

Home Health Digital Pulse Oximeter User Manual



model ADPM01F

Quick Reference Guide

Please thoroughly read the manual prior to operations of the Pulse Oximeter:

1. Insert 2 AAA batteries (included)
2. Power on
3. Insert finger

Note: If you receive a “finger out” message please reinsert or try a different finger or thumb.

Tips: If your hands/fingers are cold or if you are wearing dark nail polish you may not be able to get an accurate reading. Please warm your hands/fingers and/or remove the nail polish and try again. If the sensors are dirty you may not be able to get a reading. Gently clean the sensor with rubbing alcohol and try again.

Introduction

Thank you very much for your purchase! This manual is written and compiled in accordance with the council directive MDD93/42/EEC for harmonized standards. The Manual is written for the Pulse Oximeter you purchased. In case of modifications and software upgrades, the information contained in this document is subject to change without notice. The Manual describes, in accordance with the Pulse Oximeter’s features and requirements, main structure, functions, specifications, correct methods for transportation, installation, usage, operation, repair, maintenance and storage, etc. as well as the safety procedures to protect both the user and equipment. Refer to the respective chapters for details.

Please read the Manual very carefully before using this equipment. These instructions describe the operating procedures to be followed strictly, failure to follow these instructions can cause measuring abnormality, equipment damage and personal injury. The manufacturer is NOT responsible for the safety, reliability and performance issues and any monitoring abnormality, personal injury and equipment damage due to user’s negligence of the operation instructions.



WARNING:

- It is recommended that the Pulse Oximeter should not be applied to the same finger for over 2 hours.
- The infrared light used in this device can be harmful to the eyes. Do not stare at the light. (The LED display is not harmful)
- This device is not intended for treatment of any kind.
- For best results do not use with dark nail polish as it may interfere with accurate readings.
- This manual is published by Aluratek, Inc. All rights reserved.

1. Safety

1.1 Instructions for Safe Operation

Check the digital pulse oximeter periodically to make sure there is no visible damage to the product. It is recommended that the device should be inspected once a week. Any necessary maintenance must be performed by qualified service engineers ONLY. Do not attempt to fix or repair the oximeter in any way.

1.2 Warnings

- Explosive hazard – DO NOT use the oximeter in an environment with concentrated flammable gases.
- DO NOT use the oximeter during an MRI or CT scan.
 - DO NOT use if you are allergic to rubber.
 - Disposal – Make certain you follow your local laws and regulations when disposing of this device (including battery, plastic bags, foam and paper boxes).

1.3 Suggestions

Keep the oximeter away from dust, excessive vibration, corrosive substances, explosive materials, high temperature and moisture. If the oximeter gets wet, please stop operating it until it has completely dried.

- When it is carried from extreme temperatures such as very cold environment to warm/hot environments please do not use it immediately allowing the product to acclimate to the new temperature for best results.
- Be careful not to scratch the surface of the LED or sensor with sharp materials.
- High temperature or high pressure steam disinfection of the oximeter is not permitted. Refer to User Manual in the relative chapter for instructions on the cleaning and disinfection of the device.
- Do not have the oximeter completely submerged in any liquid. When it needs cleaning, please wipe its surface with medical alcohol and a soft cloth.
- Do not spray any liquid directly on the device.
- When cleaning the device with water, the temperature should be lower than 60°C (140°F)

- For fingers that have poor blood circulation due to being cold or for really thin fingers best results may be yielded from the thumb.

- Do not use the device on infant or neonatal patients.

- The product is best suited for children over four years old and adults whose weights do not exceed 300 lbs. - The device may not work for all patients. If you are unable to achieve stable readings, discontinue use.

- During proper working conditions results should begin to be displayed within 5 seconds. It is common for pulse and Oxygen levels to vary during use.

- The device does not have a low-voltage alarm function, it only shows the low-voltage, please change the batteries if the device no longer powers on.

- This does not have an alarm function. Do not use the device in situations where alarms are required.

