Operation and Service Manual

Thermomètre électronique infrarouge auriculaire
— Manuel d’utilisation et d’entretien
Elektronisches Infrarot-Ohrthermometer
— Gebrauchs- und Wartungsanweisung
Termometro elettronico timpanico a infrarossi
— Manuale operativo e di assistenza
Termómetro timpanico electrónico infrarrojo
— Manual de operación y servicio
Infrarød elektronisk ørthermometer
— Användar- och servicemanual
Infrarode tympane elektronische thermometer
— Handleiding voor bediening en onderhoud
Termómetro Auricular Electrónico por Infra-Vermelhos
— Manual de funcionamento e assistência
Tympaaninen sähkökäyttöinen infrapunalämpömittari
— Käyttö- ja huolto-opas
Infrarødt, elektronisk, tympanisk termometer
— Betjenings- og servicehåndbog
Elektroniczny termodrmetr bębdkowy na podczerwień
— Instrukcja obsługi i serwisowania
Kızılötesi Timpanik Elektronik Termometre
— Kullanım ve Servis Kilavuzu
Infrarødt, elektronisk øretermometer
— Bruker- og vedlikeholdshåndbok
<table>
<thead>
<tr>
<th>Section I — Introduction</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Set Up</td>
<td>1</td>
</tr>
<tr>
<td>Section II — General Information</td>
<td>1</td>
</tr>
<tr>
<td>Features</td>
<td>1</td>
</tr>
<tr>
<td>Section III — Important Precautions</td>
<td>1</td>
</tr>
<tr>
<td>Section IV — Icon Identification</td>
<td>2</td>
</tr>
<tr>
<td>Section V — Instructions for Use</td>
<td>3</td>
</tr>
<tr>
<td>Peak Select System™</td>
<td>3</td>
</tr>
<tr>
<td>Equivalence Modes</td>
<td>3</td>
</tr>
<tr>
<td>Probe Covers</td>
<td>4</td>
</tr>
<tr>
<td>Temperature Measurement</td>
<td>4</td>
</tr>
<tr>
<td>Temperature Recall</td>
<td>5</td>
</tr>
<tr>
<td>Temperature Display - Toggle</td>
<td>5</td>
</tr>
<tr>
<td>Sleep Mode</td>
<td>5</td>
</tr>
<tr>
<td>Pulse Timer Mode</td>
<td>6</td>
</tr>
<tr>
<td>Thermometer Display Icons and Alarms</td>
<td>6</td>
</tr>
<tr>
<td>Biotech Mode</td>
<td>7</td>
</tr>
<tr>
<td>Section VI — Preventative Maintenance</td>
<td>9</td>
</tr>
<tr>
<td>Section VII — Cleaning</td>
<td>9</td>
</tr>
<tr>
<td>Section VIII — Battery Replacement</td>
<td>9</td>
</tr>
<tr>
<td>Section IX — Mounting Instructions</td>
<td>9</td>
</tr>
<tr>
<td>Section X — Troubleshooting</td>
<td>10</td>
</tr>
<tr>
<td>Section XI — Specifications</td>
<td>10</td>
</tr>
<tr>
<td>Section XII — Customer Service</td>
<td>12</td>
</tr>
<tr>
<td>Section XIII — Warranty</td>
<td>13</td>
</tr>
</tbody>
</table>

This product contains software solely owned by Tyco. Tyco grants the user a non-exclusive, limited license to use the software according to the operating instructions. A copy of the license can be obtained from Tyco.
Section I — Introduction

This operator’s manual was prepared for the operator of the GENIUS 2 Infrared Tympanic Electronic Thermometer. This manual contains instructions for use, precautions, and available maintenance and service information. To achieve satisfactory results, the operator must read this manual thoroughly before attempting to use the thermometer.

Initial Set Up

- Unpack the GENIUS 2 Infrared Tympanic Electronic Thermometer and examine it for structural integrity.
- If using the wall or cart mount options (sold separately) for the base unit, consult the installation sheet provided with the respective system.
- When first used, the GENIUS 2 Thermometer will show the factory preset settings: ear mode (EAR) and the celsius scale (°C).

