



Hillrom™

**Welch Allyn®
SureTemp® Plus**
690 and 692 Series



Instructions for use

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Notice to users and/or patients in EU

Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.



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901053 ELECTRONIC THERMOMETER



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Introduction

Follow the operating and maintenance instructions provided in this manual to ensure years of accurate and reliable service. Read these instructions thoroughly before using the instrument, and then store these instructions in a safe place for future reference.

The Welch Allyn SureTemp Plus is a portable thermistor thermometer used for accurately measuring body temperatures at oral, axillary, or rectal sites. The device measures temperature by default in predictive (Normal) mode, during which it uses a predictive algorithm to calculate patient temperature. If you cannot correctly measure the patient's temperature in Normal mode, the unit will automatically enter Monitor (Direct) mode.

Normal body temperature is a range, which varies from person to person and is influenced by factors such as time of day and an individual's level of activity, ingested medications, age, and gender. A person's normal temperature tends to decrease with age.

The following table shows that ranges of normal also vary by site. Do not directly compare measurements from different sites.

This booklet provides informative tips and instructions for using the SureTemp Plus model 690 and model 692 thermometers. The chart on the following page provides details about the differences between these SureTemp Plus instruments.

Normal Body Temperature Ranges *

°C	0 - 2 years	3 - 10 years	11 - 65 year	> 65 years
Oral	—	35.5 37.5	36.4 37.5	35.8 37.0
Rectal	36.6 38.0	36.6 38.0	37.0 38.1	36.1 37.3
Axillary	34.7 37.3	35.9 36.7	35.2 36.9	35.5 36.3
Ear	36.4 38.0	36.1 37.8	35.9 37.6	35.8 37.5
Core	36.4 37.8	36.4 37.8	36.8 37.9	35.9 37.1

Normal body temperature is a range. This table shows that normal temperatures vary by site. Therefore, readings from different sites, even if taken at the same time, should not be directly compared.

* References
 Chamberlain, J. & Terndrup, T., et. al.; "Determination of Normal Ear Temperature Using an Infrared Emission Detection Thermometer"; *Annals of Emergency Medicine*; January, 1995.
 Braun, S., Preston, P., and Smith, R.; "Getting a Better Read on Thermometry"; *RN Magazine*; March, 1998.
 "Temperature Measurement in Paediatrics"; *Paediatric Child Health* Vol 5 No 5; July / August, 2000.
 Brunner, L. and Suddarth, D., et. al.; *The Lippincott Manual of Nursing Practice*; 1982; p.1145.
 Erickson, R.; *Temperature Taking Sourcebook*; IVAC Corporation, San Diego, CA, 1993.
 Houdas, Y., et. al.; *Human Body Temperature, Its Measurement and Regulation*; 1982; p.81-87.

SureTemp Plus model comparison chart

This manual describes features found in SureTemp Plus model 690 and 692 thermometers. Certain features are not available to users of the model 690 thermometer.

	SureTemp Plus model 690	SureTemp Plus model 692
Probe cover storage	X	X
F/C conversion	X	X
Last temperature recall	X	X
Monitor mode	X	X
Detachable probe	X	X
Oral / axillary / rectal modes on each thermometer	X	X
Color-coded removable probe well	X	X
Wall-holder standard		X
Pulse timer		X
Backlight		X
Security (electronic)		X
Configurable on-screen labeling for identification of instrument		X
Sold in U.S./Canada	X	X
Sold internationally	X	X
Instrument warranty	2 years	3 years
Removable probe well	90 days	90 days
Probe warranty	1 year	1 year

Intended use

The Welch Allyn SureTemp® Plus thermometer enables the health care professional to make an accurate prediction of a febrile, afebrile, or hypothermic patient's oral temperature in approximately 4-6 seconds (in Normal mode). Pediatric axillary (age 17 and younger) temperatures can be obtained in approximately 10-13 seconds. Adult axillary temperatures (in Normal mode) can be obtained in approximately 12-15 seconds. Rectal temperatures (in Normal mode) can be obtained in approximately 10-13 seconds. Predictive (Normal) mode is available for oral, rectal, and axillary use.

In the Monitor mode, the instrument provides the capability of accurate, long-term monitoring of actual oral, rectal or axillary temperature, and of following the temperature whether constant, increasing, or decreasing.

The SureTemp Plus is a clinical grade thermometer intended for use by healthcare practitioners only; typically, in a hospital, clinic, long-term care, or mobile health care environment. It is not intended for home use.

Indications for use

The Welch Allyn SureTemp® Plus thermometer is intended to be used by healthcare professionals, to provide an accurate prediction of patient temperature using the oral, axillary,

or rectal body sites in 4 to 15 seconds, or to provide an actual temperature reading in the continuous monitor mode in about 3 minutes.

Symbol descriptions

For information on the origin of these symbols, see the Welch Allyn symbols glossary: welchallyn.com/symbolsglossary.



Consult instructions for use (IFU). A copy of the IFU is available on this website. A printed copy of the IFU can be ordered from Hillrom for delivery within 7 calendar days.



Separate collection of electrical and electronic equipment. Do not dispose as unsorted municipal waste.



WARNING The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death. Warning symbols will appear with a grey background in a black and white document.



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.



NOTE Presents clarification about an instruction or helpful information about a feature or behavior.



Type BF applied part



Do not re-use, single use device



Fragile



Recyclable



Temperature limit



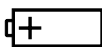
Product identifier



Humidity limitation



Reorder number



Positioning of cell



Global Trade Item Number



Battery check



Manufacturer



Not protected against the ingress of water



Serial number



Not made with natural rubber latex



Medical device



Keep dry



Lot code

Warnings



WARNING No modification of this equipment allowed.



