new setting.

Please note: The factory default is Fahrenheit.

F2 Fever-Alert Threshold

The fever-alert threshold is the temperature at which the backlit display color turns red. The default fever alert is 100.6°F (38.1°C).

To change the threshold:

1. With the instrument on, press the SET button twice (until the display reads F2).
2. Press the down “▼” button to decrease by 0.2° F. Press the up “▲” button to increase 0.2° F.
3. Press the SET button to save.

F3 Silent Mode









Silent mode will keep the unit from beeping.

To turn silent mode on or off:

1. With the instrument on, press the SET button three times (until the display reads F3).
2. Press the down “▼” button or up “▲” button to toggle between on or off.
3. Once the desired mode is selected, press the SET button to save.

Factory Reset: Adjustable settings can be cleared by performing a factory reset. With the unit on, press and hold the MODE button until RES appears in the display. This will also clear any saved readings from memory.

TROUBLESHOOTING / ERROR MESSAGES

Display	Situation	Solution
<div>Body °F</div> 	Temperature taken is not within typical human temperature range. (93.2°F ~ 109.4°F or 34.0°C ~ 43.0°C)	Take measurement again.
<div>Body °F</div> 		
<div>Body °F</div> 	Measured over the distance 2-5.9 in (5-15 cm).	Move closer to patient.
	Hair, antipyretic stickers, perspiration, or dirt can interfere with measurement.	Clean measurement area.
<div>Body °F</div> 	Operating temperature exceeds the range of specified temperature.	Move to a room within operating range, wait 30 minutes before taking temperature.
	The screen flickered, and automatically turned off.	Replace battery or the product has been damaged, needs repair.
	Low battery indication.	Replace with new battery.
	Ambient temperature changes too fast.	Wait until the ambient temperature is stable.
	1. Power is off. 2. Improper battery installation. 3. The battery is exhausted. 4. Display remains blank.	1. Press ON button again. 2. Check the battery polarity. 3. Replace with new batteries. 4. Contact Customer Service.

MAINTENANCE

Replacing the Batteries

The thermometer comes with two 1.5V AAA (LR03) alkaline batteries. Replace with two new AAA (LR03) batteries when the low-battery symbol “ ” appears on the display. Ensure correct polarity as indicated inside the battery cover. Always replace both batteries at the same time. Remove batteries when the thermometer will not be used for an extended period of time.

Cleaning and Disinfecting

Use only a soft cloth to clean the surface of the device and LCD with 70% isopropyl (rubbing) alcohol. Do not use unapproved cleaning or disinfection agents. The use of these agents may cause damage to components.

Caution:

- Never use abrasive cleaning agents, thinners, benzene, or submerge the thermometer in water.
- Always keep the thermometer within the storage temperature range and humidity range.
- Never use water to wash the thermometer lens directly. Slightly moisten a cotton swab or cloth with isopropyl (rubbing) alcohol and gently wipe the surface of the lens. Caution: Never insert a sharp object into the scanner area or any other open surface on the thermometer.
- Avoid touching the lens except when cleaning is required.

Note: ADC is not responsible for validating alternative cleaning or disinfection processes outside of our facility. You should determine the requirements for personnel, equipment, and materials necessary to achieve your desired disinfection levels and may need to employ routine monitoring of your disinfection protocols within your facility. After cleaning or disinfecting, wait at least 10 minutes prior to taking another measurement.

CALIBRATION TESTING

This thermometer is calibrated at the time of manufacture. If the thermometer is operated in accordance with these instructions, periodic readjustment is not required. ADC recommends checking calibration on an annual basis or whenever the clinical accuracy of the thermometer is in question.

DISPOSAL

The thermometer contains no hazardous materials. Remove the batteries before disposal. Discard both thermometer and batteries in accordance with national or local regulations.