Section II — General Information

The GENIUS 2 Infrared Tympanic Electronic Thermometer is a fast, accurate, and convenient clinical instrument for measuring patient temperatures. The GENIUS 2 Thermometer is an ear canal thermometer with measurement site equivalence modes including oral, axillary, core, and rectal equivalent temperatures. The equivalence modes are explained further in Section V, Instructions for Use.

Features

- Very fast temperature acquisition that meets CEN and ASTM standards - see Section XI.
- Peak Select System
- Temperature measurement range of 33.0°C to 42.0°C (91.4°F to 107.6°F).
- After a temperature has been acquired, the °C/°F button alternates the displayed temperature between °C and °F.
- Audible and visual indication of completed temperature acquisition.
- Disposable single use probe covers aid in the prevention of a cross contamination of infectious diseases.
- Low and dead battery indicators.
- “Sleep” mode stores the last temperature and conserves battery life.
- 15, 30, 45, and 60 second pulse timer functions.
- The thermometer housing can be wiped clean with common cleaning agents. See Section VII, Cleaning for instructions.
- Base unit protects the thermometer tip and stores probe covers for easy access.
- Easy to read LCD display with icons.
- Unit is designed for ambidextrous use.
- Improved probe design to allow ease of use on the pediatric population.

Section III — Important Precautions

- The GENIUS 2 Infrared Tympanic Electronic Thermometer is a precision optical instrument. For reliable and trouble free operation, handle carefully and do not drop.
- Read the operator’s manual thoroughly before using the GENIUS 2 Thermometer.
- Prior to use, ensure that the probe tip is clean and clear of any material. If the thermometer tip becomes soiled, gently clean with a lens wipe or lint free swab. The tip should appear shiny and free of fingerprints and/or debris.
• Always install a new probe cover prior to taking a temperature. The probe cover membrane should be smooth with no holes, tears, or wrinkles.

• The thermometer was designed to be used only with GENIUS 2 Thermometer probe covers. Use of probe covers manufactured by any company other than Tyco Healthcare/Kendall may result in erroneous readings.

• Ensure that the probe tip seals the ear canal prior to taking a temperature. Failing to seal the ear canal will result in a loss of accuracy.

• When not in use, the GENIUS 2 Thermometer should be placed in the thermometer base unit.

• The GENIUS 2 Thermometer should not be used on patients with ear drainage, blood, cerebrospinal fluid, vernix, ear wax plugs, or foreign bodies in the ear canal.

• Patients with removable hearing aids should remove the device at least 10 minutes prior to ear temperature assessment. Implanted devices generally do not affect ear temperature.

• Pressure equalization (PE) or tympanostomy tubes will not adversely affect accuracy. For patient comfort, wait one week after surgery before using GENIUS 2 Thermometer.

• When assessing patient temperatures during cold weather conditions, allow the patient to equilibrate to room temperature before use.

• Excessive eardrum scarring may cause lowered temperature readings.

• Under normal conditions, ear wax does not affect accuracy. However, cerumen plugs or impactions containing debris can lower the temperature measurement by several tenths of a degree.

• Always wait at least two minutes before taking another measurement in the same ear.

• Used probe covers must be treated as infectious biological waste and disposed of in accordance with current medical practices and local regulations.

• Lithium or alkaline batteries must be disposed of in accordance with local environmental and institutional policies.

• Expired or old equipment must be disposed of in accordance with institutional policy.

### Section IV — Icon Identification

- **Eject Button**
  - European Union’s Waste Electrical and Electric Equipment (WEEE) Directive in accordance with European Standard EN 50419

- **°C/°F Button**
  - Type BF Protection (Degree of protection against electrical shock - there is no conductive connection to the patient)

- **Timer Button**
  - Medical Electrical Equipment
  - GENIUS 2 Infrared Tympanic Electronic Thermometer
    1. Classified with respect to electrical shock, fire and mechanical hazards in accordance with UL60601-1
    2. Classified with respect to electrical shock, fire, mechanical and other specified hazards in accordance with CAN/CSA C22.2 No. 601.1

