10 Key of Symbols

Symbol	Description
	Type BF
	Refer to instruction manual/booklet
%SpO2	The pulse oxygen saturation(%)
PRbpm	Pulse rate (bpm)
	The battery voltage indication is deficient (change the battery in time avoiding the inexact measure)
	1. no finger inserted 2. An indicator of signal inadequacy
	battery positive electrode
	battery cathode
	1.Power switch 2.change direction of the screen 3.Change brightness of the screen
SN	Serial number

11 Function Specification

Display Information	**Display Mode**
The Pulse Oxygen Saturation(SpO_2)	OLED
Pulse Rate(PR)	OLED
Pulse Intensity (bar-graph)	OLED bar-graph display
Pulse wave	OLED
SpO_2 Parameter Specification	
Measuring range	0%~100%, (the resolution is 1%).
Accuracy	70%~100%: ±2% ,Below 70% unspecified.
Optical Sensor	Red light (wavelength is 660nm)
	Infrared (wavelength is 880nm)
Pulse Parameter Specification	
Measuring range	30bpm~250bpm (the resolution is 1 bpm)
Accuracy	±2bpm or±2% select larger
Pulse Intensity	
Range	Continuous bar-graph display, the higher display indicate the stronger pulse.
Battery Requirement	
1.5V (AAA size) alkaline batteries × 2 or rechargeable battery	
Battery Useful Life	
Two batteries can work continually for 20 hours	
Dimensions and Weight	
Dimensions	61(L) × 36(W) × 32(H) mm
Weight	About 57g (with the batteries)

dretec
Marketing Agent and Customer Service Office
Phone:+65-62840094
E-mail:sales@dretec.sg
Address:14 Jalan Mesin,Singapore 368814
Watson Plastics Industries Pte Ltd.

Operating Guide

1. Insert the two batteries properly to the direction, and then replace the cover.
2 . Open the clip as shown in Figure 4.

Figure 4. Put finger in position

3. Let the patient' s finger put into the rubber cushions of the clip (make sure the finger is in the right position), and then clip the finger.
4. Press the switch button once on front panel.
5. Do not shake the finger and keep the patient at ease during the process. Meanwhile, human body is not recommended in movement status.
6. Get the information directly from screen display.
7. The button has three functions.When the device is power off, pressing the button can open it; When the device is power on, pressing the button shortly can change direction of the screen; When the device is power on, pressing the button long can change brightness of the screen.

⚠ Fingernails and the luminescent tube should be on the same side.

Repairing and Maintenance

- Please change the batteries when the low-voltage displayed on the screen.
- 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 for next time use.
- Please take out the batteries if the oximeter is not in use for a long time.
- The best storage environment of the device is - 40ºC to 60ºC ambient temperature and not higher than 95% relative humidity.
- Users are advised to calibrate the device termly (or according to the calibrating program of hospital). It also can be performed at the state-appointed agent or just contact us for calibration.

⚠High-pressure sterilization cannot be used on the device.
⚠Do not immerse the device in liquid.
⚠It is recommended that the device should be kept in a dry environment. Humidity may reduce the useful life of the device, or even damage it 9 Troubleshooting.

9 Troubleshooting

Trouble	Possible Reason	Solution
The SpO_2 and Pulse Rate can not be displayed normally	1. The finger is not properly positioned.	1. Place the finger properly and try again.
	2. The patient's SpO_2 is too low to be detected.	2. Try again; Go to a hospital for a diagnosis if you are sure the device works all right.
The SpO_2 and Pulse Rate are not displayed stably	1. The finger is not placed inside deep enough.	1. Place the finger properly and try again.
	2. The finger is shaking or the patient is moving.	2. Let the patient keep calm
The device can not be turned on	1. The batteries are drained or almost drained.	1. Change batteries.
	2. The batteries are not inserted properly.	2. Reinstall batteries.
	3. The malfunction of the device.	3. Please contact the local service center.
The display is off suddenly	1. The device will power off automatically when it gets no signal within 5 seconds.	1. Normal.
	2. The batteries are almost drained.	2. Change batteries.

