

## Instructions for Use

**EXERGEN**  
TemporalScanner™  
Temporal Artery Thermometer

Home Models:  
TAT-2000CI SmartGlow  
TAT-2000CI Original

# The #1 Thermometer

In Proven Accuracy:  
By more than 70 published clinical studies

Used and Recommended by Millions of Doctors and Nurses

Exergen TemporalScanners are relied upon daily in thousands of hospitals and clinics, taking over a billion fast, accurate, non-invasive temperatures per year. More clinical studies support the accuracy of Exergen TemporalScanners than any other thermometer.

Safe, & Easy to Use

Remember to remove protective cap and read instruction manual completely before using.

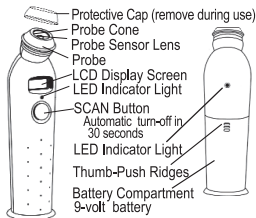


**Questions:**  
Temporalscanner.com  
medical@exergen.com  
1-800-422-3006

Clinical studies, multiple language videos, & user manuals: exergen.com/s

Clinically proven accuracy for all ages

## Familiarize Yourself with the Instrument



**To Scan:** Depress the button. The instrument will continually scan for the highest temperature (peak) as long as the button is depressed. **Beeping and LED flashing:** Beep and LED flashing indicate a rise to a higher temperature, similar to a radar detector. Slow beeping indicates that the instrument is still scanning, but not finding any higher temperatures. **Retain Reading:** The reading will remain on the display for 30 seconds after the button is released. **To Restart:** Depress the button to restart. It is not necessary to wait until the display is clear, the thermometer will immediately begin a new scan each time the button is depressed and held depressed.

## Quick Start Instructions

Your thermometer is the home version of the professional TemporalScanner used in thousands of hospitals and doctors' offices, and is used the same way as doctors and nurses use the professional model. As a technologically advanced instrument it must be used correctly. Please follow the instructions below and read the user manual carefully.

### Installing the Battery

1. Locate the battery compartment at the back of the thermometer.
2. Face the top of the thermometer toward you and place your thumb on the ridges.
3. Press down firmly and slide the cover away from you, toward the bottom of the thermometer.
4. Insert a 9-volt battery with the positive (small) terminal on the right.
5. Slide the battery compartment cover back into place.

### Taking a Temperature

1. Remove protective cap.
2. Hold thermometer so that thumb or index finger is positioned over the SCAN button (DO NOT depress until step four).
3. Place the probe flush (flat) on the center of forehead.
4. Press and hold the SCAN button.
5. Lightly slide thermometer either left or right from the center of forehead to the hairline, keeping the sensor flat and in contact with the skin for the entire scan (2-3 seconds). You will hear beeping and a red light will flash during the scan. This is normal, indicating that a measurement is taking place.
6. Release the SCAN button and remove the thermometer from head once you reach hairline.
7. Read the temperature on display.

### If perspiration is present on forehead:

1. Press and hold the SCAN button.
2. Place the probe on the neck just behind the ear lobe.
3. Release the SCAN button and remove the thermometer to get a reading.

**When not in use:** Thermometer will shut off automatically after 30 seconds. To turn off immediately press and release the SCAN button quickly. Always replace the cap to protect the sensor when not in use.



## Important Safety Instructions

### READ ALL INSTRUCTIONS BEFORE USING

When using the product, especially when children are present, basic safety precautions should always be followed, including the following:

- This product is intended for household use only. For information on thermometers for professional use, please see www.exergen.com, or call 617-923-9900.
- Use this product only for its intended use as described in this manual.
- Use of this product is not intended as a substitute for consultation with your physician.
- Do not take temperature over scar tissue, open sores or abrasions.
- Basic safety precautions should always be observed, especially when this product is used by, on or near children or invalids.
- The operating environmental temperature range for this product is 60 to 104°F (15.5 to 40°C).
- Always store this thermometer in a clean, dry place where it will not become excessively cold (-4°F/-20°C), or hot (122°F/50°C).
- The thermometer is not shockproof. Do not drop it or expose it to shocks.
- This thermometer is not intended to be sterile. Do not try to sterilize it. Follow the cleaning instructions as described in this manual.
- Do not use this thermometer if it is not working properly, if it has been exposed to temperature extremes, damaged, been subject to electrical shocks or immersed in water.
- There are no parts that you can service yourself except for the battery, which you should replace when low following the instructions in this manual. For service, examination, repair, or adjustments, return your thermometer to Exergen.
- Do not operate where aerosol spray products are being used or where oxygen is being administered.
- Do not take temperatures with this thermometer near places that are very hot, such as fireplaces and stoves.
- Do not use this thermometer outdoors.
- Never drop or insert any object into any opening.
- If your thermometer will not be used regularly, remove the battery to prevent possible damage due to chemical leakage. If the battery leaks, remove carefully. Do not allow bare skin to touch leaking fluid.
- Dispose of used batteries properly. Do not wrap them in metal or aluminum foil. Wrap them in newspaper before disposing of them. Do not burn them. Battery may explode if overheated.

## Scanning the Temporal Artery (TA)

**Measure only the side of the head exposed to the environment.** Anything covering the area to be measured (hair, hat, wig, bandages) would insulate the area, resulting in falsely high readings. **Slide the thermometer straight across the forehead, not down the side of the face.** Midline on the forehead, the TA is about a millimeter below the skin, whereas at the side of the face, the TA is much deeper, and measuring there would result in falsely low readings. **When taking the temperature behind the ear** (if there is perspiration on the forehead), first push away any hair, exposing the area. Then, tuck the thermometer on the neck below the ear lobe, in the soft conical depression, (the place where perfume might be applied). **Wait about 60 seconds before measuring the same person again** to avoid excessive cooling of the skin. **An infant is frequently swaddled in blankets** and clothing covering the neck area. Unless visibly sweaty, one measurement at the TA area is typically all that is required. Should you feel the temperature is low, then push aside any clothing or blankets covering the neck area for ~30 seconds or so, and repeat the measurement on the neck behind the ear. **Factors that may affect measurement accuracy:** The patented Arterial Heat Balance (AHB) technology in your TemporalScanner actually makes two separate measurements (1) the temperature of the skin over the temporal artery, and (2) the temperature of the room. To determine the most accurate reading, it measures skin temperatures some 1000 times a second as you sweep the TemporalScanner across the forehead. The AHB system then calculates how much the blood has cooled down during its journey from the heart to the skin over the temporal artery and makes allowance for this in the temperature it displays. The result is a highly accurate reading - delivered extremely fast and with no discomfort.

### Are there environmental effects?

As part of its Arterial Heat Balance system, the TemporalScanner measures the temperature of the surrounding environment. For this measurement to be accurate, it needs to have become acclimatized to the temperature of the room in which it is to be used. If it is taken from a cold room into a hot room, or vice versa, allow it to acclimate for at least 30 minutes before using it. Avoid holding the TemporalScanner by the head, as it will mistake the temperature of your hand for that of the room.

## SmartGlow Features-SmartGlow Model

- **Soft Glow Display:** Soft lighting for easy reading in any light. Perfect for checking the temperature of a sleeping infant (or adult) in a darkened room.
- **Eight Temperature Memory:** Automatically retains the last 8 temperature readings for instant recall to check on fever progression.
- **Programmable Beeper:** Beeping sound indicating scanning can be turned off or on to avoid waking a sleeping child (or adult). The flashing LED facing the forehead while scanning turns off when the beeper is turned off.
- **Programmable °F or °C:** Select most convenient temperature scale.
- **Elegant** one-button programming and memory access.



## SmartGlow: Eight Temperature Memory Mode

In memory mode, a small **M** will appear on the display with memory location (**1, 2, 3, 4, 5, 6, 7, 8**) and the memory location will alternate with the temperature stored in that location. The most recent temperature is stored in location 1 and the earliest temperature is stored in location 8. A display of **188.8** means that no temperature reading is stored in that memory location. Readings already in the memory when you first use it are from the factory tests.

