# Model 130
## Pulse Oximeter


## User's Manual

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POX010-130

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## Chapter 1:

# Principles of Operation

## Intended Uses

> **WARNING**
> Before using the pulse oximeter, become thoroughly familiar with the information in this manual.

The Mediaid Inc. Model 130 pulse oximeter is intended to non-invasively measure arterial oxygen saturation and pulse rate in hospitals, physicians' offices, emergency medical facilities, or at home. The Model 130 can store data in memory for later review and documentation, and features a sleep mode for patient sleep screening. The Model 130 is not intended for continuous patient monitoring.

## Principles of Oximetry

The Mediaid Inc. Model 130 pulse oximeter is designed to measure the percentage of functional oxygenated hemoglobin to total hemoglobin. Noninvasive arterial oxygen saturation measurement is obtained by directing red and infrared light through a pulsating vascular bed. The pulsating arterioles in the path of the light beam cause a change in the amount of light detected by a photodiode. The pulse oximeter determines the oxygen saturation of arterial blood by measuring the ratio of transmitted red to infrared light within the pulse waveform. The non-pulsatile signal is removed electronically for the purpose of calculation. Therefore, skin, bone, and other non-pulsating substances do not interfere with the measurement of arterial oxygen saturation.

## Intrinsic Calibration

The light absorption by hemoglobin is wavelength-dependent. Mediaid Inc. red and infrared LED (light emitting diode) wavelengths are tightly controlled by testing in production. In addition, the LED intensity recorded at the detector is automatically adjusted for amplitude; this allows different Mediaid Inc. pulse oximetry sensors to be used interchangeably without calibration.

# Principal Features

The Mediaid Inc. Model 130 pulse oximeter is a portable, lightweight, pocket-sized instrument that monitors functional arterial oxygen saturation ($SpO_2$) and pulse rate on-invasively.

**WARNING**
Do not use the Model 130 for continuous patient monitoring.

The principal features of the pulse oximeter are as follows:

- Gives an alternating readout of $SpO_2$ percentage (%$SpO_2$) and pulse rate (BPM - beats per minute) on a 3-digit, 7-segment LED display.
- Stores data automatically every 5 seconds for up to 30 minutes on a single patient or intermittently on command for up to 20 patients.
- Enables sleep screening when the CABLE ADAPTER is attached.
- Tags patient readings automatically with the time and date of the reading.
- Works with either the INTEGRAL FINGER SENSOR or any Mediaid Inc. pulse oximetry sensor with a CompuShield® Connector that attaches to the CABLE ADAPTER.
- Provides increased longevity and functionality to the pulse oximeter with the removable and replaceable sensor modules.
- Enables data to be printed or transmitted to a computer via the INFRARED PORT on the INTEGRAL FINGER SENSOR or the CABLE ADAPTER.
- Includes three function keys that allow for different modes of data storage and the transmission of recorded data to a printer or computer.
- Performs approximately 14 hours of operation on a single 1.5 volt, AA-sized alkaline battery (when using a Duracell® Ultra battery, which is recommended).

# General Cautions

- U.S. federal law restricts this device to sale by or on the order of a physician.
- Become thoroughly familiar with the information in this user's manual and all other accompanying documents before using the pulse oximeter.
- Do not attempt to modify or repair the pulse oximeter - doing so voids the warranty.
- Dispose of this device according to governmental regulations.
- Adhere to all cautions, stipulations, and instructions included with the INTEGRAL FINGER SENSOR, the CABLE ADAPTER, and all sensors used with the CABLE ADAPTER.

## Environmental Cautions

- Do not use the pulse oximeter in the presence of flammable agents or flammable anesthetics.
- Do not immerse in liquid and do not allow any liquid to penetrate the pulse oximeter's interior.
- Operate the pulse oximeter in normal light conditions.
- Avoid bright light or glare on the sensing area to ensure correct reading of the displays and indicators.
- Keep away from MRI (Magnetic Resonance Imaging) equipment.
- Move the pulse oximeter away from other electromagnetic emitting equipment if you experience interference problems. (This device complies with electromagnetic compatibility standard EN60601-1-2.)
- Keep away from equipment that emits x-ray alpha particles, beta particles, neutron particles, or microwave emissions.

## Battery Cautions

- Use only 1.5 volt, AA-sized alkaline batteries (Duracell Ultra are recommended). Never use manganese batteries, lithium batteries, or any other type of battery not specifically recommended. Use of such batteries could damage the pulse oximeter.
- Never dispose of batteries into fire, short circuit the terminals, or attempt to disassemble, heat, or recharge the battery. Doing so could damage the battery and cause a fire, injury, or environmental contamination.
- Liquid leaking from the battery can cause skin burns or damage the pulse oximeter. If a battery leaks inside the instrument, return the pulse oximeter for servicing.
- Remove the battery during shipment or if the pulse oximeter will be idle for several weeks.

## Sleep Screening Cautions

- Powering off the Model 130 while it is in the Sleep Recording mode will end the sleep screening process. The next time that the pulse oximeter is powered on (while the CABLE ADAPTER is attached) will result in the recording of new sleep screening data, and previously recorded data will be erased after 15 minutes, whether or not the sensor is applied to a patient.
- Removing the CABLE ADAPTER from the Model 130 while it is in the Sleep Recording mode will power off the instrument, ending the sleep screening process.

- When sleep screening data is gathered overnight, the sensor cord should be placed so that the patient does not become entangled. Do not attach the cord or the pulse oximeter in any permanent or semi-permanent manner to the bed or furniture. The sensor cord and the pulse oximeter should be free to move with the patient.

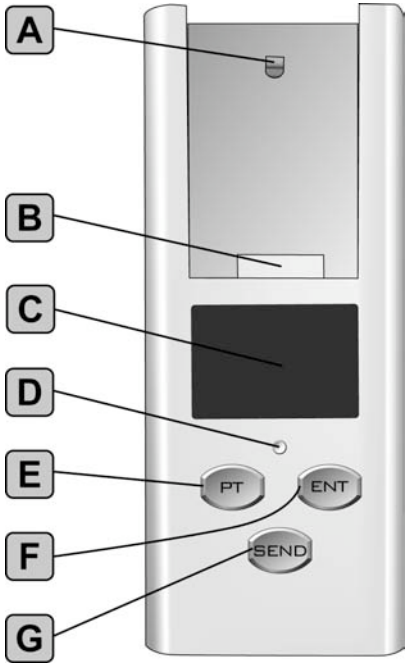
# Preventing Device Complications and Faulty Readings

- Trim the patient's long fingernails and remove artificial nails or thick nail polish.
- Insert the patient's finger completely into the sensor.
- When using the INTEGRAL FINGER SENSOR, both the pulse oximeter and the patient's hand should rest on the same flat surface.
- Fit the sensor comfortably without constricting or compressing the application site when using a sensor that is attached to the CABLE ADAPTER.
- Do not apply the sensor to anything but a well perfused extremity.
- Cold extremities can affect readings. Warm up the extremity, or move the sensor to a different site, if necessary.
- Do not apply the sensor on extremities that have blood pressure cuffs or arterial or venous catheters.
- Avoid extremity positions that could compromise venous return.
- Keep sensors at heart level whenever possible.
- Check for intravascular dyes, which could affect pulse oximeter readings.
- Turn off very bright lights, such as surgical, bilirubin, fluorescent, or infrared heating lights if they interfere with sensor functioning. In cases where such lights are unavoidable, cover the sensor site with an opaque material.
- Route sensor cords carefully.
- Avoid applying excessive tension to the sensor or sensor cord.
- Consider conditions affecting the hemoglobin dissociation curve when interpreting pulse oximeter readings (such as intravascular dyes).
- Keep patient movement to a minimum.
- When not in use, do not wind the sensor cord around the pulse oximeter.

