- Do not use the device during an MRI or CT scan.
- The device may not work when circulation is reduced. Warm or rub the finger, or re-position the device.
- This device is a precision electronic instrument and must be repaired by qualified technical professionals. Field repair of the device is not possible. Do no attempt to open the case or repair the electronics. Opening the case may damage the device and void the warranty.
- Do not overextend the device's spring.
- A functional tester cannot be used to access the accuracy of a pulse oximeter monitor.
- -Do not self-diagnose or self-medicate on the basis of the measurements without consulting your doctor. In particular, do not start taking any new medication or change the type and/or dosage of any existing medication without prior
- -Do not look directly inside the housing during the measurement. The red light and the invisible infra-red light in the pulse oximeter are harmful to your eyes.
- -This device is not intended for use by people (including children) with restricted physical, sensory or mental skills or a lack of experience and/or a lack of knowledge, unless they are supervised by a person who has responsibility for their safety or they receive instructions from this person on how to use the device. Children should be supervised around the device to ensure they do not play with it.
- Neither of the displays for the pulse wave and pulse bar allows the strength of the pulse or circulation to be evaluated at the measurement site. Rather, they are exclusively used to display the current signal variation at the measurement site and do not enable reliable diagnostics for the pulse.

Cleaning and disinfection

- 1. Please clean the surface of the device before using. Wipe the device with medical alcohol (70% isopropyl alcohol) first, and then let it dry in air or clean it by dry clean fabric. When cleaning the device with water, the water temperature should be lower than 60°C
- 2. Using the medical alcohol to disinfect the product after use, prevent from cross infection for next time use.
- 3. The best storage environment of the device is 20°C to 70°C ambient temperature and not higher than 95% relative
- 4. 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.
- Note: 1. Do not sterilize, autoclave or immerse this device in liquid. Do not pour or spray any liquids onto the device.
 - 2. Do not use caustic or abrasive cleaning agents, or any cleaning agent containing ammonium chloride or isopropyl alcohol.

Troubleshooting			
Symptoms	Check points	Corrections	
SpO2 or pulse rate cannot displayed	Applied finger improperly.	Place the finger properly and try again.	
	SpO2 is too low to detect	Try again; go to consult with your physician if you are sure the device works well.	
SpO2 or pulse rate are not displayed stably	Applied finger improperly.	Place the finger properly and try again.	
	Finger is shaking or body is moving.	keep body steady	
No display when button is pressed	Batteries run down	Replace with new batteries	
	Batteries not inserted correctly.	Re-insert batteries	
The display disappears suddenly	The device will auto power off when it gets no signal.	Normal	
	Low battery	Replace with new batteries	

⚠ Note: If the unit does not work, return it to your dealer. Under no circumstance should you disassemble and repair the unit by yourself.

Specification			
SpO2			
Measuring range	35%~99%, (the resolution is 1%).		
Accuracy	70%~99%: ±2%, Below 35~69%: unspecified.		
Optical Sensor	Red light (wavelength is 660nm), Infrared (wavelength is 905/880nm)		
Pulse			
Measuring range	30bpm~250bpm (the resolution is 1 bpm)		
Accuracy	±3bpm		
Power source	$AAA \times 2$ (Alkaline)		
Battery life	Continually for 16 hours with two alkaline batteries		
Operating Condition	Temperature: 5°C~40°C (41°F ~ 104°F), Relative Humidity: 15-95% (non condensing), Atmospheric pressure: 700hPa ~ 1013hkPa, Attitude: -1,280 to 12,000 feet (-390m to 3,658m)		
Storage Condition	Temperature: -25°C~+70°C(-13°F ~ 158°F), Relative humidity: 15-90%(non condensing), Atmospheric pressure: 700hPa ~ 1013hkPa, Attitude: -1,280 to 12,000 feet (-390m to 3,658m)		
Dimensions	63.5(L) × 34W) × 35(H) mm		
Weight	About 37g (without the batteries)		
Standards	IEC60601-1-2, Class B, IEC60601-1, Type BF, ISO80601-2-61		
*	Type BF applied parts		
IP Classification	IP22: Protection against harmful ingress of water and particulate matter		

EMC guidance and manufacturer's declaration

ded separation distances between portable and mobile RF communications equipment and the ME equipment The Finger-tip pulse oximeter is intended for use in an electromagnetic environment in which radiated RF disturbances at controlled. The customer or the user of the Finger-tip pulse oximeter can help prevent electromagnetic interference by maintain ling a minimum distance between portable and mobile RF communications equipment (transmitters) and the Finger-tip puls oximeter as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output	150 kHz to 80 MHz , d=[3.5/	80 MHz to 800 MHz , d=[3.5/	800 MHz to 2,5 GHz , d=[3.5/
power of transmitter / W	V1]√P	E1]√P	E1]√P
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.7	3.7	7.37
100	11.67	11.67	23.33