TECHNICAL SPECIFICATIONS

- **Measurement unit:** °F / °C
- **Operating mode:**
 - Adjusted mode (Body mode)
 - Direct mode (Surface mode)
- **Measuring site:** Forehead
- **Reference body site:** Axillary
- **Measurement range:**
 - Body mode: 93.2°F to 109.4°F and (42.9°C to 43.0°C)
 - Surface mode: 32.0°F to 212.0°F and (0°C to 100.0°C)
- **Accuracy:**
 - Body mode: 93.2°F to 94.8°F: ±0.5°F (34.0°C to 34.9°C:±0.3°C); 95.0°F to 107.6°F: ±0.4°F (35.0°C to 42.0°C: ±0.2°C); 107.8°F to 109.4°F: ±0.5°F (42.1°C to 43.0°C:±0.3°C)
 - Surface mode: ±3.6°F (±2°C)
- **Display resolution:** 0.1°F / 0.1°C
- **Three-color backlight:** 95.9°F to 99.2°F (35.5°C to 37.3°C):
 - (Color alarm)
 - Green** (Normal temperature)
 - 99.3°F to 100.5°F (37.4°C to 38.0°C):
 - Yellow** (Slight fever)
 - 100.6°F to 109.4°F (38.1°C to 43.0°C):
 - Red** (High fever)
- **Note:** Surface mode is always Green backlight.

- **Facial indication:**

Happy Face: 95.9°F to 99.2°F (35.5°C to 37.3°C)

Sad Face: 99.3°F to 109.4°F (37.4°C to 43.0°C)

- **Auto power off time:** ≤18 seconds
- **Measuring time:** 2 seconds
- **Measuring distance:** 2in – 5.9in (5cm – 15cm)
- **Memory:** 50

Power Supply Requirements

- **Batteries:** 1.5V (AAA) Alkaline battery (x2) (IEC Type LR03)
- **Battery life:** 2,000 measurements
- **Adaptable range:** 2.6V~3.6V
- **Environmental Operating condition:**
Operating temperature: 59°F to 104°F (15°C to 40°C)
Relative humidity: 85%,
Atmospheric pressure: 70 Kpa – 106 Kpa
- **Transport/Storage condition:**
Storage temperature: -4°F to 131°F (-20°C to 55°C)
Relative humidity: 93%,
Atmospheric pressure: 70 Kpa – 106 Kpa
- **Dimension and Weight Weight:** .26 lbs (116g) (without batteries)
- **Size:** 5.9" L x 3.7" W x 1.7" H (150mm x 95mm x 44mm)
- **Compliance Item:** Safety standards: EN 60601-1: 2006+A1:2013, EN 60601-1-1-2: 2015
- **Type of protection:** Internally powered equipment (on battery power)
- **Degree of protection:** Non applied part
- **Front panel and case labeling:** EN ISO 15223-1:2016
- **Temperature:** EN ISO 80601-2-56:2017
- **Home healthcare environment:** EN ISO 60601-1-11:2015

Safety classification of ME equipment

- **Protection against electric shock:** Internally powered ME equipment
- **Applied part:** Non applied part
- **Protection against harmful ingress of water or particulate matter:** IP22
- **Mode of operation:** Continuous operation

NOTE: Not intended to be sterilized. Not for use in an oxygen rich environment.

GUIDANCE AND MANUFACTURER'S DECLARATION

Guidance and manufacture's declaration – electromagnetic emission

The Infrared Body Thermometer is intended for use in the electromagnetic environment specified below.

The customer or the user of the Infrared Body Thermometer should assure that it is used in such an environment.

Anti-interference detection	IEC 60601 test level	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	Contact: +8 KV Air: +2,+4,+8,+15 KV	Contact: +8 KV Air: +2,+4,+8,+15 KV
Surge IEC 61000-4-5	Input power ports: +0.5, +1.0 KV Signal input/output: +2.0 KV	Not applicable
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Not applicable
Voltage dips IEC 61000-4-11	0.5 cycles for > 95% (sync angle (degrees): 0, 45, 90, 135, 180, 225, 270, 315) 1 cycles for >95% UT (sync angle (degrees): 0) 25 (50Hz)/30 (60Hz) cycles for 30% UT (sync angle (degrees): 0)	Not applicable
Voltage interruption IEC 61000-4-11	250 (50Hz)/300 (60Hz) cycles for >95% UT (sync angle (degrees): 0)	
Power frequency (50Hz / 60Hz) magnetic field IEC 61000-4-8	30A/m	30A/m

NOTE: UT is the a.c. mains voltage prior to application of the test level.