## Chapter 2:

# Features, Indicators, Keys, and Symbols

## Pulse Oximeter Front View




**A. Module Release**
The MODULE RELEASE mechanism allows for removal of either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER module from the pulse oximeter.

**B. Module Connector**
The MODULE CONNECTOR connects the INTEGRAL FINGER SENSOR or the CABLE ADAPTER module to the pulse oximeter.

**C. LED Display**
The LED display alternates between showing the pulse rate and oxygen saturation values. It also shows error codes and functions.

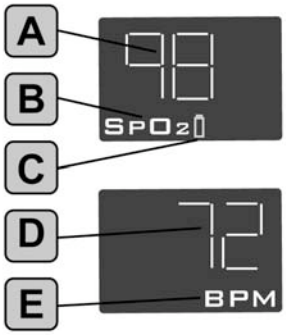
**D. Visual Pulse Indicator**
The VISUAL PULSE INDICATOR is an orange LED that flashes with everypulse detected by the pulse oximeter.

**E. PT (Patient) Key**
The PT key prepares the pulse oximeter to record data, increases and decreases the patient number, decreases time/date values, and scrolls through the recording modes. The PT key, in conjunction with the SEND key, enters the U.S. format time date setting mode.

**F. ENT (Enter) Key**
The ENT key enters data into memory, increases time/date values, and, in conjunction with the SEND key, enters the international time-date setting mode. The ENT key is also used to select the data transmission method (printer or computer).

**G. SEND Key**
The SEND key transmits recorded data to a receiving device and erases the memory. In conjunction with either the PT or ENT key, the SEND key enters either the U.S. or international Time Date Setting mode. The SEND key is also used to adjust the oxygen saturation display interval.

# LED Display




**A. Oxygen Saturation Display**
The OXYGEN SATURATION DISPLAY shows the oxygen saturation values.

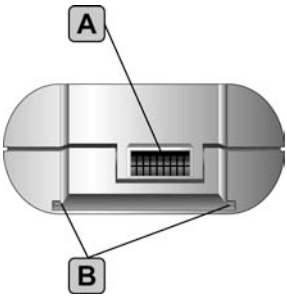
**B. Oxygen Saturation Indicator**
The OXYGEN SATURATION INDICATOR lights when an oxygen saturation value is displayed.

**C. Low Battery Indicator**
The LOW BATTERY INDICATOR lights when there is less than 30 minutes of operating time remaining.

**D. Pulse Rate Display**
The PULSE RATE DISPLAY shows the pulse rate values.

**E. Pulse Rate Indicator**
The PULSE RATE INDICATOR lights when a pulse rate value is displayed.

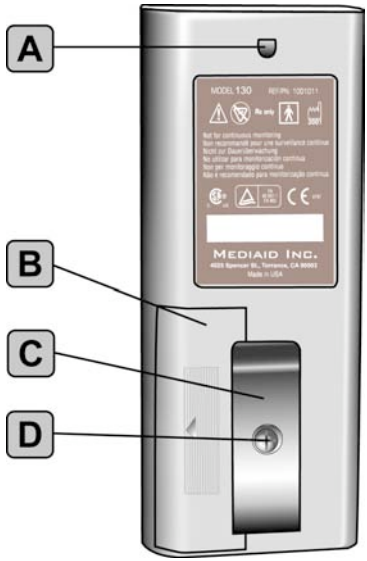
# Pulse Oximeter Top View




**A. Module Connector**
The MODULE CONNECTOR connects the INTEGRAL FINGER SENSOR or the CABLE ADAPTER module to the pulse oximeter.

**B. Insertion Guides**
The insertion guides on the pulse oximeter align with the insertion tabs on the INTEGRAL FINGER SENSOR or the CABLE ADAPTER to ensure proper attachment.

## Pulse Oximeter Back View



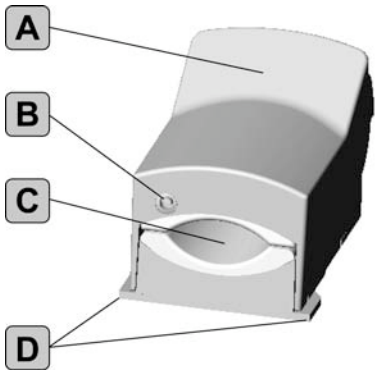

**A. Module Release**
The MODULE RELEASE mechanism allows for removal of either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER module from the pulse oximeter.

**B. Battery Compartment**
The BATTERY COMPARTMENT holds a single 1.5 volt, AA-sized alkaline battery that provides operating power for the pulse oximeter.

**C. Belt Clip**
The removable BELT CLIP provides a convenient method of carrying the pulse oximeter.

**D. Belt Clip Retaining Screw**
The BELT CLIP RETAINING SCREW attaches the BELT CLIP to the pulse oximeter.

## Integral Finger Sensor Front/Top View



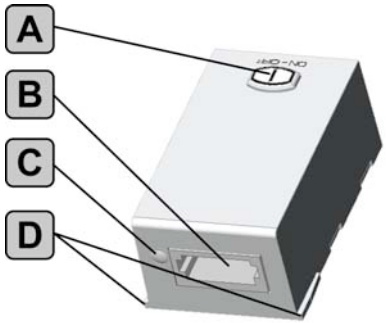

**A. Sensor Top Lever**
The SENSOR TOP LEVER is pressed to open the sensor so that a finger can be inserted. Pressing the SENSOR TOP LEVER when the INTEGRAL FINGER SENSOR is attached powers on the pulse oximeter.

**B. Infrared Port**
The INFRARED PORT transmits data to a computer or a printer.

**C. Finger Insertion Area**
The FINGER INSERTION AREA is the location for insertion of a finger or a thumb into the sensor.

**D. Insertion Tabs**
The INSERTION TABS align with the insertion guides on the pulse oximeter to ensure proper attachment.

## Cable Adapter Front/Top View



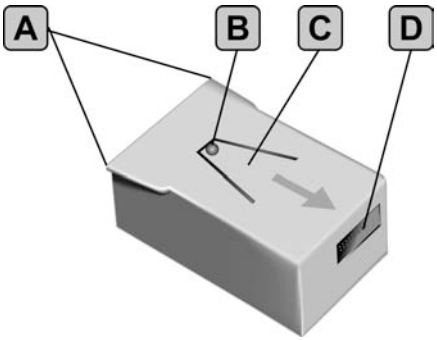

**A. Cable Adapter On/Off Key**
The CABLE ADAPTER On/Off key powers on the pulse oximeter when the CABLE ADAPTER is attached.

**B. CompuShield Connector**
The CompuShield Connector connects an appropriate Mediaid Inc. sensor to the CABLE ADAPTER.

**C. Infrared Port**
The INFRARED PORT transmits data to a computer or a printer.

**D. Insertion Tabs**
The INSERTION TABS align with the insertion guides on the pulse oximeter to ensure proper attachment.

## Cable Adapter and Integral Finger Sensor Back/Bottom View




**A. Insertion Tabs**
The INSERTION TABS align with the INSERTION GUIDES on the pulse oximeter to ensure proper attachment.

**B. Module Release**
The MODULE RELEASE mechanism allows for removal of either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER from the pulse oximeter.

**C. Spring Clip**
The spring clip secures either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER to the pulse oximeter.

**D. Rear Connector**
The rear connector electrically connects the INTEGRAL FINGER SENSOR or the CABLE ADAPTER to the pulse oximeter.