WARNING Patient injury risk. Prior to taking a temperature, instruct the patient not to bite down on the probe as patient injury and damage to the probe may result.



WARNING Patient injury risk. Use only Welch Allyn single-use disposable probe covers. **A new probe cover needs to be used with each new temperature taken.** Never take a temperature measurement without a single-use probe cover securely attached. Failure to use a probe cover can cause patient discomfort from a heated probe, patient cross-contamination, and inaccurate temperature readings.



WARNING Patient injury risk. Inaccurate measurement risk. Oral/axillary probes (blue ejection button at top of probe) and blue removable probe wells are used for taking oral and axillary temperatures only. Rectal probes (red ejection button) and red removable probe wells are used for taking rectal temperatures only. Use of the incorrect removable probe well could result in patient cross-contamination. Use of the probe at the wrong site will result in temperature errors.



WARNING Patient injury risk. When taking rectal temperatures, insert the probe tip only 5/8 inch (approximately 1.5 cm) inside the rectum of adults and only 3/8 inch (approximately 1 cm) inside the rectum of children to avoid the risk of bowel perforation.



WARNING Inaccurate measurement risk. Never take an axillary temperature through the patient's clothing. Carefully place the probe in the axilla, avoiding contact with other objects or material.



WARNING Patient injury risk. Continuous measurement durations of 3 minutes at the oral and rectal sites and 5 minutes at the axillary site are recommended for accurate measurement. Do not continuously measure beyond 10 minutes in any mode.



WARNING To ensure patient safety and temperature measurement accuracy, use only accessories and supplies recommended or supplied by Welch Allyn.



WARNING Never use a damaged temperature probe. The thermometer consists of high-quality precision parts and should be protected from severe impact or shock. Do not use the thermometer if you notice any signs of damage to the probe or instrument. If the thermometer probe is dropped or damaged, remove it from use and have it inspected by qualified service personnel.



WARNING Inaccurate measurement risk. For rectal measurements, apply a thin layer of lubricant to probe cover, if necessary, for patient comfort. Use of excessive lubricant may affect reading accuracy.











WARNING Inaccurate measurement risk. To ensure optimal accuracy, always confirm that the correct mode and site are selected.



WARNING Incorrect measurements can result in delayed or incorrect treatment. If you suspect that the thermometer is delivering inaccurate measurements, first review the instructions in the sections on temperature measurement in this manual for ways to avoid inaccurate measurements. If you still believe that the thermometer is inaccurate, contact a Hillrom Service Center for calibration.

Cautions

-  **CAUTION** Liquids can damage electronics inside the thermometer. Prevent liquids from spilling on the thermometer. If liquids are spilled on the thermometer, dry off the thermometer with a clean cloth. Check for proper operation and accuracy. If liquids possibly entered the thermometer, remove the thermometer from use until it has been properly dried, inspected, and tested by qualified service personnel.
-  **CAUTION** Welch Allyn recommends that batteries are removed for long term storage since alkaline batteries can deteriorate and leak over extended periods of time, and possibly cause damage to the thermometer.
-  **CAUTION** Do not autoclave any component of this product. Please note the cleaning procedures described in this manual.
-  **CAUTION** Do not use this instrument for any purpose other than that specified in this booklet. Doing so will invalidate the instrument's warranty.
-  **CAUTION** This thermometer complies with current required standards for electromagnetic interference and should not present a problem to other equipment nor is it effected by other devices. As a precaution, avoid using this device in close proximity to other equipment.
-  **CAUTION** Inaccurate measurement risk. Patient activities such as strenuous exercise, ingesting hot or cold liquids, eating, chewing gum or mints, brushing teeth, or smoking may effect oral temperature measurements for up to 20 minutes.
-  **CAUTION** Probe covers are disposable, nonsterilized, and single-use. Probes are also nonsterilized. Do not autoclave probes and probe covers. Ensure that probe covers are disposed of according to facility requirements or local regulations.
-  **CAUTION** Replace the battery when the battery status is low. Use only AA 1.5 Vdc alkaline batteries.

Residual risk

This product complies with relevant mechanical safety, performance, electrical and biocompatibility standards. However, the product cannot completely eliminate potential patient or user harm from the following:

- Harm from mechanical hazards,
- Harm from device, function, or unavailability,
- Harm from misuse error, and/or
- Harm from device exposure to biological triggers that may result in a severe systemic allergic reaction.

