

**Vetal 3**

**Portable Veterinary Monitor**

**Quick Reference Guide**



For detailed operation information, please scan the QR code or visit the website:



<https://ims.mindrayanimal.com/pub/detail.aspx?tid=14&rid=12>

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Contents of this guide are subject to change without notice.

If you have any questions about the operations, contact the Customer Service Department or sales representative.

## Intended Use

The Vetall 3 Portable Veterinary Monitor (hereafter called “the monitor”) is intended to be used for monitoring, displaying, reviewing, alarming and transferring of multiple physiological parameters including ECG, heart rate (HR), respiration (Resp), temperature (Temp), pulse oxygen saturation (SpO<sub>2</sub>), pulse rate (PR), non-invasive blood pressure (NIBP) and carbon dioxide (CO<sub>2</sub>).

The monitor is to be used in animal hospitals by clinical professionals or under their guidance.

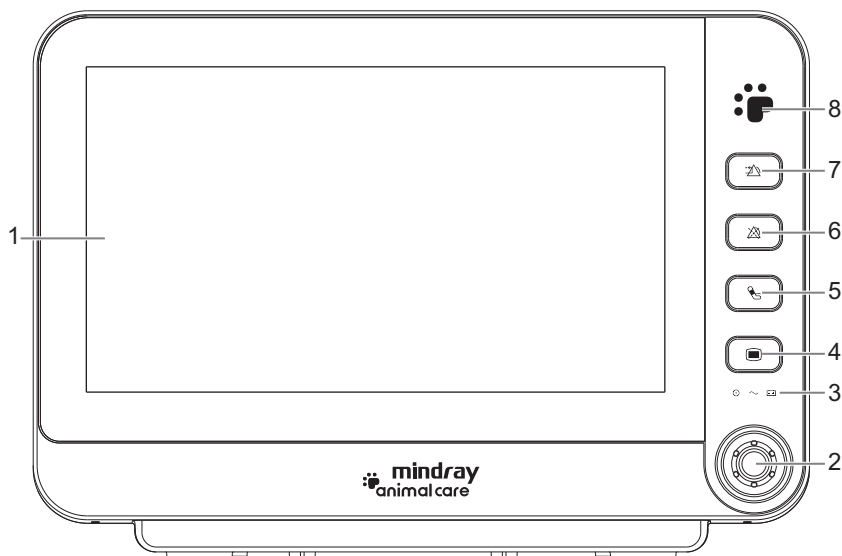
## System Components

The monitor consists of the main unit, battery and accessories.








The content of this guide, such as screens, menus or descriptions, may be different from what you see in your monitor. The content varies depending on the software version, options and configuration of the monitor.

## Introduction of Each Unit

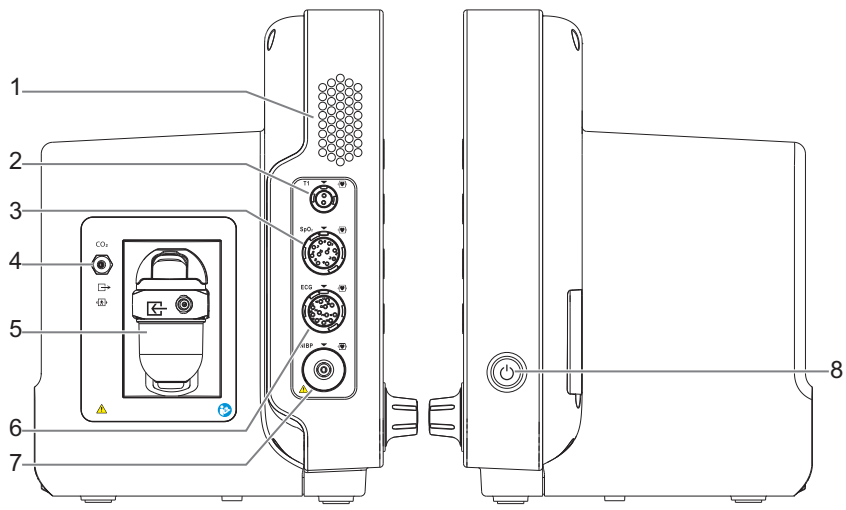
### Front Panel




No.	Name	Description
1.	Display Screen	Displays various physiological parameters, waveforms and other information.
2.	Knob	Rotate the knob clockwise or counterclockwise. With each click, the highlight jumps to the neighboring item. When you reach your desired item, press the Knob to select it.

