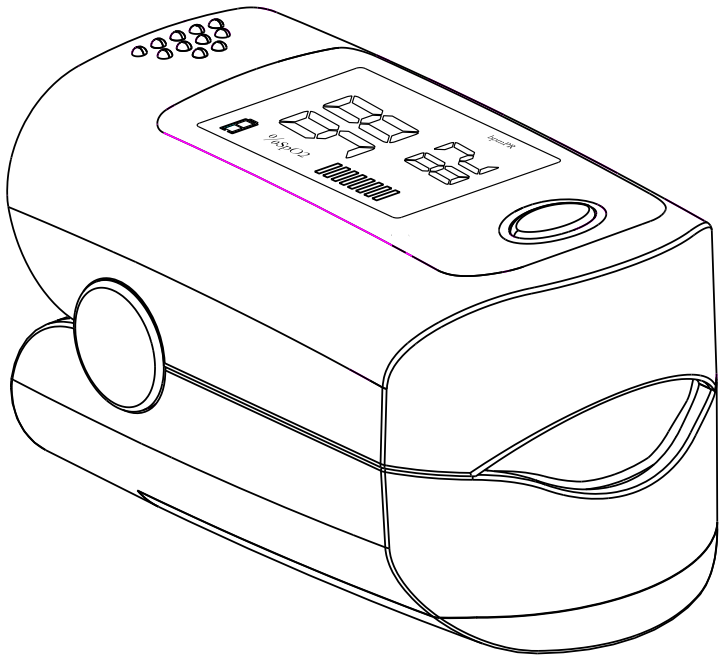
Fingertip Pulse oximeter

Operation Manual



Before using this product, please read this manual carefully.
Keep it properly to look up at any time later.

Section 1
safety

1.1 Instructions for the safe operation and use of the fingertip pulse oximeter

Do not attempt to service the fingertip pulse oximeter.Only qualified service personnel should attempt any needed internal servicing.

Do not use the pulse oximeter in situations where alarms are required. The device has no alarms.

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 east every 2 hours.

SpO2 measurements may be adversely affected in the presence of high ambient light. shield the sensor area(with a surgical towel, or direct sunlight, for example)if necessary.

The following reason will cause interference and defibrillators

High-frequency electrosurgical

Placement of a sensor on an extremity with a blood pressure cuff arterial catheter, or intravascular line.

The patient has hypotension severe vasoconstriction severe anemia or hypothermia.

The patient is in cardiac arrest or is in shock.

Fingernail polish or false fingernails may cause inaccurate SpO2 readings.

1.2Warnings

WARNING:EXPLOSION HAZARD

Do not use the Oximeter in a flammable atmosphere where

concentrations of flammable anesthetics or other materials may occur.

Do not throw batteries in fire as this may causes them to explode.

Do not attempt to recharge normal dry-cell batteries, they may leak, and may cause a fire or even explode.

Do not use the pulse Oximeter in an MRI or CT environment.

CAUTIONS

Caution

Keep the operating environment free of dust, vibrations, corrosive, or flammable materials, and extremes of temperature and humidity.

Do not operate the unit if it is damp or wet because of condensation or spills. Avoid using the equipment immediately after moving it from a cold environment to a warm, humid location.

Never use sharp or pointed objects to operate the front-panel switches.

The batteries must be taken out from the battery compartment if the device will not be used for a long time.

The device shall only be used if the battery cover is closed.

The batteries must be proper disposed according to local regulation after their use .

1.3 Definitions and symbols

Symbol	description
	Type BF equipment
	Batch code
	Date of manufacture
	Information of manufacture, including name and address
	When the end-user wishes to discard this product, it must be sent to separate collection facilities for recovery and recycling.
Warning	The information you should know to protect patients and medical staff from possible injury.
Caution	The information you should know to protect the equipment from possible damage.
Note	The important information you should know

Section 2
Introduction
2.1 general
This chapter provides a general description of the fingertip pulse oximeter including.
Brief device description
Products features
2.2 brief device description
The pulse oximeter, based on all digital technology, is intended for noninvasive spot-check measurement of functional oxygen saturation of arterial hemoglobin(SpO2). Advanced DSP algorithm can reduce the influence of motion artifact and improve measurement accuracy of low perfusion.
The oximeter can be used to measure human hemoglobin

saturation and heart rate thyough finger. The product is suitable for use in family, hospital(including clinical use in internist/ surgery, anesthesia, pediatrics, intensive care and etc.).Oxygen Bar, social medical organizations, physical care in sports and etc.

