



# SURVEYOR S12 & S19

quick reference guide



Surveyor S12 on rolling stand



Surveyor S19 wall mount







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# QUICK REFERENCE GUIDE

*This document is a guideline only to be used as an aid to comprehensive inservice training. These guidelines are not meant to replace applicable operator's manuals. Refer to the applicable operators manuals for warnings, cautions, and details.*

## PATIENT ELECTRODE SITE PREPARATION AND PLACEMENT

- Perform proper electrode site preparation
- Inform patient of procedure
- Prepare electrode site: CLEAN skin
  - C = Clear hair away
  - L = Leave no lotions, powders, or body oils.
  - E = Effectively dry the skin.
  - A = Abrade the skin to remove dead skin cells
  - N = Never forget to perform skin prep!

## ECG LEAD PLACEMENT: 3-wire leadset (as applicable)

- Place the **RA** (white) electrode under the patient's right clavicle, at the midclavicular line within the rib cage frame.
- Place the **LA** (black) electrode under the patient's left clavicle, at the midclavicular line within the rib cage frame.
- Place the **LL** (red) electrode on the patient's lower left abdomen within the rib cage frame.

## ECG LEAD PLACEMENT: 5-wire leadset (as applicable)

- Place the **RA** (white) electrode under the patient's right clavicle, at the midclavicular line within the rib cage frame.
- Place the **LA** (black) electrode under the patient's left clavicle, at the midclavicular line within the rib cage frame.
- Place the **LL** (red) electrode on the patient's lower left abdomen within the rib cage frame.
- Place the **RL** (green) electrode on the patient's lower right abdomen within the rib cage frame.
- Place the **V** (brown) electrode in one of the V-lead positions (V1 – V6).

## ECG LEAD PLACEMENT: 12-lead patient cable (as applicable)

- Place the **RA** (white) electrode under the patient's right clavicle, at the midclavicular line within the rib cage frame.
- Place the **LA** (black) electrode under the patient's left clavicle, at the midclavicular line within the rib cage frame.
- Place the **LL** (red) electrode on the patient's lower left abdomen within the rib cage frame.
- Place the **RL** (green) electrode on the patient's lower right abdomen within the rib cage frame.
- Place the **V1** electrode on the patient's 4th intercostal space at the right sternal border.
- Place the **V2** electrode on the patient's 4th intercostal space at the left sternal border.
- Place the **V3** electrode midway between the V2 and V4 electrodes.
- Place the **V4** electrode on the patient's 5th intercostal space at the left midclavicular line.
- Place the **V5** electrode at the left anterior axillary line, horizontal with the V4 electrode.
- Place the **V6** electrode at the left midaxillary line, horizontal with the V4 electrode.

## POWER ON/POWER OFF

### To power on the Surveyor patient monitor:

- Press and hold the power button on the Surveyor patient monitor for 2 seconds.
- The monitor performs a self-test. Any faults or errors should be displayed on the main screen.
- A proper power up produces audible start-up tones (two tones followed by two higher beeps).
- The monitor's main screen display illuminates and then briefly shows the Mortara logo.
- When the patient monitor is initially powered up, the New Patient confirmation message displays on the main screen.
  - Select **"Yes"** to begin a new monitoring session for a new patient. This activity erases previously stored patient monitoring data, previously configured patient-specific monitor settings, and previously entered patient demographic information. This activity restores the monitor configuration to the departmental default settings.
  - Select **"No"** to retain previously stored patient data and monitor configurations.

### To power off the Surveyor patient monitor:

- Press the power button briefly.

**Note:** The patient mode selected is retained upon a power up/down sequencing. Ensure the monitor configuration is appropriate to patient and patient mode upon powering up.

## SILENCE ALARM

- Select the Silence Alarm quick-action key on the right side of the main screen to silence the audio notifications for the current alarm, for the configured time period.
- During the alarm audio silenced period, the visual alarm notifications continue to display on the main screen for the duration of the alarm condition.
- If the alarm audio silenced period expires and the alarm condition continues, the audio alarm notifications resume.

## RETURN TO MAIN SCREEN

- If a dialogue is open, select the Home quick-action key to return to the main screen.

## START/STOP NIBP

- To initiate an NIBP, select the NIBP quick-action key during an NIBP idle or deflated.
- To stop a currently inflating NIBP, select the NIBP quick-action key. This will stop the NIBP measurement in process and deflate the NIBP cuff.