# Symbols

| Symbol | Definition |
|---|---|
|  | Cable Adapter On/Off Button |
|  | PT (Patient) Button |
|  | ENT (Enter) Button |
|  | SEND Button |
| $SpO_2$ | Oxygen Saturation Indicator |
| BPM | Pulse Rate Indicator |
|  | Low Battery Indicator |
|  | Battery Polarity indicator |
|  | Attention: consult accompanying documents |
|  | Non-Anesthetic Proof |
|  | Type BF Equipment |
|  | Date of Manufacture |
| RX Only | U.S. federal law restricts this device to sale by or on the order of a physician. |

## Chapter 3:

# Initial Setup

## Replacing the Battery

> CAUTION
> Always adhere to all cautions detailed in “Battery Cautions,” in Chapter 1.

A single 1.5 volt powers the Model 130 pulse oximeter; AA sized alkaline battery that will operate the device for approximately 14 hours (when using a Duracell Ultra battery).

To replace the battery, complete the following steps.

1. Gently press down on the BATTERY COMPARTMENT door and push it out of the pulse oximeter.
2. Insert the battery.
   Follow the correct polarity indicated by the BATTERY POLARITY symbol located on the inside of the compartment.
3. Insert the tabs on the BATTERY COMPARTMENT door into the BATTERY COMPARTMENT and gently slide the door into place.

## Attaching the Integral Sensor or the Cable Adapter

To attach either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER to the pulse oximeter, complete the following steps.

1. Place the INTEGRAL FINGER SENSOR or the CABLE ADAPTER module into the pulse oximeter, pointing the REAR CONNECTOR of the module toward the MODULE CONNECTOR of the pulse oximeter (Figure 1). The arrow on the bottom of the module will point toward the LED display of the pulse oximeter.
2. Slide the INTEGRAL FINGER SENSOR or the CABLE ADAPTER module completely into the pulse oximeter (Figure 2). The INSERTION TABS at the end of the module will fit into the INSERTION GUIDES on the pulse oximeter.

Figure 1

Figure 2

**NOTE**

The INTEGRAL FINGER SENSOR or the CABLE ADAPTER can be left connected to the pulse oximeter when it is not in use.

**CAUTION**

To obtain accurate oximetry readings, choose an appropriate Mediaid Inc. pulse oximeter and sensor according to the intended use. Follow all instructions stated within this manual as well as those included with each sensor.

## Removing the Integral Finger Sensor

To remove the INTEGRAL FINGER SENSOR from the pulse oximeter, complete the following steps.

1. Locate the MODULE RELEASE mechanism at the back of the pulse oximeter (just above the label).
2. Push the pointed end of a paper clip into the MODULE RELEASE mechanism, while simultaneously pushing gently upward on the SENSOR TOP LEVER (Figure 3), until the INTEGRAL FINGER SENSOR is released.
3. Slide the INTEGRAL FINGER sensor out of the pulse oximeter.

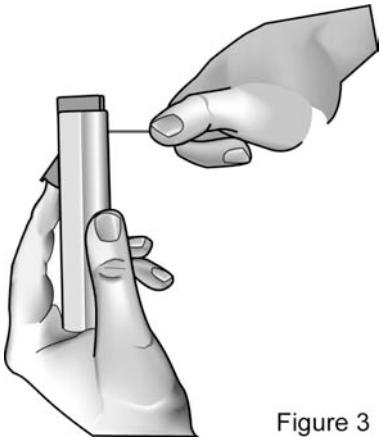


Figure 3

## Removing the Cable Adapter

To remove the CABLE ADAPTER from the pulse oximeter, complete the following steps.

1. Locate the MODULE RELEASE mechanism at the back of the pulse oximeter (just above the label).
2. Push the pointed end of a paper clip into the MODULE RELEASE mechanism, while simultaneously pushing upward on the CABLE ADAPTER or pulling upward on the attached sensor connector (Figure 4).
3. Slide the CABLE ADAPTER out of the pulse oximeter.

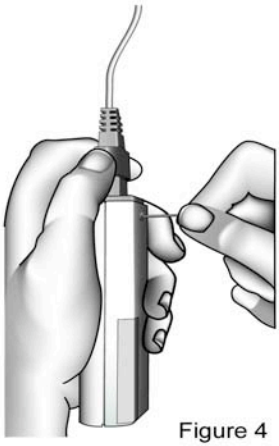


Figure 4

**CAUTION**

When in the Sleep Recording mode, removing the CABLE ADAPTER ends the sleep screening process. Recording new sleep screening data will erase previously recorded data after 15 minutes.

**CAUTION**

Removing the CABLE ADAPTER and attaching the INTEGRAL FINGER SENSOR automatically changes the recording mode to Intermittent, erasing previously stored Automatic or Sleep Recording data.

## Removing the Belt Clip

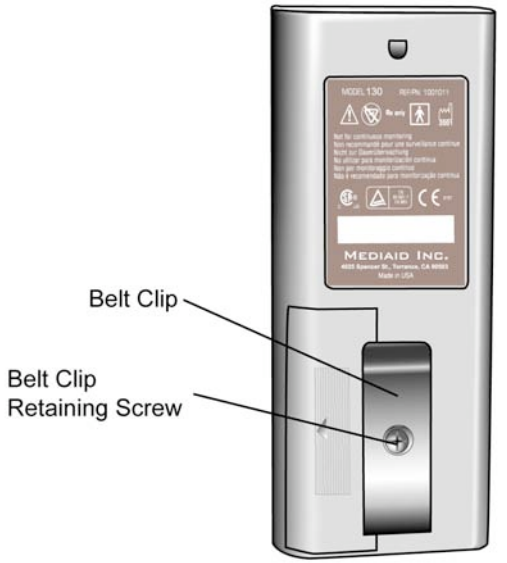
To remove the BELT CLIP from the pulse oximeter, complete the following steps.

1. Use a #1 Jeweler's (small Phillips) screwdriver to remove the BELT CLIP RETAINING SCREW.
2. Remove the BELT CLIP from the pulse oximeter.

## Attaching the Belt Clip

If the BELT CLIP has been removed from the pulse oximeter, complete the following steps to replace it.

1. Place the flat part of the BELT CLIP on the back of the pulse oximeter, lining up the screw holes on the belt clip and the pulse oximeter.
2. Place the BELT CLIP RETAINING SCREW into the hole in the belt clip.
3. Use a #1 Jeweler's (small Phillips) screwdriver to tighten the BELT CLIP RETAINING SCREW.



# Powering On the Pulse Oximeter

To power on the pulse oximeter, complete one of the following two steps.

- If the INTEGRAL FINGER SENSOR is attached, press the SENSOR TOP LEVER.
- If the cable adapter is attached, press the CABLE ADAPTER On/Off key.

> **CAUTION**
> To ensure personal safety and proper operation of the pulse oximeter, adhere to all directions, warnings, cautions, and policies stated within this manual as well as those included with each accessory.

After the pulse oximeter is powered on, the LED display shows one of the following for 1 second:

- AU, if the pulse oximeter is in the Automatic Recording mode.
- The patient number (from P1 to P20) if the pulse oximeter is in the Intermittent Recording mode. If a patient number has not been selected, the LED display shows three dashes (- - -).
- SLP, if the pulse oximeter is in the Sleep Recording mode.

Next, the pulse oximeter tests the sensor availability, internal functions, and the battery. The LED display shows three dashes (- - -) during these tests, which last 1-2 seconds.

When the pulse oximeter has successfully passed the power on tests, it enters the Monitoring mode. If the battery is low, the LOW BATTERY INDICATOR will light. An error code will show if any other malfunction occurs. See *Troubleshooting*, in Chapter 10, for error code interpretation.

# Powering Off the Pulse Oximeter

**Powering Off in Automatic or Intermittent Recording Mode**

To power off the pulse oximeter while it is in the Intermittent or Automatic Recording mode, complete one of the following steps.

- If the INTEGRAL FINGER SENSOR is attached, remove the finger from the sensor.
- If the CABLE ADAPTER is attached, either press the On/Off key or disconnect the sensor from the cable adapter.

