

Instruction Manual

Fingertip Pulse Oximeter

1. General Description

Haemoglobin Saturation is percentage of Oxyhemoglobin (HbO₂) capacity, compounded with oxygen, by all combinativable haemoglobin (Hb) obin (HbO₂) capacity in blood. In other words, it is consistence of Oxyhemoglobin in blood. It is a very important ecological parameter for Respiratory circulation System. Many respiratory diseases can result in haemoglobin Saturation being lowered in human blood. Moreover, the following factors can also lead to problems in oxygen supply, so that human haemoglobin saturation might be reduced: Automatic Organic Regulation Malfunction caused by Anesthesia, Intensive Postoperative Trauma, hurts resulted in by some medical examination and etc. In the situation, illnesses, such as light head, asthenia, vomitory and etc, might happen to patients and even endanger the patient's life. Therefore, it is very important to know Hemoglobin saturation of patient timely in clinical medical aspects. So that doctors can find problems in time.

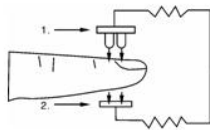
The Fingertip Pulse Oximeter features in small volume, low power consumption, convenient operation and being portable. It is only necessary for patient to put one of his fingers into a fingertip photoelectric sensor for diagnosis, and a display screen will directly show measured value of hemoglobin Saturation. It has been proved in clinical experiments that it features in rather high precise and repeatability.

2. Measurement principle

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(R Hb) and Oxyhemoglobin (O₂ Hb) in glow and near-infrared zones. Operation principle of the instrument is Photoelectric Oxyhemoglobin Inspection Technology is adopted in accordance with Capacity Pulse Scanning and Recording Technology, so that two beams of different wavelength of lights (660nm glow and 940nm near infrared light) 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 two groups of LEDs through process in electronic circuits and microprocessor.

Diagram of Operation Principle



1. **Glow and Infrared-ray Emission Tube**
2. **Glow and Infrared-ray Receipt Tube**
3. **Technical Specifications**
 - 3.1 Display type: OLED display
SPO₂ display range: 0-99%
PR display range: 30-254 BPM
PR display mode: bargraph



Low power indication :

- 3.2 Power requirements:
Two AAA 1.5V Alkaline Battery
- 3.3 Power consumption: less than 40mA
- 3.4 Resolution: ±1% for SPO₂ and ±1BPM for Pulse rate
- 3.5 Measurement Accuracy:
SPO₂: 80%--99%, ±2%; 70%--80%, ±3%; ≤70% no definition.
PR: 30—235 BPM, ±2% or 2 BPM
- 3.6 Measurement Performance in Weak Filling Condition: required the test equipment (BIO-TEK INDEX Pulse Oximeter tester) the pulse wave is available without failure when the simulation pulse wave amplitude is 6%.
- 3.7 Interference Resistance Capacity against Ambient Light: Device work normally when mixed noise produced by BIO-TEK INDEX Pulse Oximeter tester
- 3.8 It is equipped with a function switch, through which the Oximeter can be powered off in case no finger is the Oximeter longer than 8 seconds.

4. Product Properties

- 4.1 Operation of the product is simple and convenient
- 4.2 The product is small in volume, light in weight (total weight is about 50g including batteries) and convenient in carrying
- 4.3 Power consumption of the product is low and the two originally-equipped two AAA batteries can be operated continuously for 30 hours.
- 4.4 Low voltage warning will be indicated in visual window when battery voltage is so low that normal operation of the Oximeter might be influenced.
- 4.5 The product will automatically be powered off when no signal is in the product for longer than 8 seconds.

5. Product Operation Scope

The fingertip Oximeter can be used to measure human Haemoglobin Saturation and heart rate through finger. The product is suitable for use in family, hospital (including clinical use in internist /surgery, Anaesthesia, paediatrics, intensive care and etc.) Oxygen Club,

social medical organizations, physical care in sports (It can be used before or after sports. Operation in sport procedure is not recommended) and etc. The product is not suitable to monitor patient continuously.

6. Operation Instructions

- 6.1 Installing two AAA batteries into battery cassette before covering its cover.
- 6.2 Nip the clamp as diagram
- 6.3 Plug one of fingers into rubber hole of the Oximeter (it is best to plug the finger thoroughly) before releasing the clamp
- 6.4 Press the switch button once on front panel.
- 6.5 Your finger do not tremble during the Oximeter is working. Your body is not recommended in moving status
- 6.6 Read correspondent datum from display screen.
- 6.7 Six display modes

After turn on the oximeter, each time you press the power switch, the oximeter will switch to another display mode, there are 6 display modes shown as follows:

