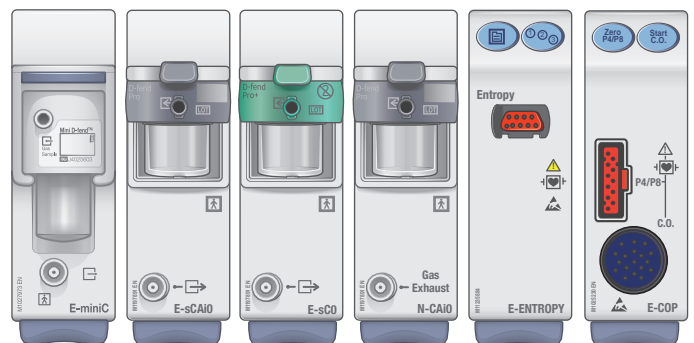
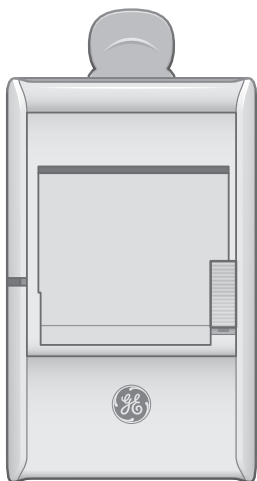




# Patient Monitor B125/B105

## Clinical Reference Guide





### Notice

The materials contained in this document are intended for educational purposes only. This document does not establish specifications, operating procedures or maintenance methods for any of the products referenced. Always refer to the official written materials (labeling) provided with the product for specifications, operating procedures and maintenance requirements.

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# 01 System Overview

## System Components

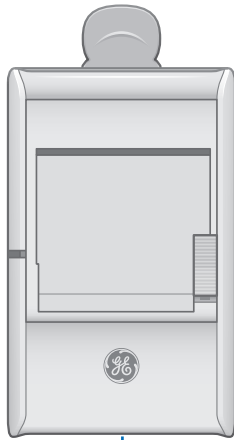
Your system may not include all these components. Consult your local representative for the available components.



1



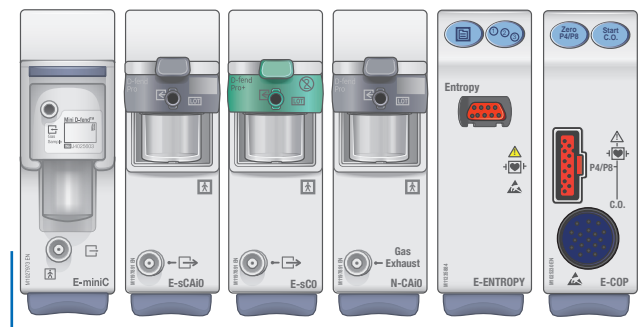
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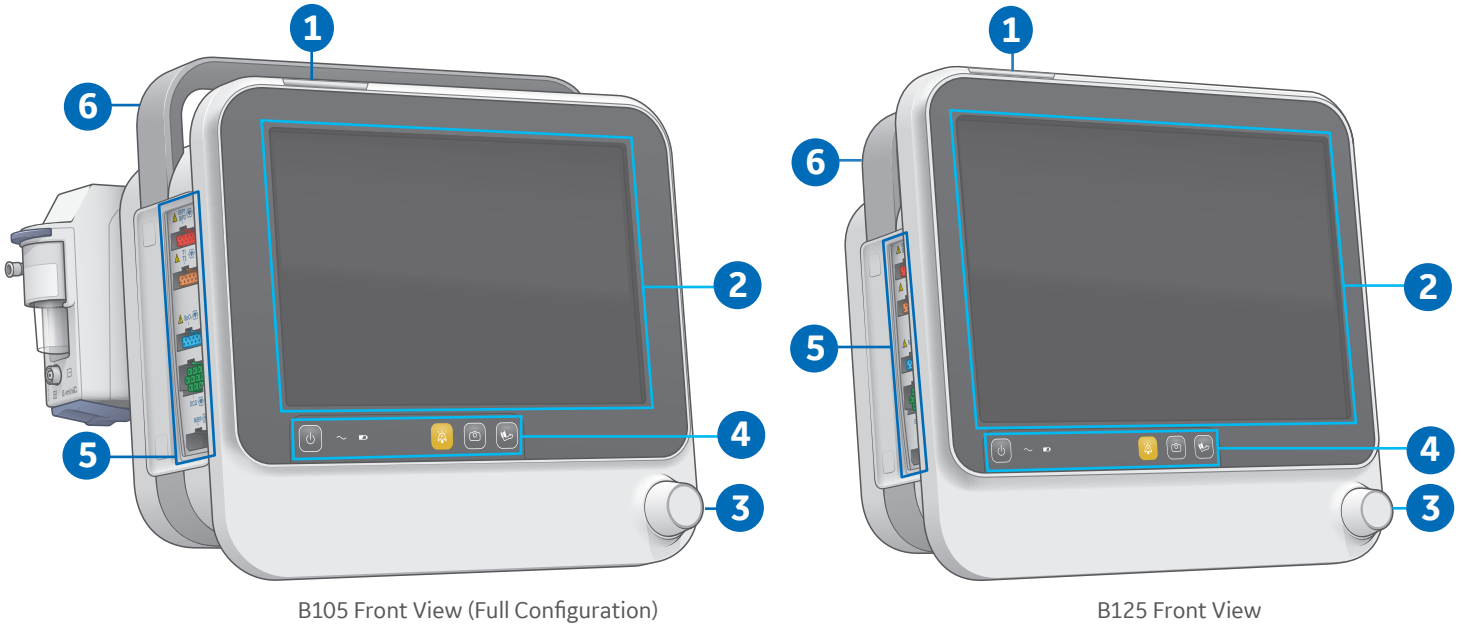
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3

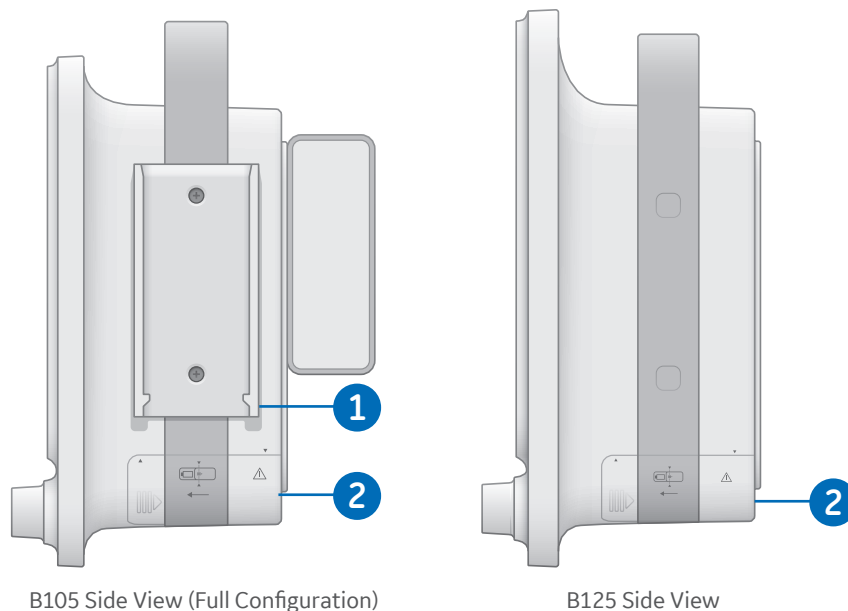
1. B105 monitor, 10.1' LED display
2. B125 monitor, 12.1' LED display
3. Acquisition modules
4. B1X5-F2 Frame
5. Recorder

# System Components: Front View



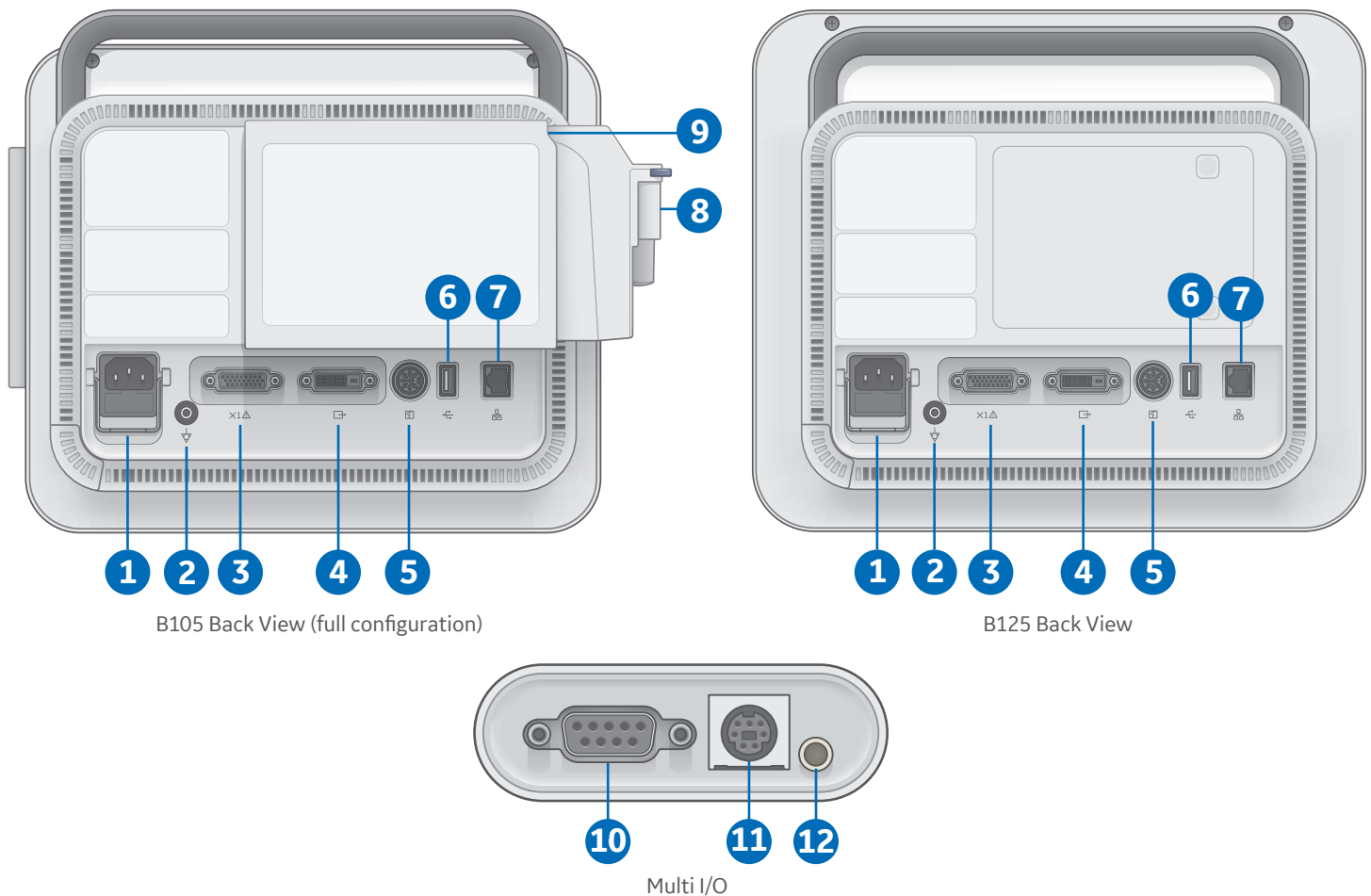
1. **Alarm light:** Changes color based on alarm condition.
2. **LED Display:** B125 Monitor is 12.1 inches, B105 Monitor is 10.1 inches.
3. **Trim Knob:** Used to highlight and confirm menu selections.
4. **Keypad:** Used to turn the monitor on and off, along with other interactions.
5. **Hemodynamic Connectors:** Contains the Invasive Pressure, Temperature, SpO<sub>2</sub>, ECG and NIBP connectors.
6. **Transportation Handle:** Used to transport the monitor.

# System Components: Main Side View



1. **Recorder Guide Rail:** Used to insert the recorder along the insertion guides.
2. **Battery Compartment:** Insert a GE authorized lithium-ion battery to allow the monitor to run on battery power.

# System Components: Back View

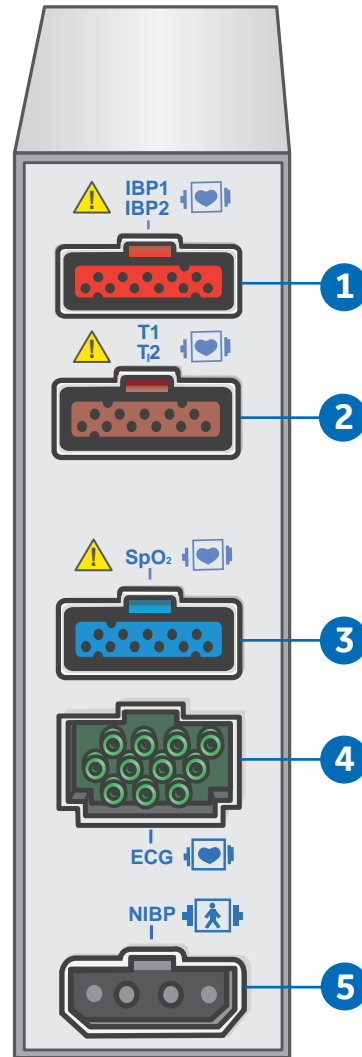


1. **Receptacle for power cord:** Connect AC power to the monitor via the power cord receptacle.
2. **Equipotential connector:** Connect device to a potential equalization conductor.
3. **Multi I/O connector:** Connect the customized Multi I/O adaptor to the Multi I/O connector.
4. **DVI connector:** Connect an external display to the monitor via the DVI connector.
5. **Recorder/B1X5-F2 frame connector:** Connect the recorder and/or the B1X5-F2 frame via this connector.
6. **USB connector:** Connect a USB storage device to save and load settings and to download logs.
7. **Network connector:** Connect the monitor to a network via the network connector.
8. **E-miniC module:** CO<sub>2</sub> measurement module.
9. **Extension rack:** Required to connect an E-module.
10. **Serial Port (Multi I/O):** Output for a serial connection from the monitor.
11. **Defibrillator connector (Multi I/O):** Used for synchronization with a defibrillator.
12. **Nurse call connector (Multi I/O):** Used to output alarm signals to the nurse call system in the hospital.

# Hemodynamic Connectors

The cables for the parameters shown all connect to the hemodynamic connectors on the left side of the monitor.

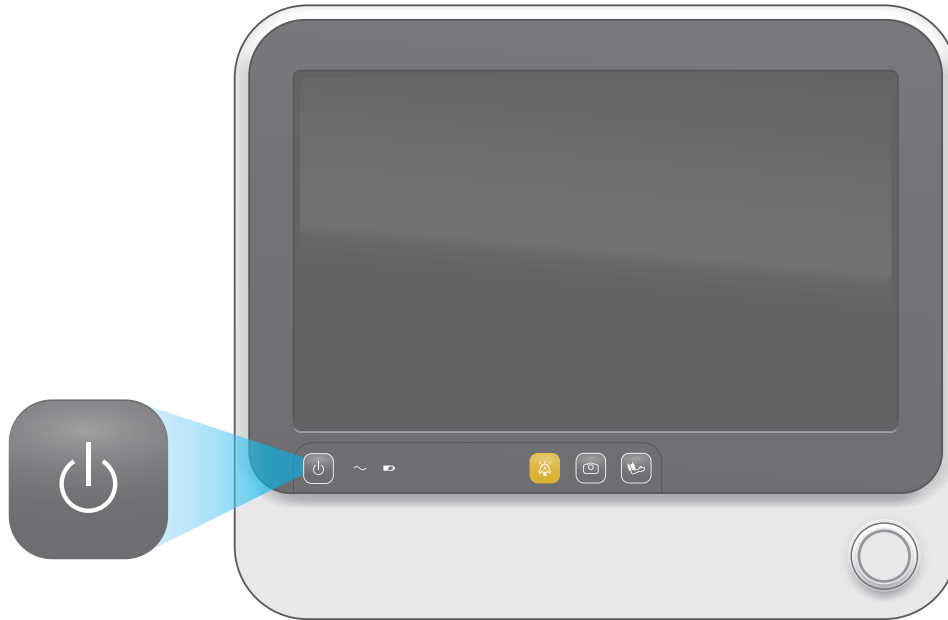
1. Invasive blood pressure (IBP) Connector
2. Temperature Connector
3. SpO<sub>2</sub> Connector
4. ECG and Impedance Respiration Connector
5. NIBP Connector





# 02 Monitoring Basics

## Turning the Monitor On and Off



### Turning the Monitor On

1. Ensure all cables are properly connected.
2. Press the **On/Off** key located on the keypad.
3. The welcoming screen will appear with a status bar indicating the progress of the startup procedure.