1. To enter memory recall mode, start from a blank display, and tap the button, **1M** will appear and alternate with the temperature stored in that memory location.
2. To access previously stored readings, tap the power button again. **2M** will alternate with the temperature in that memory location. Repeat through **8M** to access all recent memory readings.
3. To exit memory recall mode and take a temperature, press and hold the button for 1-2 seconds until the display turns off.

## SmartGlow: Turn the Audible Beeper OFF or ON

Your TemporalScanner is equipped with a beeper and front/back flashing LED's which gives you a soft audible and visual feedback as you scan over the temporal artery on the forehead. The original factory setting is with the beeper and LED's ON.

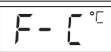
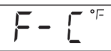
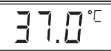
If the beeper is on and you are concerned that the sound or flashing LED may wake a sleeping child (or adult), the beeper and front LED can be turned off as follows:

1. Starting with a blank display, tap the power button until the display flashes loud, (tap 10 times, past the 8 memory locations and the F-C display)
2. Press and hold the button until **Shh** is displayed, indicating the quiet mode. A beep will indicate that the setting has been changed, and the TemporalScanner will automatically shut off.
3. To turn the beeper and front LED back on, repeat step 1 to find **Shh** then step 2 to change into **loud**.

The TemporalScanner will automatically shut off 30 seconds after the last button press, from any mode of operation. The TemporalScanner must be OFF (blank screen) before taking a temperature. The TemporalScanner can be turned off from any programming mode by pressing and holding the button for 3 seconds.

## Selecting °F or °C Mode-SmartGlow Model

1. Starting from a blank display tap the button until the flashing **F-C** appears after the 8 memory locations (9 taps). The current temperature mode will appear in the upper right indicated by the small **°F** or **°C**. The factory setting is **°F**.
2. To change from the **°F** to the **°C** mode, press and hold button until the small **°F** in the upper right of the display changes to **°C**. A beep will indicate that the setting has been changed, and the TemporalScanner will automatically shut off.
3. To change from the **°C** to the **°F** mode, repeat step 2, and press and hold the button until the small **°C** in the upper right of the display changes to **°F**.

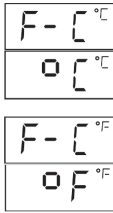




## Selecting °F or °C Mode - *Original* Model

The factory setting is °F. If you wish to change it to °C, follow the steps below:

1. Take a temperature. While the temperature is displayed, tap the button three times rapidly. A flashing **F - C** alternating with **°C** will appear. This indicates that the mode has changed to °C.
2. Take a new temperature. You will see that it is displaying in the °C mode, and the small upper right indication is °C.
3. To change from the °C mode to the °F mode, repeat steps 1 and 2.



## Frequently Asked Questions

### Why take temperature measurements at the skin surface over the temporal artery?

The best place to measure temperature is the center of the heart, but this can be done only under a doctor's supervision. Doctors know that measurement of the blood temperature in a major artery accurately reflects true body temperature. The TemporalScanner Thermometer is designed to measure the temperature of the skin surface over the temporal artery, a major artery of the head. The temporal artery is connected to the heart via the carotid artery, directly leading from the aorta, the main trunk of the arterial system. It offers constant blood flow. It is the only such artery positioned close enough to the skin surface to provide the access needed to take an accurate measurement. It is easy to use because it is ideally located at the front portion of the forehead. The TemporalScanner is easier and gentler to use than other types of measurement devices such as oral, rectal, underarm and in-ear thermometers because it is truly non-invasive.

**What is the correct technique?** When you use the TemporalScanner, make sure to start with a blank screen, then keeping the button depressed, touch the center of the forehead and scan horizontally in a straight line over to the hairline, before releasing the button. Do not curve down to the temple or you could miss the important part of the temporal artery which is up in the forehead and naturally trapped between the skin and the skull, so is never too deep. At the temple, the artery can go deep, even on an infant, and will not provide the correct temperature.