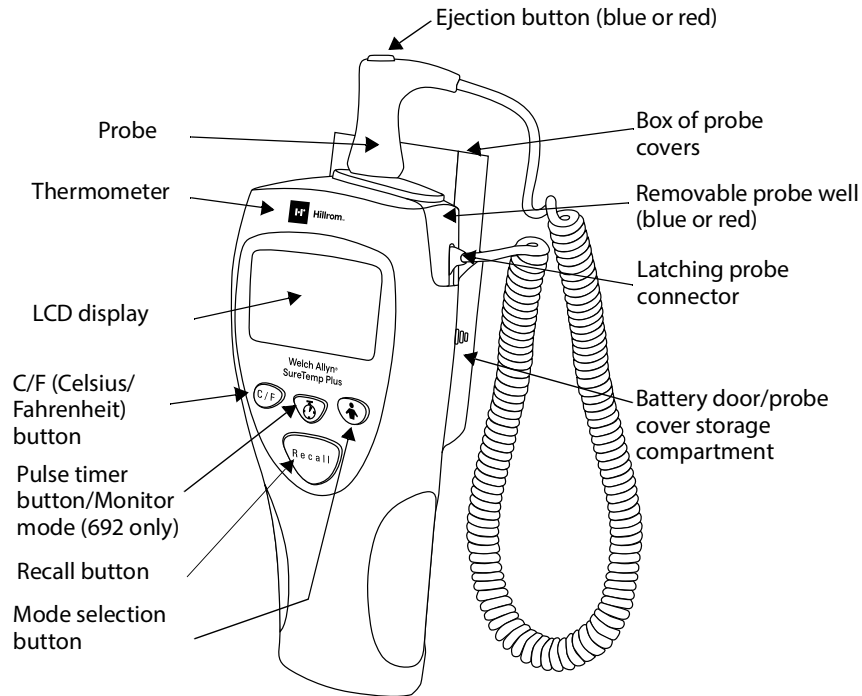
Latex statement

The components of the SureTemp Plus device that could contact the user or patient were not made with natural rubber latex. This includes all items that could be contacted during normal operation, and all other functions, such as user maintenance and cleaning, as are defined in the *Instructions for use*.

No internal components are known to be made with natural rubber latex.

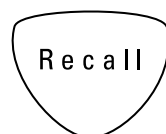
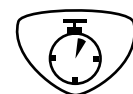
Parts and features

You can find the serial number of your device on a label affixed to the rear housing inside the unit's probe cover storage compartment. Please note the parts of your Welch Allyn SureTemp Plus thermometer as shown below:



Button functions

Button



User interaction

Press and release the **C/F (Celsius/Fahrenheit)** button to toggle between temperature scales any time a temperature is displayed on the LCD.

Press and release the **Pulse timer/Monitor mode (692 only)** button to activate the timer. Audible beeps sound at 0, 15, 30, 45, and 60 seconds. The timer turns off automatically after 60 seconds. You can stop the timer at any time by pressing the **Pulse timer/Monitor mode** button or by removing the probe from the probe well.









For Monitor mode, press and release the **Pulse timer** button after you have withdrawn the probe from the probe well to switch the device into Monitor mode.

Press and release the **Mode selection** button after you have withdrawn the blue probe from the probe well to change the current measurement site to oral, adult axillary, or pediatric axillary. The selected measurement site is displayed by a flashing body site icon. Note that no other measurement sites are available when using the red probe in the Rectal mode.

Press and release the **Recall** button when the display is blank to recall the last completed predicted temperature. The LCD will display the recalled temperature for five seconds along with the battery icon, temperature scale, mode selection, and probe-position icon (if applicable).

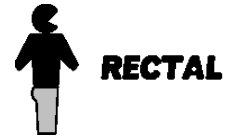
Display indicators



<p>Instrument malfunction</p> <p>The device is not working properly. Contact Hillrom Technical Support for assistance.</p>	
<p>Broken probe</p> <p>The probe is broken. Replace probe or contact Hillrom Technical Support for assistance.</p>	
<p>Loss of tissue contact</p> <p>The probe has lost contact with the patient's tissue. The icon will disappear once proper contact is achieved. The icon will later reappear at the end of the temperature measurement. It is recommended that you take a new temperature reading.</p>	
<p>ID field</p> <p>This is a seven-character field that allows customized identification of the instrument via user-selected letters and numbers. See the model 690/692 Service manual for setup instructions.</p>	
<p>Walking segments</p> <p>The dark bar will move around the display when the thermometer is in the process of taking a temperature.</p>	
<p>Oral mode</p> <p>This flashing icon and/or word are displayed to show that the oral mode is selected.</p>	
<p>Adult axillary mode</p> <p>This flashing icon and/or words are displayed to show that the adult axillary mode is selected.</p>	
<p>Ped axillary mode</p> <p>This flashing icon and/or words are displayed to show that the pediatric axillary mode is selected.</p>	

Rectal mode

This flashing icon and/or word are displayed to show that the rectal mode is selected.

**Monitor mode**

This icon is displayed while in Monitor mode. Monitor mode is used for continuous temperature monitoring when difficult situations prevent accurate temperatures in the normal mode. For oral and rectal sites, three minutes of continuous monitoring is recommended for an accurate temperature reading. For axillary sites, five minutes of continuous monitoring is recommended.



Patient temperature exceeds upper measurement range limit of 110.0 °F (43.3 °C)



Patient temperature is lower than measurement range limit of 80.0 °F (26.7 °C)



Ambient temperature exceeds upper measurement range limit of 104.0 °F (40.0 °C)



Ambient temperature is lower than measurement range limit of 50.0 °F (10.0 °C)

**Pulse timer**

This icon indicates that the device is in the pulse timer mode.

**Low battery**

A single flashing segment appears on the battery symbol. Normal operation is not affected. Replace the batteries.

**Dead battery**

An open battery symbol remains on the LCD and the device will not operate. Replace the batteries.

**Security mode**

The instrument is in security mode. Return the thermometer to the wall holder to resume normal operation. See page 14 to set the instrument in Security mode (model 692 only).