### Turning the Monitor Off

1. Press the On/Off key.
2. The message **Monitor is shutting down...** will appear on the screen.

# Keypad

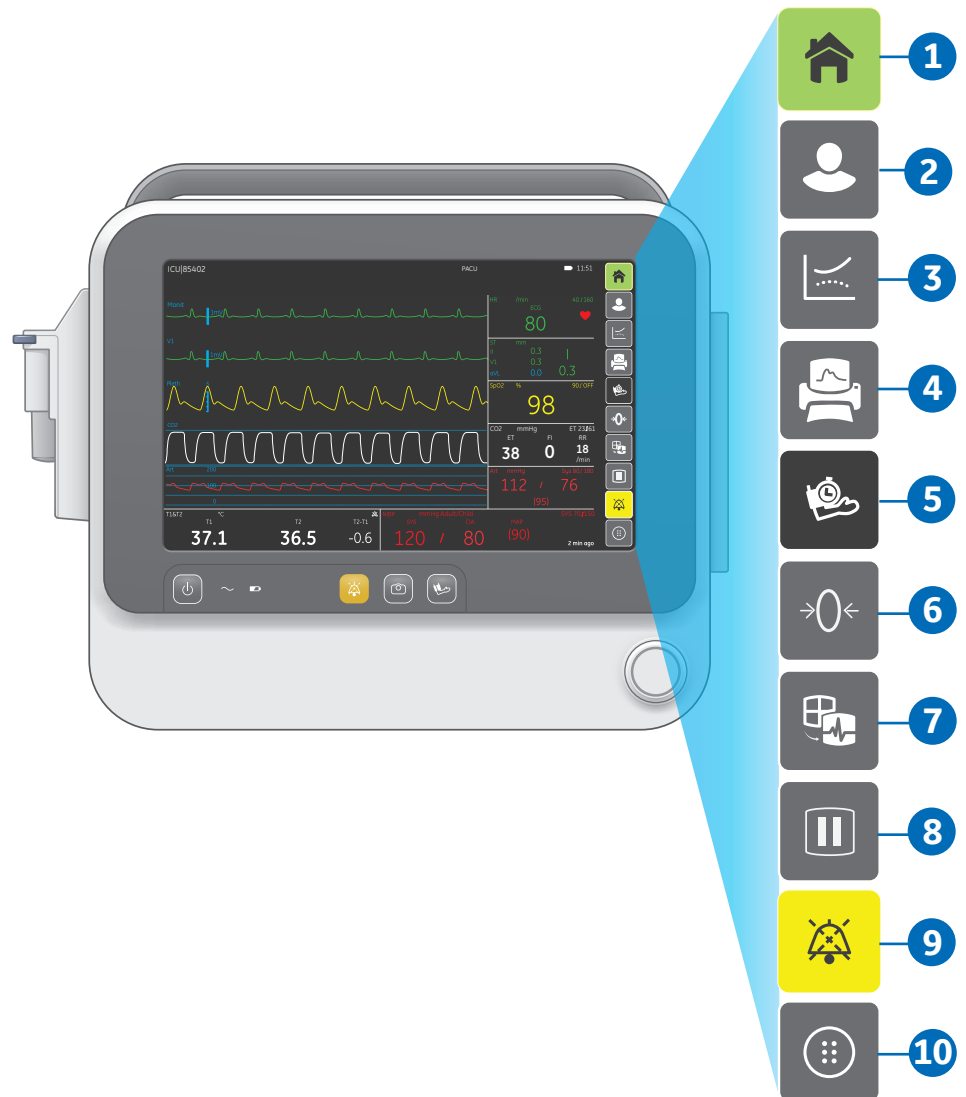
- 1. On/Off Key:** Press to turn the monitor on or off.
- 2. AC Power Status Indicator:** The indicator is lit when the monitor is receiving AC power.
- 3. Battery Status Indicator:** Green when the monitor is operating on battery power.
- 4. Audio pause key:** Temporary audio pause of active alarms.
- 5. Snapshot key:** Press to take a snapshot, which is a set of measured data captured at that specific moment.
- 6. Manual NIBP key:** Press to start a manual NIBP measurement.



# Soft Keys

Select a soft key to access the corresponding feature for that soft key. More information on each soft key will be covered throughout the quick reference guide.

- Home
- Admit/Discharge
- Trends
- Print
- Auto NIBP
- Zero Invasive Pressure
- Layout Switch
- Standby
- Audio Pause
- More



# Normal Screen

When monitoring begins, the main page appears automatically. This pre-configured page is called the normal screen. There are two layouts available for the normal screen:

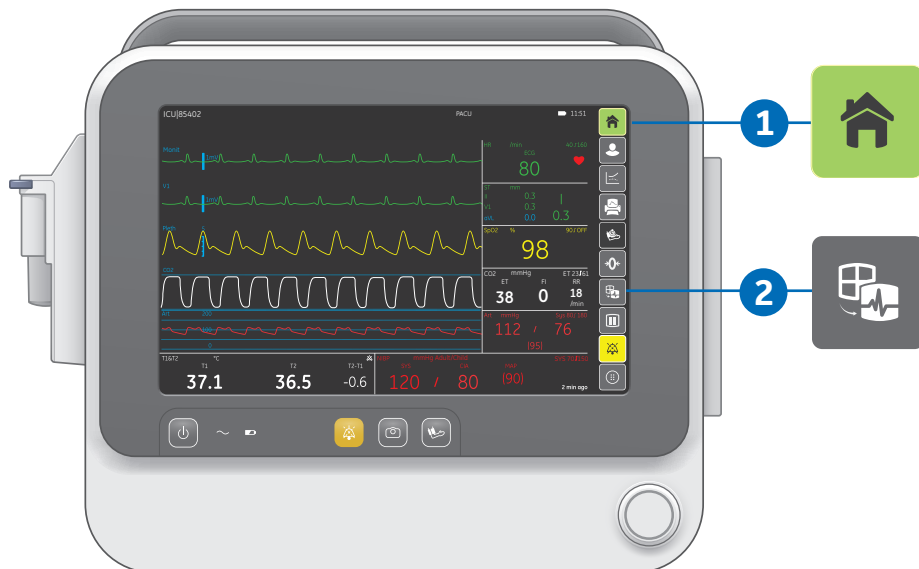
- **Waveform Layout:**

The monitor displays up to 5 waveforms and 4 lower digit fields at a time. If the lower digit field is turned off, up to 6 waveforms can be displayed.

- **Large Number Layout:** The monitor displays up four large numbered digit fields with the associated waveform at the bottom of each digit field.

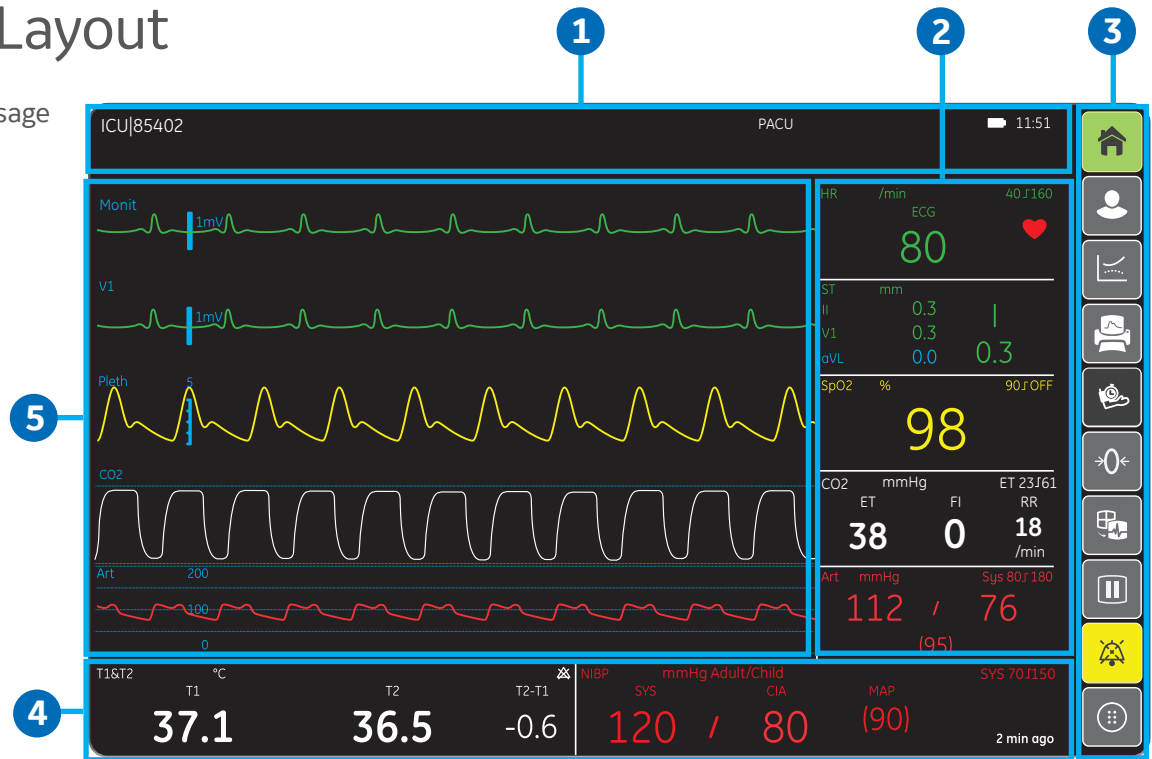
1. Select the **Home** soft key in the upper right area of the display to return to the normal screen.
2. Select the **Layout Switch** soft key in the right area of the display to switch between Waveform and Large Number layout.

Any changes you make to the screen setup during monitoring are changes to this normal screen. These changes are not permanent unless they are saved to a mode. They are valid until the patient is discharged. They are also kept in the device memory for 120 minutes after the power is turned off.



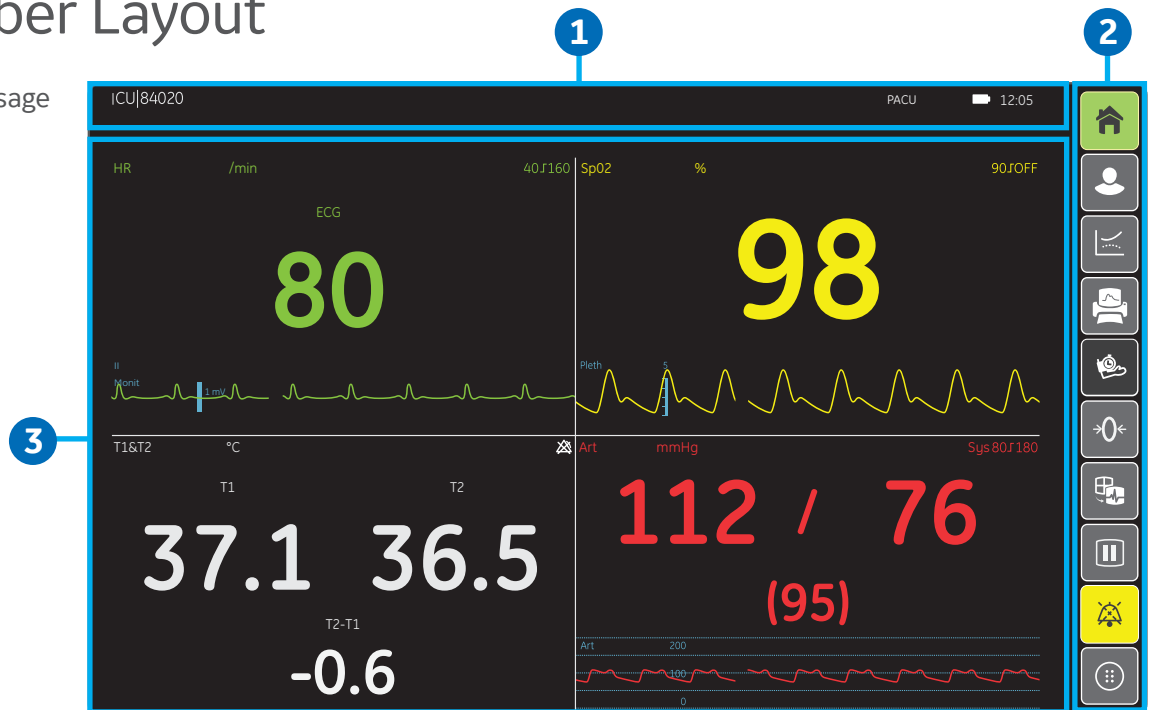
# Waveform Layout

1. Information and Message Fields
2. Upper Digit Fields
3. Soft Key Field
4. Lower Digit Fields
5. Waveform Fields

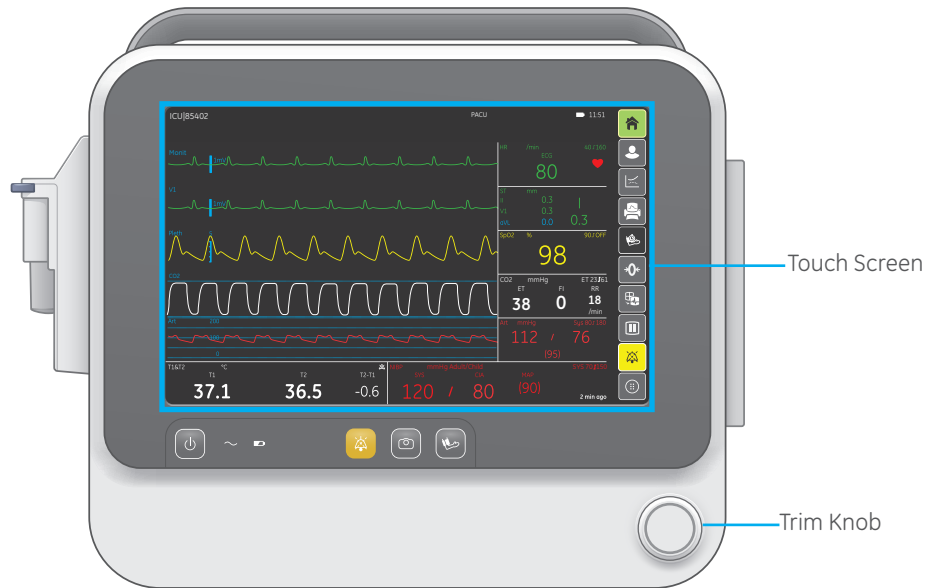


# Large Number Layout

1. Information and Message Fields
2. Soft Key Field
3. Large Number Fields



# System Navigation



## Selecting Menu Options with a Touch Screen

1. Touch the menu option with your finger.
2. The highlight on the screen moves to this option.
3. Lift your finger off the screen, and the selected function is performed.

## Selecting Menu Options with the Trim Knob Control

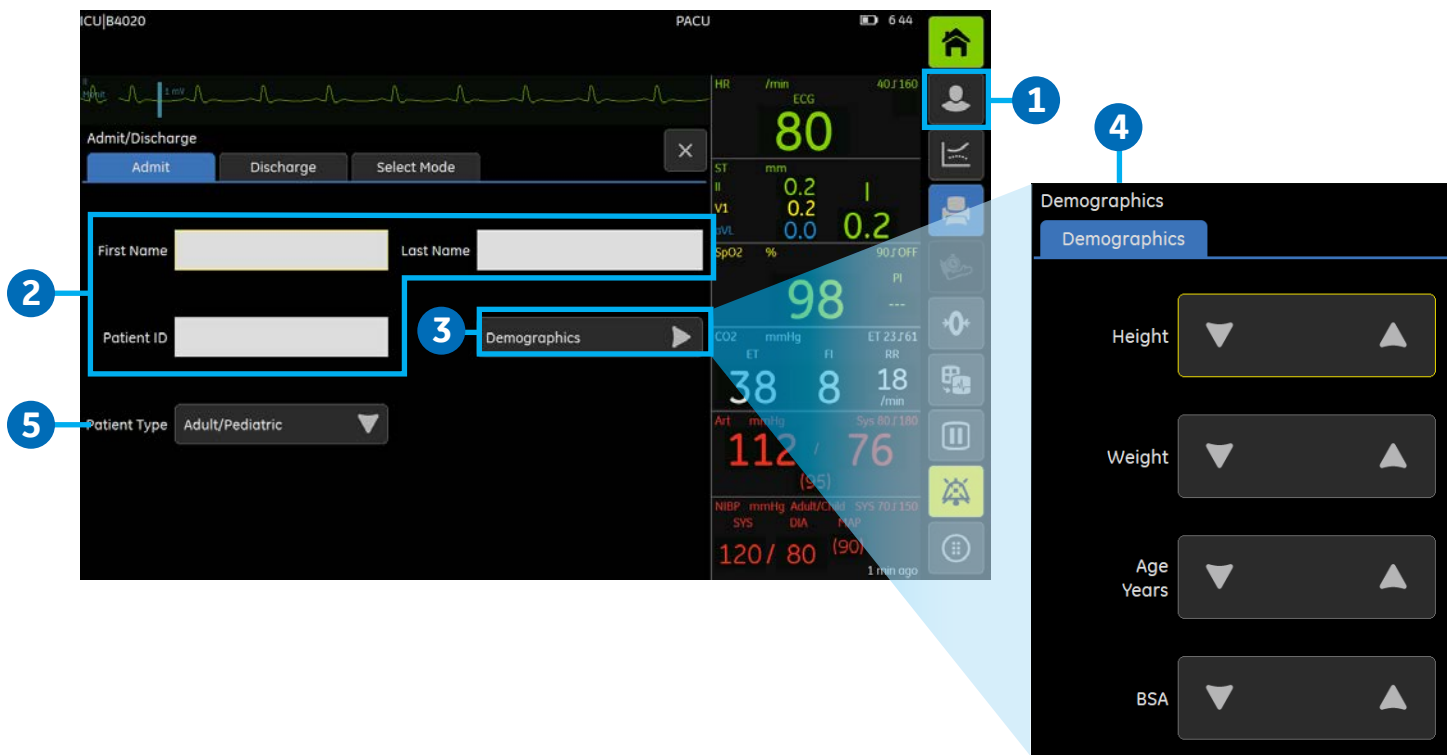
1. Rotate the Trim Knob control in either direction to move the highlighted cursor from option to option on the display.
2. Press the Trim Knob control once to select the highlighted option.

## Entering Data

When data entry is required, the monitor automatically displays an on-screen keyboard for you to use.

1. Select the desired data field. The selected field is highlighted in yellow, indicating that you can begin entering the text.
2. To enter data, select the characters with the Trim Knob or touchscreen.

# Admitting a Patient



A patient is automatically admitted when the monitor detects any of the following vital signs: ECG, impedance respiration, Art, ABP, UAC, NIBP, SpO<sub>2</sub>, Gases or Entropy. When a patient is admitted at the bedside monitor and the monitor is connected to the network, patient data will display at the central station.

A patient is manually admitted when any patient data is entered or loaded. Patient data can be entered locally using the monitor, or entered remotely using a central station.

## Entering Patient Data with the Monitor:

1. Select the **Admit/Discharge** soft key.
2. Edit or enter the **First Name**, **Last Name** and **Patient ID** by selecting the letters or numbers.
3. Select **Demographics**.
4. Select **Height**, **Weight**, **AgeYears** with arrows. The BSA is automatically calculated.
5. Select the **Patient Type** from the list. Choices are **Adult/Pediatric** and **Neonatal**.



**Note!** When you select **Patient Type** to **Neonatal**:

- The mode will automatically become **NEONATAL**.
- The **Age Years** are not available.
- The **OxyCRG** will display.