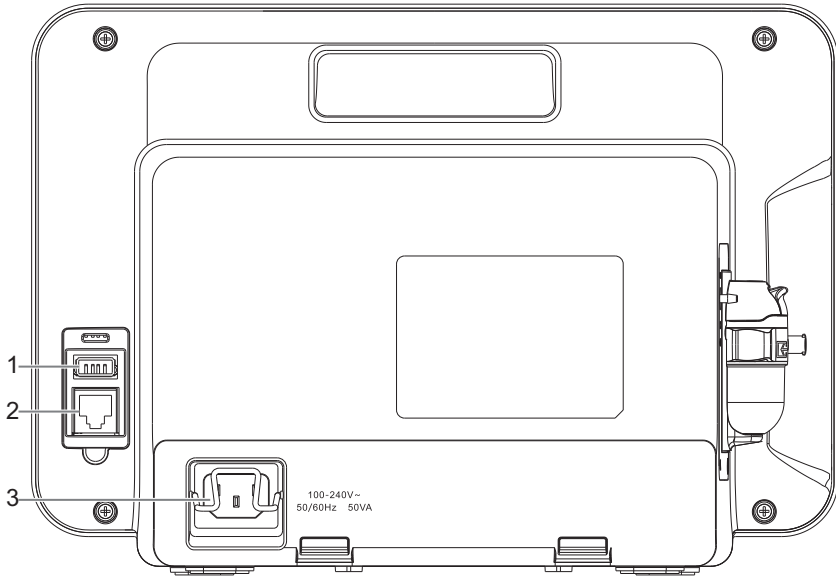
No.	Name	Description
3.	Indicators	<div>  Battery indicator <ul style="list-style-type: none"> <li>On: when the battery is installed and the AC source is connected.</li> <li>Off: when no battery is installed or the installed battery is malfunction, or no AC source is connected when the monitor is power off.</li> <li>Flash: when the monitor operates on battery power.</li> </ul> </div> <hr/> <div>  AC power indicator <ul style="list-style-type: none"> <li>On: when the power is connected.</li> <li>Off: when the power is not connected.</li> </ul> </div> <hr/> <div>  Power on/off indicator <ul style="list-style-type: none"> <li>On: when the monitor is on.</li> <li>Off: when the monitor is off.</li> </ul> </div>
4.	 (Main menu) hard key	<p>Enter or exit the main menu.</p> <p>If no menu is displayed on the screen, pressing it will enter the main menu. If there is a menu displayed on the screen, pressing it will close that menu.</p>
5.	 NIBP Start/Stop hard key	Press to start an NIBP measurement or stop the current NIBP measurement.
6.	 (Alarm pause) hard key	Press to pause the physiological alarm system.
7.	 (Alarm reset) hard key	Press to reset the alarm system.
8.	Alarm lamp	<p>When a physiological alarm or technical alarm occurs, this lamp lights and flashes corresponding with the alarm priority:</p> <ul style="list-style-type: none"> <li>High priority alarms: the lamp quickly flashes red.</li> <li>Medium priority alarms: the lamp slowly flashes yellow.</li> <li>Low priority alarms: the lamp lights in yellow without flashing.</li> </ul>