Setup

Assembling the unit

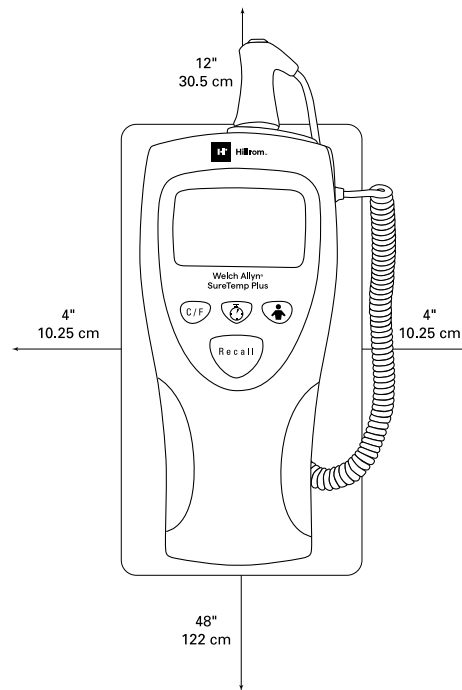
Your SureTemp Plus thermometer is shipped to you with three 1.5V AA batteries installed.

1. Install the oral/axillary probe (blue ejection button) or optional rectal probe (red ejection button) by inserting the latching probe connector on the end of the coiled cord into the unit's plug receptacle. Ensure that the connector snaps into place. The LCD will illuminate for approximately 7 seconds and will then turn off.
2. Connect the appropriate removable probe well to the thermometer. Note that the cut-out in the probe well fits over the probe cord strain relief. Ensure that the removable probe well "snaps" into position and is completely seated to the thermometer. Place the probe into the well.
3. Insert the box of Hillrom disposable probe covers into the probe cover storage holder. To open the box of probe covers, remove and discard the tear-away corner. You will see the ends of the probe covers in the box.

Mounting the unit

Mount the wall-mount bracket in a location such as an interior wall or wall divider so that the thermometer remains at ambient room temperature. Mounting the unit on an uninsulated exterior wall, in an area directly hit by sunlight, above heat radiators or powered equipment (including computers and lights), or below air conditioning outlets is not recommended.

Proper mounting of the unit will prevent tangling of the probe cord with other equipment at the patient's bedside.



1. Mount the instrument so that all other objects are no closer than 4 inches (10.25 cm) from the sides and bottom of the unit.
2. Mount the wall mount a maximum of 48 inches (122 cm) from the floor.
3. Install the wall mount to allow at least 12 inches (30.5 cm) clearance on top of the instrument. This provides ease of removing and installing the probe and probe well or installing probe covers onto the probe.

Oral temperature measurement

Using probe with blue ejection button and blue probe well

When used correctly, the SureTemp Plus thermometer accurately measures an oral temperature in approximately 4–6 seconds. The ability of the SureTemp Plus thermometer to take an accurate oral temperature requires correct user technique.

Taking an oral temperature



WARNING Do not take a patient's temperature without using a Hillrom disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.



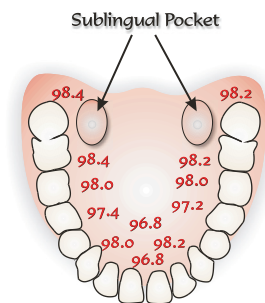
WARNING Verify that the probe cover does not come off prior to use. A probe cover that comes off during use can cause asphyxiation. If a probe cover fails to stay on, then the retention mechanism may be damaged. Remove the device from service for inspection by qualified service personnel.

1. Ensure that the oral probe (**blue ejection button**) and the **blue probe well** are installed.
2. Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
3. Verify that the oral model icon is selected by observing the flashing head icon on the instrument's display. If this icon is not flashing, press the **Mode selection** button until the head icon appears.
4. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.



WARNING Use only Hillrom probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.

5. With the Oral mode indicator flashing, quickly place the probe tip under the patient's tongue on either side of the mouth to reach the rear sublingual pocket. Have the patient close his/her lips around the probe.
6. Hold the probe in place, keeping the tip of the probe in contact with the oral tissue throughout the measurement process. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
7. The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
8. If you cannot correctly measure the patient's temperature in Normal mode, the unit will automatically enter Monitor mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal mode in the opposite sublingual pocket or keep the probe in place for three minutes in Monitor mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.



WARNING Patient injury risk. Do not exceed the recommended temperature measurement durations in Direct mode. Continuous measurement durations of 3 minutes at the oral and rectal sites and 5 minutes at the axillary site are recommended for accurate measurement. Do not continuously measure beyond 10 minutes in any mode.

9. After the temperature measurement is complete, remove the probe from the patient's mouth. Eject the probe cover by firmly pressing the ejection button on the top of the probe.

- Return the probe to the probe well. The LCD display will go blank.



CAUTION Patient actions may interfere with accurate oral temperature readings. Ingesting hot or cold liquids, eating food, chewing gum or mints, brushing teeth, smoking, or performing strenuous activity may affect temperature readings for up to 20 minutes after activity has ended.

Axillary temperature measurement

Using probe with blue ejection button and blue probe well

When used correctly, the SureTemp Plus thermometer accurately measures an axillary temperature for pediatric patients (ages 17 and younger) in approximately 10–13 seconds and for adult patients (ages 18 and older) in approximately 12–15 seconds.

Placing the thermometer into axillary mode



WARNING Do not take a patient's temperature without using a Hillrom disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.

- Ensure that the axillary probe (**blue ejection button**) and the **blue probe well** are installed.
- Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
- Verify that the axillary mode is selected by observing the correct flashing axillary icon on the instrument's display. If this icon is not flashing, press the **Mode selection** button to select the Adult axillary or Pediatric axillary mode.



Adult axillary mode icon



Pediatric axillary mode icon



CAUTION To ensure optimal accuracy, always confirm that the correct axillary mode is selected.



CAUTION After a temperature is taken and the probe is returned to the probe well, the instrument reverts to the original measurement site mode.

Taking an axillary temperature



WARNING Do not take an axillary temperature through patient's clothing. Direct contact between patient's skin and the probe is required.

- Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.
- With the correct axillary mode indicator flashing, lift the patient's arm so that the entire axilla is easily seen. Place the probe as high as possible in the axilla. Do not allow the probe tip to come into contact with the patient until the probe is placed in the measurement site. Before this, any contact between the probe tip and the tissue or other material may cause inaccurate readings.
- Verify that the probe tip is completely surrounded by axillary tissue and place the arm snugly at the patient's side. Hold the patient's arm in this position and do not allow

movement of the arm or probe during the measurement cycle. Rotating “walking” segments appear on the display, indicating that measurement is in progress.

4. The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
5. If you cannot correctly measure the patient’s temperature in Normal mode, the unit will automatically enter Monitor mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal mode in the opposite axilla or keep the probe in place for five minutes in Monitor mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.



WARNING Long-term continuous monitoring beyond five minutes is not recommended in the Axillary mode.

6. After the temperature measurement is complete, remove the probe from the patient’s axilla. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
7. Return the probe to the probe well. The LCD display will go blank.



WARNING Probe contact with electrodes, bandages, etc., poor tissue contact, taking a temperature over clothing, or prolonged exposure of axilla to ambient air can cause inaccurate temperature readings.

Rectal temperature measurement

Using probe with red ejection button and red probe well

When used correctly, the SureTemp Plus thermometer accurately measures rectal temperature in approximately 10–13 seconds.

Taking a rectal temperature



WARNING Cross contamination or nosocomial infection risk. Thorough hand-washing greatly reduces the risk of cross-contamination and nosocomial infection.



WARNING Do not take a patient’s temperature without using a Hillrom disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.

1. Ensure that the rectal probe (**red ejection button**) and the **red probe well** are installed. The instrument will only operate in Rectal mode when the red rectal probe and probe well are installed.
2. Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
3. Observe the flashing lower-body icon on the unit’s display. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.



WARNING Use only Hillrom probe covers. The use of other manufacturer’s probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.

4. With the Rectal mode indicator flashing, separate the patient's buttocks with one hand. Using the other hand, gently insert the probe only 1.5 cm (5/8 in.) inside the rectum (less for infants and children). The use of a lubricant is optional.



WARNING Patient injury risk. When taking rectal temperatures, insert the probe tip only 5/8 inch (approximately 1.5 cm) inside the rectum of adults and only 3/8 inch (approximately 1 cm) inside the rectum of children to avoid the risk of bowel perforation.

5. Tilt the probe so that the tip of the probe is in contact with tissue. Keep the hand separating the buttocks in place, and hold the probe in place throughout the measurement process. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
6. The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
7. If you cannot correctly measure the patient's temperature in Normal mode, the unit will automatically enter Monitor mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal mode or keep the probe in place for three minutes in Monitor mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.



WARNING Long-term continuous monitoring beyond three minutes is not recommended in Rectal mode.

8. After the temperature measurement is complete, remove the probe from the patient's rectum. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
9. Return the probe to the probe well. The LCD display will go blank.
10. Wash your hands.



WARNING Washing hands greatly reduces the risk of cross-contamination and nosocomial infection.

Monitor mode temperature measurement

Using probe with blue ejection button (oral/axillary) or red ejection button (rectal)

Monitor mode continuously displays the temperature of the probe for as long as the probe remains in place at the measurement site and remains within the operating patient temperature range. The patient's oral and rectal temperature will reach final equilibrium in approximately three minutes in the Monitor mode. Axillary temperature will reach equilibrium in approximately five minutes in the Monitor mode.



CAUTION Monitored temperatures are not stored in memory for recall.

Taking a temperature using Monitor mode



WARNING Do not take a patient's temperature without using a Welch Allyn disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.

1. Ensure that both the appropriately colored probe and matching probe well for the intended measurement site (oral/axillary or rectal) are installed.
2. Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
3. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.



WARNING Use only Welch Allyn probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.

4. For model 692, press and release the **Pulse timer / Monitor mode** button after you have withdrawn the probe from the probe well to switch the device into Monitor mode. The Monitor mode indicator appears on the LCD.



MONITOR



WARNING The unit will automatically enter Monitor mode if the probe is withdrawn from the probe well and is not replaced within 60 seconds of inactivity.

5. For model 690, take the patient's temperature using the normal Oral, Rectal, Pediatric axillary, or Adult axillary mode as previously described.
 - a. Continue to hold the probe in position after the temperature is displayed.
 - b. Press the **Mode selection** button until the Monitor mode indicator appears on the LCD.



MONITOR

6. Hold the thermometer in place for the required duration:

Oral	3 minutes
Axillary	5 minutes
Rectal	3 minutes



WARNING Long-term continuous monitoring beyond three to five minutes is not recommended in any mode.

7. Record the temperature before removing the probe from the site.
8. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
9. Replace the probe in the probe well to clear the display and reset the thermometer to Normal mode. The thermometer will not beep to indicate a final temperature.

Instrument security

The SureTemp model 692 thermometer is equipped with electronic security options designed to reduce the risk of theft. These options include both Temperature count and Instant-on security features.

Temperature count

The Temperature Count security feature allows you to take a set number of temperature readings before the instrument goes into the security alarm state. The selectable counts are 25, 50, 100, and 200. As the instrument nears the final reading, it will display **SECURITY COUNT** as a warning, along with a number representing the last 5 temperature counts (i.e., 5,4,3,2,1) remaining on the security counter.