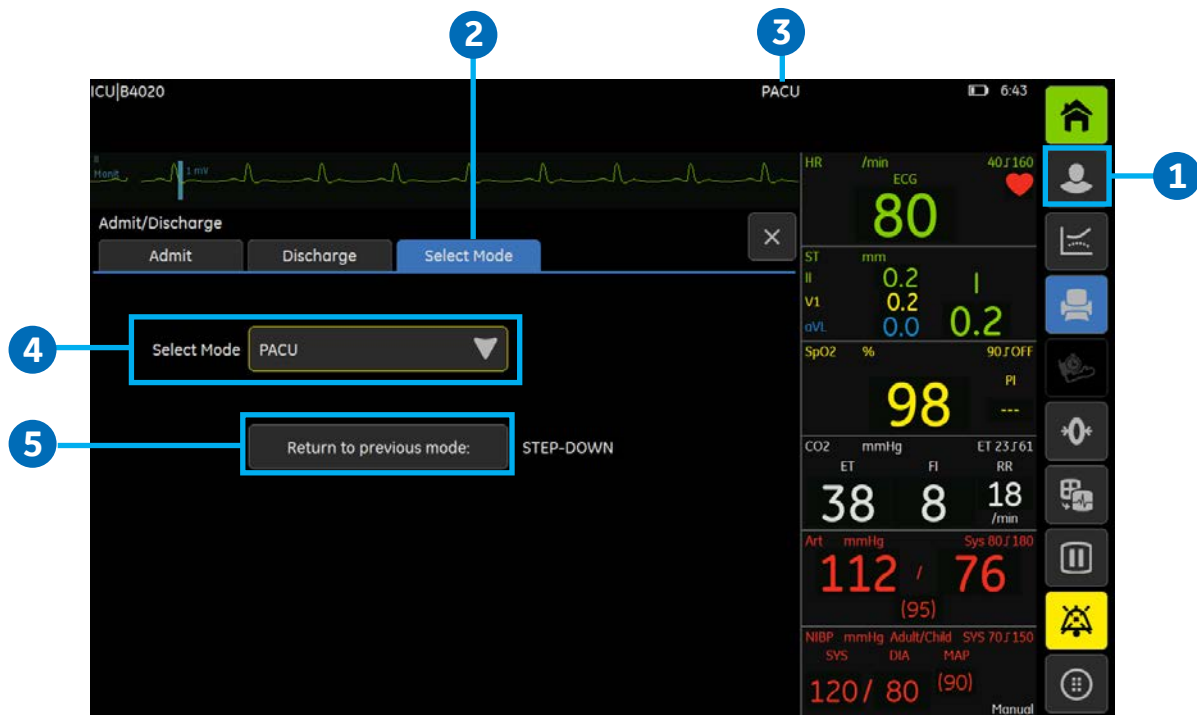
# Adjusting Sound Volume



You can adjust various sound volumes according to your care environment needs. While you are adjusting the volume, you will hear a corresponding sound that will guide you in determining a suitable level. All volumes other than Alarm Volume can be set to **0** if required.

1. Select the **More** soft key to access the Quick Access Panel.
2. Select **Sound Volumes**.
3. Adjust the **Alarm Volume**, **Beat Volume** or **Completed NIBP Volume** with the arrows.

# User Modes



When you start monitoring a patient, you can use the startup mode or select another mode. You can also change the mode while monitoring a patient without losing any patient data. The device has seven user modes to choose from. Modes control many settings, including parameter defaults, alarm detection limits, and the screen display.

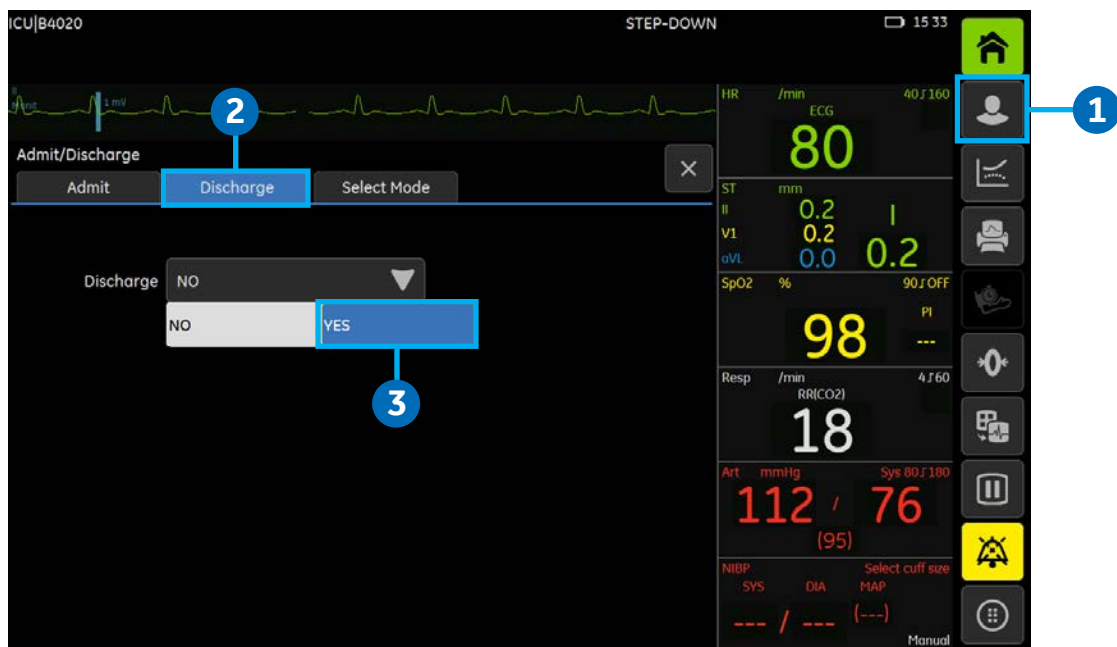
## Changing a Mode

1. Select the **Admit/Discharge** soft key.
2. Select the **Select Mode** tab.
3. The current mode is displayed in the message area of the display
4. Select a mode from the **Select Mode** list.
5. You can return to the previous mode by selecting **Return to previous mode**.

If you make changes to a mode while using it and need to return to its previous settings, first select another mode and then re-select the one you were using.



# Patient Discharge



Discharging a patient deletes all patient information in the monitor.

The monitor discharges a patient automatically after 24 hours when vital signs for parameters (except Temperature) are not available. When this happens, all trend data will be cleared and alarm settings will return to the default values.

The patient can be discharged remotely using a central station, provided that this option has been enabled.

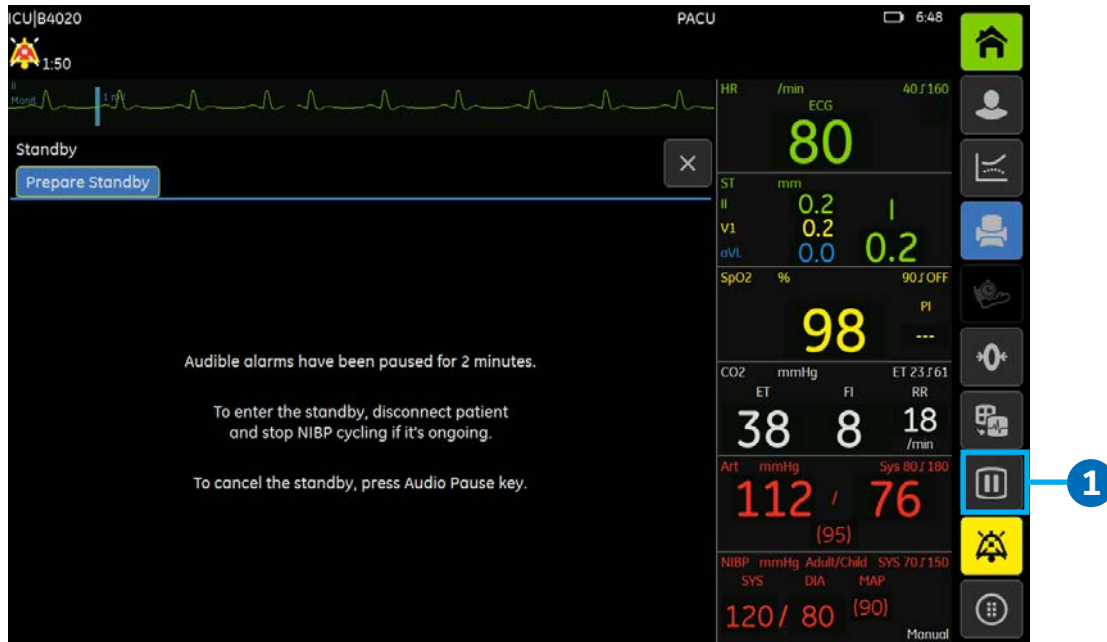
## Discharging a patient

If desired, print the patient data and then disconnect any patient cables.

1. Select the **Admit/Discharge** soft key.
2. Select the **Discharge** tab.
3. Select **YES** from the Discharge list.

Parameter settings, including alarm limits, return to the default settings. All patient data and trend data is removed from the monitor.

# Standby



## Starting Standby

1. Select the **Standby** soft key. If patient cables are still connected and the monitor is receiving physiological data, a text message will be displayed, indicating that audio alarms have been paused.
2. Disconnect patient cables to start the standby. If you do not disconnect the cables and physiological data is still present after the audio pause time expires, the standby is canceled. You can also select to cancel entering standby immediately.
3. The screen will go blank and the **Standby** text appears.

## Ending Standby

The monitor ends the standby state automatically when any of the following conditions occur:

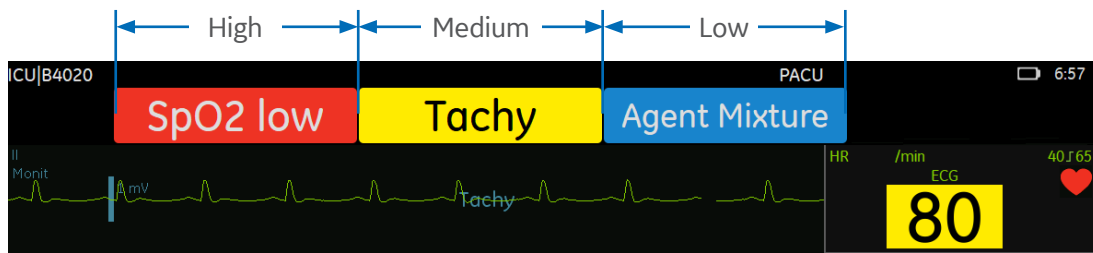
- Any physiological data is detected.
- User input is received: a keypad key is pressed, Trim Knob is pressed or rotated, or the touchscreen is pressed.

After that, a continue menu will open, the options are:

- **Continue:** Continue monitoring of previous patient.
- **Discharge:** Discharge current patient and erase patient data from monitor.
- **Standby:** Enter Standby mode.

# 03 Alarms

## Alarms Overview



### Alarm priority levels

All alarms are categorized by priority level:

- **High priority alarms:** Require an immediate response (white text flashes inside a red box).
- **Medium priority alarms:** Require a prompt response (black text inside a yellow box).
- **Low priority alarms:** Require you to be aware of this condition (white text inside a blue box).
- **Informational priority messages:** Provide information you should know (black text inside a grey box).

### Alarm priority escalation

An escalating alarm starts at a designated priority level (low or medium) and will escalate to the next higher priority level (after a set number of seconds) if the alarm condition has not been resolved. It is important to note that the alarms escalate up to the next level but will not reset until the condition has been resolved.

When more than one alarm occurs at the same time, the monitor will sound an alarm tone for the highest priority alarm. Any lower priority audible alarm tones are suppressed by the higher priority alarm tone.

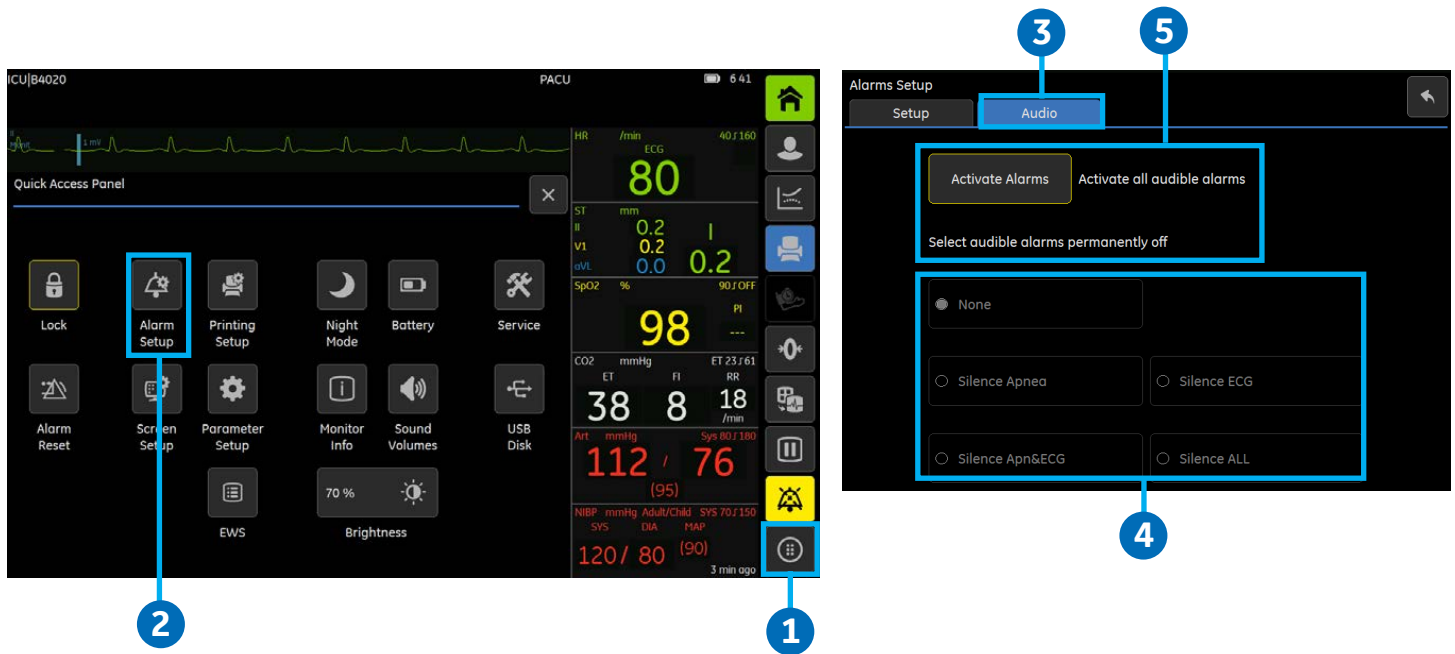
### Breakthrough Alarms

The breakthrough alarms feature allows pre-defined and user-selectable alarms to “breakthrough” (interrupt) a 2-minute audible alarm pause state.

### Latched Alarms

When alarms are latched, the visual message remains after the alarm condition no longer exists. To clear alarms that are no longer active, select the **Alarm Reset** or the **Audio Pause** soft key.

# Turning Audible Alarms On and Off



You can turn on/off the audible physiological alarm tones for an alarm group or for all alarms.

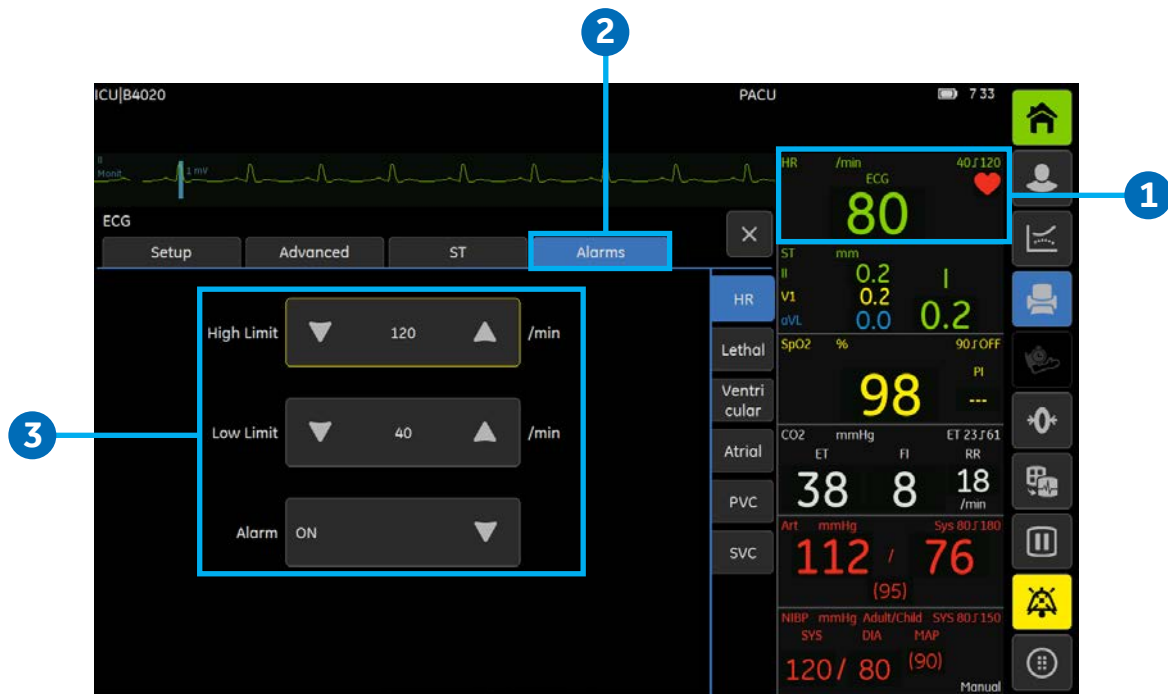
1. Select the **More** soft key to access the Quick Access Panel.
2. Select **Alarm Setup**.
3. Select the **Audio** tab.
4. Select an alarm group. Choices are:
  - **None:** No audible alarms are turned off.
  - **Silence Apnea:** Turns off audible alarms for apnea, EtCO<sub>2</sub>, FiCO<sub>2</sub>, respiration rate limit alarms.
  - **Silence ECG:** Turns off audible alarms for all HR source limit and arrhythmia alarms.
  - **Silence Apn&ECG:** Turns off audible alarms for all HR source limit, arrhythmia, apnea, EtCO<sub>2</sub>, FiCO<sub>2</sub>, respiration rate limit alarms.
  - **Silence ALL:** Turns off all audible alarms except some high priority alarms defined as breakthrough alarms.
5. To turn on all audible alarms again, select **Activate Alarms**, or select **None** as instructed above.

