Veterinary Vital Signs Monitor

Operator’s Manual

Pulse Oximeter (SpO2) + Temperature - J1459A
Before operating, please read this Manual carefully. Please store this Manual properly for future reference.
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Chapter I Overview

1.1 Introduction
The MONITOR is used to measure Spo2, or blood oxygen saturation and Temperature.

WARNING  This equipment must be operated by veterinary professionals. Personnel who are not authorized or trained should not attempt to operate this device.

NOTE  The illustrations in this manual may be slightly different than actual device due to manufacturer updates.

Safety

Do not use monitor while charging.

Degree of protection against electric shock: Type BF Applied.

The MONITOR is suitable for small animal vital signs monitoring. With the spot measurement mode, it stores up to 100 patients’ data (200 records for each patient). With the monitoring mode, it stores 48 hours of measurement data, with a friendly interface, 3.5” color TFT screen, and data review functions.

When using audio and visual alarm mode, the red light flashes when power is low. When measuring results are outside the specified limits, the font of the result becomes red and an audio alarm sounds. The user can turn on or off alarms.

NOTE  The device will shut off automatically in spot measurement mode with 1 minute of no activity. Auto shut off can be disabled if needed. See section 3.2.3.
2.1 Button and indicator light

- **Power** - Switch on/off
- **Mute** - Press this key to mute or unmute audible
- **Function 1** - Carry out functions as indicated by text showing on the lower left corner of screen
- **Function 2** - Carry out functions as indicated by text showing on the lower right corner of screen
- **Select** - Choose different options on setting menu
- **Alarm light** - Red light flashes when alarm is triggered or when battery is low.
- **Power light** - Solid red light indicates monitor is charging. Solid green light indicates full charge.
2.2 Power Socket on Bottom

![Power Socket](image)

**Fig. 2.2. 1 power socket**

<table>
<thead>
<tr>
<th>NOTE</th>
<th>Please use the power adapter as provided only. Do not use device while charging.</th>
</tr>
</thead>
</table>

2.3 Reset Micro USB

![Reset Micro USB](image)

**Fig. 2.3.1 Reset Micro USB**

Open the protecting shell, and plug a paper clip into the reset hole. Press hard, the device will be reset.

2.4 Ports on top

![Ports](image)

**Fig. 2.4.1 Ports**

<table>
<thead>
<tr>
<th>NOTE</th>
<th>Not all ports are available on all models.</th>
</tr>
</thead>
</table>
2.5 Mounting hole

![Fig. 2.5.1 Ports](image)

**NOTE**
Mounting hole is used with the optional Pole/Cage Mount device *(J1459P).*

2.6 Accessories

A. SpO2 sensor, 1 pc
B. SpO2 clips, 1 small, 1 large
C. Temperature Probe, 1 pc
D. USB cable, 1 pc
E. Power Adaptor, 1 pc
F. Charging Dock, 1 pc
G. User Manual, 1 pc
Chapter III Interface

3.1 Main Interface

3.2 Spo2 Measurement Interface

3.3 Temperature Interface
3.4 System Menu
Turn on the device, press “Set” button to enter the system setup menu.

3.4.1 Work Mode Setup: SPOT & Monitoring Mode
SPOT mode is best used to obtain a single reading, or series of readings. Monitoring mode is best used when needing to continuously monitor a patient undergoing sedation, anesthesia, critical events, etc. Under SPOT mode, the device will shut off automatically after 1 minute of no monitoring activity. The results will be saved/stored at intervals ranging from 4-120 seconds, as set by the user (see section 3.4.3). ID management can only occur under SPOT mode (see section 3.4.6)
Under Monitoring mode, auto-shut off is disabled and the device works continuously. The results are recorded at intervals ranging from 4-120 seconds, as set by the user (see section 3.4.3). User ID’s must be selected in SPOT mode before switching to Monitoring Mode. ID creation and management can only occur in SPOT mode (see section 3.4.6).

NOTE After the internal memory is full, the earliest records will be overwritten.
3.4.2 Alarm Setup: Set the alarm limit.

**SpO2 alarm range:** 100%~0%

**Pulse rate alarm range:** 0~501 BPM

**Temperature Alarm range:** 65-113°F (10-45°C)

3.4.3 SpO2 Set Up
Beep: Turn beep per heart beat on/off
Mean Time: Select the time interval for recording data

3.4.4 Temperature Unit: C, F

3.4.5 System Set up: User Preferences Set Up
Low Power Mode:
Under SPOT mode, the device will shut off automatically with no measurement taken within 1 minute. To disable auto shut off, set Low Power Mode to “off”.

NOTE
Under monitoring mode, Low Power Mode (auto shut off) is unavailable.

Bluetooth: On/Off

NOTE
The Bluetooth function is not available in current version of device.

Language: English, Chinese
Brightness: Level 1, Level 2
Time: Adjustable
Set ID (under Spot mode): select ID, New ID, Delete ID. ID’s can only be created & selected in SPOT mode. Once the ID is created & selected, user can switch to Monitoring mode to begin monitoring and recording data for that ID.

Default Configuration: To Restore the Default Factory Settings
Machine Maintenance: For service technicians only
Machine Information: Version No.
3.4.6 Review: Measurement Results Review

Choose “OK”, system will display saved IDs. Select ID and press “ok” to display the results:
3.5.1 Table
Spo2 Table: Time, SPO2, PR
Temperature Table: Time, TEMP

3.5.2 Trend Chart
Spo2 Trend Chart

![SpO2 Trend Chart]

The SpO2 trend chart displays SpO2 and Pulse Rate. The left vertical axis is oxygen saturation in percent, the right vertical axis is pulse rate and the horizontal axis is time.