The pulse oximeter will power off automatically if neither oxygen saturation nor pulse rate values can be detected or if the finger is positioned incorrectly.

**Powering Off in Sleep Recording Mode**

To power off the Model 130 while it is in the Sleep Recording mode, complete the following step.

- Disconnect the sensor from the CABLE ADAPTER.

In the Sleep Recording mode, the LED display will dim after 30 seconds without any key activity. Press one of the pulse oximeter keys (PT, ENT, or SEND) to illuminate the display for another 30 seconds.

CAUTION

Powering off the Model 130 while it is in the Sleep Recording mode will end the sleep screening process. The next time that the instrument is powered on (while the CABLE ADAPTER is attached) new sleep screening data will be recorded. Any previously recorded data will be erased after 15 minutes, whether or not the sensor is applied to a patient.

NOTE

Monitoring must take place for 15 minutes or more to retrieve data stored in Sleep Screening mode.

## Capitolo 4:

# Monitoring and Recording

Pulse oximetry data can be displayed in the Monitoring mode, or it can be recorded and stored in the Intermittent, the Automatic, or the Sleep Recording mode.

## Monitoring Pulse Oximetry

The Monitoring mode can be entered using either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER. In Monitoring mode, pulse oximetry data can be viewed on the LED display, as follows:

- Oxygen saturation values display for either 2.5 seconds or 7.5 seconds. For information about adjusting the display interval, see *Changing the LED Display Interval* in Chapter 7.
- Pulse rate values display for 2.5 seconds.

To monitor pulse oximetry data (without recording the data in memory), complete the following steps.

1. Apply the sensor to the patient.
   Either insert the patient's finger into the INTEGRAL FINGER SENSOR, or apply the sensor that is attached to the CABLE ADAPTER.
2. If the CABLE ADAPTER is attached, press the CABLE ADAPTER On/Off key to power on the pulse oximeter.
   The LED display shows three dashes (- - -) for 1-2 seconds while the pulse oximeter performs the power on tests.
   The VISUAL PULSE INDICATOR begins to blink, signaling that the pulse oximeter is measuring a site with sufficient perfusion.
3. If the VISUAL PULSE INDICATOR does not blink, adjust the sensor position.

After the power on tests, the following information shows on the pulse oximeter:

- The VISUAL PULSE INDICATOR blinks with each pulse detected by the pulse oximeter.
- Oxygen saturation values show on the LED display when the OXYGEN SATURATION INDICATOR lights.
- Pulse rate values show on the LED display when the PULSE RATE INDICATOR lights.

The following conditions apply when the pulse oximeter cannot detect a pulse rate or oxygen saturation values:

- If the pulse oximeter cannot detect a pulse rate (but can detect oxygen saturation values), three dashes (- - -) will show on the LED display each time that the PULSE RATE INDICATOR lights. The oxygen saturation values will display normally.
- If the pulse oximeter cannot detect oxygen saturation values (but can detect a pulse rate), three dashes (- - -) will show on the LED display each time that the OXYGEN SATURATION INDICATOR lights. The pulse rate values will display normally.
- If the pulse oximeter can detect neither pulse rate nor oxygen saturation values, it will power off automatically.

## Recording Data in Memory

The pulse oximeter can record pulse oximetry data either intermittently (on up to 20 patients) or automatically (every 5 seconds for up to 30 minutes on a single patient). The Model 130 also has a Sleep Recording mode that can record pulse oximetry data for up to 11.5 hours on a single patient.

**CAUTION**

Removing the CABLE ADAPTER and attaching the INTEGRAL FINGER SENSOR automatically changes the recording mode to Intermittent, erasing previously stored Automatic or Sleep Recording data.

## Recording Data Intermittently

The following conditions apply to the Intermittent Recording mode:

- Data can be manually recorded on up to 20 different patients.
- Either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER can be attached.
- The time and date are recorded with each data entry.
- Recorded data can be either printed or transmitted to a computer.

To record data in memory, the time and the date must first be set. If they are not already set, the display shows Err, then 1 (the number one). See *Adjusting the Time and Date Settings*, in Chapter 7, for more information.

To record data intermittently, complete the following three procedures: *Selecting the Intermittent Recording Mode*, *Entering a Patient Number*, and *Recording the Intermittent Data*.

**Selecting the Intermittent Recording Mode**

If the INTEGRAL FINGER SENSOR is attached, the Intermittent Recording mode is automatically selected. Skip ahead to *Entering a Patient Number*. If the CABLE ADAPTER is attached, the last recording mode selected is retained. To change the recording mode to Intermittent, complete the following steps.

> **CAUTION**
> Changing the recording mode erases all data previously stored in memory.

1. If the pulse oximeter is on, power it off.
2. Hold down the PT (patient) key.
3. While holding down the PT key, power on the pulse oximeter.
   If the INTEGRAL FINGER SENSOR is attached, press the SENSOR TOP LEVER. If the CABLE ADAPTER is attached, press the CABLE ADAPTER On/Off key.
   Either In, AU, or SLP (Intermittent, Automatic, or Sleep Recording mode) will show on the LED display.
4. If AU or SLP shows on the LED display, press the PT key until In is displayed.
   After 4 seconds of showing In, the LED display will show -0-, indicating that all previously stored data has been erased.

**Entering a Patient Number**

When the pulse oximeter is in the Intermittent Recording mode, the patient number (from P1 to P20) shows on the LED display at power on, unless a patient number has not been selected.
The patient number can be adjusted or entered when the pulse oximeter is in the Intermittent Recording mode (see *Selecting the Intermittent Recording Mode* for more information.)

1. Power on the pulse oximeter, taking note of the patient number that appears for 1 second after power on (if a patient number has been entered).
   If a patient number has not been entered, the LED display will show three dashes (- - -) at power on.
2. To increase or to enter a patient number, press the PT (patient) key (for less than 1 second).
   Each time the PT key is pressed, the patient number increases by 1. If a patient number has not been entered, the first press of the PT key will enter patient number one (P1).
3. To decrease the patient number, hold down the PT key (for at least 3 seconds).

Each time the PT key is held down, the patient number decreases by 1.

**Recording the Intermittent data**

The pulse oximeter is ready to record intermittent data when it is in the Intermittent Recording mode and a patient number has been selected (see *Selecting the Intermittent Recording Mod*" and *Entering a Patient Number* for more information).

NOTE
If PPP shows on the LED display after the ENT key is pressed, it means that a patient number has not been entered. A patient number must be entered before data can be recorded intermittently.

1. Apply the sensor to the patient.
2. Power on the pulse oximeter.
   If the integral finger sensor is attached, press the sensor top lever. If the cable adapter is attached, press the cable adapter On/Off key.
   The patient number (from P1 to P20) will show briefly on the LED display, and then the pulse oximeter will begin normal monitoring.
3. To record the data showing on the LED display, press the ENT (enter) key. The data will flash two or three times to show that it has been recorded. Each time the ENT key is pressed, both oxygen saturation and pulse rate data are recorded, regardless of what shows on the LED display.
4. To record data under a different patient number, without erasing previously stored data, enter a new patient number and repeat Steps 1-3, above. See *Entering A Patient Number* for more information.

The data recorded can be retrieved, either by printing or by transmitting to a computer (see Chapter 6).

# Recording Data Automatically on a Single Patient

The following conditions apply to the Automatic Recording mode:

- Data is recorded every 5 seconds for up to 30 minutes on a single patient.
- The CABLE ADAPTER must be attached.
- The time and date are recorded with each data entry.
- Recorded data can be either printed or transmitted to a computer.

To record data in memory, the time and the date must first be set. If they are not already set, the display shows Err, then 1 (the number one). To adjust or set the time and date, see *Adjusting the Time and Date Settings* in Chapter 7.