# Audio Pause



1. Selecting the **Audio Pause** soft key once:
  - a. Starts a 2-minute audio pause state for all alarms except the specified breakthrough alarms.
  - b. Removes all latched alarms (including message and light).
2. Selecting the **Audio Pause** soft key a second time during the 2-minute pause:
  - a. Ceases the audio pause state.
  - b. Deactivates some alarms (mainly technical alarms).
3. Selecting the **More** soft key and then the **Alarm Reset** soft key:
  - a. Starts a 2-minute alarm silence for all current active alarms.
  - b. Removes all latched alarms (including message and light).
  - c. Does not silence any new alarms.
  - d. Ceases the audio pause state, if available.
4. When **audible alarms** are turned **off**, the alarm bell icon displays in the upper left corner of the display.

# Changing an Alarm Limit



## Setting Parameter Alarm Limits

Parameter alarm limits are set in the parameter menus' own Alarms tab. Alarm limits should not be set beyond reasonable physiological boundaries to maintain patient safety. Parameter settings outside of reasonable boundaries would cause the alarms to be ineffective. An example of changing the alarms limits for ECG is shown above.

**Example:** Changing the alarm limits for ECG:

1. Select the ECG digit field.
2. Select the **Alarms** tab.
3. Adjust the ECG alarm limits using the arrow selectors.

# 04 Patient Parameters

## ECG



### 1. Accessing the ECG Setup Tab

To access the ECG setup tab, select the ECG digit field.

### 2. Basic ECG Settings:

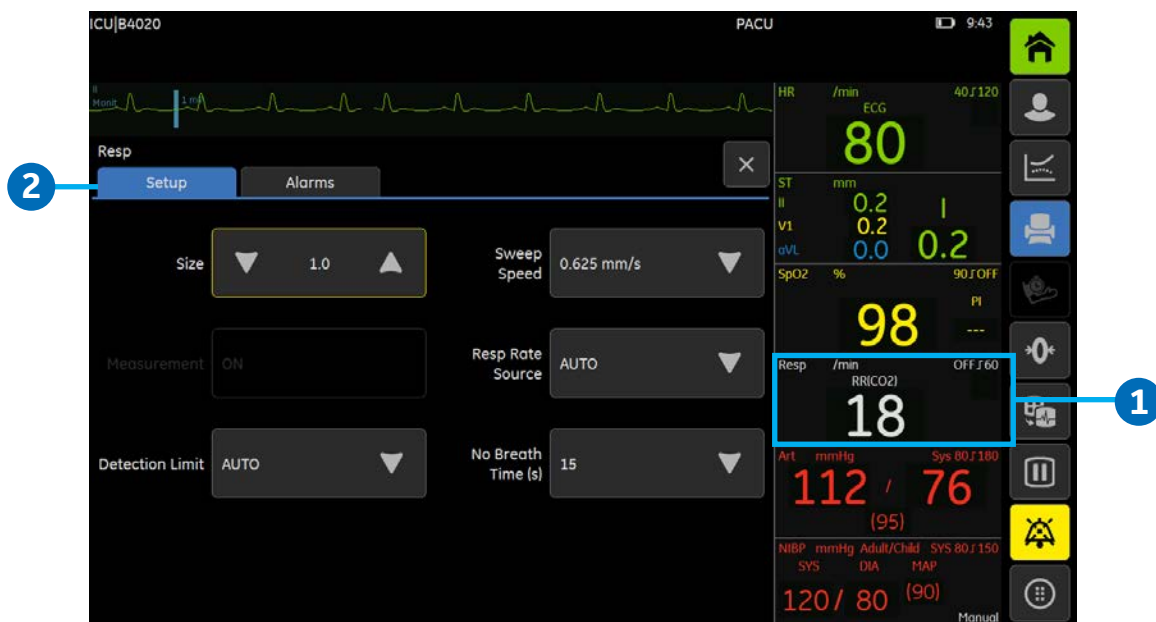
- **ECG1, ECG2 and ECG 3 Lead:** Select the first, second and third displayed ECG lead
- **V Lead:** Select the V ECG lead position with a 5-lead ECG
- **Size:** Adjust the ECG size
- **Hemodynamic Sweep Speed:** Adjust the sweep speed. The smaller the value, the slower the sweep speed
- **Beat Volume:** Set the beat tone volume. The range is 0 (volume off) to 10

### 3. Advanced ECG Settings:

- **Pacemaker Detection:** Set to:
  - **Show:** displays pacemaker spikes
  - **Hide:** hides the pacemaker spikes
  - **Sensitive:** increases pacemaker detection sensitivity and displays the spikes
- **Waveform Filter:** Set to:
  - **Monit:** filter for poor ECG signal
  - **STfilt:** filter for optimal ST analysis

- **Diagn:** filter for waveform analysis, although this filter is sensitive to artifacts
- **Moderate:** filter range is 0.5 to 20 Hz
- **QRG Width:** Set to:
  - **Narrow:** intended for neonates and pediatric patients with a QRG complex width of 100ms or less
  - **Normal:** intended for adult patients with a QRG complex of approx. 70 ms or wider
- **5 Lead Cable:** Select a 3 or 5 lead cable.
- **Primary HR Source:** Set the primary heart rate to be calculated from the ECG leads, the SpO<sub>2</sub> measurement or the invasive pressure waveform
- **Display with Primary HR:** Display a second heart rate source in the HR digit field.
- **ECG Grid:** Select the check box to display the ECG grid.
- **Relearn:** Select to learn a new ECG pattern when a dramatic change in the patient's ECG pattern has occurred.

# Impedance Respiration



## Accessing the Impedance Respiration Setup Menu

1. Select the impedance respiration digit field.
2. Select the **Setup** tab.

## Impedance Respiration Selections from the Setup Tab

**Size:** Increase or decrease the waveform size. The greater the value, the larger the waveform size.

**Measurement:** Turn impedance respiration measurement on and off.

**Detection Limit:** Auto detection limit is recommended. However, in some cases the user may wish to adjust the limits manually:

- When the respirations are weak: adjust the detection limits closer to each other to make sure that all respirations are included in the RR value. In this case, the dotted line represents the absolute detection limits.
- If there is a lot of artifact: adjust the detection limits further apart to separate smaller artifacts from the larger true peaks. The small peaks fall within the grids and are not calculated, the bigger peaks cross the grids and are calculated as true respirations.

**Sweep Speed:** Set the impedance respiration sweep speed. Choices are **0.625 mm/s**, **6.25 mm/s** and **12.5mm/s**.

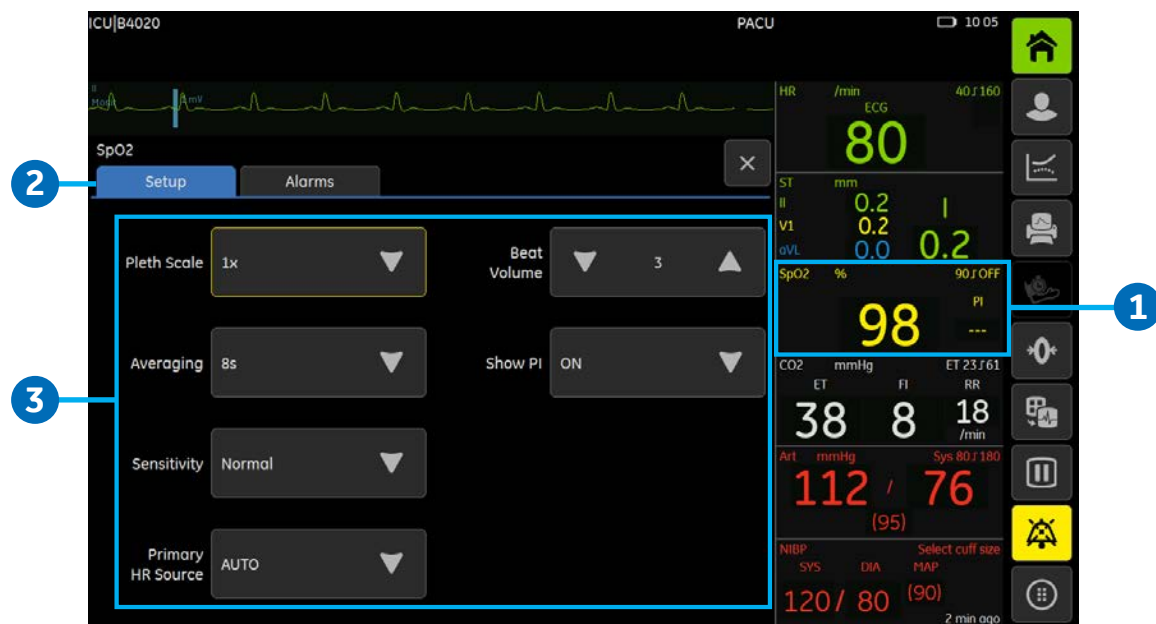
**Resp Rate Source:** The choices are:

- **AUTO:** the monitor selects the respiration rate source from the available sources. The first priority is CO<sub>2</sub>. When the CO<sub>2</sub> measurement is not available, the impedance respiration is used.
- **CO<sub>2</sub>:** available only if there is a CO<sub>2</sub> source.
- **Imped.:** available only if there is an ECG source.

**No Breath Time(s):** This menu is shown only in the Neonatal mode. You can choose how many seconds for the **No Breath** alarm delay.



# Pulse Oximetry



**Note!** The selections available on the SpO<sub>2</sub> Menu will vary depending on the SpO<sub>2</sub> technology in use. Please consult the user manual for more information on selections available for each SpO<sub>2</sub> technology. The selections shown are only an example and may not be included in your system.

## Using the SpO<sub>2</sub> Setup Menu:

1. Select the SpO<sub>2</sub> digit field
2. Select the **Setup** tab.
3. Settings will vary depending on the SpO<sub>2</sub> technology in use. Some examples are:
  - **Pleth Scale:** Select the scale from the list using the selection arrows.
  - **Averaging:** (Masimo technology and Masimo sensors only). You can have an average of the SpO<sub>2</sub> measurement on screen instead of the beat to beat values, and you can select how many seconds are used for this averaging
  - **Sensitivity:** (Masimo and Masimo sensors only). Use the **Normal** sensitivity setting for normal patient monitoring purposes. Use the **Maximum** sensitivity setting for improved poor perfusion performance and for faster tracking of rapid SpO<sub>2</sub> saturation changes. Using the **Maximum** sensitivity setting also delays the **Probe Off** detection alarm. Use the **APOD** (Adaptive Probe Off Detection) sensitivity settings for better probe off detection.
  - **SpO<sub>2</sub> Response** (GE TruSignal technology and sensors only): Select an average time of the SpO<sub>2</sub> measurement from the list
  - **Primary HR Source:** Select the heart rate source using the selection arrows.
  - **Beat Volume:** Adjust tone the volume using the selection arrows.
  - **Show PI:** (Masimo technology and Masimo sensors only). PI (Perfusion Index) is a relative assessment of the pulse strength at the monitoring site.

# NIBP Starting Measurements



1. To access the NIBP Setup Menu: Select the **NIBP digit field** and then:
2. Select the Setup tab.
3. To start or stop a Manual NIBP measurement: press the **Auto NIBP** soft key, **or**:
4. Press the **NIBP** key on the keypad, **or**:
5. Select **Start** or **Stop for NIBP Manual** from the NIBP setup menu.
6. To start or stop Automatic NIBP measurements: First set the cycle time and then:
7. Press the **Auto NIBP** soft key, **or**:
8. Press the **NIBP** key on the keypad, **or**:
9. Select **Start Cycling** or **Stop Cycling** for NIBP Auto from the NIBP setup menu.

## NIBP Menu Selections

### Other NIBP Setup Menu Selections

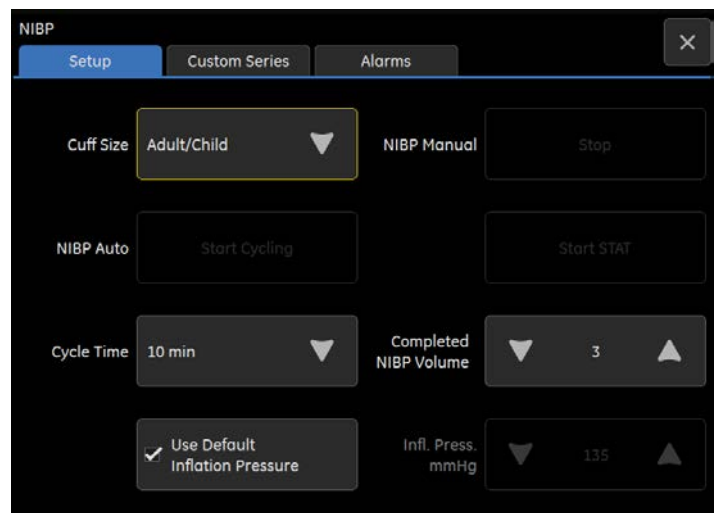
**Cuff Size:** Select **Adult/Child**, or **Neonatal** from the **Cuff Size** list.

**Use Default Inflation Pressure:** Select the check box to use the default inflation pressure, which corresponds to cuff size.

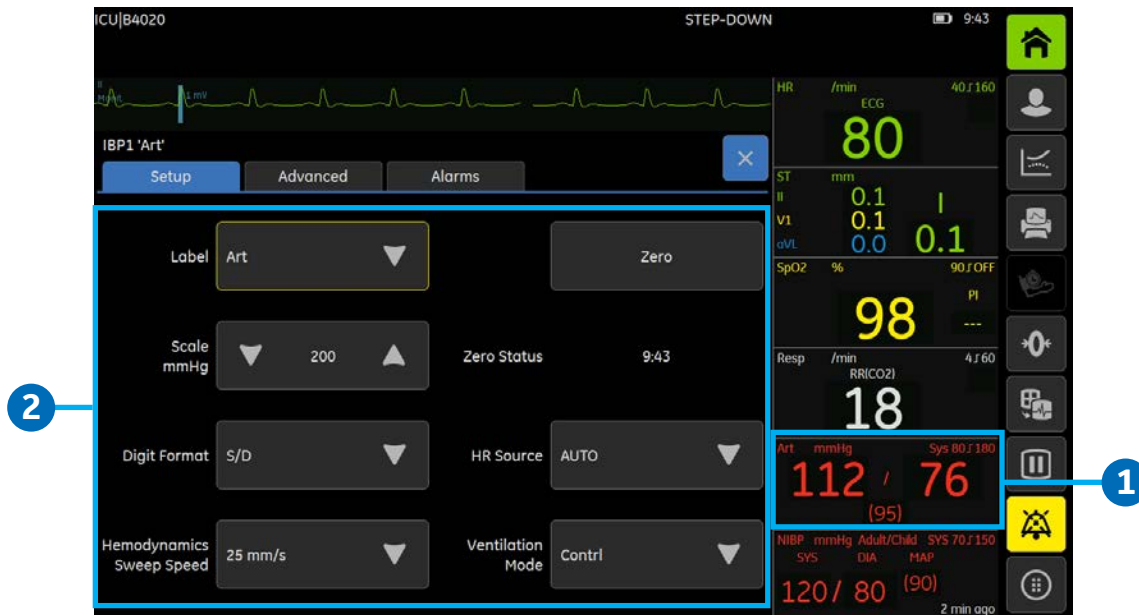
**Start STAT:** The STAT mode initiates a continuous cycle of measurements for five minutes.

**Completed NIBP Volume:** Use the selection arrows to adjust the NIBP completion volume. The lower the value, the softer the tone.

**Infl. Pressure mmHg:** You can manually change the target inflation pressure for the first NIBP measurement by using the selection arrows. **Use Default Inflation Pressure** must be un-checked.



# Invasive Pressure



## 1. Accessing the Invasive Pressure Setup Tab:

To access the Invasive Pressure Setup Tab, select the Invasive Pressure digit field.

## 2. Invasive Pressure Setup Menu Selections

**Label:** Select a channel label from the Label list. Only one channel label can be mapped at a time.

**Scale mmHg:** Select the waveform scale with the selection arrows. The larger the scale value, the smaller the waveform size.

**Digit Format:** You can choose to display systolic, diastolic, or mean pressure values in different formats. Select the desired format with the selection arrows.

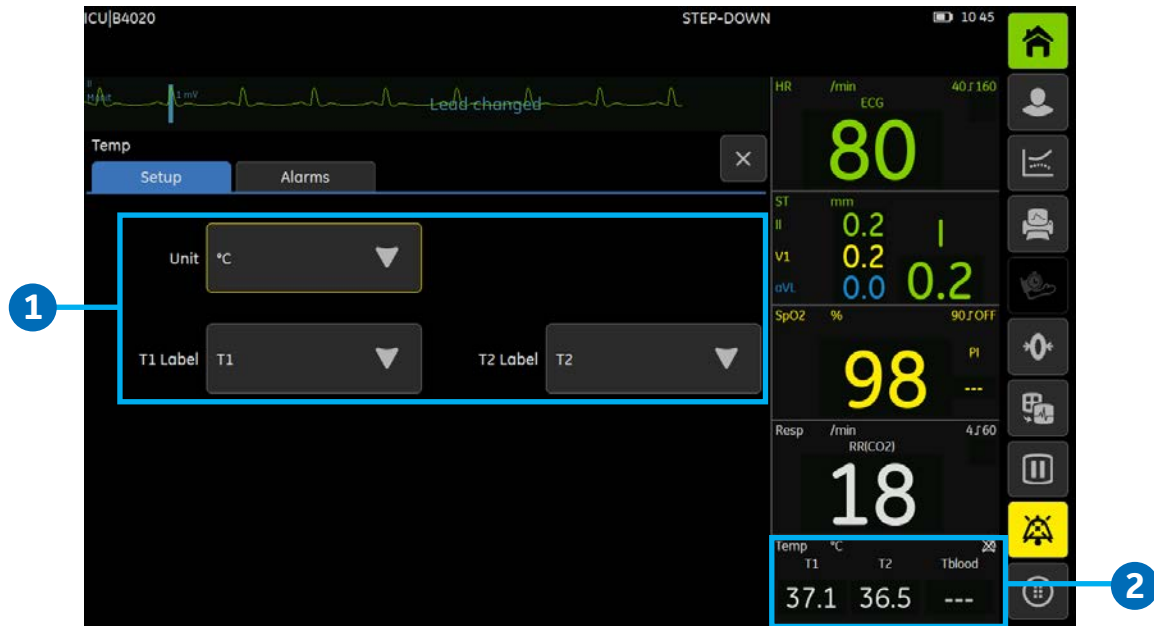
**Hemodynamics Sweep Speed:** Select a numeric value with the selection arrows. The smaller the value, the slower the sweep speed.

