uMEC10/uMEC12/uMEC15/uMEC6/ uMEC7/uMEC15S

Patient Monitor

Operator's Manual

CE 0123

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7 Alarms

Alarms, triggered by a vital sign that appears abnormal or by technical problems of the patient monitor, are indicated to the user by visual and audible alarm indications.

WARNING

- **A potential hazard can exist if different alarm presets are used for the same or similar equipment in any single area, e.g. an intensive care unit or cardiac operating room.**
- **If your patient monitor is connected to the central monitoring system (CMS) or other monitors, alarms can be displayed and controlled remotely. Remote suspension, inhibition, or reset of monitor alarms via the CMS or other monitors may cause a potential hazard. For details, refer to the operator's manual of the CMS and the other monitors.**

7.1 Alarm Categories

By nature, the patient monitor's alarms can be classified into three categories: physiological alarms, technical alarms and prompt messages.

1. Physiological alarms

   Physiological alarms, also called patient status alarms, are triggered by a monitored parameter value that violates set alarm limits or an abnormal patient condition. Physiological alarm messages are displayed in the physiological alarm area.

2. Technical alarms

   Technical alarms, also called system status alarms, are triggered by a device malfunction or a patient data distortion due to improper operation or mechanical problems. Technical alarm messages are displayed in the technical alarm area.

Apart from the physiological and technical alarm messages, the patient monitor shows some messages telling the system status or patient status. Messages of this kind are included into the prompt message category and usually displayed in the technical alarm area and prompt information area. Some prompt messages that indicate the arrhythmia events are displayed in the physiological alarm area. For some measurements, their related prompt messages are displayed in their respective parameter windows.

7.2 Alarm Levels

By severity, the patient monitor's alarms can be classified into three categories: high level, medium level and low level.

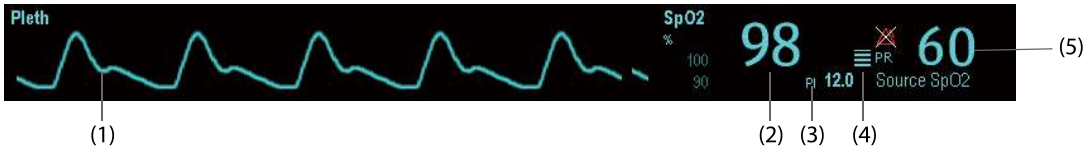
	Physiological alarms	**Technical alarms**
High level	Indicate that your patient is in a life threatening situation, such as Asystole, Vfib/Vtac and so forth, and an emergency treatment is demanded.	Indicate a severe device malfunction or an improper operation, which could make it possible that the monitor cannot detect critical patient status and thus threaten the patient's life.
Medium level	Indicate that your patient's vital signs appear abnormal and an immediate treatment is required.	Indicate a device malfunction or an improper operation, which may not threaten the patient's life but may compromise the monitoring of vital physiological parameters.
Low level	Indicate that you patient's vital signs appear abnormal and an immediate treatment may be required.	Indicate a device malfunction or an improper operation, which may compromise a certain monitoring function but will not threaten the patient's life.

11 Monitoring SpO_2

11.1 Introduction

SpO_2 monitoring is a non-invasive technique used to measure the amount of oxygenated haemoglobin and pulse rate by measuring the absorption of selected wavelengths of light. The light generated in the probe passes through the tissue and is converted into electrical signals by the photodetector in the probe. The SpO_2 module processes the electrical signal and displays a waveform and digital values for SpO_2 and pulse rate.

This device is calibrated to display functional oxygen saturation. It provides four measurements:



(1) Pleth waveform (Pleth): visual indication of patient's pulse. The waveform is not normalized.

(2) Oxygen saturation of arterial blood (SpO_2): percentage of oxygenated hemoglobin in relation to the sum of oxyhemoglobin and deoxyhemoglobin.

(3) Perfusion index (PI): gives the numerical value for the pulsatile portion of the measured signal caused by arterial pulsation. PI is an indicator of the pulsatile strength. You can also use it to assess the quality of SpO_2 measurement.

- Above 1 is optimal,
- Between 0.3 and 1 is acceptable.
- Below 0.3 indicates low perfusion. When PI is below 0.3, the low perfusion status indicator (a question mark) is displayed to the right of the SpO_2 value, indicating that the SpO_2 value may be inaccurate. Reposition the SpO_2 sensor or find a better site. If low perfusion persists, choose another method to measure oxygen saturation if possible. You can also disable the display of the the low perfusion status indicator by refering to ***11.4.9 Setting the Low Perfusion Status Indicator***.

◆ PI value can be displayed under the PR value in larger characters if **[PI Zoom]** is enabled.

(4) Perfusion indicator: the pulsatile portion of the measured signal caused by arterial pulsation.

(5) Pulse rate (derived from pleth wave): detected pulsations per minute.

NOTE

- **A functional tester or SpO_2 simulator cannot be used to assess the accuracy of a SpO_2 module or a SpO_2 sensor.**
- **A functional tester or SpO_2 simulator can be used to determine the pulse rate accuracy.**

11.2 Safety

WARNING

- **Use only SpO_2 sensors specified in this manual. Follow the SpO_2 sensor's instructions for use and adhere to all warnings and cautions.**
- **When a trend toward patient deoxygenation is indicated, blood samples should be analyzed by a laboratory co-oximeter to completely understand the patient's condition.**