To record data automatically, complete the following two procedures: *Selecting the Automatic Recording Mode*, and *Recording the Automatic Data*.

**CAUTION**
If data has been stored under the Intermittent or Sleep Recording modes, changing to the Automatic Recording mode will erase the stored data.

**Selecting the Automatic Recording Mode**

The CABLE ADAPTER must be attached to record data automatically. When using the CABLE ADAPTER, the pulse oximeter will retain in memory the last recording mode selected. To change the recording mode to Automatic, complete the following steps.

1. If the pulse oximeter is on, power it off.
2. Hold down the PT (patient) key.
3. While holding down the PT key, press the CABLE ADAPTER On/Off key.
   Either In, AU, or SLP (Intermittent, Automatic or Sleep Recording mode) shows on the LED display.
4. If I n or SLP shows on the LED display, press the PT key until AU is displayed.
   After 4 seconds, -0- shows on the LED display to indicate that all previously stored data has been erased, and then the pulse oximeter powers off.

**Recording the Automatic Data**

The pulse oximeter is ready to record automatic data when it is in the Automatic Recording mode (see *Selecting the Automatic Recording Mode* for more information).

1. Attach an appropriate sensor to the CABLE ADAPTER and apply it to the patient.
2. Press the CABLE ADAPTER On/Off key to power on the pulse oximeter.
   AU will show briefly on the LED

**NOTE**
If the ENT key is pressed before the PT key, PPP will show on the LED display, and no data will be recorded.

display, and then the pulse oximeter will begin normal monitoring.

3. Press the PT (patient) key (for less than 1 second).
   P will show briefly on the LED display, indicating that the pulse oximeter is prepared to record data.
4. Press the ENT (enter) key to begin recording the displayed data.
   The data showing on the LED display will flash each time that the data is recorded. Each recording gathers both oxygen saturation and pulse rate data.

> **NOTE**
> If FUL (full) shows on the LED display, it means that the memory is full and must be erased before more data recording can take place. See "*Erasing Stored Data*," in Chapter 4, for more information.

5. To exit the Automatic Recording mode, do one of the following:

- Press the CABLE ADAPTER On/Off key.
- Remove the sensor from the patient so that the pulse oximeter powers off automatically.
- Remove the sensor from the CABLE ADAPTER.

The automatically recorded data can be retrieved by transmitting it to a printer or a computer (see Chapter 6).

## Erasing Data Storage

Pulse oximetry data is erased from memory either when manually erased or when the recording mode is changed. In the Sleep Recording mode, previously recorded sleep screening data is erased 15 minutes after new sleep screening data begins recording.

> **CAUTION**
> When data is erased from memory, it can no longer be retrieved.

To manually erase data from memory, complete the following steps.

1. Power on the pulse oximeter.
2. Use an extra long press (6 seconds) of the SEND key to erase all stored data.

The LED display shows -0- to indicate that all data has been erased.

## Chapter 5:

# Recording Sleep Screening Data

## Sleep Screening Setup

1. If the Model 130 is on, power it off.
2. Install a fresh, AA-sized alkaline battery (Duracell Ultra is recommended).
   See *Replacing the Battery*, in Chapter 3, for more information.
3. Connect a sensor to the CABLE ADAPTER. The Mediaid Inc. Tape-On Finger Sensor is recommended.
4. Hold down the PT (Patient) key.
5. While holding down the PT key, press the CABLE ADAPTER On/Off key to turn on the unit.
   Either In, AU, or SLP (Intermittent, Automatic, or Sleep Recording mode) will show on the LED display.
6. If AU or In shows on the LED display, press the PT key until SLP is displayed (Figure 5). After 4 seconds of showing SLP, the LED display will show -0-, indicating that all previously stored data has been erased.
7. Disconnect and then reattach the sensor from the CABLE ADAPTER to power off the Model 130.
   Disconnecting the sensor is the *only* way to power off the Model 130 when it is in the Sleep Recording mode.

**CAUTION**

If data has been stored under the Intermittent or Automatic Recording modes, changing to the Sleep Screening mode will erase the stored data.

**NOTE**

Monitoring must take place for 15 minutes or more to retrieve data stored in the sleep screening mode.


Figure 5

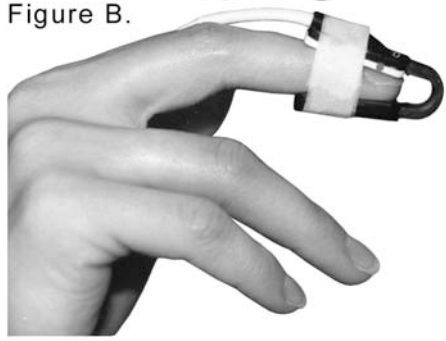
8. Give the Model 130 and a copy of the *Patient Sleep Screening Instructions* to the patient for a home sleep study.
   The *Patient Sleep Screening Instructions* can be found on a separate sheet included with the Model 130, as well as in the following section.
9. To transmit the sleep screening data to a computer, follow the instructions in *Transmitting Data to a Computer* in Chapter 6.
   Sleep screening data can be transmitted to a computer and then printed, but it cannot be transmitted directly to an infrared printer.

## Patient Sleep Screening Instructions

Your health care provider has given you the Mediaid Inc. Model 130 pulse oximeter so that you can record your oxygen saturation data while you sleep. Carefully read the following instructions.

Figure A.

Figure B.



1. Place the Tape-On Finger Sensor on your right or left middle finger so that the RED DOT of the sensor is over the middle of your fingernail.
   The angle of the sensor can be opened wider if the fit is too tight. Avoid any constriction of your finger (Figure A.).
2. Tear off a 4-5 inch strip (12-13 cm) of 1/4 or 1/2 inch (about 1/2 or 1 cm) paper tape.
3. With the sensor resting comfortably on your finger, wrap the tape around your finger and the sensor (Figure B.).
4. Press the tape against the skin on both sides of your finger.
5. Turn on the Model 130 by pressing the On/Off key.
   The Model 130 will display SLP for a few seconds and will then start to monitor your oxygen saturation and pulse rate. After about 30 seconds, the display will dim.

6. Place the Model 130 next to you while you sleep.
7. Do not remove the sensor from your finger until the study is finished. The Model 130 should be carried with you if you get up during the night. Monitoring can continue for as long as 11.5 hours.
8. When the study is finished (most likely when you wake up in the morning), turn the Model 130 off by disconnecting the sensor-— squeeze the tabs on either side of the sensor connector and pull it away from the Model 130.

**WARNING**

Carefully place the sensor cord so that you do not become entangled while you sleep. Do not attach the sensor cord or the Model 130 to the bed or furniture. The sensor cord and Model 130 should be free to move with you throughout the night.

## Chapter 6:

# Retrieving Data from Memory

Stored data can be retrieved by sending it to a computer or printer via the INFRARED PORT on the CABLE ADAPTER or the INTEGRAL FINGER SENSOR. If the data was stored in the Intermittent or the Automatic Recording mode, it can be transmitted to a printer or a computer. If the data was stored in the Sleep Recording mode, it can be transmitted to a computer. All patient information remains in memory until erased or until the recording mode is changed.

**WARNING**

If data receiving equipment is not approved for the patient environment, remove the pulse oximeter from the patient environment before transmitting data.

**CAUTION**

Do not change recording modes or switch from the CABLE ADAPTER to the INTEGRAL FINGER SENSOR without first printing or transmitting stored data. Doing so will erase all data stored in memory.

## Transmitting Data to a Printer

Transmitting pulse oximetry data to a printer requires the following:

- The Model 130, with either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER attached.
- The Hewlett Packard infrared printer (Model 82240B).