**Zero:** Select to zero a single active pressure transducer.

**HR Source:** Select the heart rate source with the selection arrows. This setting adjusts the primary heart rate source for all of the hemodynamic parameters.

**Ventilation Mode:** Select either **Spont** (spontaneous respiration) or **Contrl** (controlled ventilation). This setting affects the respiration filter.

# Temperature



## 1. Accessing the Temperature Setup Menu

Select the Temperature Digit Field.

## 2. Temperature Setup Menu Selections

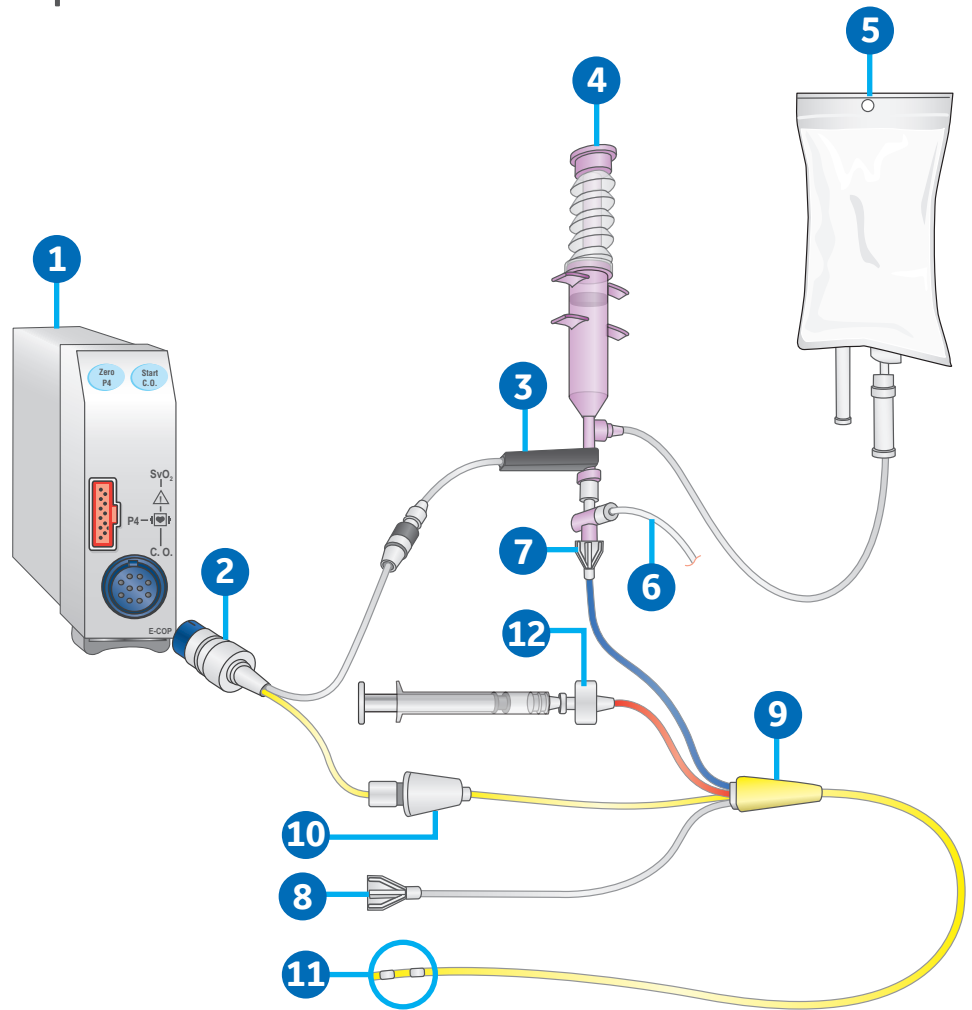
**T1 Label:** Select a site label using the selection arrow.

**T2 label:** Select a site label using the selection arrow.

**Unit:** Select either Centigrade or Fahrenheit using the selection arrow.

# Cardiac Output Setup

1. Module with C.O. measurement capability
2. Cardiac output cable
3. In-line injectate temperature probe
4. Injectate syringe
5. Injectate solution
6. CVP line to InvBP transducer or fluid infuser
7. Proximal injectate port
8. PA distal port
9. SWAN GANZ® thermodilution catheter
10. Thermistor connector
11. Balloon
12. Balloon inflation valve



## Preparing the C.O. Measurement:

- Connect the C.O. cable to the module, thermistor, and injectate temperature port.
- Follow your care unit's policy and procedures for positioning the patient for the C.O. measurement.
- Follow the catheter manufacturer's instructions to set up the in-line or bath probe patient cables.

# Cardiac Output Setup Menu

Cardiac Output

Setup Measurement

Catheter Type 131HF7 Measurement Type Auto

REF Measurement Injectate Volume 10 ml

Computation Constant Scale 1.0 °C

Show With C.O./C.I. NONE Tblood Alarm

To access the Cardiac Output Setup menu, select the Cardiac Output digit field and then select the Setup tab.

**Catheter Type:** Select the cardiac output catheter type.

**REF Measurement:** Right Ventricular Ejection Fraction measurement is only available with Baxter REF catheters. The catheter types are **D431HF75** and **User Defined**. Select the check box for **REF Measurement**.

**Computation Constant:** Enter number to match the value listed on the catheter packaging. This is only available with a **User Defined Catheter Type**.

**Show With C.O./C.I.:** Select a value to show in the digit field along with C.O./C.I. Selections are **NONE**, **PCWP**, **Tblood**, and **REF**.

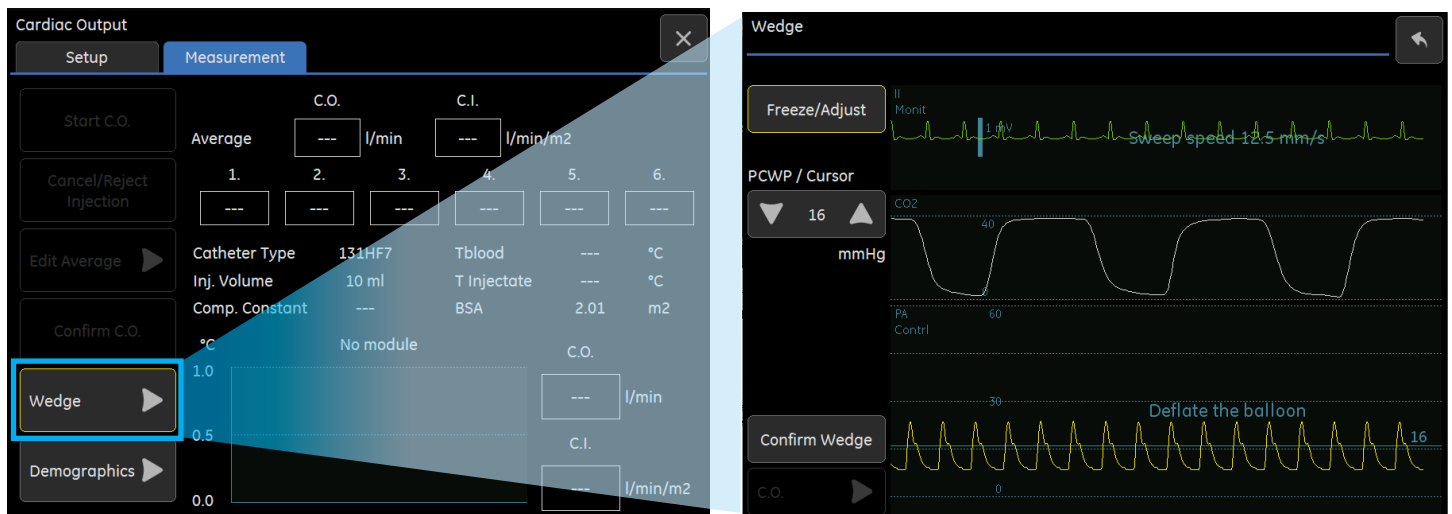
**Measurement Type:** Select **Manual** or **Auto**. The manual mode allows you to determine when to begin the injection procedure. This mode may be preferred for patients with extreme blood temperature fluctuations, or when the automatic mode is unable to establish a stable baseline. When measuring C.O. using the automatic mode, new measurements can be taken when the Press start C.O. message displays.

**Injectate Volume:** Selections are **3 ml**, **5 ml** and **10 ml**.

**Scale:** Sets the upper limit of the waveform scale for the thermodilution waveform fields.

**Tblood Alarm:** Allows the user to turn the **Tblood** alarm on and off, and to set the high and low limits when the alarm is on.

# Cardiac Output Measurement Menu



To access the Cardiac Output Measurement menu, select the Cardiac Output digit field and then select the Measurement tab.

**Start C.O.:** Starts and stops the cardiac output measurement in both Manual and Automatic mode. You can also use the **Start C.O.** module key.

**Cancel / Reject Injection:** When a C.O. measurement has just completed, you can remove this C.O. measurement trial without entering the **Edit Average** window. In addition to removing the previous measurement, you can also cancel an in-process measurement.

**Edit Average:** Check the selection boxes for those trials you wish to include in the C.O. average. If you do not wish to include a trial, ensure its selection box is not checked.

**Confirm C.O.:** Select Confirm C.O. to store the calculated C.O. average and display it in the cardiac output digit field and measurement menu.

**Wedge:** You can obtain a PA wedge measurement (PCWP) with the automated wedge program. The automated wedge program displays on-screen messages to inflate or deflate the catheter balloon. The wedge algorithm then determines the PCWP value. You can confirm this value or adjust the measurement with the provided cursor.

**Demographics:** Set the patient's height and weight, which is required for determining cardiac index (C.I.).

# Airway Gas Overview

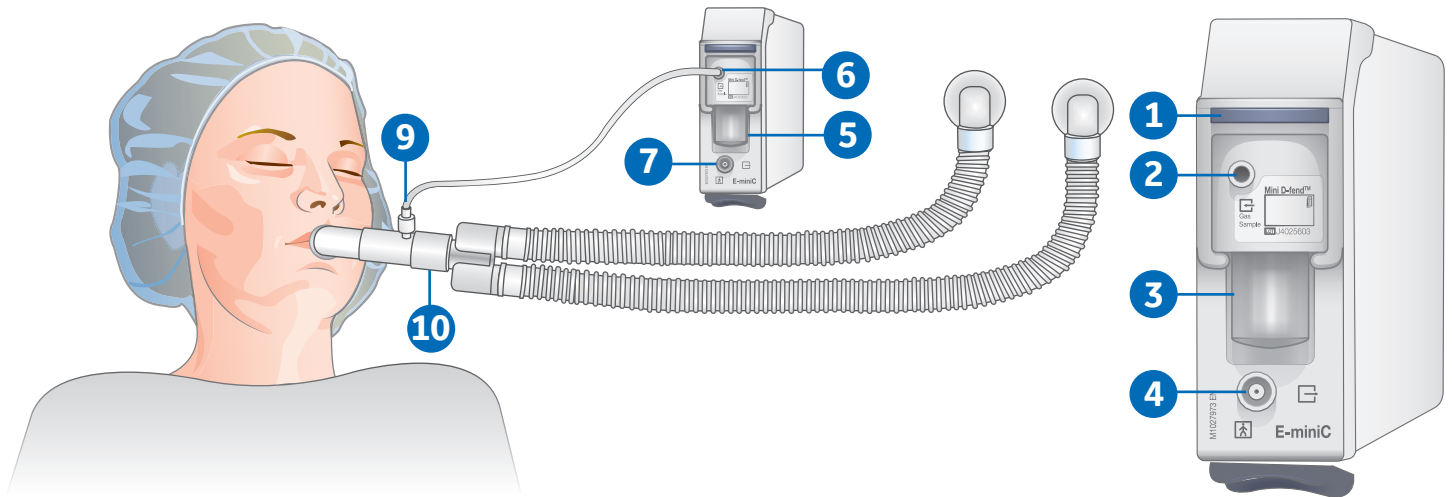
There are four airway gas modules compatible with the B125 and B105 monitors:



1. **E-miniC:** Measures and displays CO<sub>2</sub> gas only.
2. **N-CAiO:** Measures and displays CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>O, Anesthetic Agent (AA).
3. **E-sCAiO:** Measures and displays CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>O, Anesthetic Agent (AA). It also displays Balance Gas, MAC and MACage.
4. **E-sCO:** Measures and displays CO<sub>2</sub> and O<sub>2</sub>.



# Airway Gas Setup



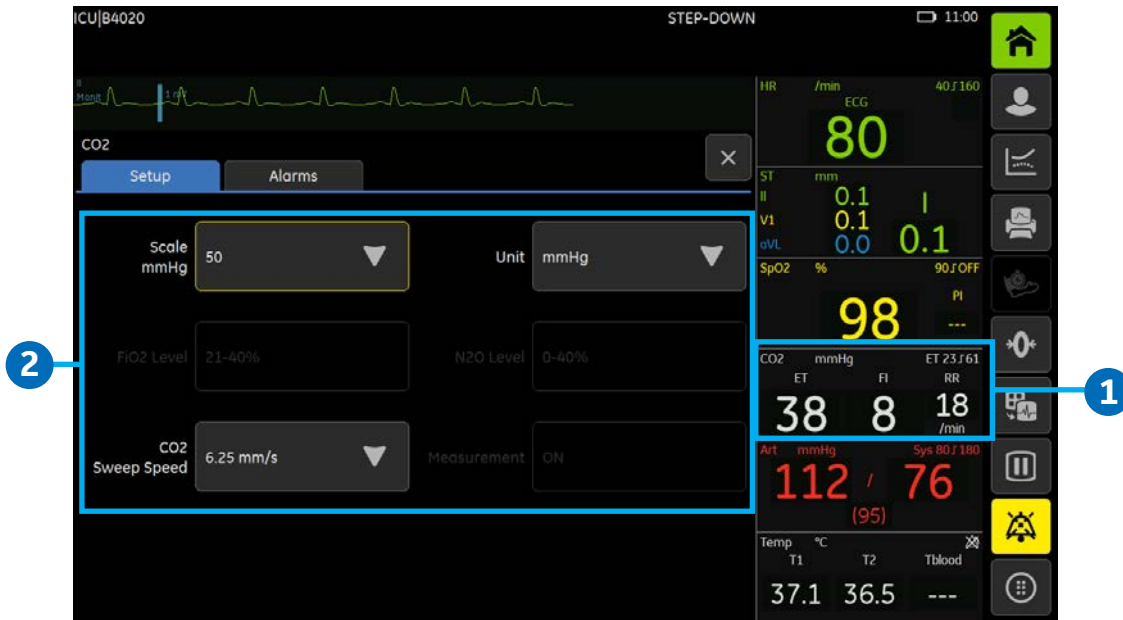
## E-miniC Components

1. Water trap latch
2. Sample line connector
3. Mini D-fend water trap
4. Sample gas outlet (gas exhaust)

## Patient Connection Example

5. Make sure that the water trap container is empty and properly attached.
6. Connect the gas sampling line to the sampling line connector on the water trap.
7. Connect the sample gas outlet to gas scavenging if N<sub>2</sub>O or volatile agents are used.
8. Turn on the monitor or connect the module to the monitor. The monitor performs a self-check for the module when the module is connected. Wait until the message **Calibrating** disappears.
9. Connect the sampling line to the airway adapter on the ventilator circuit. Position the adapter with the sampling port upwards to minimize the amount of condensed water possibly entering the sampling line.
10. Check that the airway adapter connections are tight and that the adapter is operating properly.

# The CO<sub>2</sub> Setup Tab



## 1. Accessing the CO<sub>2</sub> Setup Menu:

Select the CO<sub>2</sub> digit field, and then select the **Setup** tab.

## 2. CO<sub>2</sub> Setup Menu Selections:

**Scale:** Select the waveform scale with the selection arrows. The larger the scale value, the smaller the waveform size.

**FiO<sub>2</sub> Level:** The presence of a large concentration of oxygen causes the CO<sub>2</sub> level to appear lower than the actual value. Use this option to compensate for the presence of O<sub>2</sub>.

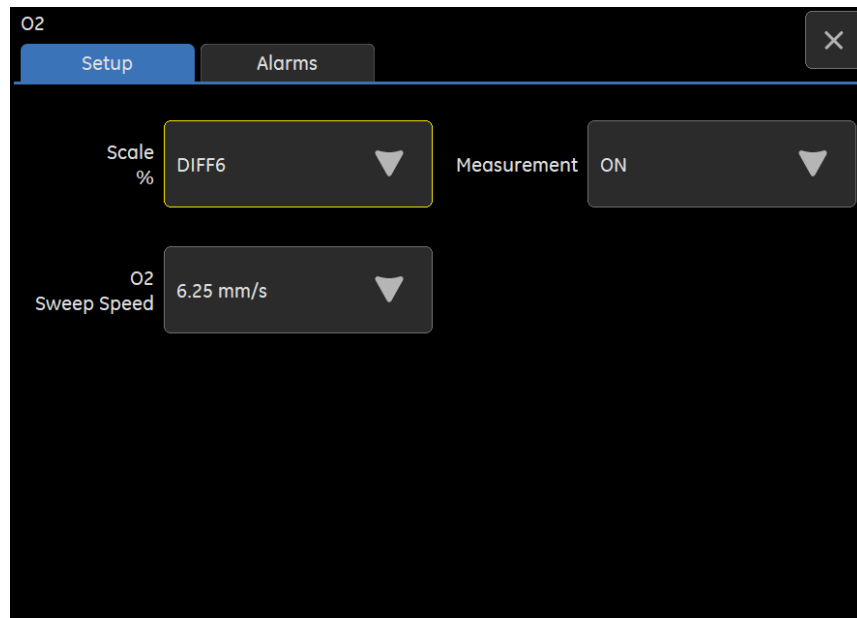
**CO<sub>2</sub> Sweep Speed:** Select a sweep speed with the selection arrows. The choices options are **0.625 mm/s**, **6.25 mm/s** and **12.5 mm/s**.