## Side Panels



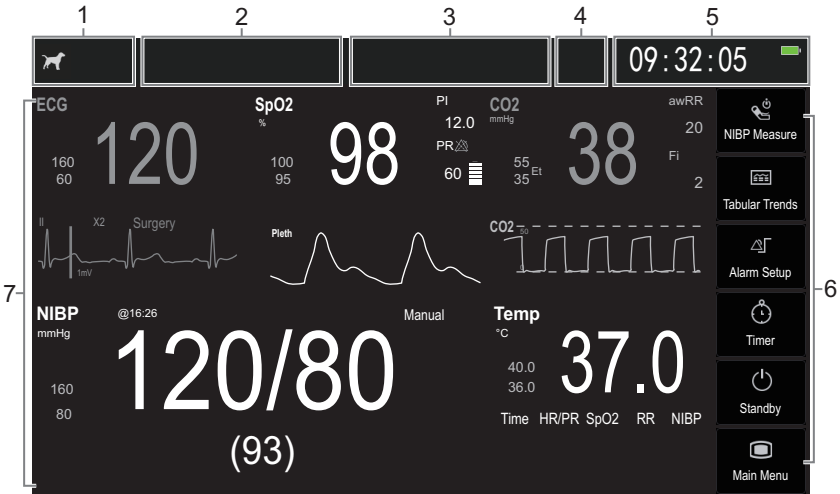
No.	Name	Description
1.	Speaker	/
2.	Temperature probe connector	/
3.	SpO <sub>2</sub> probe connector	/
4.	CO <sub>2</sub> gas outlet (optional)	Connect the gas outlet to the scavenging system using an exhaust tube.
5.	Watertrap (optional)	Connect the gas sample line to the watertrap.
6.	ECG cable connector	/
7.	NIBP cuff connector	/
8.	 Power switch	<ul style="list-style-type: none"><li>• Press to turn on the monitor.</li><li>• When the monitor is on, press and hold at least 5s to turn off the monitor.</li></ul>

## Rear Panel



No.	Name	Description
1.	USB port	Connect USB devices.
2.	Network port	Reserved.
3.	AC Power input	Connect to AC power outlet.

## Screen Display









No.	Name	Description
1.	Animal information area	Displays animal information, including animal category, animal name, age, weight, and so on. Selecting this area enters the animal information management menu.
2.	Technical alarm information area	Displays prompt messages and technical alarm messages. Selecting this area displays the list of active technical alarms.
3.	Physiological alarm information area	Displays physiological alarms. Selecting this area displays the list of active physiological alarms.
4.	Alarm status icon area	Displays the alarm symbol.
5.	System status information area	Displays battery status, system time, etc.
6.	Quick key area	Displays selected quick keys.









No.	Name	Description
7.	Parameter display area	<ul style="list-style-type: none"> <li>Parameters with waveforms: displays parameter waveforms, parameter values, alarm limits, and alarm status.</li> <li>No-waveform parameter: displays parameter values, alarm limits, and alarm status.</li> </ul> <p>Selecting a parameter numeric area enters corresponding parameter menu.</p>

## Available Quick Keys

The monitor provides quick keys for you to quickly access some functions. The quick keys displayed on the screen are configurable.

Symbol	Label	Function
	<b>NIBP Measure/Stop All</b>	Starts an NIBP measurement or stops the current NIBP measurement.
	<b>Alarm Setup</b>	Enters the Alarm Setup menu.
	<b>Tabular Trends</b>	Enters the animal data review screen.
	<b>Alarm Reset</b>	Resets the alarm system.
	<b>Screen Exchange</b>	Switches the screen display layout.
	<b>Timer</b>	Enables to show/hide the timer.

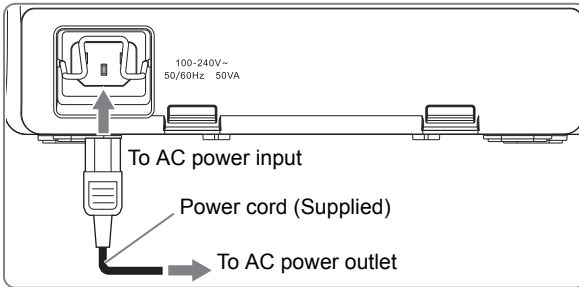
Symbol	Label	Function
	<b>Alarm Pause</b>	Pauses the physiological alarms.
	<b>General Setup</b>	Enters the <b>General Setup</b> menu.
	<b>Standby</b>	Discharges the current animal and enters the standby mode.
	<b>Parameter Setup</b>	Enters the <b>Parameter Setup</b> menu.
	<b>Freeze</b>	Freezes waveforms.
	<b>Main Menu</b>	Enters/Exits the main menu.