2.3product features

Lightweight for carrying and easy to use.

Manually adjust the direction of interface.

Color OLED display simulataneous display for testing value and plethysmogram.

Low perfusion down to 0.3%.

Visual alarm function, real-time spotchecks.

Low battery voltage indicator.

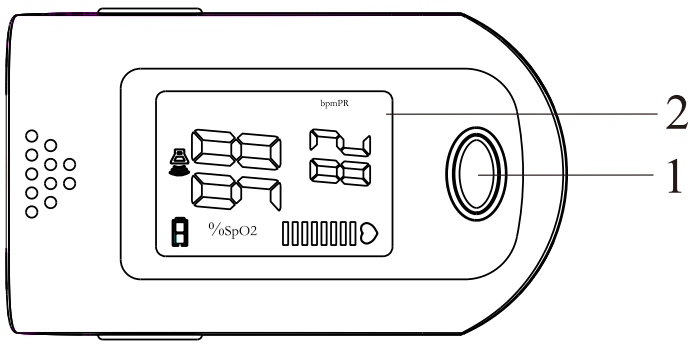
Automatically switch off.

Standard two AAA 1.5V Alkaline batteries support more than 20 hours continuous work.

Section 3

Installation, setup and operation

3.1 description of the front panel

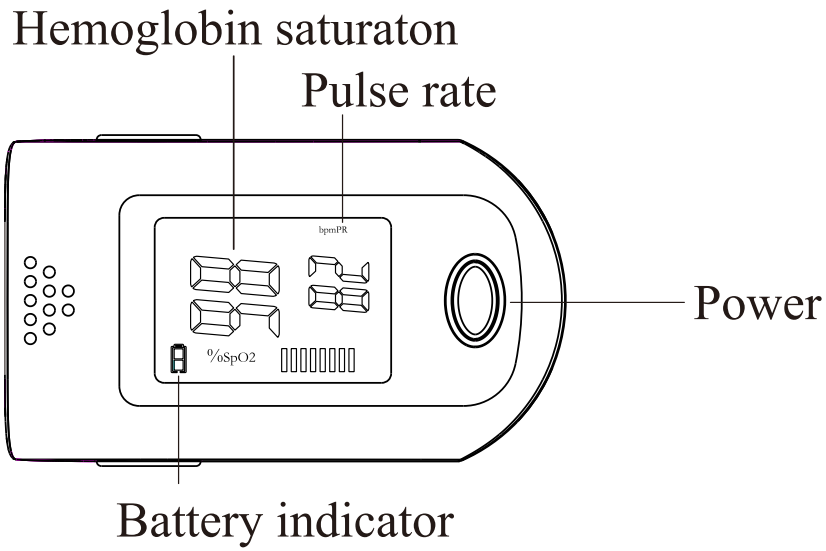


3.1.1 parts of front and back panel

Table 3.1.1 part definition and description

Item	Name	description
1	Power button	Turn on the machine, direction change and parameter setting
2	LED Panel	Display the SpO2/PR data and plethysmogram

3.2 display
After switch on ,the LED display of the Oximeter is as follow

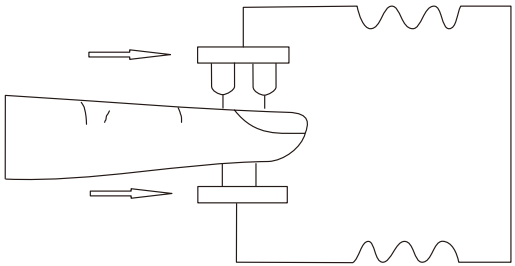


3.3 operation
3.3.1 install batteries
Installing two AAA batteries into battery cassette in correct polarities and cover it.
WARNING: Do not attempt to recharge normal alkaline

batteries, they may leak and may cause a fire or even an explode.

3.3.2 turn the pulse oximeter on/off

Put one of fingers into rubber hole of the oximeter (it is best to put the finger thoroughly)with nail upward, then releasing the clamp.



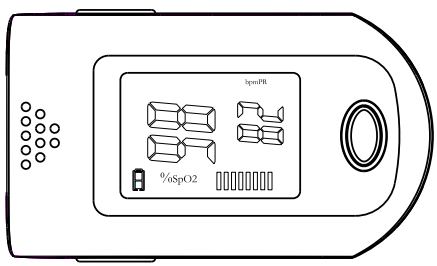
Press power button to turn the pulse oximeter on. The oximeter will automatically be powered off when no finger in the device for longer than 16 seconds.

