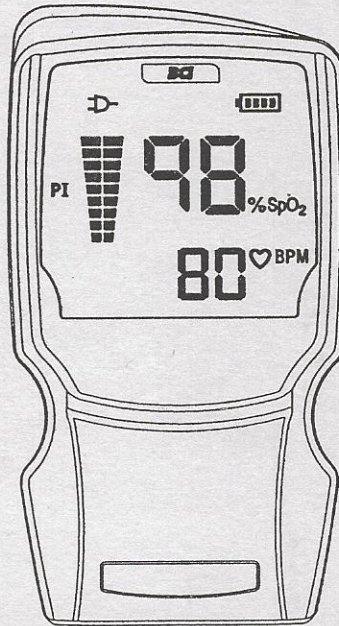


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**WW1000/WW1020  
Pulse Oximeter Home Use Guide**



**en** English

Catalog Number WW1922HU  
Version 0, April 2009

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## Monitor Display and Key

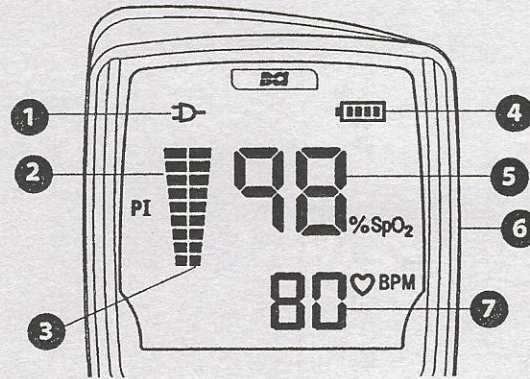



Figure 1: Monitor Display and Key

- 1 External Power Indicator (  ) - green**  
 This indicator is lit when the device is receiving power from the AC adapter or USB cable.
- 2 Pulse Amplitude Index Bar Graph - green / yellow**  
 The pulse amplitude index bar graph is used to assist the operator in locating the oximetry sensor site with the best pulse signal strength. A higher bar graph indicates a better quality site. The bottom 2 bars turn yellow to indicate that the oximeter is receiving a low signal quality from that sensor site.
- 3 Pulse Signal Strength Bar Graph - red**  
 The pulse strength bar graph “sweeps” with the patient’s pulse beat. The height of the bar graph is a logarithmic representation of the pulse signal strength.
- 4 Battery Charge Indicator - green (yellow if low)**  
 The battery charge indicator shows the current state of charge of the installed battery. LED segments will disappear as the battery becomes weaker. When only one LED is lit and flashing yellow, the batteries will expire within minutes; replace the batteries.

**5 SpO<sub>2</sub> Numeric Display - red**

A number shows the patient's functional oxygen saturation value in percent. Dashes (--) indicate the monitor is not able to calculate the SpO<sub>2</sub> value.

**6 % ON/OFF Key**

The ON/OFF key is located on the side of the monitor. Momentarily press this key when the device is OFF to turn the monitor ON. Press this key when the device is ON to turn the monitor OFF.

**7 Pulse Rate Numeric Display - red**

A number shows the patient's pulse rate value in beats per minute. Dashes (--) indicate the monitor is not able to calculate the pulse rate value.

## Installing the Batteries

The oximeter uses four (4) standard "AA" alkaline, IEC Type LR6, cells (Figure 2A on the following page) or a custom rechargeable Lithium-Ion (Li+) battery pack (WW1090 - Figure 2B on the following page).

To install/replace the batteries:

1. Depress the battery door tab near the center of the oximeter and slide the cover off toward the bottom of the monitor.
- 2a. If using "AA" (LR6) alkaline batteries: Install the negative end of each battery first, compressing the battery terminal spring until the positive terminal clears the positive tab. Press the battery down into place.
- 2b. If using WW1090 Li-Ion (Li+) rechargeable battery pack: Align the battery pack so that the metal connectors line up with the connectors in the WW1000/WW1020 battery compartment. Push the WW1090 Lithium-Ion (Li+) rechargeable battery pack straight in to place.
3. Replace the battery door by sliding the cover back until the latch clicks.

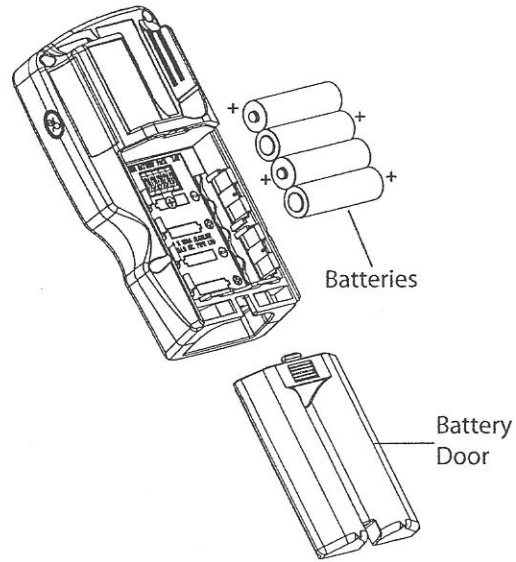


Figure 2A: AA (LR6) Alkaline Battery Placement

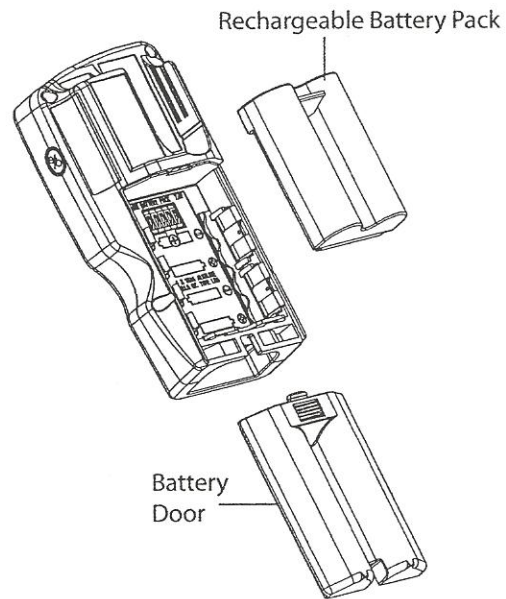


Figure 2B: Rechargeable Lithium-Ion Battery Pack




## Cleaning or Disinfecting the Sensors

Clean or disinfect reusable sensors before attaching to a new patient.

Clean the sensor with a soft cloth moistened in water or a mild soap solution. To disinfect the sensor, wipe the sensor with a 70% isopropyl alcohol solution. If there is contamination with blood borne pathogens (BBPs) or other potentially infectious materials (OPIMs), then the use of a health-care provider approved disinfectant is appropriate.

## Attaching the Sensor to the Patient

To attach the sensor to the patient:

1. Choose the appropriate sensor.
2. If using a reusable sensor, clean or disinfect the sensor per *Cleaning or Disinfecting the Sensors* section in these instructions. (Disposable sensors with the label  are for single-patient use and do not require cleaning or disinfecting.)
3. Check the sensor and oximetry cable for damage and integrity.
4. Attach sensor to the patient.

| KEYWORD | DEFINITION  |
|---------|---|
| WARNING | Something that could hurt the patient or hurt the operator. |
| CAUTION | Something that could damage the monitor.                    |

## Warnings and Cautions

**WARNING!** This device is not a toy. Keep out of reach of children.

**WARNING!** This device is not intended for continuous patient monitoring. This device is intended to measure the patient's %SpO<sub>2</sub> and pulse rate values. There are no audible or visible alarms.

**WARNING!** The monitor was not designed or tested to be an apnea monitor.

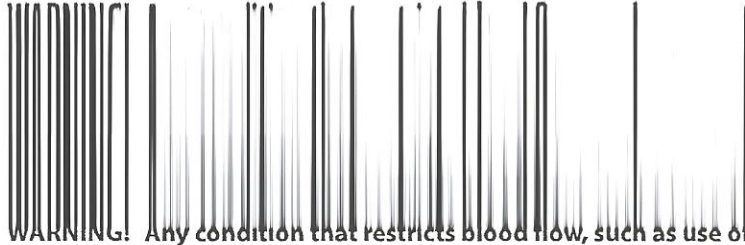
**WARNING!** Operation of this device may be adversely affected in the presence of conducted transients or strong electromagnetic (EM) or radiofrequency (RF) sources, such as portable and mobile RF communication equipment, electrosurgery and electrocautery equipment, x-rays, and high intensity infrared radiation.