**Unit:** Select a unit with the selection arrows. The choices are **%**, **kPa**, or **mmHg**.

**N<sub>2</sub>O Level:** The presence of N<sub>2</sub>O causes the CO<sub>2</sub> level to appear higher than the actual value. Use this option to compensate for the presence of N<sub>2</sub>O.

**Measurement:** Select **On** or **Off** to turn the CO<sub>2</sub> measurement on or off.

# O<sub>2</sub> Setup Menu Selections



## Accessing the O<sub>2</sub> Setup Menu:

Select the O<sub>2</sub> digit field, and then select the **Setup** tab.

## O<sub>2</sub> Setup Menu Selections:

**Scale:** If the difference between FiO<sub>2</sub> and EtO<sub>2</sub> is more than 6%, change the O<sub>2</sub> scale.

**O<sub>2</sub> Sweep Speed:** Select an option from the **O<sub>2</sub> Sweep Speed** list. The options are **0.625 mm/s**, **6.25mm/s**, and **12.5 mm/s**. The smaller the value, the slower the sweep speed.

**Measurement:** Select **On** or **Off** to turn the O<sub>2</sub> measurement on or off.

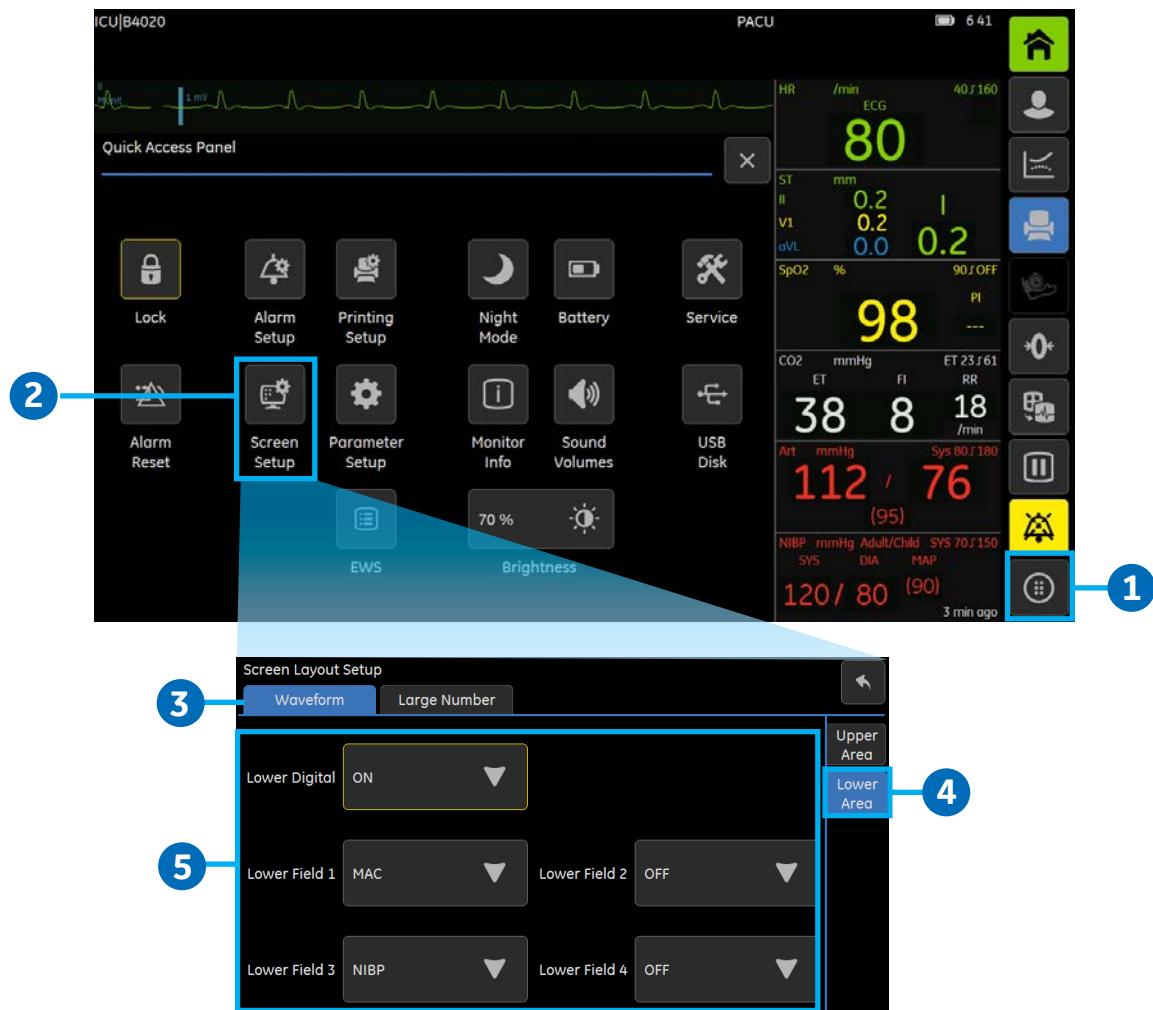
# Anesthetic Agent and N<sub>2</sub>O

The main monitor displays various vital signs: HR 80, SpO2 98, CO2 38, and Art 112/76. A callout box labeled '1' points to the 'Iso/Enf' section at the bottom of the monitor, which shows MAC 0.3 and NIBP 120/80. A second callout box labeled '2' points to the 'Agent/N2O' menu, which has 'Setup' and 'Alarms' tabs. Inside the 'Setup' tab, callout '3' points to the 'Agent Scale' dropdown menu (set to 5) and callout '4' points to the 'Agent Sweep Speed' dropdown menu (set to 6.25 mm/s). Both 'Agent Measurement' and 'N2O Measurement' are set to 'ON'.

If **Measurement off** is shown on Agent/N<sub>2</sub>O waveform field or **OFF** is shown on Agent/N<sub>2</sub>O digit field, you need to select Agent/N<sub>2</sub>O measurement on.

1. To access the Agent/N<sub>2</sub>O menu, select the Agent digit field.
2. To turn on the Agent/N<sub>2</sub>O measurement, select **ON** from the **Agent Measurement** list for Agent and/or Select **ON** from the **N<sub>2</sub>O Measurement** list for N<sub>2</sub>O.
3. To select the agent scale, select an option from the **Agent Scale** list.
4. To select the Agent sweep speed, select an option from the **Agent Sweep Speed** list. The options are: **0.625 mm/s**, **6.25 mm/s** and **12.5 mm/s**. The smaller the value, the slower the sweep speed.

# MAC, MACage and Balance



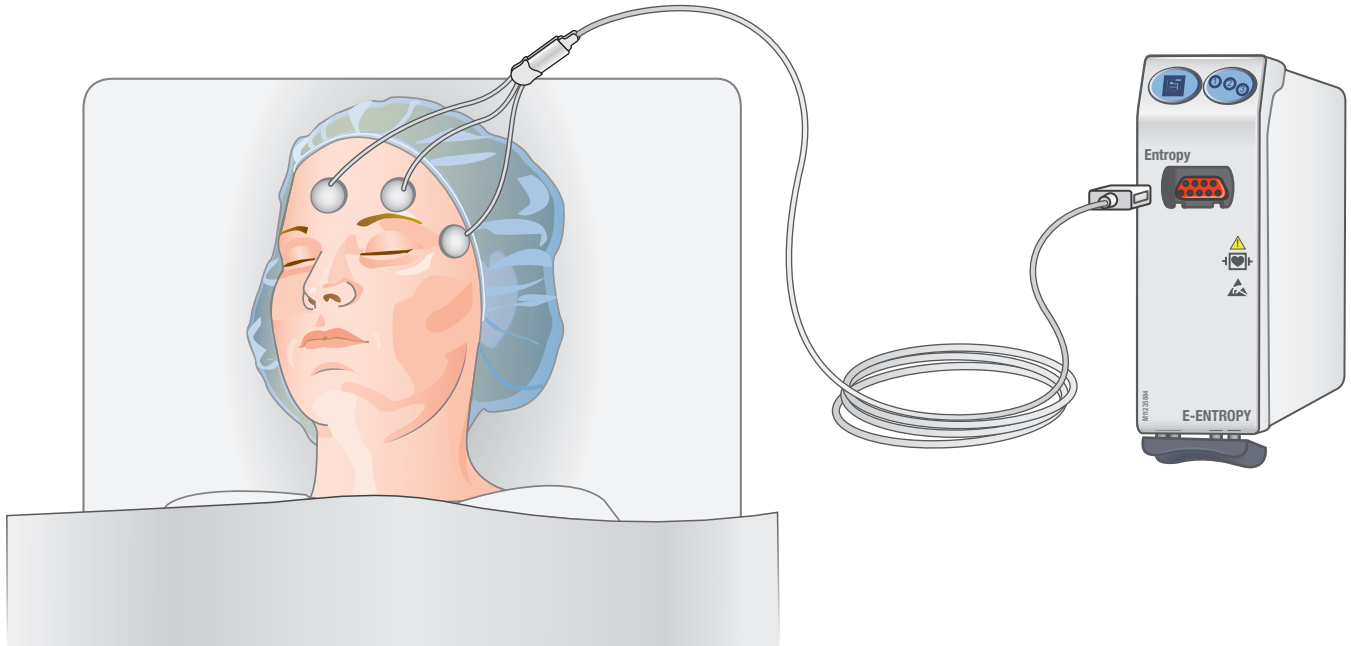
The use of either traditional MAC or MACage is selected during monitor configuration and is password protected. The MACage provides age and temperature compensated measurement. To enable MACage calculations, enter patient's age to the monitor and attach a temperature sensor. If the patient's age is not given, the monitor shows normal MAC even if MACage has been selected.

End-tidal balance gas is the percentage of gas concentration not measured by the gas sensors.

To set the MAC or MACage (if enabled) or Balance parameter to the main screen:

1. Select the **More** soft key to access the Quick Access Panel.
2. Select the **Screen Setup** soft key.
3. Select the **Waveform** tab.
4. Select the **Lower Area** vertical tab.
5. Select **MAC** or **MACage** (if enabled) or **Balance** for **Lower Field 1, 2, 3, or 4**.

# Entropy Overview



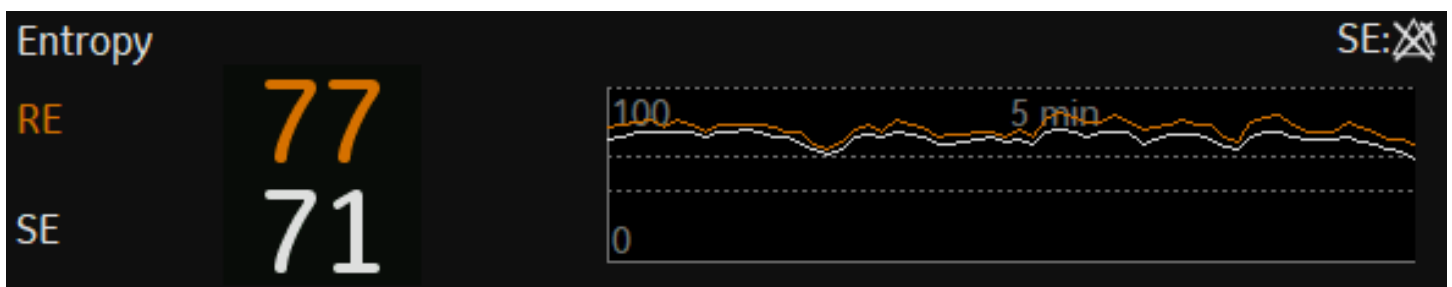
## What is Entropy?

Entropy measurement is based on processing of raw EEG and FEMG signals by using the Entropy algorithm, a GE application of Spectral Entropy. EEG signals reflect the underlying state of brain activity. As a person falls asleep or is anesthetized, the brain function (activity) starts to decrease and becomes more orderly and regular. EEG changes from irregular to more regular patterns when anesthesia deepens. Similarly, frontal EMG quiets down as the deeper parts of the brain are increasingly saturated with anesthetics.

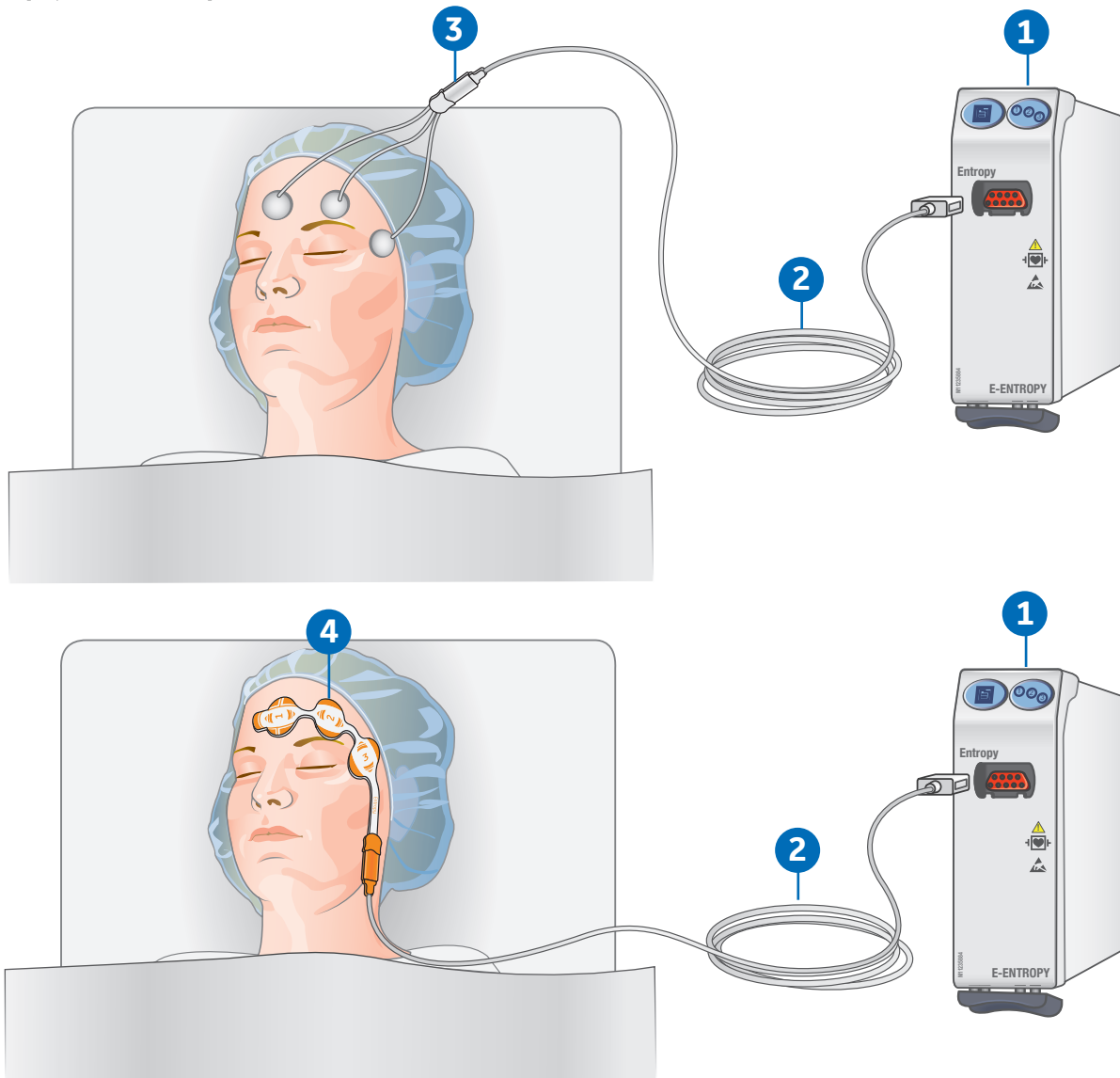
The Entropy measurement is to be used as an adjunct to other physiological parameters. In adult patients, Response Entropy (RE) and State Entropy (SE) may be used as an aid in monitoring the effects of certain anesthetic agents, which may help the user titrate anesthetic drugs according to the individual needs of adult patients. Furthermore, in adults the use of Entropy parameters may be associated with a reduction of anesthetic use and faster emergence from anesthesia.

## Interpreting Entropy Values

RE Value	SE Value	Description
100	90	Awake
60 - 40	60 - 40	Low probability of recall, clinically adequate level for most surgical operations
<40	<40	Deep anesthesia
0	0	Suppressed EEG

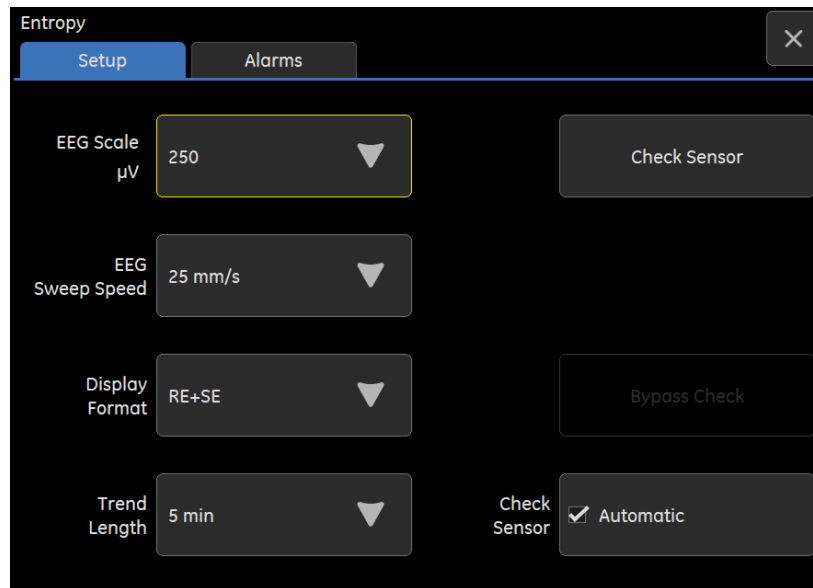


# Entropy Setup



1. Module with Entropy measurement capability
2. GE Entropy sensor cable
3. GE Entropy sensor
4. Entropy EasyFit sensor
  - Connect the Entropy sensor cable to the module.
  - Clean the application site according to the sensor's instructions for use and let it dry before attaching the sensor.
  - Place the Entropy sensor on the patient's forehead; see sensor package for instructions.
  - Connect the sensor to the Entropy sensor cable.
  - Observe the results of the automatic sensor check in the digit field.
  - The measurement starts automatically after the sensor has passed the check.