Declaration — electromagnetic emissions and immunity — for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING and

are specified for use only in a shielded location The Finger-tip pulse oximeter system is intended for use in the electromagnetic environment specified below. The customer or the user of the Finger-tip pulse oximeter system should assure that it is used in such an environment. Electromagnetic environment-guidance Portable and mobile RF communications equipment should be used IEC 61000-4-6 150 kHz to 80 MHz no closer to any part of the EQUIPMENT or SYSTEM including cables han the recommended separation distance calculated from the equa tion applicable to the frequency of the transmitter. Interference ma IEC 61000-4-3 80 MHz to 2.5 GHz occur in the vicinity of equipment marked with the following symbol

Declaration — electromagnetic immunity

The Finger-tip pulse oximeter system is intended for use in the electromagnetic environment specified below. The customer of the Finger-tip pulse oximeter system should assure that it is used in such an environment.

the user t	of the finger-up puise oximica	ci system snoulu assure mat	it is used iii sucii aii ciiviioiiiiiciit.
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge	±6 kV contact	±6 kV contact	Floors should be wood, concrete or ceramic
(ESD) IEC 61000-4-2	±8 kV air	±8 kV air	tile. If floors are covered with synthetic mate- rial, the relative humidity should be at least 30 %.
Electrical fast	±2 kV for power sup-	±2 kV for power sup-	Mains power quality should be that of a typi-
transient/burst IEC	ply lines	ply lines .	cal commercial or hospital environment.
61000-4-4	±1 kV for input/output		
	lines		
Surge IEC 61000-4-5	± 1kV differential mode	± 1kV differential mode	Mains power quality should be that of a typi-
	± 2kV common mode	± 2kV common mode	cal commercial or hospital environment.
Voltage dips, short	<5% UT(>95% dip in UT)	<5% UT(>95% dip in UT)	Mains power quality should be that of a
interruptions and	for 0,5 cycle	for 0,5 cycle	typical commercial or hospital environment.
voltage variations on	40% UT(60% dip in UT)	40% UT(60% dip in UT)	If the user of the EQUIPMENT or SYSTEM
power supply input	for 5 cycles	for 5 cycles	requires continued operation during power
lines IEC 61000-4-11	70% UT(30% dip in UT) for		mains interruptions, it is recommended that
	25 cycles		the EQUIPMENT or SYSTEM be powered from
	<5% UT(>95% dip in	<5% UT(>95% dip in	an uninterruptible power supply or a battery.
	UT) for 5 s	UT) for 5 s	
Power frequency	3 A/m	3 A/m	Power frequency magnetic fields should
(50/60 Hz) magnetic			be at levels characteristic of a typical loca-
field IEC 61000-4-8			tion in a typical commercial or hospital
			environment.

Declaration — electromagnetic emissions The Finger-tip pulse oximeter is intended for use in the electromagnetic environment specified below. The customer or the use

of the Finger-tip pulse oximeter should assure that it is used in such an environment. Electromagnetic environment-quidance The Finger-tip pulse oximeter uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. The Finger-tip pulse oximeter is suitable for use in all establishm including domestic establishments and those directly connected to Voltage fluctuations/flicker emissions IFC Complies the public low-voltage power supply network that supplies building



WARNING: The symbol on this product means that it's an electronic product and following the European directive 2012/19/EU the electronic products have to be dispose on your local recycling centre for safe treatment.





EN Fingertip Pulse Oximeter

www.rossmax.com

Warranty Card

This instrument is covered by a 1 year guarantee from the date of purchase, batteries and accessories are not included. The guarantee is valid only on presentation of the guarantee card completed by the dealer confirming date of purchase or the receipt. Opening or altering the instrument invalidates the guarantee. The guarantee does not cover damage, accidents or non-compliance with the instruction manual. Please contact your local seller/dealer or www. rossmax.com.

Customer Name:	
Address:	
Telephone:	
E-mail address:	
Gender: Male □ Female □ Age:	
Product Information:	
Date of purchase:	
Store where purchased:	





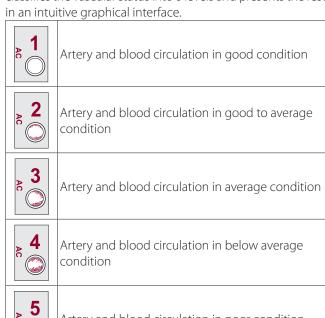
Introduction

Rossmax Fingertip Pulse Oximeter SB200 is used to measure arterial oxygen saturation (% SpO2) of hemoglobin and pulse rate, an important indicator of your respiratory function. It is non-invasive device intended for spot-check of adult and pediatric whose age is over 3 at home, hospital and clinics.

Attention: Consult the accompanying documents. Please read this manual carefully before use. Please be sure to keep this manual.

ACT (Artery Check Technology)

ACT processes the SpO2 signal and determines the elasticity of blood vessel based on the derived wave form. It further classifies the vascular status into 6 levels and presents the result in an intuitive graphical interface.



