ADC® Adtemp™ Non-Contact Infrared Thermometer

Instruction Manual



PLEASE NOTE:
THIS MEDICAL INSTRUMENT MUST BE USED ACCORDING TO INSTRUCTIONS TO ENSURE ACCURATE READINGS.

Questions?
Call ADC toll free at 1-800-232-2670

AMERICAN DIAGNOSTIC CORPORATION

A Special Thank You...

Thank you for choosing an ADC® Adtemp™ 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 optimum performance.

You'll quickly appreciate the results, for you now own one of the finest non-contact thermometers available.

With proper care and maintenance, your ADC Adtemp thermometer is sure to provide you with many years of dependable service. Please read the following instructions and general information which will prove helpful in allowing you to enjoy your ADC product.

Read this booklet thoroughly before attempting to use your new ADC Adtemp thermometer.

Thank you for your patronage.

Sincerely,
American Diagnostic Corp.

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Adtemp™ 429 - Instruction Manual

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1. Symbols

Documentation 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 instruction manual/booklet
CE 2797	Meets essential requirements of European Medical Device Directive 93/42/EEC.

Shipping, Storing, and Environment Symbols

	Temperature Limits
	Keep dry
	**Electronic Waste:** Dispose of this device in accordance with local or national regulations
	Fragile
	Humidity Limitation
IP22	Protected against solid foreign objects of 12.5mm diameter or greater. Protected against vertically falling water drops when the device is titled up to 15°.

Miscellaneous Symbols

	Manufacturer
REF	Product identifier
EU REP	Authorized representative in the European Union
GTIN	Global trade identification number
SN	Serial number
MD	Medical device

Miscellaneous Symbols

	Type BF applied part

Battery Level Indications

	Low battery - thermometer can still be used
	Low battery - the batteries must be replaced before further operation

2. Introduction / Intended Use

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

3. General Warnings and Cautions 

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

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

- **Failure to understand and observe any warning statement in this manual could lead to patient illness, injury, or death.**
- **Failure to understand and observe any caution statement in this manual could lead to damage to the thermometer or other property, damage to the surrounding environment, or loss of patient data.**
- **High, prolonged fever requires immediate medical attention, especially for young children.**

Warning: Failure to follow the recommendations in this manual may result in personal injury or inaccurate measurements.

Warning: If the accuracy of any measurement is in question or the use of this thermometer is not appropriate due to patient condition, check the patient's temperature with an alternate method and then check to verify the device is functioning properly by comparing it against a calibrated reference device.

Warning: Keep this thermometer and its batteries out of the reach of children. Do not allow children to take their temperature with this thermometer unattended.

Warning: Dispose of this thermometer and its batteries in accordance with local or national regulations for electronic waste.

Caution: When replacing the batteries, always replace both batteries and ensure that they are of the type and specification indicated in this manual. Observe correct polarity when inserting new batteries.

Caution: Do not use rechargeable batteries. The use of rechargeable batteries may compromise the performance of this device.

Caution: Remove the batteries whenever the device is not expected to be used for an extended period of time.

Caution: If battery leakage occurs, fully clean the battery compartment using personal protective equipment prior to re-use.

Caution: Observe proper measurement distance, starting between 4 and 6 cm from the patient's forehead. This is essential to the accuracy of the measurement.

Caution: Do not modify or disassemble this device in any way without prior authorization.

Caution: To avoid accuracy concerns, make sure that the thermometer's lens is clean and intact prior to use and after measurement is complete.

Caution: Avoid touching the lens directly with your fingers.

Caution: Do not expose the thermometer to extreme temperatures or humidity levels.

Caution: Do not expose to direct sunlight.

Caution: The thermometer is not waterproof; do not immerse in water or any other liquid.

Caution: Avoid dropping the device or exposing it to heavy shock or vibration.

Caution: Do not autoclave. Follow only the cleaning procedures described in this manual.

Caution: Stop using this device if it operates erratically or if the display malfunctions.

Caution: Contact ADC or your local ADC representative for any assistance with this device. Refer to the warranty section of this manual for contact details.

Caution: Allow 30 minutes for both patient and thermometer to become accustomed to existing environmental conditions prior to measurement.

Caution: Wherever possible, measurements should be taken by pointing the infrared sensor at the same area of the forehead. Temperatures measured at different measurement sites on the temples, on opposite sides of the head, or on different body parts can vary considerably.

Caution: Avoid taking temperature measurements for at least 30 minutes after physical activity, bathing, swimming, consuming food or beverages, or spending time outdoors.