- It is highly recommended that the batteries be removed if the device is going to be stored for extended periods of time of more than one month, or else batteries may leak.

- A flexible circuit connects the two parts of the device. Do not twist, pull or try to disassemble.

2. Overview

The pulse oxygen saturation is the percentage of HbO₂ in the total Hb in the blood, so-called O₂ concentration in the blood. It is an important bio-parameter for respiration. For the purpose of measuring the SpO₂ more easily and accurately, our company developed the Pulse Oximeter. At the same time, the device can measure the pulse rate simultaneously. The Pulse Oximeter features in small volume, low power consumption, convenient operation and being portable. It is only necessary for patients to put one of their fingers into a fingertip photoelectric sensor for diagnosis, and a display screen will directly show measured value of Hemoglobin Saturation and Pulse rate.

2.1 Classification:

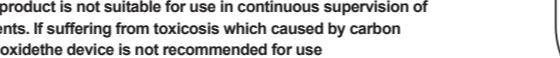
Class II b, (MDD93/42/EEC IX Rule 10)

2.2 Features

- Operation of the product is simple and convenient.
- The product is small and light weight (total weight is about 50g/0.11lbs including batteries) and convenient for carrying.
 - Power consumption of the product is extremely low. Two AAA batteries can power the device continuously for an estimated 20 hours.
 - The product will automatically be powered off when not in use after 5 seconds to conserve the battery life.

2.3 Major Applications and Scope of Application

The Pulse Oximeter can be used to measure human Hemoglobin Saturation and pulse rate through the finger and indicate the pulse intensity.



The product is not suitable for use in continuous supervision of patients. If suffering from toxicosis which caused by carbon monoxide the device is not recommended for use

2.4 Environment Requirements

- Storage Environment
- a) Temperature: - 40°C + 60°C
 - b) Relative humidity: <95%
 - c) Atmospheric pressure: 500hPa – 1060hPa

- Operating Environment
- a) Temperature: 10°C- 40°C/50°F-105°F
 - b) Relative Humidity: <75% (for best results)
 - c) Atmospheric pressure: 700hPa – 1060hPa

3. Principle and Caution

3.1 Principle of Measurement

Principle of the Oximeter is as follows: An experience formula of data process is established taking use of Lambert Beer Law according to Spectrum Absorption Characteristics of Reductive Hemoglobin (Hb) and Oxyhemoglobin

(HbO₂) in glow & near-infrared zones. Operation principle of the instrument is: Photoelectric Oxyhemoglobin Inspection technology is adopted in accordance with Capacity Pulse Scanning & Recording Technology, so that two beams of different wavelength of lights can be focused onto human nail tip through perspective clamp finger-type sensor. Then measured signal can be obtained by a photosensitive element, information acquired through which will be shown on screen through treatment in electronic circuits and microprocessor.

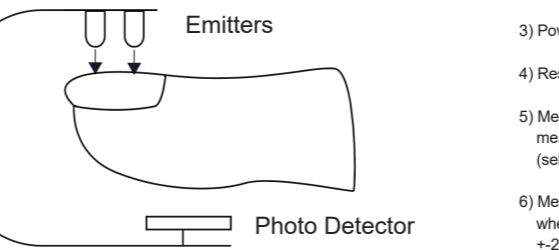


Figure 1 Operating Principle

3.2 Caution

1. The finger should be placed properly (see the attached illustration of this manual, Figure 4), or else it may cause an inaccurate measurement.
2. The SpO₂ sensor and photoelectric receiving tube should be arranged in a way with the subject’s arteriole in a position there between.
3. The SpO₂ sensor should not be used at a location or limb tied with arterial canal or blood pressure cuff or receiving intravenous injection.
4. Make sure the optical path is free from any optical obstacles like rubberized fabric.
5. Excessive ambient light may affect the measuring result. It includes fluorescent lamp, dual ruby light, infrared heater, direct sunlight and etc.
6. Strenuous action of the subject or extreme electrosurgical interference may also affect the accuracy.
7. Do not use enamel or other dark nail polishes or paint for more accurate results.