## Preparation before Use

### Connecting the Power Cord

#### Connecting the AC Mains

Perform the following procedure:

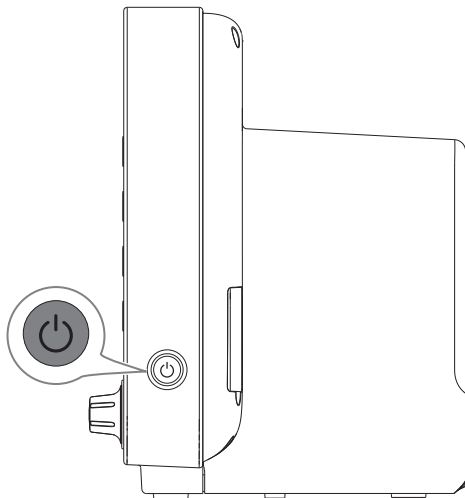


1. Plug the power cord in the socket of the monitor and pull the retaining clamp downward to lock the power cord.
2. Plug the other end power plug into an appropriate outlet.

### Powered by Batteries

This monitor is designed to operate on rechargeable Lithium-ion battery power during intra-hospital animal transfer or whenever the power supply is interrupted. The battery is charged automatically when the monitor is connected to AC power, no matter the monitor is powered on or not. Whenever the AC power is interrupted during animal monitoring, the monitor will automatically run power from the internal batteries.

### Turning on the Monitor




Before you start to make measurements, check the monitor for any mechanical damage and make sure that all external cables and accessories are properly connected.

Press the power button switch.

## Setup

Perform the following procedure:

1. Select **Main Menu** quick key or press  button to enter the **Main Menu** screen.
2. Rotate the knob to move the focus, and then press the knob to enter the selected menu or set the parameters.
3. Exit system setup.

Select the corresponding mode to exit the setup menu according to the actual screen display.

- Select  button of the menu.
- Select **Ok** or **Cancel**.

## Animal Data Management

After being switched off, the monitor automatically discharges the previous animal and admits a new animal at startup.

### Manually Admitting an Animal

Always discharge the previous animal before starting monitoring a new animal. Failure to do so can lead to data being attributed to the wrong animal.

Perform the following procedure:

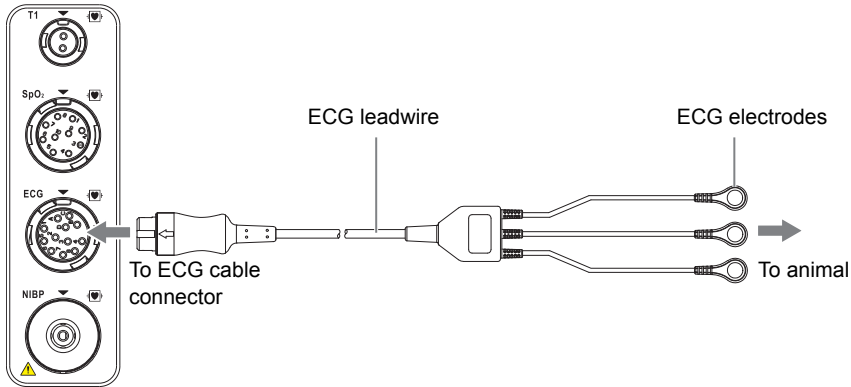
1. Select **Standby** quick key, and then select **Yes** to enter the standby screen.
2. Rotate or press the knob to enter the Admit New Animal screen.
3. Select animal type and input the weight.
4. Select **Enter** to admit a new animal.

## Managing Animal Information

To edit the animal information after an animal has been admitted, or when the animal information is incomplete, or when you want to change the animal information:

1. Rotate the knob to select the animal information area on the screen and press the knob.
2. Modify animal information as needed.
3. Select **Ok** to confirm the modification.