A Note: the classification of artery and blood circulation

Artery and blood circulation in poor condition

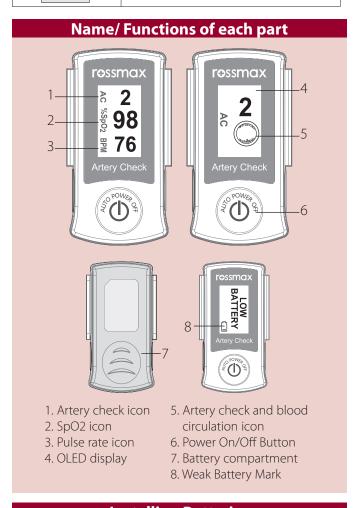
↑ Note: the classification of artery and blood circulation condition is for reference only, Please consult with your physician for further advice.

Error code for your reference

SENSOR ERROR: ERROR ERROR	Sensor cannot be detected, return the device to your local distributor or service centre.	
MEASURE ER- ROR: MEASURE ERROR	Signals cannot be detected, turn the device off and measure again.	



Weak signal for artery check, turn the device off and measure again.

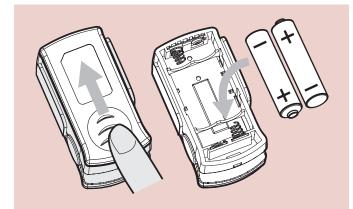


Installing Batteries

- 1. Use thumb to slide battery cover out
- 2. Insert or replace 2 "AAA" sized batteries down with the correct electrical polarity.

You need to replace the batteries when

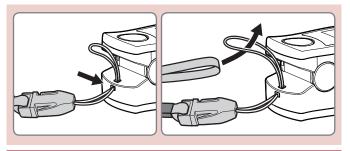
- 1. LOW BATTERY appears on display
- 2. The function button is pressed and nothing appears on display



Caution: Batteries may leak or explode if used or disposed of improperly. Remove batteries if the device will be stored for long time. Do not use different types or brands of batteries at the same time. Do not mix fully charged and partially charged batteries at the same time.

Attaching the lanyard

- 1. Insert the narrow end of the lanyard through the holder.
- 2. Draw the other end of the lanyard through the loop at the narrow end and tighten.



How to use

- 1. Open the clip; press the Power On/Off button as **1**.
- 2. Information of software version appears and then finger invitation icon appears. Insert one finger(left hand middle finger is recommended), nail side up, into the finger opening of the pulse oximeter as ②.

Note: If no finger insert, the device will auto shut off after 10 seconds

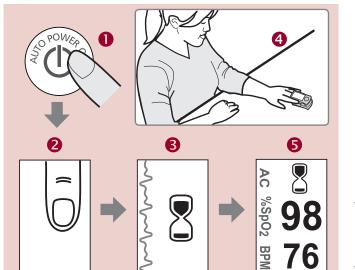
3. The display shows , pulse oximeter begins its measurement as 3.

Note: Make sure the finger is lying flat. Do not shake and keep body steady during measurement as **4**.

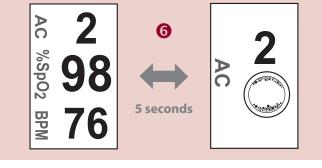
4. Your SpO2 and pulse rate values will appear on the screen after few seconds and artery check result will appear on screen after 30 -60 seconds as **3**.

Note: 1. Don't remove your finger until the timer icon \mathbb{Z} is no longer on the screen.

- 2. If artery check result cannot be detected, "- -" will appear on the screen.
- 3. While SpO2 is lower than 90, device will sound the warning and the reading will flicker.



- 5. When measurement is completed, the 3 parameters (SpO2, pulse rate and artery check) display and artery check display alternate automatically every 5 seconds as **6**.
- 6. Press button shortly to reverse the display upside down before artery check is done.
- 7. Press button slightly longer to turn the device off.



\Lambda Note:

- 1. The SpO2 sensor and photoelectric receiving tube should be arranged in a way with the subject's arteriole in a position there between.
- 2. Make sure the optical path is free from any optical obstacles like rubberized fabric.
- 3. Excessive ambient light may affect the measuring result. It includes fluorescent lamp, dual ruby light, infrared heater, direct sunlight and etc.
- 4. Strenuous action of the subject or extreme electrosurgical interference may also affect the accuracy.

Cautionary Notes

- This device is to be operated by trained personnel only.
- -This device has no audible and it intended only for spotchecking, but not medical result evaluation.
- This device is designed to determine the percentage of arterial oxygen saturation of functional hemoglobin. Factors that may degrade pulse oximeter performance or affect the accuracy of the measurement include the following:
- Do not apply the pulse oximeter on the same arm as a blood pressure cuff, arterial catheter or infusion line(s)
- Excessive light, such as sunlight or direct home lighting.
- Not steady at the site of application (e.g. trembling)
- Moisture in the device
- Improperly applied device
- Finger is too large or too small to fit into the device.
- Poor pulse quality
- Venous pulsations
- Anemia or low hemoglobin concentrations.
- Cardiogreen and other intravascular dyes
- Carboxyhemoglobin
- Methemoglobin
- Dysfunctional hemoglobin
- Artificial nails or fingernail polish
- On fingers with anatomical changes, oedemas, scars or burns.
- Using the device for long periods may cause pain for people with circulatory disorders. Reposition the device at least once every 4 hours to allow the patient's skin to breath and to check patient's condition regularly.
- Do not use the device near flammable or explosive gas mixtures.