**Why am I getting low readings? Smudgy/dirty lens:** The most common reason for low readings is a smudgy/dirty lens. To resolve, an alcohol dampened Q-tip should be twirled directly on the lens every 2-3 weeks. Like a camera or eyeglasses, the TemporalScanner uses optical technology. In the case of the scanner, the infrared sensor (which is behind the lens) must "see" the heat in order to measure it. If you have had the TemporalScanner a little while, it might just need a lens cleaning. Make sure you use a Q-tip or generic cotton tipped stick applicator, not a twisted paper towel or tissue. Following the alcohol cleaning, let the scanner recover from the coldness of the alcohol for about 5 minutes before using it again. The little lens should be cleaned as follows below:

1. Dampen the Q-Tip with either an alcohol prep/swab, or dip the Q-Tip in a little alcohol, but do not use the alcohol prep/swab to clean the lens as it will not provide the leverage needed.
2. Twirl the Q-Tip directly on the little lens deep in the center of the probehead.
3. This preventive maintenance should be routinely done (every few weeks).
4. Following the alcohol cleaning, wait about five minutes to let the infrared sensor behind the little lens recover from the coldness of the alcohol cleaning.



**Sweat will cause low temperature readings:** If the individual is sweaty, the effect of evaporative cooling on the forehead will result in low temperatures when using the scanner. However, sweat is a sign the fever has broken and, as a result, the temperature is rapidly falling back to normal. If sweaty, wait until the forehead has dried before taking a temperature. Wiping the forehead will not work. However, when the individual is just beginning to sweat, taking the temperature in the little soft depression on the neck just below the earlobe will work since we sweat last on the neck. But if both forehead and neck are wet/moist, wait until the sweating has subsided before taking a temp.



**Why do the readings differ from rectal temperature?** Unlike rectal temperature, the TemporalScanner identifies a change in temperature immediately, since it is measuring the heat from the blood coming directly from the heart (a true core temperature). Even on an infant, when temperature is changing, it can take 60-90 minutes for rectal temperature to identify the change, and considerably longer on older children and adults.

**Why am I getting a high reading?** The TemporalScanner is measuring a core temperature. Like a rectal temperature, temperature taken with the TemporalScanner, on average, will be about a degree Fahrenheit higher than an oral temperature. With the exception of an infant up to about 6 months, the TemporalScanner, on average, will be about two degrees higher than an axillary (under the arm) temperature. Temperature on an infant up to about 6 months will be about the same as an axillary and rectal temperature as the infant's body temperature is close to being uniform regardless of where the temperature is taken.

**Should I believe my hand or the TemporalScanner?** Touching the forehead is just not an accurate method (although we all do it). Many studies have proven that the hand (or a kiss on the forehead) will be correct 98% of the time when there is no fever, but wrong half of the time when the individual actually has a fever. The reason is that body heat is released or retained to keep our body temperature in the normal range. This contributes to the erroneous assessment as felt by the hand or lips. The core body temperature stays normal by the release of heat (like opening the windows when the house is too hot) or by retention of the heat (closing the windows when the house is too cold).

### Why do I get a different reading with each scan?

Multiple scans in rapid succession will change the temperature of the skin and result in variability of the readings. It is important to wait a full minute before repeating the scan to allow the skin over the temporal artery to recover from the cooler temperature of the probe head. The probe head is at room temperature and about 30 degrees lower than body temperature.

## Display Messages

	A flickering <b>Scn</b> on display is visible during measurement. At completion, releasing the button will display and lock temperature on the screen for 30 seconds.
	The target temperature measured is higher than 107.6°F (42°C).
	The target temperature measured is lower than 60°F (15.5°C).
	Temperature of the thermometer is higher than 104°F (40°C). Let the instrument acclimatize for about 30 minutes in a cooler area in which it will be used.
	The temperature of the thermometer is lower than 60°F (15.5°C). Let instrument acclimatize for about 30 minutes in a warmer area in which it will be used.
	EMI/RFI (like static on a radio) protection is preventing a temperature from being taken. Wait a minute and you should be able to proceed. If not, reset by removing and replacing the battery. Be sure battery is tightly connected. Call Customer Service if error message reappears.
	Blinking battery icon with temperature displayed: battery is low but will still operate correctly. Replace soon. Blinking battery icon with 2 dashes: not enough energy in the battery to measure correct temperature. Replace battery.