When the instrument enters the alarm state, it beeps for approximately 10 seconds. At this time, the instrument displays **SEC** on the LCD along with **SECURITY COUNT** in the ID field in the upper left-hand corner of the screen. The instrument is then disabled. Returning the instrument to the wall holder resets the security count. If the count is set to "OFF" the temperature count function is disabled and no security alarm will occur.

To set the Temperature count security feature, refer to the Service manual.

Instant-on

When the Instant-on feature is activated, the instrument goes into the security alarm state within five seconds after removal from the wall holder. When the instrument enters the alarm state, it beeps continuously and displays SEC on the LCD. Pressing the Mode selection button while removing the probe from the probe well, within 30 seconds of the instrument's removal from the wall holder, clears the alarm and allows the instrument to operate. Returning the instrument to the wall holder will reset the instant audio alarm.

The options for the Instant-on feature are ON and OFF. In the OFF setting, no security alarm will sound.

To set the Instant-on security feature, refer to the Service manual.

Cleaning and disinfection

Clean and disinfect on a routine basis according to each facility's policy or whenever contamination occurs.

Cleaning and disinfecting the thermometer and probe

Wipe the thermometer and probe with an appropriate health care low- or intermediate-level cleaner/disinfecting wipe that incorporates either a 1:10 sodium hypochlorite (bleach) solution or isopropyl alcohol as the active disinfection ingredient. Follow wipe manufacturer's instructions for appropriate use, contact times, and applicable warnings and precautions.



WARNING Cleaning solutions, including those that contain bleach, can cause skin irritation if not completely wiped clean from the probe or thermometer following cleaning.



CAUTION DO NOT immerse or soak the thermometer or probe in any type of fluid.



CAUTION DO NOT use steam, heat, or gas sterilization on the thermometer or probe.



CAUTION DO NOT autoclave the thermometer or the probe.

Cleaning and disinfecting the removable probe well

- Remove the probe well from the unit. Unplug the latching probe connector to prevent the device from consuming battery power while you are cleaning the probe well.
- Clean the inner surface of the probe well by swabbing the surface with a cloth dampened with a 1:10 sodium hypochlorite (bleach) solution or isopropyl alcohol solution as the active disinfection ingredient. Clean the probe well's outer surface by swabbing or wiping the surface with one of the solutions mentioned above.



CAUTION DO NOT use hard or sharp objects to clean the probe well. This could damage the probe well and cause the unit to not function properly.



CAUTION DO NOT use steam, heat, or gas sterilization on the probe well.



CAUTION DO NOT autoclave the probe well.

- Thoroughly dry all surfaces before re-assembling the instrument.
- Re-connect the latching probe connector to the thermometer. Ensure that the connector snaps into place.
- Re-install the probe well in the thermometer and snap the probe well into place.
- Insert the probe into the probe well.

Maintenance

Replacing the batteries

1. Remove the box of probe covers from the probe cover storage compartment on the back of the unit.
2. Remove the probe and the probe well.
3. Press inward on the textured grips on each side of the assembly to remove the battery door from the back of the unit.
4. Remove the three AA 1.5Vdc alkaline batteries and replace all three batteries with AA 1.5 Vdc alkaline batteries. Match the +/- polarity of each battery to the +/- symbols inside the battery compartment.



WARNING Use size AA 1.5 Vdc alkaline batteries only. Use of any other battery size or type could damage the thermometer and cause personal injury.

5. Snap the probe cover storage assembly back into place.
6. Replace the probe and probe well.



CAUTION Remove the batteries if the instrument is not used for an extended period of time to avoid possible damage to the thermometer due to battery leakage.

Service

Except for the replaceable AA batteries, this instrument contains no user-serviceable parts. Return the thermometer to a Hillrom authorized service center for service and repair. Refer to the Service manual.

Hillrom service policy

Only a Hillrom Service Center can perform or approve all repairs on products under warranty. Unauthorized repairs will void the warranty. Qualified electronics personnel or a Hillrom Service Center should repair out-of-warranty products.

Contacting Hillrom

If you encounter an equipment problem that you cannot resolve, contact the Hillrom Service Center nearest you for assistance. Find a Hillrom Service Center at welchallyn.com/en/service-support.html.

Before returning a product for repair, you must first obtain authorization from Hillrom. If you are advised to return a product to Hillrom for service or repair, you should schedule the repair with the Hillrom Service Center nearest you.

Hillrom service personnel will provide you with a Return Materials Authorization (RMA) number. Print this number on the outside of your shipping box.

Hillrom does not accept returns that are missing an RMA number.

Disposal



Users must adhere to all federal, state, regional, and/or local laws and regulations as they pertain to the safe disposal of medical devices and accessories. If in doubt, the user of the device should first contact Hillrom Technical Support for guidance on safe disposal protocols.

Performance and technical specifications

Ambient operating temperature range	50.0 °F to 104.0 °F (10.0 °C to 40.0 °C)
Operating altitude	-557 ft. to +16,000 ft / -170m to +4877m
Patient temperature range	80.0 °F to 110.0 °F (26.7 °C to 43.3 °C)
Temperature predict time*	Oral: Approximately 4–6 secs. Adult axillary (18 years and older): Approximately 12–15 secs. Pediatric axillary (17 years and younger): Approximately 10–13 secs. Rectal: Approximately 10–13 secs.
Transport/storage temperature	-13°F to +131°F (-25 °C to +55 °C)
Calibration accuracy	+/- 0.2 °F (0.1 °C) (Monitor mode)
Humidity	15% to 95% non-condensing
Dimensions	8.46" x 3.18" x 2.43" (215mm x 81mm x 62mm)
Weight	12.6 ounces/357 grams
Power	(3) 1.5Vdc AA batteries
Equipment classification	Internally powered, continuous operation Not AP or APG equipment
Applied part	Thermometer probe
IPXØ	Not protected against the ingress of water.