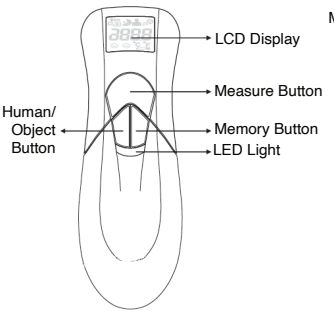
Caution: Wait at least 1 minute between temperature measurements. Repeating measurements more often may compromise the accuracy of the readings.

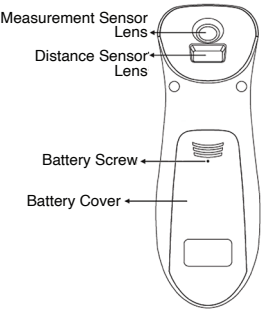
Caution: When taking patient temperature, avoid pointing the infrared sensor at any heat source other than the patient. When using in object mode, be sure to point sensor directly at the object being measured.

Caution: Holding the thermometer for an excessive period of time or exposing the device to external heat sources may result in distorted temperature readings.

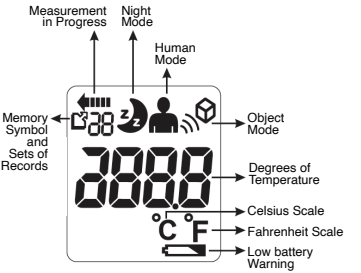
4. Using the Thermometer

4a. Controls and Features



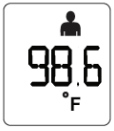


4b. LED Screen/Display



4c. Selecting a Scan Mode

With the power on, press the Human/Object button to switch between scan modes. There are 4 modes available, including Human, Object, Human/Night, and Object/Night mode (in order). The thermometer's volume will be muted in both Human/Night mode and Object/Night mode, and the Moon symbol will appear on the LCD in both Night modes.



Human Mode



Object Mode



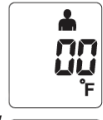
Human Mode & Night Mode

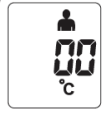


Object Mode & Night Mode

Note: Each press of the Human/Object button is accompanied by a beep sound to confirm that the setting is activated (excluding Night modes).

4d. Changing the Temperature Scale





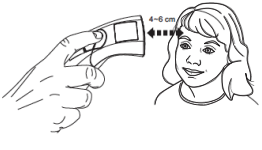
The Adtemp 429 Non Contact Thermometer can display readings in either Fahrenheit (F) or Celsius (C). The default temperature scale is Fahrenheit. To change the scale to Celsius, power the device on, then press and hold the **Human/Object** and **Memory** buttons simultaneously for 1 second. Pressing these buttons again will change the scale back to Fahrenheit.
Note: Removing the batteries will reset the scale to the default setting.

5. Taking a Measurement

1. Press and release the **Measure** button to power on the thermometer The unit will run a self-test and the LCD will briefly display all of its symbols during this time. When the device is ready, '00' will appear on the screen, and the thermometer will beep twice.

2. Select the desired mode by pressing and releasing the Human/Object button.
   Note: When taking a patient's temperature, ensure that the thermometer is in Human mode; the Human symbol will appear on the display. Refer to Section 4c for instructions on selecting a different scan mode.

3. Position the thermometer about 2 inches (5 cm) from the center of the patient's forehead with the sensor aimed between the eyebrows.



Note: If the patient's skin is covered with hair, sweat, or dirt, clean the area and wait 10 minutes before taking a measurement.

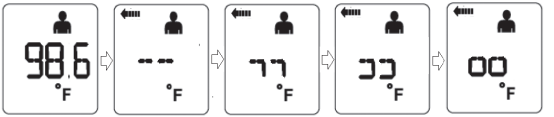
Note: Ensure that the thermometer is held firmly during measurement and that the patient does not move until the measurement is complete. Patient movement can impact the measurement.

4. Press and release the **Measure** button, making sure not to obstruct your view of the LED display or the button area.

5. Slowly move the device toward the patient's forehead. The unit will beep continuously and a series of dash icons forming two circles will rotate on the display. Once the correct distance is reached (about 1 inch or 3 cm), an amber light will flash just below the **Mode** and **Memory** buttons. The unit will emit a short beep (except in Night mode), and the backlit display will illuminate when the measurement is complete.



Note: If the distance of the thermometer is too far from or too close to the patient's forehead, the dash icons will continue to rotate and the unit will beep (except in Night mode) UNTIL the correct distance is obtained. Once the **Measure** button is pressed and released, you will have 20 seconds to obtain a temperature reading. After 20 seconds the unit returns to standby mode.