**Selecting the Printer Transmission Method**

The pulse oximeter has two data transmission methods. To transmit data to a printer, the Printer Transmission method must first be selected. The pulse oximeter retains in memory the last method selected. To change to the Printer Transmission method, complete the following steps.

1. If the pulse oximeter is on, power it off.
2. Hold down the ENT (enter) key while simultaneously powering on the pulse oximeter.
   Either HP (for transmission to a printer) or CO (for transmission to a computer) shows on the LED display.
3. If CO shows on the LED display, press the ENT key until HP is displayed.

Each press of the ENT key will toggle the pulse oximeter between the Printer and Computer Transmission methods (HP or CO).

Figure 6

**Printing Stored Data**

1. With the Printer Transmission method (HP) selected, power off the pulse oximeter, if necessary.
2. If the cable adapter is being used, remove the sensor.
3. Align the infrared port located at the front of the infrared printer to the INFRARED PORT on the INTEGRAL FINGER SENSOR or the CABLE ADAPTER (Figure 6).

   The distance between the infrared printer and the infrared port should be no more than 6 inches (15.2 cm).
4. Power on the printer.
5. Power on the pulse oximeter.
6. Send the data to the printer by pressing the SEND key on the pulse oximeter.

   While data is being transmitted, the LED display on the pulse oximeter flashes HP, and the end bars of the LED display move from top to bottom.

If necessary, an extra long press of the ENT (enter) key stops the transmission of data. Otherwise, transmission stops when all data has been received.

CAUTION

If the INFRARED PORT on the CABLE ADAPTER or the INTEGRAL FINGER SENSOR is misaligned with the infrared receiver on the printer, data transmission will be incomplete. However, data will not be lost and can be retransmitted.

# Transmitting Data to a Computer

Transmitting pulse oximetry data to a computer requires the following:

- The Model 130, with either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER attached.
- The Mediaid Inc. Infrared Data Converter.
- A Personal Computer (PC) or laptop running Windows 95, 98, 2000, ME, or NT 4.0 SP3_SP6.
- Mediaid Inc. OxySoft™ software installed on the PC.

**Getting Ready to Transmit Data**

Before transmitting data to a computer, make sure that the following conditions have been met.

- Pulse oximetry data has been stored in memory, using either the Automatic, Intermittent, or Sleep Recording modes.
- OxySoft software has been installed. To install the software, follow the instructions on the CD package and/or the computer screen. A password is required for installation, which can be found on the back of the CD package.
- The Infrared Data Converter has been connected to the PC. Connect the serial cable from the Infrared Data Converter to the PC's COM port. The PC COM port is either a 9- or 25_pin D_shaped male connector, usually located on the back of the computer. It is sometimes labeled "COM1" or "COM2."
- The Computer Transmission method has been selected for transmitting data (see "*Selecting the Computer Transmission Method*," in this chapter, for more information).

> **CAUTION**
>
> Do not change recording modes or switch from the CABLE ADAPTER to the INTEGRAL FINGER SENSOR without first printing or transmitting stored data. Doing so will erase all data stored in memory.

**Selecting the Computer Transmission Method**

The pulse oximeter has two data transmission methods. To transmit data to a computer, the Computer Transmission method must first be selected.

The pulse oximeter retains in memory the last method selected. To change to the Computer Transmission method, complete the following steps.

1. If the pulse oximeter is on, power it off.
2. Hold down the ENT (enter) key while simultaneously powering on the pulse oximeter.
   Either HP (for transmission to a printer) or CO (for transmission to a computer) shows on the LED display.
3. If HP shows on the LED display, press the ENT key until CO is displayed.

Each press of the ENT key will toggle the pulse oximeter between the Printer and Computer Transmission methods (HP or CO).

**Transmitting the Stored Data**

To transmit data to a computer, complete the following steps:

1. Power on the PC and start the Mediaid Inc. OxySoft program.
2. If the CABLE ADAPTER is being used, remove the sensor.
3. Align the INFRARED PORT on the Infrared Data Converter with the INFRARED PORT on the CABLE ADAPTER or the INTEGRAL FINGER SENSOR.
   The distance between the pulse oximeter and the Infrared Data Converter should be no more than 6 inches (15.24 cm).
4. On the PC, open the "File" menu, point to "Import", and then click "Model 130". The "Import Pulse Oximeter Data, Step 1" screen appears.
5. Follow the on-screen instructions, clicking on the "Next>>" button to proceed to the next step. When data transmission begins, the pulse oximeter's LED display briefly flashes CO, the end bars of the LED display move from top to bottom, and the "Receive Status" box will flash "RECEIVING." When data transmission is complete, the "Receive Status" box will show "FINISHED."

NOTE

The Infrared Data Converter powers off automatically after 1 minute without any transmission activity. It might be necessary to power it back on if there is transmission delay.

NOTE

Sleep screening data can take several minutes to transfer.

CAUTION

Data transmission will be incomplete if the INFRARED PORT on the CABLE ADAPTER or INTEGRAL FINGER SENSOR is misaligned with the infrared receiver on the Infrared Data Converter. However, data is not lost and can be retransmitted.

6. If necessary, an extra long press of the ENT (enter) key on the pulse oximeter stops the transmission of data. Otherwise, transmission stops when all data has been transmitted.
7. After the transmission is completed, on the PC, click the “Exit” button on the “Import Pulse Oximeter Data” window to exit “Import.”

# Chapter 7:
# Changing The Pulse Oximeter's Settings

## U.S. or International Time/Date Format

When the pulse oximeter stores pulse oximetry data in memory, data is automatically tagged with time and date information in either the U.S. or the international time/date format:

- U.S. time format stores hour information as a number between 1 and 12 along with either A.M. or P.M. information. In this format, date information is transmitted in the following sequence: month - day - year.
- International time format stores hour information as a number between 0 and 23 (also known as military time). In this format, date information is transmitted in the following sequence: day - month - year.

## Selecting a Time/Date Format

To select either the U.S. or international time/date format, complete the following steps.

1. If the pulse oximeter is on, power it off.
2. To select a time/date format, complete one of the following two steps:

- To select or adjust the U.S. time/date format, hold down both the PT (patient) and SEND keys while simultaneously powering on the pulse oximeter.

  The LED display shows AP (A.M./P.M.) for 1 second, and then it shows the last two digits of the year parameter for 6 seconds before powering off.
- To select or adjust the international time/date format, hold down both the ENT (enter) and SEND keys while simultaneously powering on the pulse oximeter.

  The LED display shows 24 for 1 second, then it shows the last two digits of the year parameter for 6 seconds before powering off.

## Adjusting the Time and Date Settings

To adjust the time and/or date settings, complete the following steps.

1. If the pulse oximeter is on, power it off.
2. Select a time/date format (see *Selecting a Time/Date Format*, on the previous page).

3. Adjust the year parameter while it is displayed, as follows:
   - To increase the parameter, press the ENT (enter) key.
   - To decrease the parameter, press the PT (patient) key.
4. To scroll through the remaining time/date parameters, press the SEND key.

   In the U.S. format, the parameters appear in the following order: Year, Month, Day, Hour, A (for A.M.), P (for P.M.), and Minute.

   International format is the same, except that the A.M. or P.M. parameters do not appear.
5. Adjust the remaining parameters while they are displayed, as follows:
   - To increase the parameter, press the ENT key.
   - To decrease the parameter, press the PT key.

**NOTE**
To adjust the time and/or date settings, either the cable adapter or the INTEGRAL FINGER SENSOR must be attached.

After 6 seconds without key activity, the parameters are set in memory and the pulse oximeter powers off.

# Changing the LED Display Interval

The LED display alternates between showing the oxygen saturation and the pulse rate values. The pulse rate values always show for 2.5 seconds, but the oxygen saturation values can show for either 2.5 seconds or 7.5 seconds.