- **Scan Button**

- **See Accompanying Documents**
  - Choking Hazard
The GENIUS 2 Infrared Tympanic Electronic Thermometer is a reliable and accurate temperature-taking device. The reason for the accuracy of the GENIUS 2 Thermometer is the design, controlled calibration methods and stringent manufacturing controls. One of the most critical functional parts of a thermometer is the ACCUSYSTEM√ probe cover produced by Tyco Healthcare/Kendall. The GENIUS 2 Thermometer ACCUSYSTEM√ probe cover, when placed on a GENIUS 2 Thermometer, serves as an infection control barrier between the patient and the device and the medium for heat transmission from the patient to the thermometer. The functionality of the GENIUS 2 Thermometer ACCUSYSTEM√ probe cover is extremely important for preventing device contamination and also for allowing accurate patient temperature measurements.

The reason the GENIUS 2 Infrared Tympanic Electronic Thermometer and GENIUS 2 Thermometer ACCUSYSTEM√ probe covers have satisfied our customers’ expectations is due to the integration of these two parts during the manufacturing process. The GENIUS 2 Thermometer ACCUSYSTEM√ probe cover molding process parameters are tightly controlled at Tyco Healthcare/Kendall to minimize variation and produce consistent and reliable products. The special grades of thermoplastic materials are also tightly controlled and are specifically chosen to deliver consistent temperature measurements with GENIUS 2 Thermometers. The factory calibration and final determination of an acceptable GENIUS 2 Thermometer is dependent on the use of acceptable Tyco Healthcare/Kendall. GENIUS 2 Thermometer ACCUSYSTEM√ probe covers. The use of generic probe covers or other probe covers not produced by Tyco Healthcare/Kendall is not supported or sanctioned by Tyco Healthcare/Kendall. The use of unauthorized GENIUS 2 Thermometer probe covers could jeopardize the accuracy of the GENIUS 2 Thermometer. Check your probe cover carton for the ACCUSYSTEM√ logo to be certain that your thermometer will deliver an accurate temperature every time it is utilized.

Section V — Instructions for Use

Peak Select System

The GENIUS 2 Thermometer uses the patented Peak Select System. This system is well known from our GENIUS Thermometer. It reduces technique errors by taking multiple readings and automatically selecting the most accurate temperature for display. Whereas the GENIUS only used 32 readings for Peak Select, the new and improved GENIUS 2 Thermometer uses 100 readings.

Equivalence Modes

GENIUS 2 Infrared Tympanic Electronic Thermometer is an ear canal thermometer for neonates**, newborns, children, and adults.

Prior to the introduction of tympanic thermometry, patient temperatures were measured in the mouth (oral), in the rectum (rectal), under the arm (axillary), or in special cases with an indwelling Swan-Ganz™ catheter (core). If a patient’s temperature was measured simultaneously with each of these methods, different absolute temperatures would be obtained. The GENIUS 2 Thermometer compensates for the average difference in temperature at each of these sites by adjusting the displayed temperature.

A field calibration checker is available for this device. The device should be checked if it is dropped or if it is stored at less than -25°C or above 55°C.

“ASTM laboratory accuracy requirements in the display range of 37 to 39°C (98 to 102°F) for Infrared thermometers is ± 0.2°C (± 0.4°F), whereas for mercury-in-glass and electronic thermometers, the requirement per ASTM Standards E 667-86 and E 1112-86 is ± 0.1°C (± 0.2°F).”
The following equivalence modes are available on the GENIUS 2 Infrared Tympanic Electronic Thermometer. Data is available from Tyco Healthcare/Kendall on request.

**Ear:** In ear (EAR) mode, the display will indicate the absolute temperature without adjustment.

**Oral:** In oral (ORL) mode, the tympanic temperature is adjusted to display an oral temperature equivalent. Oral Mode = Ear Mode + 0.60°C.

**Axillary:** In axillary (AX) mode, the tympanic temperature is adjusted to display an axillary temperature equivalent. Axillary Mode = Ear Mode + 0.04°C.

**Core:** In core (CORE) mode, the tympanic temperature is adjusted to display the core temperature equivalent. Core Mode = Ear Mode + 1.04°C.