* Predict time depends on probe placement and patient condition. Predict times do not include tissue contact-detection time or time needed to place the probe into the measurement site.

Standards and compliance

The device complies with the following standards:

IEC 60601-1, IEC 60601-1-2, IEC 80601-2-56 and ISO 10993-1

Country-specific standards are included in the applicable Declaration of Conformity.

Serial number

The serial number (SN) of a device reveals many details about its manufacture including its date of manufacture. For serial number YYWWXXXX, YY = Last 2 digits of the year, WW= Week of the year, and XXXX=Sequential number.

Lot code

The Probe is LOT coded. For lot code PPYYYY, PP= Week of the year+10, and YYY=Year.

Guidance and manufacturer's declaration

EMC compliance

Special precautions concerning electromagnetic compatibility (EMC) must be taken for all medical electrical equipment. This device complies with IEC EN 60601-1-2:2014.

- All medical electrical equipment must be installed and put into service in accordance with the EMC information provided in this document and the Welch Allyn SureTemp Plus Instructions for use.
- Portable and mobile RF communications equipment can affect the behavior of medical electrical equipment.

The SureTemp Plus complies with all applicable and required standards for electromagnetic interference.

- It does not normally affect nearby equipment and devices.
- It is not normally affected by nearby equipment and devices.
- It is not safe to operate the SureTemp Plus in the presence of high-frequency surgical equipment.
- However, it is good practice to avoid using the SureTemp Plus in extremely close proximity to other equipment.



NOTE The SureTemp Plus has essential performance requirements associated with temperature measurement. In the presence of EM disturbances, the device might display an error code. Once the EM disturbances stop, the SureTemp Plus will self-recover and perform as intended.



WARNING Avoid using the SureTemp Plus adjacent to or stacked with other equipment or medical electrical systems because it could result in improper operation. If such use is necessary, observe the SureTemp Plus and other equipment to verify that they are operating normally.



WARNING Use only accessories recommended by Welch Allyn for use with the SureTemp Plus. Accessories not recommended by Welch Allyn might affect the EMC emissions or immunity.



WARNING Maintain minimum separation distance between the SureTemp Plus and portable RF communication equipment. SureTemp Plus performance might degrade if you do not maintain a proper distance between equipment.




WARNING This device has not been tested for use in clinical environments near high-frequency surgical equipment and magnetic resonance imaging. Do not use this device in environments like these where electromagnetic disturbance is high.

Emissions and immunity information

Electromagnetic emissions

The Welch Allyn SureTemp Plus is intended for use in the electromagnetic environment specified below. The customer or the user of the Welch Allyn thermometer should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The SureTemp Plus 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 SureTemp Plus is suitable for use in all establishments other than domestic, and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes, provided the following warning is heeded.
Harmonic emissions IEC 61000-3-2	Class B	 WARNING This equipment/system is intended for use by healthcare professionals. This equipment/system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as re-orienting or relocating the device or shielding the location.
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Electromagnetic immunity


The Welch Allyn SureTemp Plus is intended for use in the electromagnetic environment specified below. The customer or user of the Welch Allyn thermometer should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/ burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Not Applicable - Battery powered Device
Surge IEC 61000-4-5	±1 kV differential mode ±1 and ±2 kV common mode	±1 kV differential mode ±1 and ±2 kV common mode	Not Applicable - Battery powered Device
Voltage dips, short interruptions, and voltage variations on power supply input lines. IEC 61000-4-11	<0 % U_T (>100 % dip in U_T) for 1 cycle 70 % U_T (30 % dip in U_T) for 25/30 cycles <0 % U_T (>100 % drop in U_T) for 0.5 cycles@ 0°, 45°, 90°, 135°, 180°, 225°, 270°, & 315° for 250/300 cycles	<0 % U_T (>100 % dip in U_T) for 1 cycle 70 % U_T (30 % dip in U_T) for 25/30 cycles <0 % U_T (>100 % drop in U_T) for 0.5 cycles@ 0°, 45°, 90°, 135°, 180°, 225°, 270°, & 315° for 250/300 cycles	Not Applicable - Battery powered Device
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Note: U_T is the a.c. mains voltage prior to application of the test level.

Electromagnetic immunity

The Welch Allyn SureTemp Plus is intended for use in the electromagnetic environment specified below. The customer or user of the Welch Allyn thermometer should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the Welch Allyn SureTemp Plus models 690 and 692, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = (1.17) \sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 1 GHz	3 V/m	$d = (1.17) \sqrt{P}$ 80 to 800 MHz $d = (2.33) \sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ^a should be less than the compliance level in each frequency range. ^b Interference may occur in the vicinity of equipment marked with the following symbol: 

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

^a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the device.

^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the Welch Allyn SureTemp Plus

The device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the Welch Allyn thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the device as recommended below, according to the maximum output power of the communications equipment.

Separation distance according to frequency of transmitter (m)			
Rated maximum output power of transmitter (W)	150 kHz to 80 MHz $d = (1.17) \sqrt{P}$	80 MHz to 800 MHz $d = (1.17) \sqrt{P}$	800 MHz to 2.5 GHz $d = (2.23) \sqrt{P}$
0.01	0.11667	0.11667	0.23333
0.1	0.36894	0.36894	0.73785
1	1.1667	1.1667	2.3333
10	3.6894	3.6894	7.3785
100	11.667	11.667	23.3333

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.

Replacement parts and accessories

To order replacement parts and accessories, visit hillrom.com.