Temperature Trend Chart

![Temperature Trend Chart]

The temperature trend displays temperature data, the unit is either Fahrenheit or Celsius.
Chapter IV SpO2 Measurement

4.1 Measurement Parameters
Arterial oxygen saturation (SpO2): Oxyhemoglobin percentage of total hemoglobin
Pleth waveform (Pleth): patient pulse signal in Pleth waveform
Pulse Rate: pulse per minute
Index bar: in proportion to the pulse strength
Blood flow perfusion index: PI values reflect the pulse strength. The stronger the pulse the higher the PI value.

4.2 Measurement instruction
SPO2 sensor:
1) Connect the SpO2 sensor to the monitor appropriately
2) Press the power button to turn on the monitor
3) Place the SpO2 sensor on the patient appropriately. Lingual surface is preferred but sensor can also be placed on lip, ear, prepuce/vulva, or any other non-haired, minimally pigmented surface.

4.3 Cautions
1) Must use the SpO2 sensor supplied with the monitor
2) Keep the SpO2 sensor stable to get accurate measurement results
3) When the SpO2 sensor or the patient is moving, the measurement results may not be accurate
4) Do not put the SpO2 sensor on the same limb as a blood pressure cuff, bandage or peripheral catheter.
5) Check all the cables and make sure the SPO2 sensor is in good condition before use
6) Do not use the monitor when the patients pulse rate is lower than 25 bpm, it may give incorrect results.
7) During long term monitoring, user should verify the SpO2 sensor is still correctly placed. Re-position as needed every 2-4 hours.
8) Keep the SpO2 probe placement location clean. Blood, dirt or other fluids may cause inaccurate results.
### 4.4 SpO2 Error and SpO2 Possible Cause of error

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>SysErr3</td>
<td>SPO2 module self-test error</td>
</tr>
<tr>
<td>SysErr4</td>
<td>SPO2 module communication</td>
</tr>
<tr>
<td>no pulse</td>
<td>Can’t find pulse</td>
</tr>
<tr>
<td>no Sensor</td>
<td>SPO2 sensor not connected</td>
</tr>
<tr>
<td>Sensor off</td>
<td>Sensor is no longer placed on patient</td>
</tr>
<tr>
<td>Searching</td>
<td>Searching for pulse</td>
</tr>
</tbody>
</table>
Chapter V Temperature Measurement

5.1 Connection Mode
For reusable TEMP probe, plug sensor in to the TEMP probe socket. Place the distal end of the probe either in the patient’s rectum or esophagus. Note: Esophageal use can only occur when patient is under general anesthesia.

Maintain and Cleaning

WARNING This equipment must be operated by professional veterinarians or trained veterinary professionals.

Reusable TEMP probe
1. Temperature of the probe shall not exceed 212 °F (100 °C).
2. Do not use steam sterilization.
3. Use only alcohol to clean and disinfect.
4. Disposable rectal probe covers can be used (J0134AC).

5.2 TEMP Error and Possible Cause of Error

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>SysErr5</td>
<td>TEMP module self-test/communication error</td>
</tr>
<tr>
<td>Overrange</td>
<td>Beyond the measurement range</td>
</tr>
</tbody>
</table>
Chapter VI Specifications

6.1 Equipment Classification (IEC 60601-1)
IEC Class II, Type BF applied

**Display:** 3.5” Color TFT  
**Dimension:** 65mm*30mm*145mm (2.5” x 1.2” x 5.7”)  
**Weight:** 250g (8.8 oz) with rechargeable battery  

**Working Environment:**

**Temperature**  
**Operating:** 5°~ 40°C (41°~104°F)  
**Storage/Transportation:** -20°~+55°C (-4°~131°F)

**Humidity**  
**Operating:** 15%~80%  
**Storage/Transportation:** ≤ 95%

**Power:** 4V, DC, P≤3.2VA  
**Power Source:** AC power or battery  
**Fuse (self-recovery):**  
  - Input fuse: 2A/250V  
  - Fuse (battery): 60Vdc/3A(max)

**Battery**  
Lithium ion rechargeable battery: 3.6V/4.2Ah  
Work time: 8hours  
Charge time: 6hours

**Measurement Range:**  
Spo2: 0~100%  
PR: 0-500 bpm  
Perfusion Index: 0.05%-20%

6.2 Accuracy Range  
SpO2: 70%-100%  
PR: 30-500 bpm  
Perfusion Index: 0.05%-20%
6.3 Measurement accuracy

**SpO2:** +/- 2 digits (70-100%)
   Undefined (<70%)

**On motion condition:**
   - **Pulse rate:** +/- 3 digits
   - **SpO2:** +/- 3 digits

**Temperature:**
   - **Range:** 77-113° F (25-45°C)
   - **Resolution:** 0.1° F
   - **Accuracy:** +/- 0.1° F
Chapter VII Instruction of USB Data Upload

7.1 Instruction of USB Data Upload

1) Open ‘HandleVitalSignsMonitorSoftwareSetup’

2) Select ‘Run anyway’

3) Select ‘Next’
4) Select ‘Install’

5) Select ‘Next’
6) Select ‘Finish’

![Device Driver Installation Wizard](image1)

7) Select ‘Close’

![Microsoft Visual C++ 2010 x64 Redistributable Setup](image2)
8) The icon below will appear on your desktop

![Icon Image]

9) Open the software and connect the InSight Vet Vital Signs via USB to the computer, select Import to transfer data to the PC.

![Software Interface Image]