**Rectal:** In rectal (REC) mode, the tympanic temperature is adjusted to display the rectal temperature equivalent. Rectal Mode = Ear Mode + 1.16°C.

**Probe Covers**

The GENIUS 2 Thermometer utilizes a single use disposable probe cover during temperature measurement. The probe cover was designed especially for use with the GENIUS 2 Thermometer. The use of probe covers produced by any company except Tyco Healthcare/Kendall will result in erroneous temperature measurement. In order to aid in infection prevention and control, always install a new probe cover prior to taking a temperature. The probe covers are contained in a cassette that is located in the thermometer base. To load a probe cover on the thermometer, firmly insert the probe tip into the probe cover. When installed on the thermometer, the probe cover membrane should be smooth with no holes, tears, or wrinkles. After the patient temperature has been taken, eject the probe cover by pressing the eject button and then dispose of properly.

**Temperature Measurement**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Remove the GENIUS 2 Thermometer from the base.</td>
</tr>
<tr>
<td>2.</td>
<td>Inspect the probe lens. If any debris is present, clean the probe tip per the directions in Section VII, Cleaning. If the probe tip is clean, proceed to step 3.</td>
</tr>
<tr>
<td>3.</td>
<td>Install a probe cover by firmly inserting the probe tip into a probe cover. After the probe cover is installed, the thermometer will perform a system reset. The thermometer will then display dashes, the equivalence mode, and the thermometer icon.</td>
</tr>
<tr>
<td>4.</td>
<td>Inspect the probe cover to make sure it is fully seated (no space between cover and tip base) and no holes, tears, or wrinkles are present in the plastic film.</td>
</tr>
</tbody>
</table>
5. Place the probe in the ear canal and seal the opening with the probe tip. For consistent results, ensure that the probe shaft is aligned with the ear canal.

6. Press and release the scan button.

7. Remove the probe from the ear as soon as the triple beep is heard.

8. The patient temperature and the probe eject icons will be displayed.

9. Press the eject button to eject the probe cover.

10. Return the thermometer to base for storage.

**Temperature Recall**

After a temperature has been acquired, the thermometer will enter “off” mode after approximately 10 seconds. The temperature can be recalled by pressing and releasing the scan button or by pressing and holding the °C/°F button.

**Temperature Display - Toggle °C or °F**

When a temperature is in the display, the user may press and hold the °C/°F button to toggle between degrees Celsius and degrees Fahrenheit.

**Sleep Mode**

The GENIUS 2 Thermometer enters sleep mode after 30-40 seconds of non-use. To wake up the thermometer, eject the attached probe cover and/or install a new probe cover. This energy conserving function optimizes battery life.
Pulse Timer Mode

1. Press and hold the timer button to enter Timer mode. Press again to start the timer. The timer will run from 0 to 60 seconds.
2. The thermometer will issue a single beep at 15 seconds, a dual beep at 30 seconds, a triple beep at 45 seconds, and four beeps at 60 seconds.
3. Pressing the timer button at any point during the timer function will return the thermometer to “off” mode.
4. At the end of the 60 seconds, the thermometer will wait two seconds and then enter sleep mode.
5. Return the thermometer to base for storage.

Thermometer Display Icons and Alarms

Thermometer operation is communicated to the user via the LCD display and an audible device contained inside the thermometer case. After the probe cover is installed or the batteries have been changed, the thermometer will perform a system reset. The thermometer will perform an internal test to verify that the system components are functioning properly.

<table>
<thead>
<tr>
<th>Alarm Condition</th>
<th>Display Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient temperature above specified range</td>
<td></td>
</tr>
<tr>
<td>Patient temperature below specified range</td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature above specified range</td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature below specified range</td>
<td></td>
</tr>
<tr>
<td>Low Battery</td>
<td></td>
</tr>
<tr>
<td>Dead Battery</td>
<td></td>
</tr>
</tbody>
</table>

**Low Battery**

The LCD displays the low battery icon. The low battery icon will remain on until the battery is replaced or until the dead battery icon is displayed. After the low battery icon is displayed, the user may take approximately 100 temperatures until the dead battery icon is displayed.