Accessories

Part #	Description
01802-110	9600 Plus Calibration Tester
02678-100	PROBE ASSY,LATHG CONN,ORAL,9FT
02679-100	PROBE ASSY,LATHG CONN,RCTL,9FT
02891-000	Removable Probe Well (Blue)
02891-100	Removable Probe Well (Red)
02892-000	Probe and Well Kit (Incl. Probe) 4 ' Rectal
02892-003	Probe and Well Kit, 4', Vet
02892-100	Probe and Well Kit (Incl. Probe) 9 ' Rectal
02892-103	Probe and Well Kit, 9', Vet
02893-000	Probe and Well Kit (Incl. Probe) 4 ' Oral
02893-100	Probe and Well Kit (Incl. Probe) 9 ' Oral
02895-000	Probe Well Kit OEM ORAL 9'
02895-100	Probe Well Kit OEM RECTAL 9'
05031-101	Disposable Probe Cover Clear 1K
05031-101-ME	Disposable Probe Cover Clear 1K-ME
05031-105	Disposable Probe Cover Clear 5K
05031-110	Disposable Probe Cover Clear 10K
05031-125	Disposable Probe Cover Clear 1.25K
05031-150	Disposable Probe Cover Clear 1.5k
05031-750	Disposable Probe Covers Clear 7.5K
06138-000	SureTemp® Calibration Key
106701	Operators Manual (DFU)
20500-251N	SLEEVE ASSY,250 PACK
406682	Soft Carrying Case



NOTE These instructions for use (IFU) may contain information about products that may or may not be approved for use by a relevant regulatory authority in any particular country or region of the world. Customers and/or End-Users are requested to contact their local sales representative for further information regarding regulatory registration status and availability of products.

SureTemp Plus Global Trade Item Numbers (GTIN)

Part number	Description	GTIN number
01690-200	PKG THERM SYS,M690,4FT ORAL	00732094029352
01690-201	PKG THERM SYS,M690,4FT RECTAL	00732094029345
01690-300	PKG THERM SYS,M690,9FT ORAL	00732094029321
01690-301	PKG THERM SYS,M690,1/RM 9FT RE	00732094029307
01690-400	PKG THERM SYS,M690,4',OR,WH	00732094029185
01690-401	PKG THERM SYS,M690,INTL 4' RE	00732094029178
01690-410	PKG THERM,M690,INTL,4',OR,WHmm	00732094029161
01690-500	PKG THERM SYS,M690,INTL 9FT ORAL	00732094029154
01690-501	PKG THERM SYS,M690,INTL 9FT RE	00732094029147
01690-700	PKG THERM SYS,M690,9FT ORAL with STAND	00732094029123
01692-200	PKG THERM SYS,M692,4FT ORAL	00732094028980
01692-201	PKG THERM SYS,M692,4FT RECTAL	00732094028973
01692-300	PKG THERM SYS,M692, 1/RM 9FT ORAL & Wall Holder	00732094028966
01692-301	PKG THERM SYS,M692,1R/M 9FT RE	00732094028959
01692-400	PKG THERM INTL,M692,4',OR,W	00732094028942
01692-401	PKG THERM SYS,M692,INTL 4' RE	00732094028935
01692-500	PKG THERM SYS,M692,INTL 9FT ORAL & Wall Holder	00732094028928
01692-501	PKG THERM SYS,M692,INTL 9FT RE	00732094028911
01692-700	PKG THERM SYS,M692,9FT ORAL with STAND	00732094028904
01692-MC	ST PLUS 692 & PADDED CASE W/O WALLHOLDER	00732094028799

Limited warranty

Three-year limited warranty on model 692 and two-year limited warranty on model 690 instruments

Instrumentation purchased new from Hillrom is warranted to be free from original defects in material and workmanship under normal use and service for a period of three years for model 692 and a period of two years for model 690 from the date of first shipment from Hillrom. This warranty shall be fulfilled by Hillrom or its authorized representative repairing or replacing at Hillrom's discretion, any such defect, free of charge for parts and labor.

Hillrom must be notified via telephone of any defective product and the item must be immediately returned, with an RMA number provided by Hillrom, securely packaged and postage prepaid to Hillrom. Loss or damage in shipment shall be at the purchaser's risk.

Hillrom will not be responsible for loss associated with the use of any Hillrom product that (1) has had the serial number defaced, (2) has been repaired by anyone other than an authorized Hillrom service representative, (3) has been altered, (4) has been used in a manner other than in accordance with the instructions, or (5) has been abused or exposed to extreme environmental conditions.

One-year limited warranty on probes and probe covers

Hillrom warrants probes and probe covers to meet Hillrom's specifications for the product at the time of purchase and to be free from original defects in material and workmanship under normal use and service for a period equal to one-year from the date of first shipment of such product to the customer by or on behalf of distributor. Probe covers are intended for single use only.

Ninety day limited warranty on removable probe wells

Removable probe wells (blue oral and red rectal) are warranted to be free from original defects in material and workmanship under normal use and service for a period of ninety days from the date of first shipment from Hillrom.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR OTHER WARRANTY OF QUALITY, WHETHER EXPRESS OR IMPLIED. WELCH ALLYN WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE SALE, USE, OR IMPROPER FUNCTIONING OF THE INSTRUMENTATION REGARDLESS OF THE CAUSE. THE DAMAGES FOR WHICH WELCH ALLYN WILL NOT BE RESPONSIBLE INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF REVENUE OR PROFIT, DOWNTIME COSTS, AND LOSS OF USE OF THE INSTRUMENTATION.



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