Guidance and manufacture's declaration – electromagnetic emission

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Immunity Test	IEC 60601 test level	Compliance level
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	Not applicable
Radiated RF IEC 61000-4-3	Professional healthcare environment: 3 V/m home Healthcare environment: 10 V/m 80 MHz to 2700 MHz	Professional healthcare environment: 3 V/m home Healthcare environment: 10 V/m 80 MHz to 2700 MHz

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 Non Contact Infrared Body Thermometer is used exceeds the applicable RF compliance level above, the Non Contact Infrared Body Thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Non Contact Infrared Body Thermometer.

b) Over the frequency range 150 kHz to 80 MHz, Field strength should be less than 3 V/m.

Guidance and manufacture's declaration – electromagnetic emission	
<p>The Infrared Body Thermometer is intended for use in the electromagnetic environment specified below.</p> <p>The customer or the user of the Infrared Body Thermometer should assure that it is used in such an environment.</p>	
Emission test	Compliance
RF emissions CISPR 11	Group 1
RF emission CISPR 11	Class B
Harmonic emissions IEC 61000-3-2	Not applicable
Voltage Fluctuations/flicker emissions	Not applicable
IEC 61000-3-3	

Guidance and manufacture's declaration – RF wireless communication equipment immunity						
Frequency Test (MHz)	Band a) (MHz)	Service a)	Modulation b)	Maximum power (W)	Distance (m)	IMMUNITY Po TEST LEVEL (V/m)
385	380-390	TETRA 400	Pulse modulation b) 18 Hz	1,8	0,3	27
450	430-470	GMRS 460, FRS 460	FMc) 5 kHz standard deviation 1 kHz sinusoidal	2	0,3	28
710						

745	704-787	Band LTE 13, 17	Pulse modulation b) 217 Hz	0,2	0,3	9
780						
810	800-960	GSM 800/900; TETRA 800; IDEN 820; CDMA 850; Band LTE 5	Pulse modulation b) 18 Hz	2	0,3	28
870						
930						
1720	1700-1990	GSM 1800; CDMA 1900; GSM 1900; DECT; Band LTE 1, 3, 4, 25; UMTS	Pulse modulation b) 217 Hz	2	0,3	28
1845						
1970						
2450	2400-2570	Bluetooth, Wireless LAN, 802.11 b / g / n , RFID 2450, LTE Band 7	Pulse modulation b) 217 Hz	2	0,3	28
5240		Local network				

5500	5100-5800	k 802.11 year wireless	Pulse modulation b) 217 Hz	0,2	0,3	9
5785						

a) Some services include only uplink frequencies.

b) The carrier wave should be modulated using a 50% duty cycle square wave modulated.

c) As an alternative to frequency modulation, 50% pulse modulation at 18 Hz can be used because, although it does not represent actual modulation, it would be the worst option.

WARRANTY

This thermometer is guaranteed for a period of two years from the date of purchase. This warranty does not cover batteries or damage resulting from improper handling or use. Specific legal rights stipulated in your state may guide this warranty. If you have a legitimate claim under this warranty, send item(s) postage paid to ADC Attn: Repair Dept., 55 Commerce Dr., Hauppauge, NY 11788. Please include your name and address, phone no., proof of purchase, and a brief note explaining the problem.

Implied Warranty: Any implied warranty shall be limited in duration to the terms of this warranty and in no case beyond the original selling price (except where prohibited by law). This warranty gives you specific legal rights and you may have other rights which vary from state to state.

For Australian Consumers: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

CONTACT INFORMATION

To register your product visit us at www.adctoday.com/register

This manual is available online in a variety of languages, follow the links for language options.

www.adctoday.com/care

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Documents / Resources

 <p>ADC® Adtemp™ 433 Non-Contact Infrared Body Thermometer</p> <p>Instructions for Use</p>	<p>ADC Adtemp 433 Non-Contact Infrared Body Thermometer [pdf] Instruction Manual</p> <p>Adtemp 433 Non-Contact Infrared Body Thermometer</p>
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References

- [ADC American Diagnostic Corporation - Core Medical Device Manufacturer. Stethoscopes, Blood Pressure, Thermometry, and EENT](#)
- [ADC American Diagnostic Corporation - Core Medical Device Manufacturer. Stethoscopes, Blood Pressure, Thermometry, and EENT](#)
- [ADC Warranty Registration | American Diagnostic Corporation](#)