**NOTE**
To change the display interval, either the CABLE ADAPTER or the INTEGRAL FINGER SENSOR must be attached.

The factory setting for oxygen saturation values is 7.5 seconds. To change the display interval, complete the following steps.

1. Power off the pulse oximeter, if necessary.
2. Hold down the SEND key while simultaneously powering on the pulse oximeter.

   Either 7.5 or 2.5 shows on the LED display.
3. Press the SEND key to toggle the LED display interval between 7.5 and 2.5.

After 4 seconds without key activity, the display interval is set in memory and the pulse oximeter powers off automatically.

## Chapter 8:

# Overview Of The Operating Modes

## Monitoring Mode

In the Monitoring mode, the pulse oximeter measures oxygen saturation and pulse rate. The Monitoring mode is entered after the pulse oximeter is powered on and a sensor is applied to the patient. Either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER can be attached to the pulse oximeter.

## Intermittent Recording Mode

In this mode, data can be manually recorded on up to 20 different patients, and a number of data recordings can be entered under each patient number. Either the INTEGRAL FINGER SENSOR or the CABLE ADAPTER can be attached. Data stored in the Intermittent Recording mode can be transmitted to either a printer or a computer via the infrared port on the INTEGRAL FINGER SENSOR or the CABLE ADAPTER.

## Automatic Recording Mode

In this mode, data can be automatically recorded and stored every 5 seconds on a single patient for up to 30 minutes. The CABLE ADAPTER must be attached to the pulse oximeter to record data in the Automatic Recording mode. Data stored in the Automatic Recording mode can be transmitted to either a printer or a computer via the INFRARED PORT on the CABLE ADAPTER.

## Sleep Recording Mode

In this mode, data can be automatically recorded and stored every 5 seconds for up to 11.5 hours. The CABLE ADAPTER must be attached to the pulse oximeter to record data in the Sleep Recording mode. Data stored in the Sleep Recording mode cannot be printed, but can be transmitted to a computer via the INFRARED PORT on the CABLE ADAPTER.

# Chapter 9:
# Overview Of Key Functions

## PT (Patient) Key

The PT key performs the following functions:

- When the pulse oximeter is in the Automatic Recording mode, a short press of the PT key prepares the pulse oximeter to record data. See Chapter 4 for more information.
- When the pulse oximeter is in the Intermittent Recording mode, the PT key can be used to adjust the patient number. See Chapter 4 for more information.
- Pressing both the PT and SEND keys while simultaneously powering on the pulse oximeter will cause the instrument to enter the U.S. format Time/Date Setting mode. See Chapter 7 for more information.
- Once the pulse oximeter is in the Time/Date Setting mode (U.S. or international format), the PT key can be used to decrease each time and date parameter. See Chapter 7 for more information.
- When the CABLE ADAPTER is attached, the PT key can be used to scroll through the Intermittent, Automatic, and Sleep recording modes. See Chapter 4 for more information.

## ENT (Enter) Key

The ENT key performs the following functions:

- In the Intermittent Recording mode, each short press of the ENT key enters the current oxygen saturation and pulse rate values into memory. See Chapter 4 for more information.
- In the Automatic Recording mode, a short press of the ENT key begins automatic data recording, every 5 seconds for up to 30 minutes. See Chapter 4 for more information.
- Pressing the ENT key before pressing the PT (patient) key results in an error, indicated by PPP showing on the LED display. See Chapter 4 for more information.
- Pressing both the ENT and SEND keys while simultaneously powering on the pulse oximeter will cause the instrument to enter the international format Time/Date Setting mode. See Chapter 7 for more information.
- Once the pulse oximeter is in the Time/Date Setting mode (U.S. or international format), the ENT key can be used to increase each time and

date parameter. See Chapter 7 for more information.

- Pressing the ENT key while simultaneously powering on the pulse oximeter will cause the LED display to show which data transmission method is entered—either the Printer (HP) or the Computer (CO) Transmission method. See Chapter 6 for more information.
- While the data transmission method (HP or CO) is showing on the LED display, each additional press of the ENT key toggles the pulse oximeter between the two data transmission methods. See Chapter 6 for more information.

## SEND Key

The SEND key performs the following functions:

- A short press of the SEND key transmits all stored data to a computer or a printer. See Chapter 6 for more information.
- An extra long press (6 seconds) of the SEND key erases all stored data from memory. See Chapter 4 for more information.
- Pressing both the SEND and PT (patient) keys while simultaneously powering on the pulse oximeter will cause the instrument to enter the U.S. format Time/Date Setting mode. See Chapter 7 for more information.
- Pressing both the SEND and ENT (enter) keys while simultaneously powering on the pulse oximeter will cause the instrument to enter the international format Time/Date Setting mode. See Chapter 7 for more information.
- Once the pulse oximeter is in the Time/Date Setting mode (U.S. or international format), the SEND key can be used to scroll through each time and date parameter. See Chapter 7 for more information.
- Holding down the SEND key while simultaneously powering on the pulse oximeter will cause the LED display to show the interval setting (in seconds) for the oxygen saturation values—either 7.5 or 2.5. See Chapter 7 for more information.
- While the interval setting for the oxygen saturation values is showing on the LED display, the SEND key can be used to toggle the pulse oximeter between the two intervals (7.5 or 2.5). See Chapter 7 for more information.

# Chapter 10:
# Maintenance

## Cleaning

The pulse oximeter, the INTEGRAL FINGER SENSOR, and the CABLE ADAPTER can be wiped clean with a soft cloth lightly dampened with isopropyl alcohol, a glutaraldehyde solution, or soap and water. Do not immerse in liquid or allow any liquid to penetrate the interior of the pulse oximeter. Avoid caustic or abrasive cleaners that could damage the case, keypad, or sensors. Use extra care in cleaning the LED display window to avoid scratching the finish.

## LED Display Codes

The following is a list of all possible LED display codes:

| Display Codes | Explanation |
|---|---|
| In | Intermittent Recording mode |
| AU | Automatic Recording mode |
| SLP | Sleep Recording mode |
| HP | transmit to a printer |
| CO | transmit to a computer |
| PPP | no data recording |
| P | ready to record data |
| -0- | memory erased |
| Ful | memory full |
| P # | patient number (# = number) |
| 2.5 | 2.5 second $SpO_2$ display interval |
| 7.5 | 7.5 second $SpO_2$ display interval |
| AP | U.S. time format (A.M./P.M.) |
| A | A.M. |
| P | P.M. |
| Err # | error code (# = number) |
| 24 | international time format |
| --- | waiting for data |

# Troubleshooting

Whenever an error occurs, the pulse oximeter displays the letters Err (error) for 2 seconds, and then displays the error code for 2 seconds. Error messages cycle three times, then the pulse oximeter powers off.

Table 1 explains the error code messages and gives possible solutions to the problems described in the messages.

If any other error codes appear, contact Mediaid Inc. Technical Support.