4. Technical Specifications

- 1) Display Format: OLED display
SpO₂ Measuring range: 0% - 100%
Pulse Rate measuring range: 30bpm – 250bpm;
Pulse Wave display: Columniation display and the waveform display.
- 2) Power Requirements: 2x1.5V AAA alkaline battery (not included)
- 3) Power consumption: Less than 30mA
- 4) Resolution: 1% for SpO₂ and 1bpm for Pulse rate.
- 5) Measurement Accuracy: +/-2% in stage of 70%-100% SpO₂, and the meaningless when stage being smaller than 70% +/- 2bpm or +/-2% (select larger) for Pulse rate.
- 6) Measurement Performance: SpO₂ and pulse rate can be shown correctly when pulse-filling ratio is 0.4%. SpO₂ error is +/-4%, pulse rate error is +/-2bpm or +/-2%.
- 7) Resistance to surrounding light: The deviation between the value measured in the condition of man-made light or indoor natural light and that of darkroom is less than +/-1%.
- 8) It is equipped with a function on/offpower switch. The oximeter will power off in case no finger is the oximeter within 5 seconds to preserve battery life.
- 9) Optical sensor: Red light (wavelength is 660nm, 6.65mW)
Infrared (wavelength is 880nm, 6.75mW)

5. Installation

5.1 View of the Front Panel

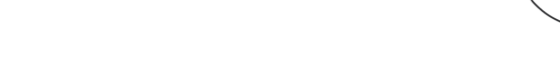


Figure 2 Front View

5.2 Battery

- Step 1. Refer to figure 3. And insert the two AAA size batteries properly in the right direction.
- Step 2. Replace the cover.

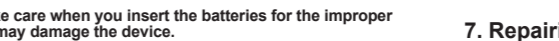


Figure 3 Battery Installation

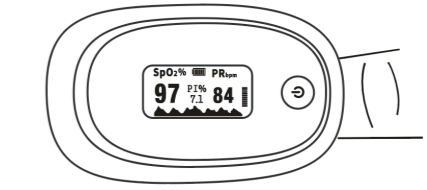
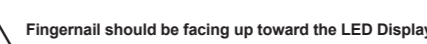


Figure 4 Finger position (palm down measurement is more accurate)

6. Operating Guide

- 1) Insert the two batteries ensuring that the + (plus) and – (minus) terminals are aligned correctly, and then replace the cover.
- 2) Open the clip as shown in Figure 4.
- 3) Insert the finger into the rubber cushions of the clip (make sure the finger is in the right position)
- 4) Press the power button once on front panel. Please keep the finger/hand steady during the measurement.
- 5) Result will be shown on the display.

The Power button has two main functions. When the device is powered off, press the button to power it on. When the device is powered on, quick press the button to change the display orientation of the LED display.



Fingernail should be facing up toward the LED Display

7. Repairing and Maintenance

- Please change the batteries when low-voltage is displayed on the screen or the device no longer powers on.
- Please clean the surface of the device before using. Wipe the device with medical alcohol first, and then let it dry in air or clean it by dry clean fabric.
- Using the medical alcohol to disinfect the product after use, prevent from cross infection or next time use.
- Please take out the batteries if the oximeter is not going to be used for a long period of time.

8. Radio and TV Interference Statement

WARNING!!! This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by whatever measures may be required to correct the interference.

9. Technical Support and Warranty

If you need further assistance, please contact the Aluratek support department for troubleshooting prior to returning this device.

E-mail: support@aluratek.com
Web: www.aluratek.com/helpdesk
Local (Irvine, CA): 714-586-8730
Toll free: 1-866-580-1978

Aluratek warrants this product against defect in material or workmanship for 1 YEAR from the date of purchase.

For more information, please visit:
<https://aluratek.com/warranty-return-policy>

You can register your product online at:
<https://aluratek.com/product-registration>