# Entropy Setup Menu Selections



To access the Entropy Setup Menu: Press the Entropy module key or select the Entropy digit field.

**EEG Scale:** Select a value from the scale list. Selections are **25, 50, 100, 250, 400** and **500**.

**EEG Sweep Speed:** Determines the drawing speed for the EEG waveform, the smaller the value, the slower the sweep speed.

**Display Format:** Selects the Entropy parameters that are shown in the digit field:

- **RE** = Response Entropy
- **SE** = State Entropy
- **RE+SE** = Both Response and State Entropy
- **RE+SE+BSR** = RE, SE and Burst Suppression Ratio (BSR)

**Trend Length:** This setting affects the width of the Entropy microtrend in the digit field.

**Check Sensor:** Performs the sensor check manually. Select **Check Sensor** and observe the results on the screen.

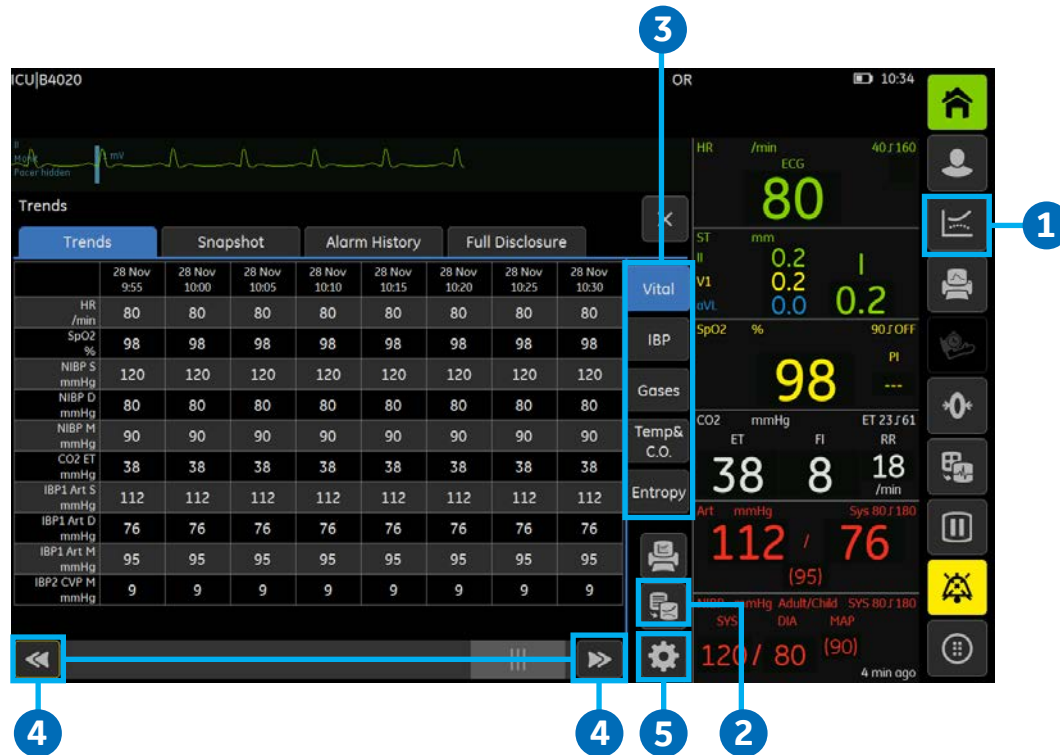
**Bypass Check:** If the sensor does not pass the impedance check, this option becomes selectable. It allows you to start the measurement without completing the sensor check. In this case, the measurement may be unreliable.

**Check Sensor - Automatic:** Sensor impedance check is performed at the start up whenever a sensor or an electrode is attached. If the automatic sensor check has been selected on, the check is also performed periodically every 10 minutes.



# 05 Patient Data

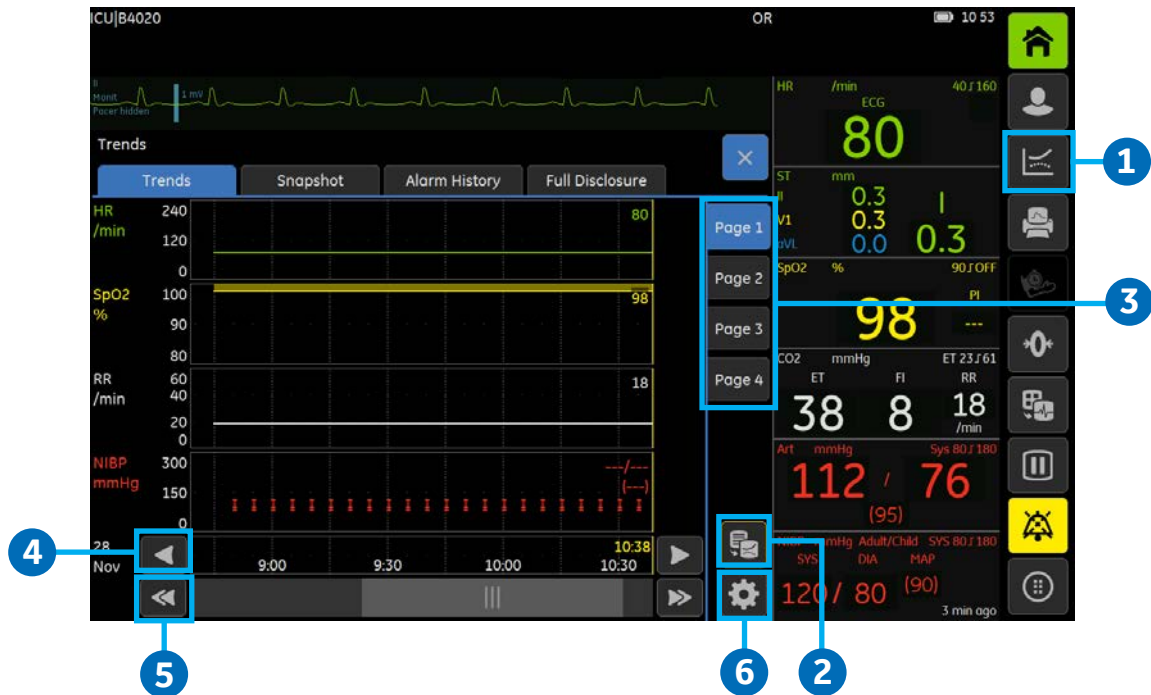
## Numeric Trends



Numeric trends contain 5 pages with 168 hours (7 days) of trend data. You cannot configure the layout of the Numerical Trends view.

1. Select the **Trends** soft key.
2. If necessary, select the **Trends Switch** soft key to switch to numeric trends view.
3. To see more parameters, select their vertical tabs in the trend view.
4. To see more numeric trend data, use << >> at the bottom bar.
5. To change the time interval, select the **Setup** icon on the bottom right corner and then select a value from the **Time Interval** list.

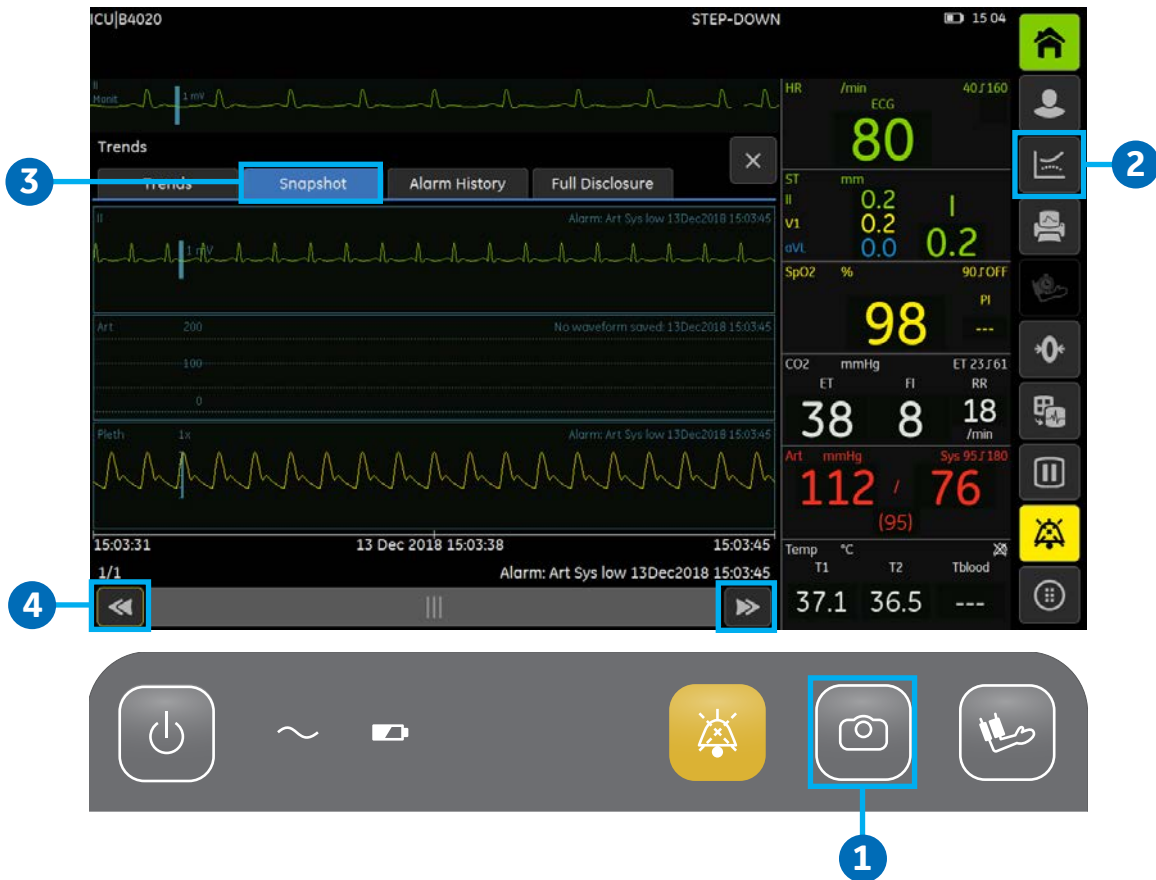
# Graphic Trends



Graphic trends contain 168 hours (7 days) of trend data. They contain four trend pages, each having up to four fields with different parameters.

1. Select the **Trends** soft key
2. If necessary, select the **Trends Switch** soft key to switch to graphic trends view.
3. To see more parameters, select vertical tabs **Page 1** to **Page 4**.
4. To see numeric values at a certain time, use < > at the bottom bar to that point of time. The numeric values are displayed next to the cursor.
5. To see more values for a previous time, use << >> at the bottom bar.
6. To change the timescale, select the **Setup** icon on the bottom right corner and then select a value from **Time Scale**.

# Snapshots



A snapshot is a set of measured data saved from a certain moment of time. Snapshots can contain waveform clips and trigger events. You can take up to 200 snapshots. The duration of the stored snapshot may not contain the entire duration of the physiological event that triggered it. The duration of each snapshot that gets displayed in the waveform box will be about 11.5 seconds for B105, and 13.5 seconds for B125.

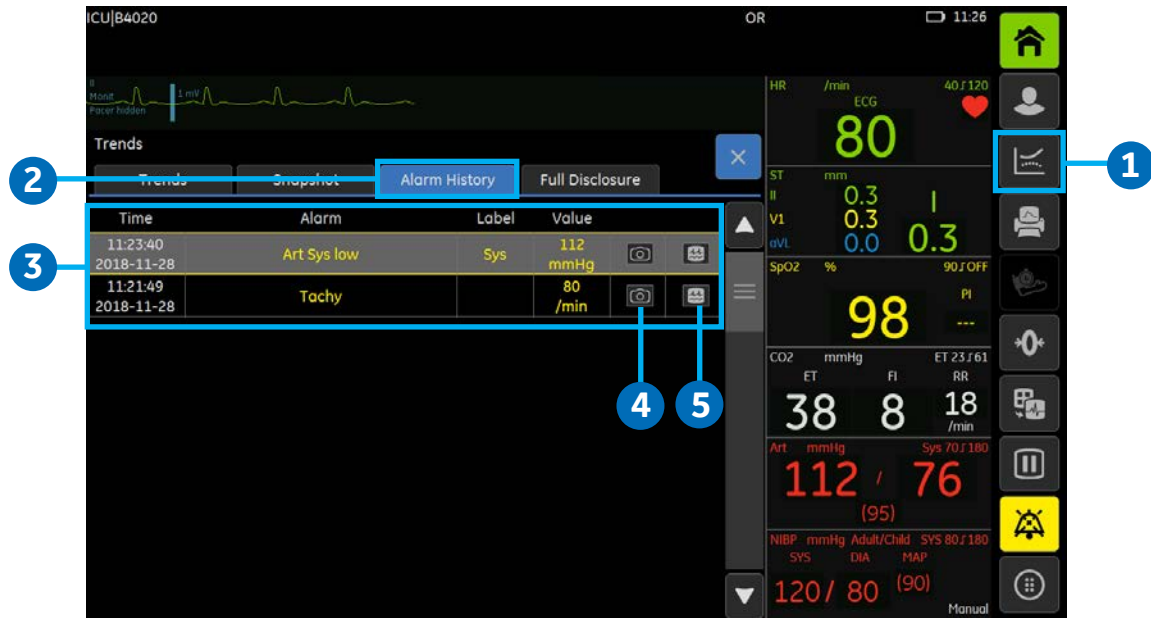
## Automatically Created Snapshots

You can create snapshots automatically on alarms if automatic snapshot creation is enabled. The alarm condition for creation are: **Brady**, **Tachy**, **Art Sys high**, **Art Sys low**, **Art Mean high**, **Art Mean low**, **Art Dia high** and **Art Dia low**. This feature is enabled via a password protected setting.

## Manually Creating Snapshots and Viewing Snapshots

1. To manually create a snapshot, select the **snapshot** key on the keypad. The monitor saves the image of waveforms at that moment in time.
2. To view snapshots, select the **Trends** soft key and then:
3. Select the **Snapshot** tab.
4. You can see more snapshots by using << >> at the bottom bar.

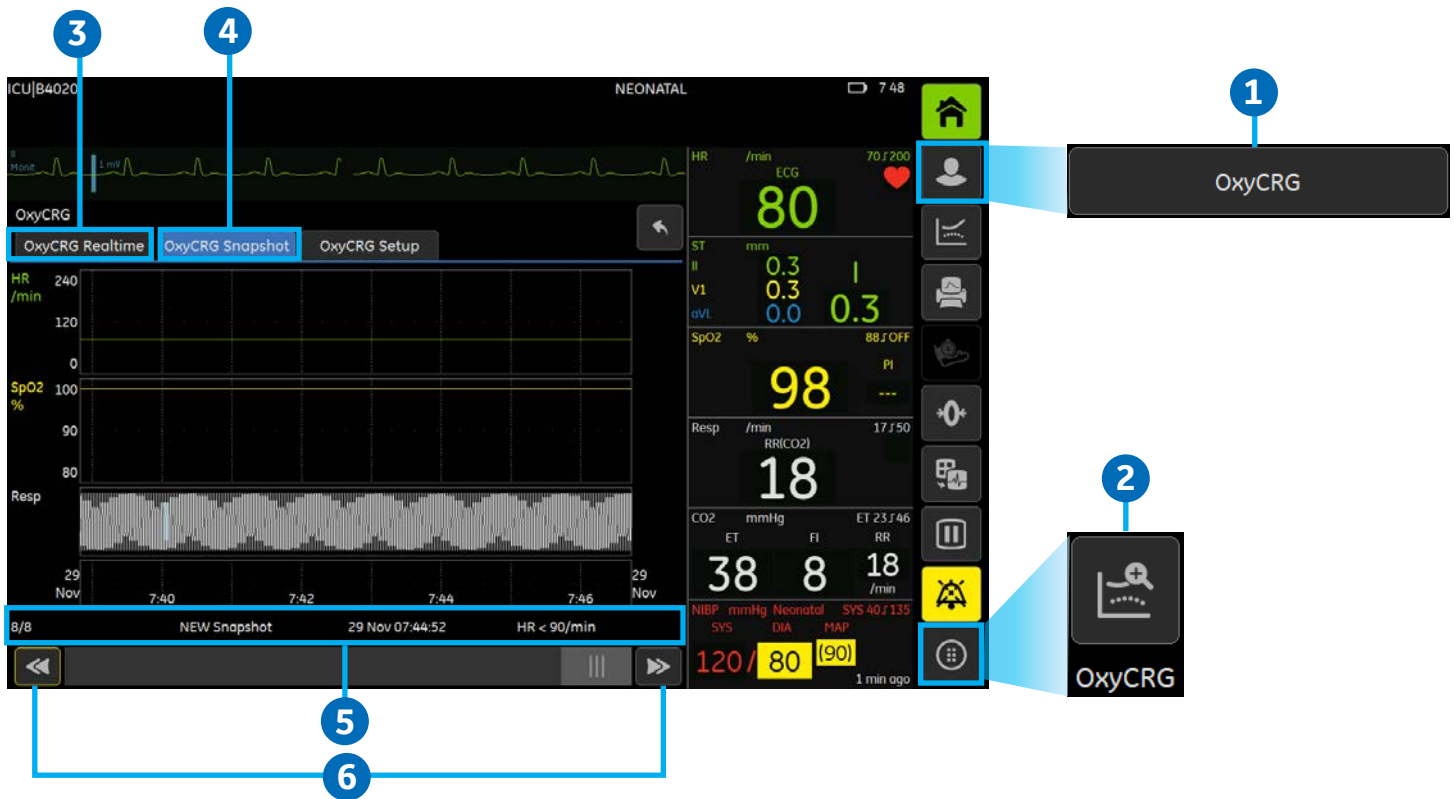
# Alarm History



Alarm history is a list that stores high, medium and low priority alarms.

1. Select the **Trends** soft key.
2. Select the **Alarms History** tab.
3. The alarm history list displays the latest 100 alarms. The color of each alarm indicates the alarm priority.
4. The **Snapshot** symbol indicates that there is a snapshot attached to an event. You can click the symbol to view the related snapshot.
5. The **Full Disclosure** symbol indicates that is Full Disclosure data at the time of the alarm. You can click the symbol to view the related full disclosure.