**Dead Battery**

The LCD displays the dead battery condition. When any button is pressed, the battery icon will flash several times and then the LCD will turn OFF. After the battery icon is displayed, the batteries must be changed before the thermometer can be used.
If the display shows a system error 4 and the system error icon, the ambient conditions are changing too rapidly for the device to be used. Allow the device to equilibrate for 20 minutes before using.

If the display shows any other system error, then reset the thermometer by installing a probe cover. If the system error does not clear, then contact the factory for available service options. The applicable manufacturer addresses are located in Section XII, Customer Service.

**Biotech Mode**

The biotech function is used to select the operational mode of the thermometer and to verify the installed software version. All operational mode settings in biotech mode are stored in nonvolatile memory and retained through system power cycles, such as changing batteries. All factory calibration parameters are also stored in nonvolatile memory.

**The factory default settings are shown below:**

Temperature mode °C (unlocked)  
Site mode Ear  
Site text On

The biotech mode is accessed by pressing and holding the timer and °C/°F buttons for four seconds. All LCD segments will light for one second, the thermometer will issue a single beep, and the display will show scrolling dashes. Pressing the timer button cycles through the biotech modes. When options are available within a mode, the °C/°F button cycles through the options.

Pressing the timer button after the site text display will return the user to the installed software version. To exit biotech mode, two options are available: (1) press and hold the °C/°F and timer buttons for one second, or (2) the device will automatically exit biotech mode after about 30 seconds of inactivity. Any changes are saved.

**The biotech mode sequence is shown below:**

**Software version**

Displays the installed software version of device. Where “00” is the current software version.
### Temperature mode

<table>
<thead>
<tr>
<th>Option</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C (unlocked)</td>
<td>°C</td>
</tr>
<tr>
<td>Locked °C</td>
<td>°C°</td>
</tr>
<tr>
<td>Locked °F</td>
<td>°F°</td>
</tr>
<tr>
<td>°F (unlocked)</td>
<td>°F</td>
</tr>
</tbody>
</table>

### Site mode

<table>
<thead>
<tr>
<th>Option</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>* ORL</td>
</tr>
<tr>
<td>Core</td>
<td>* CORE</td>
</tr>
<tr>
<td>Axillary</td>
<td>* AX</td>
</tr>
<tr>
<td>Rectal</td>
<td>* REC</td>
</tr>
<tr>
<td>Ear</td>
<td>* EAR</td>
</tr>
</tbody>
</table>
Pressing the °C/°F button when in this mode turns the body site text labels on or off. The labels will remain on when an “X” appears inside the box icon, and the text will remain off when the box is empty.

Section VI — Preventative Maintenance

Functional checks must be performed by technicians trained by Tyco Healthcare/Kendall and based on the procedure in the GENIUS 2 Infrared Tympanic Electronic Thermometer Checker Operation Manual. Contact your Tyco Healthcare/Kendall representative for details. Tyco Healthcare/Kendall recommends functional checks at 12 month intervals. Harsh use or environmental conditions may require reduced functional check intervals at some facilities. If the unit is dropped or abused, check the unit prior to next use.

Section VII — Cleaning

- The GENIUS 2 Thermometer body may be wiped clean with a damp cloth. Water temperature should not exceed 55°C (130°F). Do not soak, rinse, or submerge the GENIUS 2 Thermometer under water.
- The probe tip can be cleaned with a lint free swab. If the probe tip becomes soiled, it can be cleaned with a dampened swab. After the foreign matter has been removed, the window at the end of the probe tip should be cleaned with a lint free swab or lens wipe. The thermometer lens must be free from fingerprints and/or smudges for proper operation.
- A mild detergent may be added to the water. Do not use cleaners such as Spray-Nine™, Phisohex™, Hibiclens™, or Vesta-Syde™ disinfectants, as they may result in damage to the thermometer case.
- Occasional use of a 10:1 water and hypochlorite mixture or a damp isopropyl alcohol wipe or Cidex™ or ManuKlenz™ or VIROX™ or CaviWipes™ cleansing agents is acceptable. However, prolonged or repeated use of these chemicals may result in damage to the thermometer case and display area.
- Use of a cloth or sponge is recommended for cleaning. Never use an abrasive pad or an abrasive cleaner on the GENIUS 2 Thermometer.
- The thermometer is non-sterile. Do not use ethylene oxide gas, heat, autoclave, or any other harsh method to sterilize this thermometer.
- Allow sufficient time for drying before attempting to use the thermometer.