## Monitoring ECG (Limb Leads)



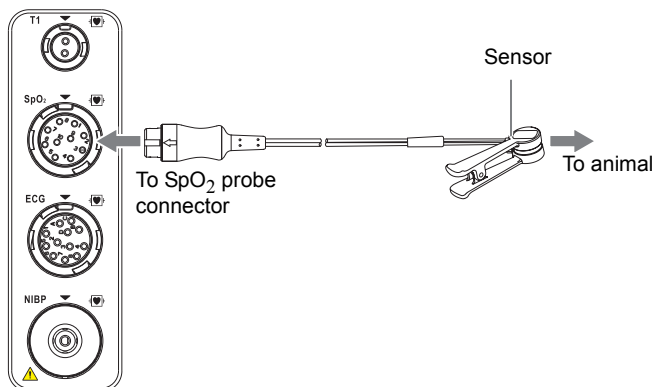
Perform the following procedure:

1. Select an appropriate leadwire.
2. Prepare the animal's skin.

Proper skin preparation is necessary for good signal quality at the electrode, as the skin is a poor conductor of electricity. To properly prepare the skin, choose flat areas and then follow this procedure:

- a. Shave hair from skin at chosen sites.
  - b. Gently rub skin surface at sites to remove dead skin cells.
  - c. Thoroughly cleanse the site with a mild soap and water solution.
  - d. Dry the skin completely before applying the electrodes.
3. Place the electrodes on the animal.
  4. Connect the ECG cable to the ECG connector of the monitor.
  5. Adjust parameters in the ECG parameter setup menu to obtain the optimized waveform display.

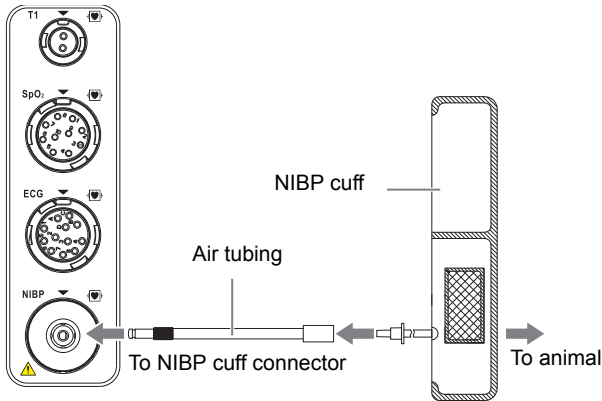
## Monitoring Pulse Oxygen Saturation





Perform the following procedure:

1. Select an appropriate sensor according to the module type, animal category and weight.
2. Clean the contact surface of the reusable sensor.
3. Clean the application site.
4. Apply the sensor to the animal according to the instruction for use of the sensor.  
The SpO<sub>2</sub> sensor selection and application site depend on the animal category.
5. Connect the SpO<sub>2</sub> sensor tubing to the SpO<sub>2</sub> connector.
6. Adjust parameters in the SpO<sub>2</sub> parameter setup menu to obtain the optimized waveform display.

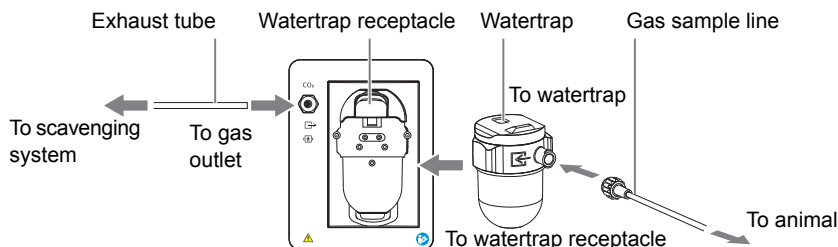
## Monitoring NIBP



Perform the following procedure:

1. Verify that the weight value is correct.
2. Connect the air tubing to the NIBP connector.
3. Place the NIBP Cuff:
  - a. Select a correct sized cuff.
  - b. Confirm that the cuff is completely deflated, and select a cuff position based on the animal type and weight.
  - c. Connect the cuff to the air tubing and make sure that the air tubing is not compressed or twisted. Air must pass unrestricted through the tubing.
4. Adjust the measurement parameter and measurement method in the NIBP setup menu as required.
5. Do one of the following to start measurement:
  - Select **NIBP Measure** quick key and you can start the desired measurement from the popup menu.
  - Press the  hard key on the front panel.
6. Do one of the following to stop measurement:
  - Select **Stop All** quick key.
  - Press the  hard key on the front panel.