6. To repeat the process, return to step 2.

7. The thermometer automatically turns off (with a single beep) after 30 seconds of inactivity.

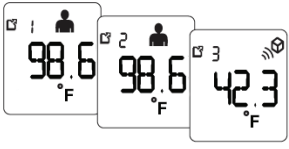
Note: The device cannot be turned off manually.

6. Memory Function

The unit retains the last 30 readings.

To recall previous readings:

1. Press the **Measure** button to power the unit on.
2. Briefly press and release the **Memory** button then press again to display the last measurement accompanied by the 1 symbol.



Note: The Human or Object symbols will be displayed to indicate the measurement mode that was in use for the displayed reading in memory.

3. Each press of the **Memory** button will display a previous measurement (up to 30).

To delete readings from memory:

1. Press the **Measure** button to power the unit on.
2. Press and hold the **Memory** Button for at least 3 seconds to delete all the readings.
3. The LCD displays "--" and the device beeps to confirm all the memories are cleared.



Note: Once 30 measurements are in memory each new measurement will overwrite the oldest.

Note: All the readings (Human and Object) will be cleared when deleting readings from memory.

7. Troubleshooting/Error Messages

LCD Display	Cause	Solution
	The temperature measured is higher than: 1. Human Mode: **122°F (50°C)** 2. Object Mode: **212°F (100°C)**	Take the measurement again. Follow the steps in Section 5. If necessary, clean the sensor lens.
	The temperature measured is lower than: 1. Human Mode : **50°F (10°C)** 2. Object Mode : **32°F (0°C)**	In the event of a repeated error message, contact your retailer or ADC's Customer Service line at: 1-800-ADC-2670
	The operating temperature is outside the allowable range: **60.8°F to 95°F** **(16°C to 35°C)**	Operate the thermometer only between the specified temperature ranges. In the event of a repeated error message, contact your retailer or ADC's Customer Service line at: 1-800-ADC-2670

8. Maintenance

8a. Replacing the Batteries

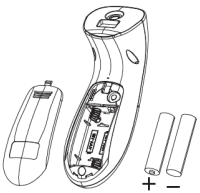
The thermometer comes with two 1.5V AAA (LR03) alkaline batteries. Replace with two new AAA (LR03) batteries when the low-battery symbol "  " appears on the display.

The thermometer can continue to be used with the low-battery symbol displayed but the batteries should be replaced as soon as possible.

If the batteries are completely depleted, “Lo” will be displayed along with the low battery symbol.



1. Use a Phillips head screwdriver to loosen battery cover screw. Remove cover.
2. Remove the batteries.
3. Insert two AAA (or equivalent) batteries, correctly positioned with positive “+” and negative “-” as shown in illustration.
4. Place the battery cover on the thermometer and tighten the screw to secure it in place.



Note: Remove the batteries before storing the thermometer for an extended period of time.

8b. Cleaning and Disinfecting

The thermometer can be cleaned and an intermediate-level of disinfection can be achieved using the following method.

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.

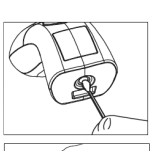
CAUTION: Never insert a sharp object into the scanner area or any other open surface on the thermometer.

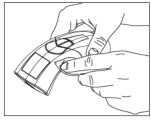
CAUTION: Do not use unapproved cleaning or disinfection agents. Use of these agents may cause damage to components.

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

Cleaning the lenses:

Never use water to clean the thermometer lens directly. Slightly moisten a cotton swab or cloth with isopropyl or ethyl alcohol and gently wipe the lens surface. Wipe from side to side rather than in a circular motion to avoid pushing debris on the center of the sensor. Avoid touching the lens except when cleaning is required.





Note: ADC is not responsible for validating the cleaning or disinfection protocols used on this device outside of ADC's manufacturing site. 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.

9. 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 clinical accuracy of the thermometer is in question.

Recommendations for calibration do not supersede any legal obligations that you may have in relation to this equipment. Please consult applicable local or national laws in the place of use to ensure that the requirements for the control of the measurement, functionality, and accuracy of the device are maintained for your specific uses.

10. Disposal

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



Battery:
Dispose of empty batteries in accordance with national or local regulations.