3. Clinical Restrictions

- As the measure is taken on the basis of arteriole pulse, substantial pulsating blood flow of subject is required. For a subject with weak pulse due to shock, low ambient/body temperature, major bleeding, or use of vascular contracting drug, the SpO2 waveform (PLETH) will decrease. In this case, the measurement will be more sensitive to interference.
- For those with a substantial amount of staining dilution drug (such as methylene blue, indigo green and acid indigo blue), or carbon monoxide hemoglobin (COHb), or methionine (Me+Hb) or thiosalicylic hemoglobin, and some with icterus problem, the SpO2 determination by this monitor may be inaccurate.
- The drugs like dopamine, procaine, prilocaine, lidocaine and butacaine may also be a major factor blamed for serious error of SpO2 measure.
- As the SpO2 value serves as a reference value for judgement of anemic anoxia and toxic anoxia, some patients with serious anemia may also report good SpO2 measurement.

Technical Specification

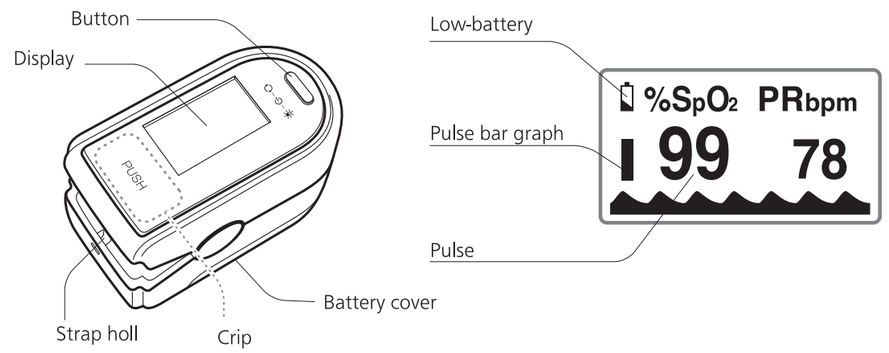
- Display Format : OLED Display;
  SpO2 Measuring Range : 0% - 100%;
  Pulse Rate Measuring Range : 30 bpm - 250 bpm;
  Pulse Wave Display : columniation display and the waveform display.
- Power Requirements : 2 ×1.5V AAA alkaline battery(or using the rechargeable battery instead), adaptable range: 2.6V~3.6V.
- Power Consumption : Smaller than 30mA.
- Resolution : 1% for SpO2 and 1 bpm for Pulse Rate.
- Measurement Accuracy : ±2% in stage of 70%-100% SpO2, and meaningless when stage being smaller than 70%. ±2 bpm or±2% (select larger) for Pulse Rate.
- Measurement Performance in Weak Filling Condition : SpO2 and pulse rate can be shown correctly when pulse-filling ratio is 0.4%. SpO2 error is ±4%, pulse rate error is ±2 bpm or ±2% (select larger).
- 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%.
- It is equipped with a function switch. The Oximeter can be powered off in case no finger is the Oximeter within 5 seconds.
- Optical Sensor
  Red light (wavelength is 660nm, 6.65mW)
  Infrared (wavelength is 880nm, 6.75mW)

Accessories

- One hanging rope;
- Two batteries (optional);
- One User Manual.

Installation

1. View of the Front Panel



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.
⚠Please take care when you insert the batteries for the improper insertion may damage the device.

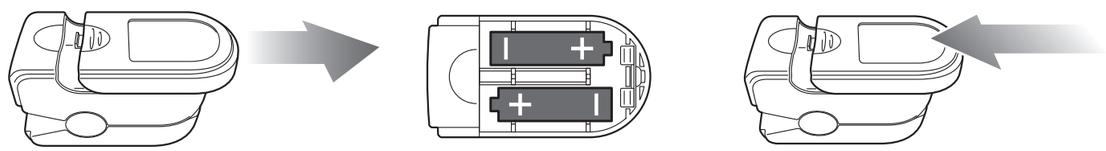


Figure 3. Batteries Installation