## Monitoring Carbon Dioxide







Perform the following procedure:


1. Select the appropriate watertrap and sampling line according to the animal category.
  - a. Connect the watertrap to the watertrap receptacle, and then connect the sampling line to the watertrap.
  - b. Connect the other end of the sampling line to the animal.
  - c. Connect the gas outlet to the scavenging system using an exhaust tube.
2. After the CO<sub>2</sub> module is connected, it enters **Measure** mode by default and the monitor displays CO<sub>2</sub> Starting. CO<sub>2</sub> can be measured after the start-up is complete.
3. Adjust parameters in the CO<sub>2</sub> parameter setup menu to obtain the optimized waveform display.


## Alarms

### Alarm Status Symbols

-  (Alarm pause): indicates that the system is in the alarm pause status.
-  (Alarm off): indicates that the system is in the alarm off status.
-  (Audio off): indicates that audible alarm tones are turned off.
-  (Alarm reset): indicates that the alarm system is reset.


### Pausing Alarms

Press  button on the front panel or select **Alarm Pause** quick key to disable alarm indicators to temporarily.

When the alarm pause time expires, the alarm paused status is automatically deactivated. You can also cancel the alarm paused status by pressing  button on the front panel or selecting **Alarm Pause** quick key.



## Resetting Alarms

Press  button on the front panel or select **Alarm Reset** quick key to reset the alarm system. When the alarm system is reset, the alarm reset symbol displays in the alarm status icon area.

## Actions When an Alarm Occurs

When an alarm occurs, observe the following steps and take proper actions:

1. Check the animal's condition.
2. Confirm the alarming parameter or alarm category.
3. Identify the source of the alarm.
4. Take proper action to eliminate the alarm condition.
5. Make sure the alarm condition is corrected.



## Alarm Limit

Item	Name	Default Setting
HR/PR	On/Off	On
	High	Canine/other: 160; Feline: 180
	Low	Canine/other: 60; Feline:100
	Level	Med
RR	On/Off	On
	High	30
	Low	6
	Level	Med
Apnea	On/Off	On
	High	/
	Low	/
	Level	High

Item	Name	Default Setting
<b>SpO2</b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	100
	<b>Low</b>	95
	<b>Level</b>	<b>Med</b>
<b>Desat</b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	/
	<b>Low</b>	85
	<b>Level</b>	<b>High</b>
<b>NIBP-S</b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	Canine/other: 160; Feline: 160
	<b>Low</b>	Canine/other: 80; Feline: 80
	<b>Level</b>	<b>Med</b>
<b>NIBP-D</b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	Canine/other: 90; Feline: 90
	<b>Low</b>	Canine/other: 55; Feline: 60
	<b>Level</b>	<b>Med</b>
<b>NIBP-M</b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	Canine/other: 100; Feline: 100
	<b>Low</b>	Canine/other: 60; Feline: 65
	<b>Level</b>	<b>Med</b>
<b>Temp</b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	40.0
	<b>Low</b>	Canine/other: 36.0; Feline: 37.0
	<b>Level</b>	<b>Med</b>

Item	Name	Default Setting
<b>EtCO<sub>2</sub></b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	Canine/other: 55; Feline: 50
	<b>Low</b>	Canine/other: 35; Feline: 30
	<b>Level</b>	<b>Med</b>
<b>FiCO<sub>2</sub></b>	<b>On/Off</b>	<b>On</b>
	<b>High</b>	5
	<b>Low</b>	/
	<b>Level</b>	<b>Med</b>

Perform the following procedure:

1. Select **Main Menu** quick key or press  button to enter the **Main Menu** screen.
2. Rotate the knob to move the focus to highlight **Alarm Limit**, and then press the knob.
3. Use the knob to set alarm limits, alarm switches and alarm level for all parameters.
4. Select  button of the menu to exit the setup.

## Review

Select **Tabular Trends** quick key, or select **Main Menu > Graphic Trends, Tabular Trends** or **Events** to access their respective review windows.

## Contact Information

### Global Service Department

Shenzhen Mindray Animal Medical Technology Co., Ltd.

Address: Room 702, Tower 4, YESUN Intelligent Community III, No.1301-88 Guanguang Road, Xinlan Community, Guanlan Street, Longhua District, Shenzhen 518110, P. R. China

Website: [www.mindrayanimal.com](http://www.mindrayanimal.com)

E-mail Address: [service@mindrayanimal.com](mailto:service@mindrayanimal.com)

Tel: +86 755 33997000