**CAUTION**

There are no user-serviceable parts or adjustments inside the Model 130. Do not attempt to open the instrument case-— any attempt to open the instrument voids the Mediaid Inc. warranty. Refer to the information in Chapter 12, for service information.

| | | |
|---|---|---|
| 1 | The time and date are not set. | Set the time and date. See *Adjusting the Time and Date Settings*, in Chapter 6 for more information. |
| 2 | The pulse oximeter will not power off. | Remove the battery and contact Mediaid Inc. Technical Support. |
| 3 | The battery needs replacing. | Replace the battery. If replacement does not clear the code, contact Mediaid Inc. Technical Support. |
| 7,8 | The cable adapter, the sensor attached to the CABLE ADAPTER, or the INTEGRAL FINGER SENSOR is malfunctioning. | Replace the INTEGRAL FINGER SENSOR or the sensor attached to the CABLE ADAPTER with a known functioning sensor. If replacing the sensor attached to the CABLE ADAPTER does not clear the code, try replacing the CABLE ADAPTER. If the error code persists, contact Mediaid Inc. Technical Support. |
| 11 | The pulse oximeter cannot detect the sensor module, either because of a sensor malfunction or because the sensor is not properly attached. | Remove and then reattach the CABLE ADAPTER, the sensor attached to the Cable Adapter or the INTEGRAL FINGER SENSOR. If reattaching does not clear the code, contact Mediaid Inc. Technical Support. |
| 4,6,9,10,12 ,13,14,15 | An internal failure has occurred. | Contact Mediaid Inc. Technical Support. |

## Chapter 11:

# Equipment Specifications

| | | | |
|---|---|---|---|
| **General** | Size: | 4.73 x 1.82 x 0.96 in<br>(12 x 4.67 x 2.46 cm) | |
| | Weight: | 4.1 oz (113 g) w/Cable Adapter<br>3.9 oz (111 g) w/Integral Finger Sensor<br>(weight includes battery) | |
| **Display** | Type: | 3 digit, 7 segment LED display | |
| **Display Rates** | $SpO_2$: | Every 2.5 or 7.5 seconds | |
| | BPM: | Every 2.5 seconds | |
| **Resolution** | $SpO_2$: | 1% | |
| | Pulse: | 1 BPM | |
| **Range** | $SpO_2$: | 20 to 100% | |
| | Pulse: | 25 to 250 BPM | |
| **Accuracy** | $SpO_2$: | 100 to 70% | ± 2% |
| | | 69 to 60% | ± 3% |
| | | < 60% | unspecified |
| | Pulse: | 25 to 200 BPM | ± 2 BPM, or 2%<br>(whichever is greater) |
| | | Above 200 BPM | ± 3% |
| **Response Time** | $SpO_2$: | 8 seconds for 80% of patients | |
| | Pulse: | 8 seconds for 80% of patients | |

**Infrared Interface**

| | |
|---|---|
| Medium: | Infrared |
| Format: | HP 82240B type & IrDA type transmission |
| Distance: | 6 inches maximum from receiving device |

### Sensors

The Integral Finger Sensor—or any Mediaid Inc. pulse oximeter sensor with the CompuShield Connector for use with the Cable Adapter—are compatible with the Model 130.

| | | |
|---|---|---|
| Red LED: | Wavelength: | 660 ± 2 nm |
| | Energy: | 60 uW |
| IR LED: | Wavelength: | 910 ± 10 nm |
| | Energy: | 150 uW |

### Power Source

| | |
|---|---|
| Battery Type: | One 1.5 volt, AA-sized alkaline battery (Duracell Ultra recommended) |
| Battery Life: | Approximately 14 hours (using Duracell Ultra) |

**NOTE**: Battery life varies with usage conditions and battery brand.

## Environmental Conditions

### Operating Temperature

32° to 104° F (0° to 40° C)

### Storage/Transport Temperature

-40° to 158° F (-40° to 70° C )

### Operational Relative Humidity

30 to 75%

### Storage/Transport Relative Humidity

10 to 100% (including condensation)

### Operational Atmospheric Pressure

700 to 1060 hPa

### Storage/Transport Atmospheric Pressure

500 to 1060 hPa

# Equipment Classification

The Mediaid Inc. Model 130 Pulse Oximeter is classified according to CAN/CSA C22.2, No. 601-1, IEC 601□1, Part 1, Section 1, Subclause 5, as follows:

- Type of protection against electric shock:

  **Internally powered, Type BF applied parts.**
- Degree of protection against harmful ingress of water:

  **Ordinary Equipment.**
- Degree of safety of application in the presence of a flammable anesthetic mixture with air, or with oxygen or nitrous oxide:

  **This equipment is not suitable for use in the presence of a flammable anesthetic mixture with air, or with oxygen or nitrous oxide.**

## Chapter 12:

# Mediaid Inc. Limited Warranty

## Applicability of Warranty

This warranty covers only the Mediaid Inc. Model 130 pulse oximeter and accessories as indicated. It is not extended to other products or components that the customer uses in conjunction with Mediaid Inc. products.

> NOTE
> Mediaid Inc. sells this product under the warranties set forth herein.

This warranty shall not apply if the manufacturer determines that the product has been damaged due to abuse, misuse, misapplication, accident, negligence, tampering, or as a result of service or modification by anyone other than an authorized Mediaid Inc. service technician. Opening of the sealed enclosure or altering of the serial number voids the Mediaid Inc. Warranty. Use of equipment contrary to or inconsistent with the User's Manual will also void the warranty.

## Warranty Coverage

Mediaid Inc. warrants that the Model 130 enclosed with this warranty will conform to the manufacturer's specifications and will be free from defects in workmanship and materials for a period of 2 years from the date of purchase. Batteries and accessories are excluded from this warranty. The integral finger sensor and cable adapter are warranted according to information on their respective instruction sheets.

This warranty does not cover any damage done to the equipment during shipping, which shall be the sole responsibility of the transportation company.

There are no warranties, expressed or implied, which extend beyond the warranties set forth herein. Mediaid Inc. makes no warranty of merchantability or fitness for a particular purpose with respect to the product or parts thereof. This warranty gives you specific legal rights. You may have other legal rights, which vary from state to state (or country to country). Mediaid Inc. will not be liable to the user for incidental or consequential damage or loss arising out of the user's inability to use this product.

# Mediaid Inc. Problem Correction Plan

Should the Mediaid Inc. product prove to be defective, contact Mediaid Inc. by telephone at:

**+1 310 793 8844 (USA)**

**+001 310 793 8844 (international)**

or email: **info@mediaidinc.com**

Have the product and serial numbers available when calling. Mediaid Inc. will then issue a Return Authorization Number (RAN). Return the pulse oximeter securely packaged in its original shipping carton (or equivalent packaging), and include the RAN.

Mediaid Inc. will repair any faulty workmanship and will either repair or replace (at our option) any defective part with new or refurbished parts. For non-warranty repairs, Mediaid Inc will charge the customer the current repair rate at the time of receipt. All transportation charges shall be the customer's responsibility.

Always read the user's manual carefully. The information included in the User's Manual will assist the user in preventing equipment misuse and ensuring patient safety. Operation of the equipment in a manner contrary to or inconsistent with the User's Manual voids the warranty.

# Owner's Registration

To assist Mediaid Inc. in better serving the user, please complete the included Warranty Registration Card and return it to:

**Mediaid Inc.**
4025 Spencer Street Suite 103
Torrance, CA 90504 USA

# Chapter 13:
# User References

## Contact/Customer Service Information

For information on other Mediaid Inc. products, visit the Mediaid Inc. home page on the web at www.mediaidinc.com, or contact us at:

**Customer Service**
4025 Spencer Street Suite 103
Torrance, CA 90503, USA

**Returns Department**
4025 Spencer Street Suite 103
Torrance, CA 90503, USA

**Telephone**
+1 310 793 8844 (USA) or
+001 310 793 8844 (International)

**Fax**
+1 310 793 8740 (USA) or
+001 310 793 8740 (International)

**Email**
info@mediaidinc.com

**Web**
www.mediaidinc.com

# Product Information

To better assist customers, Mediaid Inc. recommends writing down all pertinent product and warranty information in the spaces provided below:

**Model 130**
Product Number: POX 010-130
Serial Number: _____
Warranty Expiration Date: _____

**Integral Finger Sensor**
Product Number: POX050-750-1S
Serial Number: _____
Warranty Expiration Date: _____

**Cable Adapter**
Product Number: POX055-200-1S
Serial Number: _____
Warranty Expiration Date: _____