Section VIII — Battery Replacement

The GENIUS 2 Infrared Tympanic Electronic Thermometer batteries should be replaced when the low battery icon is shown on the LCD display. After the low battery icon is displayed, the user will be able to take approximately 100 temperatures before the dead battery icon is displayed and the unit will not allow a temperature to be taken. To replace the batteries, access the battery compartment by unscrewing the battery door that retains the battery cover. Note the polarity of the installed batteries. Remove the old batteries and install fresh batteries, ensuring the correct polarity. Reinstall the battery cover and secure it with the screw.

Section IX — Mounting Instructions

If using the wall or cart mount options (sold separately) for the base unit, consult the installation sheet provided with the respective system.
Section X — Troubleshooting

If the GENIUS 2 Infrared Tympanic Electronic Thermometer is not functioning properly, check the following items:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature reading unusually high</td>
<td>Check the probe cover for tears or gaps</td>
</tr>
<tr>
<td>Temperature reading unusually low</td>
<td>Check the probe cover and thermometer tip for obstructions. Check the patient ear canal for obstructions.</td>
</tr>
<tr>
<td>Low battery indicator lit</td>
<td>Replace battery</td>
</tr>
<tr>
<td>Dead battery indicator lit</td>
<td>Replace battery</td>
</tr>
<tr>
<td>Display blank</td>
<td>Replace battery</td>
</tr>
<tr>
<td>System error displayed</td>
<td>If system error “4”, then let the thermometer equilibrate in the room for 20 minutes before using. For all other system errors, reset the thermometer by installing a probe cover. If the system error does not clear, send the thermometer to the facility Biomedical Engineering department or contact the factory for available service options. The service information is located in Section XII, Customer Service.</td>
</tr>
</tbody>
</table>

The GENIUS 2 Thermometer advisory and alarm conditions are described in the Thermometer Display Icons and Alarms subheading of Section V, Instructions for Use.

Section XI — Specifications

Clinical accuracy characteristics and procedures are available from the manufacturer on request. To verify accuracy, use a certified blackbody as specified in EN 12470-5-2003, Annex C or use a Genius 2 Checker/Calibrator — order part number 303097.

**Calibrated Accuracy Limits:**

<table>
<thead>
<tr>
<th>Ambient Temperature</th>
<th>Target Temperature</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>25°C (77°F)</td>
<td>36.7°C to 38.9°C (98.1°F to 102°F)</td>
<td>± 0.1°C (± 0.2°F)</td>
</tr>
<tr>
<td>16°C to 33°C (60.8°F to 91.4°F)</td>
<td>33°C to 42°C (91.4°F to 107.6°F)</td>
<td>± 0.2°C (± 0.4°F)</td>
</tr>
</tbody>
</table>

**Calibrated Accuracy Limits (after Recalibration***):

<table>
<thead>
<tr>
<th>Ambient Temperature</th>
<th>Target Temperature</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>16°C to 33°C (60.8°F to 91.4°F)</td>
<td>36°C to 39°C (96.8°F to 102.2°F)</td>
<td>± 0.2°C (± 0.4°F)</td>
</tr>
<tr>
<td>16°C to 33°C (60.8°F to 91.4°F)</td>
<td>less than 36°C (less than 96.8°F)</td>
<td>± 0.3°C (± 0.5°F)</td>
</tr>
<tr>
<td>16°C to 33°C (60.8°F to 91.4°F)</td>
<td>greater than 39°C (greater than 102.2°F)</td>
<td>± 0.3°C (± 0.5°F)</td>
</tr>
</tbody>
</table>