**WARNING!** Any monitor that has been dropped or damaged should be inspected by qualified service personnel, prior to use, to insure proper operation.

**WARNING!** If the accuracy of any measurement is in question, verify the patient's vital sign (s) by an alternative method and then check the monitor for proper functioning.

**WARNING!** This device must be used in conjunction with clinical signs and symptoms. This device is only intended to be an adjunct in patient assessment.

- WARNING!** This device is intended for use by persons trained in professional health care or those who have access to the oversight of a professional health care provider. The operator must be thoroughly familiar with the information in this manual before using the device.
- WARNING!** Prolonged use or the patient's condition may require changing the sensor site periodically. Change sensor site and check skin integrity, circulatory status, and correct alignment at least every 4 hours.
- WARNING!** When attaching sensors with Microfoam<sup>®</sup> tape, do not stretch the tape or attach the tape too tightly. Tape applied too tightly may cause inaccurate readings and blisters on the patient's skin (lack of skin respiration, not heat, causes the blisters).
- WARNING!** Use only SpO<sub>2</sub> sensors supplied with, or specifically intended for use with, this device.
- WARNING!** Incorrectly applied sensors may give inaccurate readings. ⚠ Refer to the sensor insert for proper application instructions.
- WARNING!** Do not autoclave, ethylene oxide sterilize, or immerse the sensors in liquid. This may cause damage to the sensor which may cause inaccurate readings.
- WARNING!** Unplug the sensor from the oximeter before cleaning or disinfecting to prevent damaging the sensor or monitor, and to prevent user safety hazards.
- WARNING!** Measurements made at sites with low perfusion are potentially inaccurate. Always use measurements in conjunction with other clinical signs and symptoms.
- WARNING!** SpO<sub>2</sub> measurements may be adversely affected in the presence of high ambient light. Shield the sensor area (with a surgical towel, for example) if necessary.



**WARNING!** Any condition that restricts blood flow, such as use of a blood pressure cuff or extremes in systemic vascular resistance, may cause an inability to determine accurate pulse rate and SpO<sub>2</sub> readings.

**WARNING!** Remove fingernail polish or false fingernails before applying SpO<sub>2</sub> sensors. Fingernail polish or false fingernails may cause inaccurate SpO<sub>2</sub> readings.

**WARNING!** The oximeter will not operate without batteries installed. Properly charged batteries provide a reserve source of power in case of external power failure. Never use an oximeter with discharged batteries to monitor a patient.

**WARNING!** Inspect battery terminals for corrosion or contamination. The monitor may not operate properly if battery terminals are corroded or contaminated. Do not use until properly cleaned and repaired.

**WARNING!** Check expiration date of batteries. The monitor may not operate properly if expired batteries are used. Do not use until proper batteries can be obtained.

**WARNING!** Remove device batteries prior to long term storage.

**WARNING!** Do not allow the patient to handle the device if the battery door has been removed, except while installing new batteries.

**WARNING!** Disconnect the external power supply from the monitor or Docking Station before disinfecting or cleaning the monitor.

**WARNING!** Do not plug the monitor or Docking Station into an outlet controlled by a wall switch.

**WARNING!** Disconnect the AC power supply from the outlet before disconnecting it from the monitor. Leaving the AC power supply connected to an AC power outlet without being connected to the monitor may result in a safety hazard.



**WARNING!** Do not allow any moisture to contact the AC power supply connectors or a safety hazard may result. Ensure that hands are thoroughly dry before handling the AC power supply.

**WARNING!** Do not place the monitor or Docking Station in the patient's bed or crib. Do not place the monitor or Docking Station on the floor.

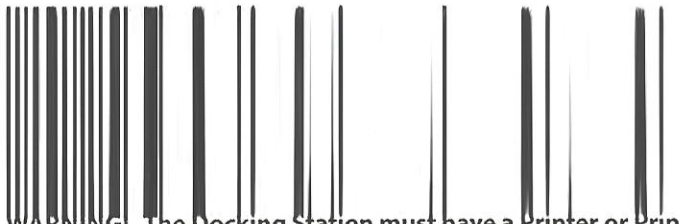
**WARNING!** Failure to place the monitor or Docking Station away from the patient may allow the patient to turn off, reset, or damage the monitor, possibly resulting in the patient not being monitored. Make sure the patient cannot reach the monitor from their bed or crib.