## Maintenance

The TemporalScanner is an optical instrument. Like a camera or eyeglasses, a dirty lens will distort the view. If the thermometer is unable to see the heat clearly, it will be unable to measure it accurately, resulting in low readings.

Probe lens and cone should be shiny clean. If not, wipe the silver cone with a small cloth moistened with alcohol. Lens should be cleaned with an alcohol dampened Q-tip. Hold upside-down to prevent excess moisture from entering the sensor area. It will not harm the sensor, but if it becomes too wet, you will be unable to take a temperature until it dries.

Thermometer case can be cleaned with a clean cloth with alcohol. Avoid gritty, abrasive cleaners as they can scratch the thermometer.

Do not hold the TemporalScanner under the faucet or submerge in water. It is not water-proof.

## Specifications

**Clinical Accuracy:** Meets ASTM E1965-98 and EN60601-1 standards for electronic and radiation thermometers to the extent applicable to thermometers which measure the surface of the skin over the temporal artery. **EMI/RFI Protection:** Error message displayed. **Calibration Protection:** Error message displayed. **Temperature Range:** 15.5 to 42°C (60 to 107.6°F). **Operating Environment:** 15.5 to 40°C (60 to 104°F). **Resolution:** 0.1°C or °F. **Response Time:** Approximately 0.04 second. **Time Displayed on Screen:** 30 seconds before automatic shutdown. **Battery Life:** Approximately 1000-5000 readings depending on 9V battery type. **Size:** 7.0 in x 1.75 in x 1.25 in (17.8 cm x 4.45 cm x 3.18 cm). **Weight:** 4.5 oz (130 grams) including battery. **Display Type:** High contrast LCD. **Construction Method:** Impact resistant casing, hermetically sealed sensing system. **Storage Range:** -4°F to 122°F (-20°C to 50°C). **Laboratory Error:** ASTM laboratory accuracy requirements in the display range of 37° to 39°C (98 to 102° F) for IR thermometers is +/-0.2°C (+/-0.4°F) whereas for mercury-in-glass and electronic thermometers, the requirement per ASTM standards E667-86 and E1112 is +/-0.1°C (+/-0.2°F). Full responsibility for this product meeting applicable portions of this standard is assumed by Exergen Corporation, Watertown, MA 02472. **Patents:** Listed at [www.exergen.com/patents](http://www.exergen.com/patents).

## Five and Three Year Warranty

Exergen Corporation warrants each new Exergen TemporalScanner against defects in materials or workmanship for a period of **5 years for the TAT-2000C/SmartGlow and 3 years for the TAT-2000C/Original**, from the date of purchase, and agrees to repair or replace any defective product without charge. **IMPORTANT:** This warranty does not cover damage resulting from accident, misuse or abuse, lack of reasonable care, the affixing of any attachment not provided with the product or loss of parts or subjecting the product to any but the specified battery.\* Use of unauthorized replacement parts will void this warranty. Exergen Corporation will not pay for warranty service performed by a non-authorized repair service and will not reimburse the customer for damage resulting from warranty service performed by a non-authorized repair service. No responsibility is assumed for any special, incidental or consequential damages. For warranty service, call Exergen Corporation Customer Service, 800-422-3006 or email [RMA@exergen.com](mailto:RMA@exergen.com) for a Return Material Authorization number (RMA). Then send the product, postage or shipping prepaid, to Exergen in accordance with the instructions given with the RMA number. **NOTE:** No other warranty, written or verbal, is authorized by Exergen Corporation. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion and limitations may not apply to you.\*Read enclosed instructions carefully.

## Used and Recommended by Millions of Doctors and Nurses



This symbol on the product's nameplate means it is listed by Underwriters Laboratories, Inc.

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**EXERGEN** Corporation  
400 Pleasant Street, Watertown, MA 02472 USA  
Tel 617-923-9900 Fax 617-923-9911  
[medical@exergen.com](mailto:medical@exergen.com), [www.exergen.com](http://www.exergen.com)