*Post recalibration accuracy using the GENIUS 2 Checker/Calibrator may not necessarily be equivalent to factory calibration.
Discovered Temperature Measurement Range:
Temperature Range Depends On Site Mode as follows:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Range °C</th>
<th>Range °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ear</td>
<td>33.0 to 42.0</td>
<td>91.4 to 107.6</td>
</tr>
<tr>
<td>Oral</td>
<td>33.6 to 42.0</td>
<td>92.5 to 107.6</td>
</tr>
<tr>
<td>Axillary</td>
<td>33.0 to 42.0</td>
<td>91.4 to 107.6</td>
</tr>
<tr>
<td>Core</td>
<td>34.0 to 42.0</td>
<td>93.2 to 107.6</td>
</tr>
<tr>
<td>Rectal</td>
<td>34.2 to 42.0</td>
<td>93.6 to 107.6</td>
</tr>
</tbody>
</table>

Ambient Temperature Range:
16°C to 33°C (60.8°F to 91.4°F) where as CEN defines the standard as 16°C to 35°C (60.8°F to 95°F), 10 to 95%RH, non-condensing.

Storage Temperature Range:
-25°C to 55°C (-13°F to 131°F), up to 95% RH non-condensing. If the unit is stored at extremes, it is recommended that the unit be checked on the field calibration checker or at the factory before returning to service.

Clinical Repeatability:
Meets Section A.5 of EN 12470-5: 2003 (E) per Tyco Healthcare/Kendall technical report. Data is available from Tyco Healthcare/Kendall on request.

Response Time:
Less than 2 seconds

Pulse Timer:
60 seconds

Temperature Resolution:
0.1°C or 0.1°F

Power:
3 AAA alkaline batteries

Battery Life:
Minimum of 15,000 temperature readings

Size:
Thermometer — 17.8 cm (7”)
Base — 20.3 cm (8”)

Weight:
Thermometer (with batteries) — 160 grams
Base — 100 grams
Regulatory and Safety standards:
The GENIUS 2 Thermometer follows international regulatory standards.

- EN 12470-5:2003 (E) Clinical Thermometers — Part 5: Performance of infrared ear thermometers where sections 6.3.4 and 6.5.5 were met based on Tyco Healthcare/Kendall technical report. Data is available from Tyco Healthcare/Kendall on request.
- UL 60601-1
- EN 60601-1-2
- BS EN 980: 2003
- IEC 1000-4-2: 1995
- IEC 1000-4-3:1995
- EN 60601-1
- MDD 93/42/EEC
- ASTM E1965-98
- BS EN 980: 2003
- IEC 1000-4-2: 1995
- IEC 1000-4-3:1995

The device meets EN12470-5:2003 (E) and ASTM E1965-98 subject to the following conditions:

1. The software was modified during testing to increase the precision of the measurements taken from one significant digit to two significant digits.
2. The increased precision numbers were then averaged to account for the known variance in measurements taken due to human factors.

Section XII — Customer Service

Tyco Healthcare/Kendall will make available on request circuit diagrams, component part lists, descriptions, or other information to assist qualified institutional technical personnel in repairing parts of this device designated by Tyco Healthcare/Kendall as repairable.

In the event that it is necessary to return a unit for repair, please observe the following:

1. Contact Tyco Healthcare/Kendall as shown below for an Authorized Return Number and shipping instructions.
2. Ship insured parcel to your local service contact or the appropriate location below.

**United States**
Tyco Healthcare Group LP
98.6 Faichney Drive
Watertown, NY 13601
1-800-448-0190 or (315) 788-5246

**Canada**
Tyco Healthcare Canada
7300 Trans Canada Highway
Pointe-Claire, QC
H9R 1C7
1-877-664-8926 or (514) 698-1220

**Outside US & Canada**
Tyco Healthcare Group LP
Unit 2 Talisman Business Center, London Road
Bicester, OX266HR, UK
+44-1869-328065
Parts Listing
To order repair parts, please contact your local customer service center or sales representative for the parts listed below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENIUS 2 Thermometer with Base</td>
<td>303000</td>
</tr>
<tr>
<td>GENIUS 2 Probe Cover</td>
<td>303030</td>
</tr>
<tr>
<td>GENIUS 2 Field Checker/Calibrator</td>
<td>303097</td>
</tr>
<tr>
<td>GENIUS 2 Replacement Base</td>
<td>F31949WT</td>
</tr>
<tr>
<td>GENIUS 2 Replacement Coil Cord</td>
<td>F31950WT</td>
</tr>
<tr>
<td>GENIUS 2 Replacement Battery Door</td>
<td>F31951WT</td>
</tr>
<tr>
<td>GENIUS 2 Locking Mount for Wall</td>
<td>303058</td>
</tr>
<tr>
<td>GENIUS 2 Cart with Locking Mount</td>
<td>303059</td>
</tr>
</tbody>
</table>