## PRINT REAL-TIME WAVEFORMS

- Select the Print quick-action key on the right side of the main screen.
- The waveforms printed, the strip length, and the print delay are configured in the Setup>Setup Recorder dialogue.
- The location of the printout is based on system options and system settings. Consult your system administrator for additional details.

## STANDBY: HIBERNATION MODE

### To enter the Standby hibernation mode:

- Select the Standby quick-action key on the right side of the main screen.
- The Standby Mode Choice dialogue displays.
- Select the Enter Standby Mode choice.
- The monitor enters the Standby hibernation mode.
- The Standby Mode screen displays.

### To exit the Standby hibernation mode:

- Touch the main screen to resume monitoring.
- The “New Patient” prompt appears.

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- Exiting the Standby hibernation mode by selecting the NO button (is the same patient):
  - Resumes monitoring of patient parameter monitoring as previously configured.
  - Resumes capturing of any patient monitoring data.
  - Resumes alarm surveillance for all arrhythmias and physiological patient parameters as previously configured.
  - Re-enables the CO<sub>2</sub> pump for use as configured.
  - Initiates a relearn of the Arrhythmia and ST algorithms.
  - Resumes monitoring for this patient monitor at the Surveyor Central Station. Refer to the central station operator's manual for details of Standby mode functionality at the central station.
  - Select the START/STOP NIBP quick-action key to resume the previously configured NIBP interval and to start the cuff inflation.
- Exiting the Standby Mode by selecting the YES button (not the same patient):
  - Erases the previous patient monitoring data at the patient monitor (and central station as applicable).
  - Erases the entered demographic information at the patient monitor (and central station as applicable).
  - Erases any previously set alarm configuration settings at the patient monitor (and central station as applicable).
  - Returns the monitor to the departmental default configuration settings at the patient monitor (and central station as applicable).
  - Begins a new monitoring session at the patient monitor (and central station as applicable).

## STANDBY: DISCHARGE MODE

### To enter the Standby discharge mode:

- Select the Standby quick-action key on the right side of the main screen.
- The Standby Mode Choice dialogue displays.
- Select the Discharge Patient choice.
- The Confirm Discharge Patient confirmation message displays.
- Select the OK button to discharge all previous patient data. This action:
  - Erases the previous patient monitoring data at the patient monitor (and central station as applicable).
  - Erases the entered demographic information at the patient monitor (and central station as applicable).
  - Erases any previously set alarm configuration settings at the patient monitor (and central station as applicable).
  - Returns the monitor to the departmental default configuration settings at the patient monitor (and central station as applicable).
  - Displays the Discharged Monitor screen.
  - Touch the screen to begin a new monitoring session at the patient monitor (and central station as applicable).
- Select the Cancel button to return to previous monitoring session.

## VIEW LIST TRENDS

- Select the Trends quick-action key on the right side of the main screen.
- The Trends dialogue displays.
- The Trends dialogue does not “time out” and must be closed to return to main screen display.
- To close the Trends dialogue:
  - Select the Close button on the Trends dialogue.
  - OR select the Home button on the right side of the main screen.

## ADJUST LIST TRENDS DISPLAY INTERVAL

- Select the Trends quick-action key on the right side of the main screen.
- Locate the Interval label.
- Select the arrow to display the drop down list box choices (1min, 5mins, 15mins, 1hour, 4hours).
- The new display interval takes effect upon selection of the display interval.
- The trends displayed contain the discreet values associated with the displayed time stamp.

## CLEAR TRENDS

- Trends clear upon discharge of the monitor.
- The Clear button allows the clinician to manually erase the trends stored in the patient monitor without performing a discharge.
- Select the Trends quick-action key on the right side of the main screen.
- Select the Clear button.
- The Confirm Clear Trends confirmation message displays.
  - Select the OK button to permanently delete the list trends.
  - Select the Cancel button to retain the list trends.

## ADJUST BP INTERVAL

### To select an automatic NIBP interval:

- Select the NIBP numeric parameter tile to display the Setup NIBP dialogue.
- Locate the NIBP Interval label.
- Select the arrow to display the drop down list box choices (OFF, 2m, 3 m, 5m, 10m, 15m, 30m, and 60 minutes).
- Select the appropriate choice.
- Select the OK button to enter that change OR select the Cancel button to cancel the changes.
  - Selecting OK with an interval chosen prompts the patient monitor to begin that interval.
  - Selecting OK with an interval chosen displays that interval in the system message area below the NIBP tile.