3.3.3 read correspondent data from display screen

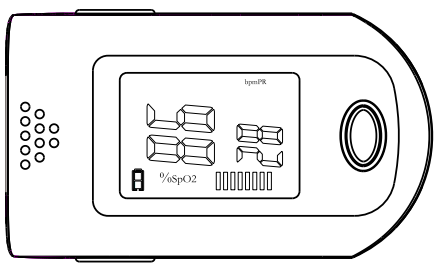
3.3.4display description of LED

The display interface of “LED” can rotate four directions with four different display modes after pressing the power button for less than 0.5s. It is shown as below:

Type 1



Type 2



Note: when battery power is at lowest level, the battery

capacity indicates symbol of ”  ” in LED， remind users of replacement of battery.

Section 4

4.1 cleaning

Switch off the power and take out the batteries before cleaning. keep the exterior surface(LED display screen included) of the unit with a dry and soft cloth. Use 75% density of medical alcohol to clean the surface and use dry fabric with a little alcohol to avoid alcohol permeates into the device.

Caution: don't use string solvent For example, acetone.
Caution: never use an abrasive such as steel wool or metal polish.
Caution: do not allow any liquid into the product, and do not immerse any parts of the device into any liquids.
Caution: avoid pouring liquids on the device while cleaning.
Caution: don't remain any cleaning solution on the surface of the device.

Section 5

Troubleshooting and maintenance

5.1 maintenance

Replace the batteries timely when battery indication is low. Clean surface of the pulse oximeter before it is used in diagnosis for patients.

Remove the batteries inside the battery cassette if the oximeter will not be operated for a long time.

It is better to preserve the product in a place where ambient temperature is 10-40 and humidity is 10%-80%.

Regular inspection to make sure that no obvious damage existed to affect the safety and performance of the device.

No flammable substance. overtop or lower temperature and humidity existed in operation conditions.

5.2 troubleshooting

Table 5.2.1 troubleshooting

Problems	Possible reason	Resolutions
Oxyhemoglobin or heart rate cannot be shown normally	1.Finger is not plugged correctly. 2.Patient's perfusion is too low to be measured.	1.Retry by plugging the finger. 2.Try some more times. 3.If you can make sure about no problem existing in the product, please go to a hospital timely for exact diagnosis.
Oxyhemoglobin or heart rate is shown unstably	1.finger might not be plugged deep enough. 2.Finger is trembling or patient's body is in movement status.	1.Retry by plugging the finger. 2.Try not to move, let the patient keep clam.
The oximeter can not be powered on	1.power of batteries might be inadequate or not be there at all. 2.Batteries might be installed incorrectly. The oximeter might be damaged.	1.Please replace batteries. 2.Please reinstall the batteries. 3.Please contact with local customer service center.
The screen are suddenly off	1.The product is automatically powered off when no signal is detected longer than 8 seconds. 2.Power quanitity of the batteries is exhausted.	1.Normal 2.Replace the batteries.

Fingertip pulse oximeter

Specifications:

Physical characteristics

Machine:
Dimension:60mm×35mm×37mm
Weight: (including 2 AAA alkaline batteries)
Outer box:65mm×45mm×90mm
Classification
Anti-electronic shock type: internally powered equipment
Anti-electronic shock degree: type BF equipment
EMC: type B class I
Mode of operation: continuous operation enclosure degree of ingress/
Protection: IPX4

Power

Internal	2 AAA 1.5V alkaline batteries
Power consumption	Smaller than 30mA(normal)

Power consumption

Operating temperature	5℃～40℃
Storage temperature	-10℃～50℃
Relative humidity	15%～80% non-condensing

Alarm default value

Parameter	Value
Hemoglobin saturation	Upper limit:100 Bottom limit:94
Pulse rate	Upper limit:130 Bottom limit:50

Alarm default value

Hemoglobin saturation display		35%～100%
Pulse rate display		30～250 BPM
Pulse rate	Hemoglobin saturation	1%
	Pulse rate	1BPM
Measure accuracy	Hemoglobin saturation	2%(70%-100%)unspecified(≤70%)
	Pulse rate	2BPM

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