

**PM-60**

**Pulse Oximeter**

**Operator's Manual**



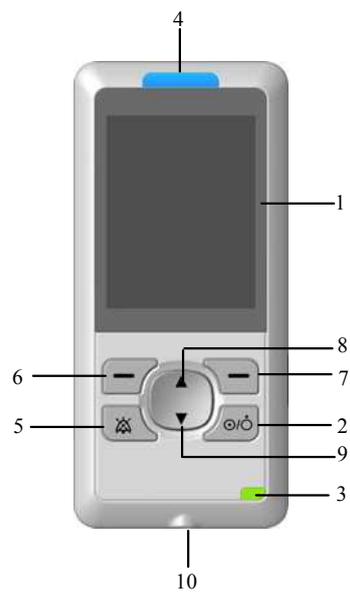
© 2007-2015 Shenzhen Mindray Bio-Medical Electronics Co., Ltd. All rights reserved.

For this Operator's Manual, the issue date is 2015-05.

---

## 2.2 Main Unit

### 2.2.1 Front View



1. Display screen
2. Power button
  - Press this button to turn the pulse oximeter on after the batteries are installed.
  - Press and hold it for 2 seconds to turn the pulse oximeter off.
3. Power indicating lamp
  - It is a LED that lights green and yellow. The status of the LED is specified as follows:

- 
- Green: when the pulse oximeter is placed in the Charger stand and the AC mains is connected, or when the battery is fully charged if a lithium battery is used.
  - Yellow: when a lithium ion battery is used and is being charged.
  - Off: When the AC mains is not connected.
4. Alarm indicating lamp  
When an alarm occurs, this lamp will light up as defined below:
    - High level alarms: the lamp quickly flashes red.
    - Medium level alarms: the lamp slowly flashes yellow.
    - Low level alarms: the lamp lights yellow without flashing.
  5. Press this button to pause or reactivate the alarm sound.
  6. Left button  
Press this button to enter the main menu or select the highlighted menu item.
  7. Right button  
Press this button to return to the previous menu or exit the current menu. In the case that no menu is opened, you can press and hold this button for 2 seconds to lock or unlock buttons except the Power button.
  8. Up button  
Press this button to move the cursor upwards, increase the value of selected menu item or raise the beat volume.
  9. Down button  
Press this button to move the cursor downwards, decrease the value of selected menu item or lower the beat volume.
  10. Power supply connector  
It is used to connect the Charger stand.

---

<b>Charger stand</b>	
Input voltage	100 to 240 VAC, 50/60 Hz
Output voltage	5 VDC
Output current	1.2 A
Output power	6 W

<b>Alkaline batteries</b>	
Quantity	3
Specification	1.5 V, AA
Capacity	2000 mAh
Run time	36 hours with SpO <sub>2</sub> monitored continuously, audio indicators off and backlight brightness set to minimum using new, full power batteries at ambient temperature 25°C.
Shutdown delay	Min. 5 minutes after the low battery alarm first occurs.

<b>Lithium ion battery(LI11S001A)</b>	
Quantity	1
Rated voltage	3.7V
Capacity	1800 mAh
Run time	24 hours with SpO <sub>2</sub> monitored continuously, audio indicators off and backlight brightness set to minimum using a new, fully charged battery at ambient temperature 25°C.
Charge time	2 hours to 90% 3.5 hours to 100%
Shutdown delay	Min. 5 minutes after the low battery alarm first occurs.

## D.2 Technical Alarm Messages

Alarm messages	L	Cause and action
SpO2 Self Test Err	L	The pulse oximeter failed the power-on self-test. Restart the pulse oximeter.
SpO2 Comm Err	L	The pulse oximeter encountered a communication error. Restart the pulse oximeter.
SpO2 Comm Stop	L	An error occurred to the SpO2 module or there was a communication problem. Restart the pulse oximeter.
SpO2 Overrange	L	Measured SpO2 value is beyond the specified measurement range. Check the patient's condition.
PR Overrange	L	Measured PR value is beyond the specified measurement range. Check the patient's condition.
Sensor Off	L*	The SpO2 sensor detached the patient or the pulse oximeter, or there was a fault with the SpO2 sensor, or an unspecified SpO2 sensor was used. Check that the sensor application site and the sensor type are correct, and make sure that the sensor is undamaged. Reconnect the sensor if the sensor is disconnected or use a new sensor if the sensor is damaged.
No Sensor	L	
SpO2 Low Perf	L	The signal detected is weak or the signal quality is poor. Check the patient's condition. Change the sensor application site. If the problem persists, replace the sensor.
Voltage Too High	L	The system power supply fails. Restart the pulse oximeter.
Voltage Too Low	L	
Battery Too Low	M	The battery power is low. Replace the batteries if alkaline batteries are used or charge the battery if a lithium ion battery is used.
Battery Error	L	A problem occurs when the lithium ion battery is being charged. Check the battery for damage. If yes, replace the battery.
Power Comm Err	M	Communication problem occurred to the power supply part during the power-on self-test or operation. Restart the pulse oximeter.
Clock Need Set	L	The real-time clock is reset. Set the clock.