# OxyCRG



The OxyCRG (oxycardiiorespirogram) provides services to view and review specific high-resolution trends, high resolution beat-to-beat HR trends, high resolution beat-to-beat SpO2 trends and compressed respiration waveform - simultaneously in the same view.

The device displays 8 minutes of OxyCRG function in the NEONATAL mode. Two types of views are provided: OxyCRG Realtime view and OxyCRG Snapshot view.

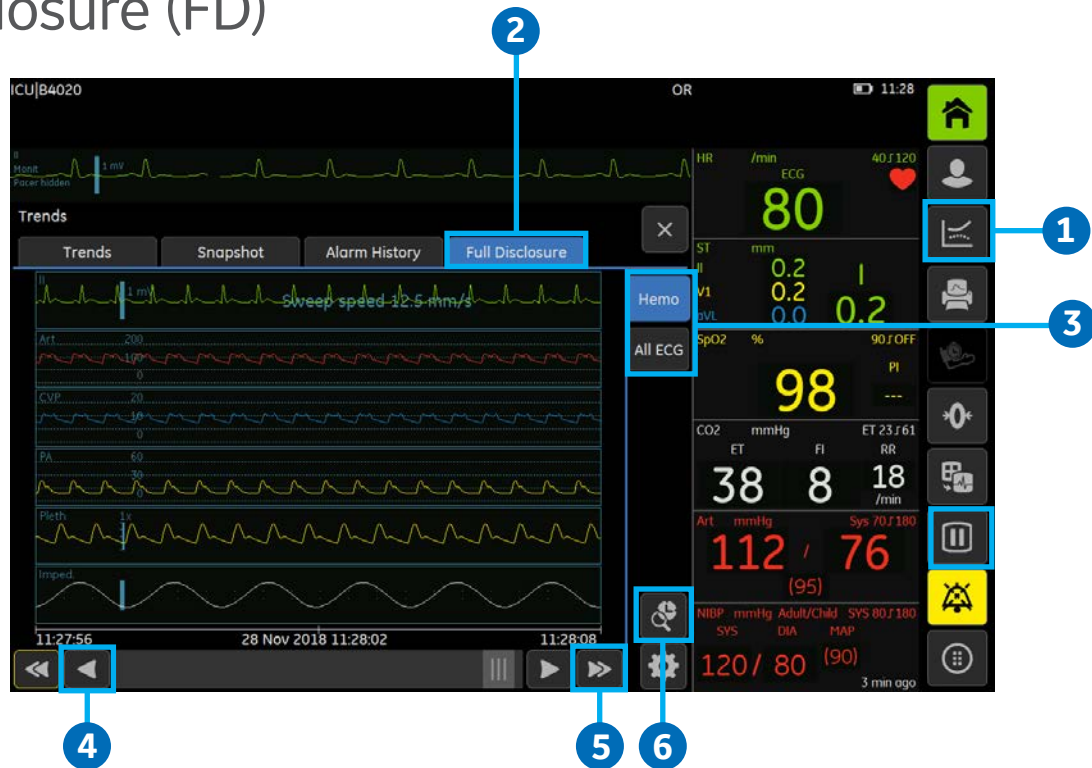
## Viewing Realtime OxyCRG

1. Select the **Admit/Discharge** soft key, set the **Patient Type** to **Neonatal** and then select **OxyCRG**. Alternatively:
2. In Neonatal mode, select the **More** soft key and then select the **OxyCRG** soft key.
3. Ensure that the **OxyCRG Realtime** tab is selected.

## Viewing OxyCRG Snapshot

4. From the OxyCRG menu, select the OxyCRG Snapshot tab.
5. The lowest field shows the snapshot triggered time and condition.
6. You can see more OCRG snapshots using << >> at the bottom bar.

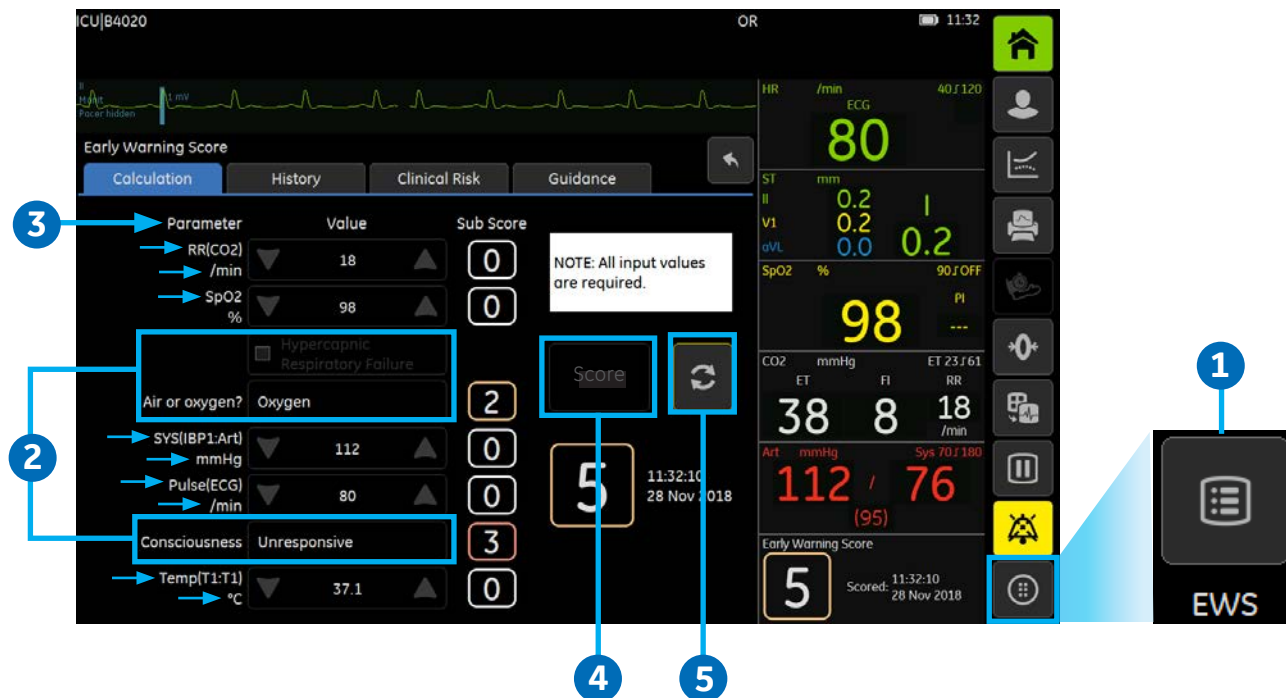
# Full Disclosure (FD)



Full disclosure can display up to 36 hours ECG, SpO<sub>2</sub>, IBP and RESP waveform data.

1. Select the **Trends** soft key.
2. Select the **Full Disclosure** tab.
3. Select the vertical tab for more parameters.
4. To see the waveform data 1 second before current time, use < > at the bottom bar to that point of time.
5. To see the waveform data 1 page before/after current page, use <<>> at the bottom bar.
6. To view Full Disclosure for a specific time, select the Full Disclosure soft key, select the values for **Date, Hour and Minute** and then select **Go**.

# National Early Warning Score (NEWS)



Early Warning score (EWS) is an optional, license-based feature which helps to recognize the early signs of deterioration in medical patients.

EWS is a simple scoring system in which a score is allocated to physiological parameters measured in clinical practice. Some parameters for EWS may be entered manually. Hospitals may use a similar system but use another name for it, e.g. NEWS. EWS feature can help clinician to recognize the early signs of deterioration in medical patients, follow prompt and effective action, and minimize the occurrence of adverse events.

The EWS is calculated by following parameters:

- Respiratory rate
- SpO<sub>2</sub>
- Air or oxygen
- Systolic blood
- Pulse
- Consciousness
- Temperature

To Calculate EWS, confirm that the patient meets the intended use and then perform the following steps:

1. Select the **More** soft key and then select the EWS soft key.
2. Select check box of **Hypercapnic Respiratory Failure**, select the **Air or oxygen?** and **Consciousness** value.
3. Check other parameter values, if the parameter is not available on monitor, adjust values if necessary.
4. Select **Score** to do single calculation.
5. If you need to refresh the parameter values enter and calculation, select the **Refresh** soft key.

# 06 Printing

## Local and Remote Printing Options

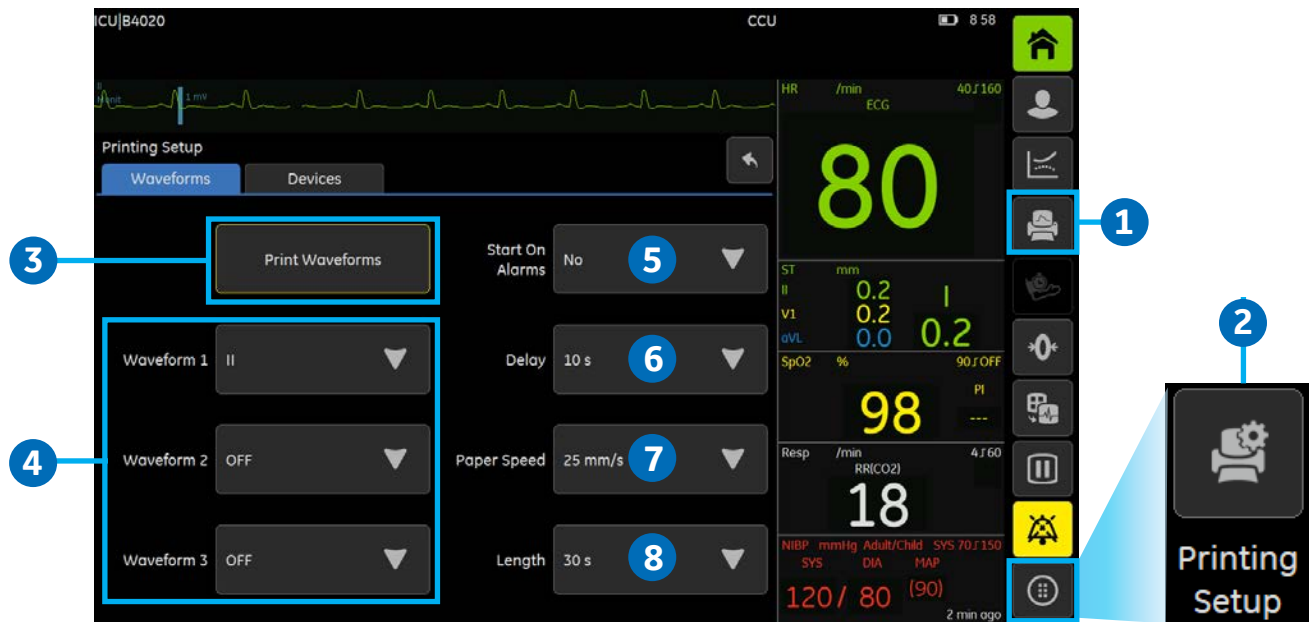


Local and Remote Printing Options:

1. Select the **More** soft key, and then select the **Printing Setup** soft key.
2. Select the **Devices** tab.
3. Select the **Printout** type from the **Printout** list:
  - **Waveforms:** current waveforms
  - **Alarm Waveforms:** waveforms triggered by alarms
  - **Numerical Trends:** numerical trends according to Trends Printing settings in Trends menu
4. Select the **Location** for the printout: **Local** or **Remote**.
5. If you selected **Remote**: Choose the central station from the **Care Unit** list, and then select the print device from the **Remote Device** list.



# Printing Waveforms



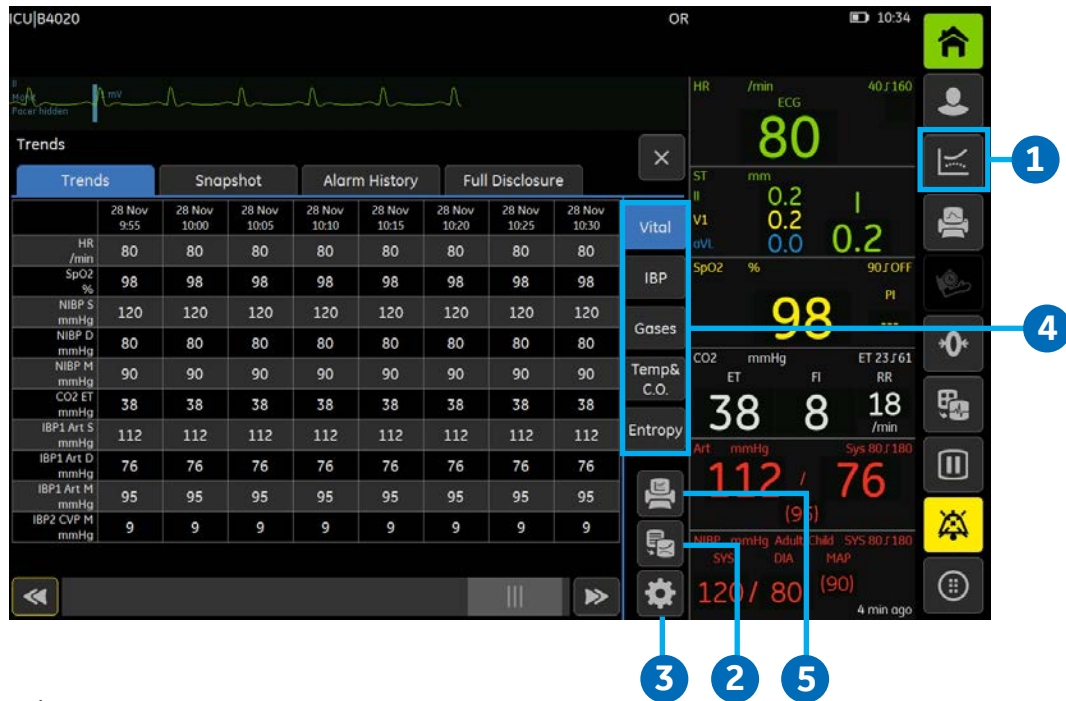
## Starting and Stopping a Waveform Printout

1. Select the **Print** soft key. Alternatively:
2. Select the **More** soft key, and then select the **Printing Setup** soft key.
3. From the **Waveforms** tab, select **Print Waveforms**. Select **Stop Printing** to stop printing. If print length has been configured for Continuous, you will be required to stop the print request.

## Waveform Printing Options

4. **Waveforms 1, 2, and 3:** Choose the desired ECG lead/parameter for waveforms 1, 2 and 3.
5. **Start On Alarms:** Choices are:
  - **NO:** No alarm waveforms print during an alarm condition.
  - **High:** Alarm waveforms print during high priority alarm conditions only.
  - **All:** Alarm waveforms print during any alarm condition.
6. **Delay:** Select a print delay. Choices are:
  - **10 s:** Manual waveform printing starts with 10 seconds of the most recently saved data first. After that, the real time data begins to print
  - **0 s:** Manual waveform printing starts with real time data
7. **Paper Speed:** Select a time value to select the sweep speed for the actual paper speed of the recorder.
8. **Length:** Select a time value for the length of the printout. Choices are **10 s**, **30 s** or **Cont.** (continuous).

# Printing Numerical Trends



To print numeric trends:

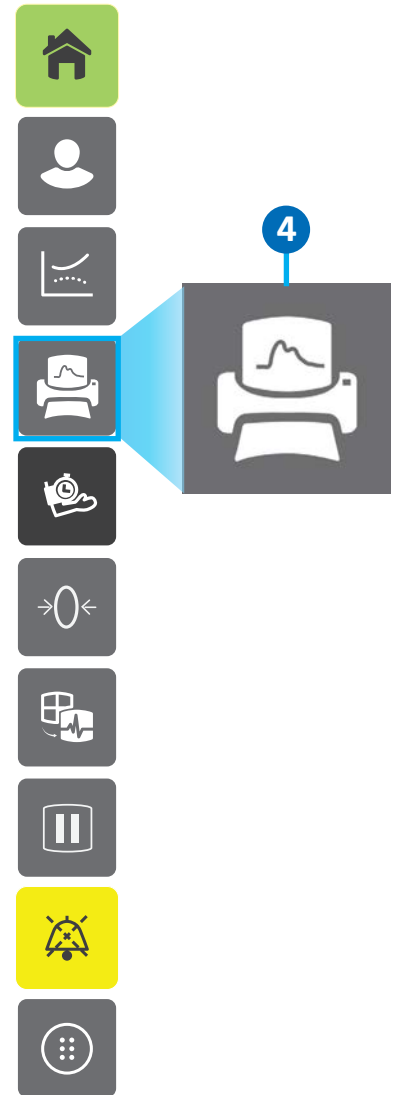
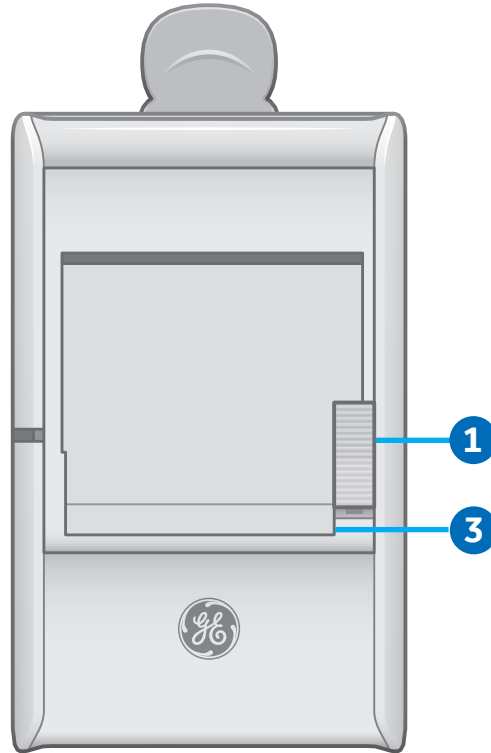
1. Select the **Trends** soft key.
2. If necessary, select the **Trends Switch** soft key to switch to numeric trends view.
3. Select the **Setup** soft key if you need to change the **Trend Interval** or to choose to print **Screen Data** or **All Data**.
4. Select the vertical tab for desired parameters.
5. Select the **Print** soft key to start printing. Select it again to stop printing.

# Inserting Recorder Paper

1. Press the door latch to open the recorder door.
2. Remove the paper core. Place a new paper roll between the tabs of the paper holder. Make sure the paper unrolls from underneath the paper roll.



3. Pull out 3 to 4 cm of paper, then close the door.
4. Select the **Print** soft key to print out a strip.





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In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

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