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## To stop an automatic NIBP interval:

- Select the NIBP numeric parameter tile to display the Setup NIBP dialogue.
- Locate the NIBP Interval label.
- Select the arrow to display the drop down list box.
  - Select the OFF NIBP interval choice.
- Select the OK button to enter that change OR select the Cancel button to cancel the changes.
  - Selecting OK with the OFF interval chosen prompts the patient monitor to discontinue the automatic NIBP mode and places the patient monitor NIBP acquisition into an idle mode.
  - Selecting OK with the OFF interval chosen removes the NIBP interval message from the system message area below the NIBP tile.

## ADJUST HR/PR SOURCE AND AUDIO TONE

The HR/PR parameter may be sourced based on the following hierarchy:

- Heart Rate (HR): Green when the source is ECG.
- Pulse Rate (PR): Cyan when the source is SpO2.
- Pulse Rate (PR): Red when the source is the P1/ART invasive pressure.

To manually adjust the HR/PR Source:

- Select the HR/PR numeric parameter tile to display the Setup HR/PR dialogue.
- Locate the HR/PR Source button.
  - Select the arrow to display the drop down list box with choices (AUTO, ECG, SPO2, and P1 /ART).
  - The AUTO setting allows the monitor to seek the next available source.
  - Select the desired HR/PR source.
- Select the OK button to enter that change OR select the Cancel button to cancel the changes.
- The HR/PR numeric parameter in the HR numeric tile is displayed in the same color as the current HR/PR source.

## To enable/disable the HR/PR systole audio tone:

- The HR/PR Tone feature provides the ability to configure an audio tone for each detected QRS complex or pulse. If the HR/PR Tone feature is enabled, an audio tone is produced for each systole beat detected.
- Select the HR/PR numeric parameter tile to display the Setup HR/PR dialogue.
- Locate the HR/PR Tone button.
- Select Yes to enable the HR/PR systole audio tone.
- Select No to disable the HR/PR systole audio tone.
- Select the OK button to enter that change OR select the Cancel button to cancel the changes.

## To adjust the HR/PR systole beep tone volume:

- Select the Setup quick-action key on the main screen.
- Select the Audio button in the Setup menu.
- Locate the HR/PR Tone Volume label.
- The HR/PR Tone Volume choices are 1 to 10 in increments of 1.
- Select the Up arrow to increase the HR/PR systole beep volume.
- Select the Down arrow to lower the HR/PR systole beep volume.
- As the volume is adjusted, an audible tone is played to indicate the volume of the HR/PR systole beep.
- Select the OK button to enter that change OR select the Cancel button to cancel the changes.



## PAUSE SpO<sub>2</sub> CHECK SENSOR/SENSOR OFF MESSAGE

To acknowledge that the removal of the SpO<sub>2</sub> sensor is intentional and to remove the “SpO<sub>2</sub> Check Sensor” technical alarm:

- Select the SpO<sub>2</sub> numeric parameter tile to display the Setup SpO<sub>2</sub> dialogue.
- Locate the SpO<sub>2</sub> Alarm Pause button.
- The “SpO<sub>2</sub> Alarms Paused” message is briefly display in the system message area of the main screen.
- The SpO<sub>2</sub> alarms reactivate when the SpO<sub>2</sub> sensor is reconnected to the patient.

## ADJUST PARAMETER ALARM SETTINGS

There are two ways to adjust the numeric parameter's alarm limits at the patient monitor:

- Select the numeric parameter tile.
  - Adjust the Upper alarm limit by selecting the up/down arrows to move the upper alarm limit box until the desired value is reached.
  - Adjust the Lower alarm limit, select the up/down arrows to move the lower alarm limit box until the desired value is reached.
  - Select the OK button to enter that change OR select the Cancel button to cancel the changes.
- Select the Settings quick-action key.
  - Select the Alarms button in the Setup menu.
  - Locate the numeric parameter.
  - Adjust the Upper alarm limit by selecting the up/down arrows to move the upper alarm limit box until the desired value is reached.
  - Adjust the Lower alarm limit, select the up/down arrows to move the lower alarm limit box until the desired value is reached.
  - Select the OK button to enter that change OR select the Cancel button to cancel the changes.

## ENTER/EDIT PATIENT INFORMATION

- Select the Settings quick-action key.
  - Select the blue Patient Information button to display the Patient Information dialogue.
- OR Select the black patient information area located above the system date/time on the main screen.
- To enter patient information,
  - Select the blue demographic indicator button.
  - Based on the demographic label selected, the onscreen keyboard, keypad, or dropdown list box opens.
  - Enter the information.
  - Selecting OK enters the information and displays the Setup dialogue.
  - Selecting CANCEL cancels the function and displays the Setup dialogue.
  - When in the Setup dialogue, select CLOSE to close the Setup dialogue.
  - Select the HOME quick-action key to close the dialogue and return to the main screen.