**WARNING!** Failure to carefully route the cable from the sensor to the monitor may allow the patient to become entangled in the cable, possibly resulting in patient strangulation. Route the cable in a way that will prevent the patient from becoming entangled in the cable. If necessary, use tape to secure the cable.

**WARNING!** If there is a risk of the AC power supply becoming disconnected from the monitor during use, secure the cord to the monitor several inches from the connection.

**WARNING!** Ensure the device's AC rating is correct for the AC voltage at your installation site before using this monitor. The monitor's AC rating is shown on the external power supply. If the rating is not correct, do not use the monitor. Contact the Smiths Medical PM, Inc. service department, or your authorized service representative, for help.

**WARNING!** Use only the power supply included with your monitor, or approved by Smiths Medical PM, Inc. Use of an inappropriate power supply may cause a patient shock hazard or cause the oximeter to stop monitoring.



**WARNING!** The Docking Station must have a Printer or Printer Port Cover installed. Failure to do so may cause a risk of electrical shock to the patient or operator or risk damage to the equipment.

**WARNING!** Under certain clinical conditions, pulse oximeters may display dashes if unable to display SpO<sub>2</sub> and/or pulse rate values. Under these conditions, pulse oximeters may also display erroneous values. These conditions include, but are not limited to: patient motion, low perfusion, cardiac arrhythmias, high or low pulse rates or a combination of the above conditions. Failure of the clinician to recognize the effects of these conditions on pulse oximeter readings may result in patient injury.

**WARNING!** Verify that all LEDs (light emitting diodes) on the display light up upon startup of the device.

**CAUTION!** Federal (U.S.A.) law restricts this device to sale by or on the order of a physician.

**CAUTION!** ⚠ Do not disassemble unit, not user serviceable. Refer to qualified service personnel.

**CAUTION!** Failure to charge the monitor while the monitor is in long term storage may shorten the battery life. Charge the monitor while it is in storage to ensure the longest battery life.

**CAUTION!** Due to limitations of the Li-Ion chemistry, the rechargeable battery pack should not be charged at ambient temperatures above 45 °C (113 °F) or below 5 °C (41 °F).

**CAUTION!** The WW1090 rechargeable battery pack is shipped with only 30% of full charge. The battery pack must be charged completely before use.

**CAUTION!** The WW1090 rechargeable battery pack utilizes Li-Ion secondary cells. Dispose of spent batteries in compliance with your institution's guidelines and local ordinances.

- CAUTION!** Observe proper battery polarity (direction) when replacing batteries.
- CAUTION!** Do not allow water or any other liquid to spill onto the monitor or Docking Station. Do not autoclave, ethylene oxide sterilize, or immerse the monitor or Docking Station in liquid. Evidence that liquid has been allowed to enter the monitor or Docking Station voids the warranty.
- CAUTION!** Where the equipment has accidentally gotten wet, it should be wiped dry externally and allowed to dry thoroughly before use.
- CAUTION!** Before cleaning or disinfecting the printer, unplug the AC adapter, remove the batteries and remove the paper.
- CAUTION!** Do not allow printer paper to become wet. If the printer paper gets wet, remove the paper immediately. Do not use the printer until the paper is replaced.
- CAUTION!** Chemicals used in some cleaning agents may cause brittleness of plastic parts. Follow cleaning instructions in this manual.
- CAUTION!** Cleaning with disinfectants, including alcohol, may shorten the life of the plastic or electronic parts, but appropriate disinfection must still be performed.
- CAUTION!** Pressing any key with sharp or pointed instruments may permanently damage the keypad. Only press keys with your finger.



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**EC REP** Authorized Representative

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MEDICAL EQUIPMENT



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IN ACCORDANCE WITH UL60601-1, IEC60601-1,  
CAN/CSA C22.2 NO. 601.1



Manufactured By

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