Section XIII — Warranty

LIMITED WARRANTY: Kendall, a Tyco Healthcare Group LP company, warrants to the original purchaser ("Customer") that this product will be free of defects in materials and workmanship, under normal use, for one (1) year from the date of original purchase from Tyco Healthcare/Kendall or its authorized distributor. If this product does not operate as warranted above during the applicable warranty period, Tyco Healthcare/Kendall may, at its option and expense, replace the defective part or product, or, if neither replacement nor repair is reasonably available, refund to Customer the purchase price for the defective part or product. Dated proof of original purchase will be required.

Tyco Healthcare/Kendall does not assume any liability for loss arising from unauthorized repair, misuse, neglect, or accident. Removal, defacement, or alteration of serial lot number voids warranty. Tyco Healthcare/Kendall disclaims all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose or application other than expressly set forth in the product labeling.

™Trademark of Tyco Healthcare Group LP or its affiliate.

™CAVI WIPES is a trademark of Metrex Research Corporation
™CIDEX is a trademark of Johnson & Johnson
™HIBICLSENS is a trademark of Regent Medical Limited
™MANU-KLENZ is a trademark of Steris Inc.
™PHISOHEX is a trademark of The Mentholatum Company
™SPRAY NINE is a trademark of Spray Nine Corporation
™SWAN-GANZ is a trademark of Edwards Lifesciences Corporation
™VESTA-SYDE is a trademark of Steris Inc.
™VIROX is a trademark of Virox Technologies, Inc.

This product is covered by one or more U.S. Patents: 6,179,785; 7,108,419; 7,237,949; 7,354,194; 7,140,764; 7,303,499; 7,478,946; 7,507,019; 7,520,671; 7,536,568; Patents Pending.

© 2009 TYCO HEALTHCARE GROUP LP • 15 HAMPSHIRE ST. • MANSFIELD, MA 02048 • MADE IN CHINA • TYCO HEALTHCARE GROUP LP • ALL RIGHTS RESERVED • 090730 • PRODUCT INFO IN U.S. 1-800-962-9888 • www.tycohealthcare.com

EC REP: TYCO HEALTHCARE U.K. LTD • GOSPORT, PO13 0AS, U.K.

SMF0509-005
Infrared Tympanic Electronic Thermometer

Operation and Service Manual
Thermomètre électronique infrarouge auriculaire
Manuel d'utilisation et d'entretien
Elektronisches Infrarot-Ohrthermometer
Gebrauchs- und Wartungsanweisung
Termometro electrónico timpanico a infrarossi
Manuale operativo e di assistenza
Termómetro timpanico electrónico infrarrojo
Manual de operación y servicio
Infrarød elektronisk ørontermometer
Anvánda- och servicemanual
Infrarode tympane elektronische thermometer
Handleiding voor bediening en onderhoud
Termómetro Auricular Electrónico por Infra-Vermelhos
Manual de funcionamento e assistência
Tympaaninen sähkökäyttöinen infrapunalämpömittari
Käyttö- ja huolto-opas
Infrarödt, elektronisk, tympanisk termometer
Betjening- og servicehåndbog
Электронный термометр для измерения тимпанической температуры
Указателна и сервизна приручка
Infračervený bubíkový elektronický teploměr
Uživatelská a servisní příručka
Infrawärme, timpanikus, elektronikus hőmérső
Kezelési és karbantartási kézikönyv
Инфракрасный электронный термометр для
Инструкция описывает и обслуживания
Kızılötesi Timpanik Elektronik Termometre
Kullanım ve Servis Kılavuzu
Infrarödt, elektronisk öretermometer
Bruger- og vedlikeholdshåndbok

AccuSystem™ 0123