## CHANGE PATIENT MODE: Adult and Pediatric

- Select the Settings quick-action key.
  - Select the blue Patient Information button to display the Patient Information dialogue.
- OR Select the black patient information area located above the system date/time on the main screen.
- Select Mode: Choices are Adult and Pediatric.
  - Selecting OK enters the information and displays the Setup dialogue.
    - If the patient mode is changed during an active monitoring session a Confirm Patient Mode Change message shall be displayed on the main screen.
    - This confirmation message consists of continuing and changing configuration settings back to departmental defaults, or canceling the change in patient mode.
  - Selecting CANCEL cancels the function and displays the Setup dialogue.
  - When in the Setup dialogue, select CLOSE to close the Setup dialogue.
  - Select the HOME quick-action key to close the dialogue and return to the main screen.

## SHOW ALL ECG/12-LEAD ECG

To enter the All ECG mode when using a 3-wire or 5-wire ECG lead set:

- Select the All ECG quick-action key on the main screen.
- The All ECG mode is now displayed.
- When in the All ECG view, the quick-action key re-labels to “Normal.”
- Select the Normal quick-action key to return to the main screen display.

To enter the All ECG mode when using a 12-lead ECG patient cable:

- Select the 12-lead ECG quick-action key on the main screen.
- The all 12-lead ECG view is now displayed.
- When in the 12-lead ECG view, the quick-action key re-labels to “Normal.”
- Select the Normal quick-action key to return to the main screen display.

## GENERATE A RESTING 12-LEAD INTERPRETATION (optional)

**Best Practice Recommendation:** To be truly diagnostic and comparable to standard resting 12-Lead data acquisition devices, it is recommended that the arm and leg electrodes be placed on the patient's arm and legs as described in the operators' manual prior to acquiring the resting 12-lead ECG. Refer to the operators' manual for complete details.

- Enable the 12-lead via the Setup HR/PR dialogue.
- Perform electrode site preparation as per hospital standard of care.
- Select the 12-lead ECG quick-action key on the right side of the main screen.
- Select the Analyze button to have the algorithm analyze the 12-lead data.
- Select the Interp button to display the 12-lead interpretation on the display.
- Select the Print button to print the 12-lead interpretive report.
- Select the Close button to close the 12-lead interpretation view and return to the main 12-lead view display.

## EDIT/SAVE/RESTORE DEPARTMENT DEFAULTS

### To edit/save departmental defaults:

- Configure the monitor as per the department's request (Alarm limit settings, etc.).
- Once the monitor is configured and ready for saving as the department default.
  - Select the Settings quick-action key on the right side of the display.
  - Select Administration.
  - Select System.
  - Enter the Passcode (Contact system administrator for further assistance).
  - Select Save Department Defaults.
  - The Confirm Department Default Setup confirmation message displays.
  - Select the OK button to save the monitor configuration as the department default settings
  - These department default settings appear upon resumption of monitoring post-discharge.
  - Select the Cancel button to cancel the function, close the confirmation message, and return to the Setup System dialogue.

### To restore the departmental defaults:

- Select the Setup quick-action key on the main screen to access the Setup dialogue.
- Select the Restore Departmental Default button.
- Select the OK button to enter that change OR select the Cancel button to cancel the changes.

## ADJUST DATE/TIME

- Select the Settings quick-action key on the right side of the display.
- Select Administration.
- Select System.
- Enter the Passcode (Contact system administrator for further assistance).
- Select Set Date and Time.
  - Enter changes
  - Select the OK button to enter that change OR select the Cancel button to cancel the changes.



## CLEAN THE TOUCHSCREEN DISPLAY

- The touchscreen display may be cleaned with a soft, lint-free cloth and a non-abrasive, gentle cleaner such as plain soap and water.
- Avoid spraying cleaning agents directly onto the monitor's display.
- Spray the cleaning agent onto the lint-free cloth first and then wipe the display.
- Do not use any cleaning agents that may leave a film.
- To temporarily deactivate the touchscreen capability for display cleaning:
  - Select the Setup quick-action key on the main screen to access the Setup dialogue.
  - Select the Administration button.
  - Select the Screen Cleaning button.
  - The "Screen Cleaning Mode" message displays in the alarm messaging area of the main screen.
  - During this 15 seconds, patient monitoring and alarm notifications continue.
  - After the 15 seconds has expired, the touchscreen activates.



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