11. Technical Specifications

Type: Non-Contact Infrared Thermometer

Measuring Range:	
Human Mode:	50°F ~ 122°F (10°C ~ 50°C)
Object Mode:	32°F ~ 212°F (0°C ~ 100°C)
Calibration Accuracy:	
Human Mode:	71.6°F ~ 104°F ±0.5°F (22°C ~ 40°C) ±0.3°C
Object Mode:	≤ 68°F ± 1°F (≤ 20°C ± 1°C) ≥ 68°F ± 5% (≥ 20°C ± 5%)
Display Resolution:	0.1°F (0.1°C)
Operating Environment:	60.8°F ~ 104°F (16°C ~ 40°C) with relative humidity up to 95% (non condensing)
Storage/Transportation Environment:	-4°F ~ 122°F (-20°C ~ 50°C) with relative humidity up to 95% (non condensing)
Power Supply:	Two 1.5 V AAA alkaline batteries
Weight:	3oz. (87g) including batteries
Dimensions:	2.06 x 1.75 x 5 in (52.4 x 44.5 x 129.9 mm)
Operation Distance:	Approximately 1.57 - 2.36 in 4 ~ 6 cm (±1 cm)
Auto Shut-Off:	After 30 seconds of inactivity
Battery Life:	2,000-2,500 measurements

12. Standards

ASTM E1965-98
EN 12470-5
MDD (93/42/EEC) Annex II

13. Guidance and Manufacturer's Declaration

The 429 IR Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the 429 Thermometer should assure that it is used in such an environment.		
Emissions Test	Compliance	Electronic environment guidance
RF emissions CISPR 11	Group 1	The 429 IR Thermometer 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 429 IR Thermometer is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	N/A	
Voltage Fluctuations/ flicker emissions IEC 61000-3-3	N/A	

Guidance and Manufacturer's Declaration Electromagnetic emissions

The 429 IR Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the 429 Thermometer should assure that it is used in such an environment.			
Immunity Test	IEC 60601 Test level	Compliance	Electronic environment guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6kV contact ±8kV air	±6kV contact ±8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Power Frequency (50/60 Hz) magnetic field IEC 61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Guidance and Manufacturer's Declaration Electromagnetic emissions

The 429 IR Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the 429 IR thermometer must make sure it is used in such an environment.

Guidance and manufacturer's declaration - Electromagnetic emissions

Phenomenon	Professional healthcare facility environment a)	Home Healthcare environment a)
Conducted and radiated RF EMISSIONS	a)	CISPR 11 Group 1 Class B
Harmonic distortion	Not applicable	
Voltage fluctuations and flickering	Not applicable	

a) The equipment is suitable for use in Home Health Environments and Professional Health Care Environments limited to patient rooms and respiratory treatment facilities in hospitals or clinics. The more restrictive acceptance limits of Group 1 Class B (CISPR 11) have been considered and applied. The equipment is suitable for use in the mentioned environments when directly connected to the Public Mains Network.
b) The test is not applicable in this environment unless the ME EQUIPMENT and ME SYSTEM used will be connected to the PUBLIC MAINS NETWORK and the power input is otherwise within the scope of the Basic EMC standard.

Guidance and manufacturer's declaration - Electromagnetic immunity - Enclosure port

Phenomenon	Basic EMC standard or test method	Immunity test levels	
		Professional healthcare facility environment	HOME HEALTHCARE ENVIRONMENT
ELECTROSTATIC DISCHARGE	IEC 61000-4-2	± 8 kV contact ± 2 kV, ±4 kV ±, ±8 kV, ±15 kV air	
Radiated RF EM fields	IEC 61000-4-3	a)	10 V/m b) 80MHz - 2.7 GHz 80% AM at 1kHz
Proximity fields from RF wireless communications equipment	IEC 61000-4-3	COMPLIANT NOTE: Further information about distances to be maintained between portable and mobile RF communications equipment (transmitters) and the 429 IR can be requested from ADC using the contact information provided in this manual. However, it is advisable to keep the electromechanical aerosol equipment at an adequate distance of, at least 0.5 m from mobile phones or other RF communications transmitters to minimize possible interference.	
RATED power frequency magnetic fields	IEC 61000-4-8	30 A/m c) 50 Hz or 60 Hz	

a) The equipment is suitable for use in Home Health Environments and Professional Health Care Environments limited to patient rooms and respiratory treatment facilities in hospital or clinics. The more restrictive IMMUNITY acceptance limits have been considered and applied.
b) Before modulation is applied.
c) This test level assumes a minimum distance of at least 15 cm between the ME EQUIPMENT or ME SYSTEM and source of power frequency magnetic fields.

Recommended separation distances between portable and mobile RF communications equipment and the 429 IR Thermometer

The 429 IR Thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the 429 IR Thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the 429 IR Thermometer 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		
	150 kHz to 80 MHz d=1.2 P	80 MHz to 800 MHz d=1.2 P	800 MHz to 2.5 GHz d=2.3 P
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	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.

14. Warranty

This thermometer is warranted for two years from the date of purchase.

To Obtain Warranty Service: 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.

15. Contact Information

To register your product, visit:
www.adctoday.com/register

This manual is available online in multiple languages.
Follow the links for language options at:
www.adctoday.com/care

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