

# DM4 (91331) Dual-Mode Monitor

## Quick Start Guide

### Software Version 4.0.x



## Introduction

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The Spacelabs DM4 monitor has two workflow modes: Spot Check and Continuous.

- In Spot Check (SPOT) mode, the DM4 monitor supports the collection and documentation of vital signs data for multiple patients.
- In Continuous (CONT) mode, the DM4 monitor provides real-time patient monitoring and alarm notification.

## Components

- DM4 monitor with external AC power supply

*NOTE: The monitor can also operate on battery power for up to 12 hours when fully charged.*

- SpO<sub>2</sub> adapter cable and sensor
- Appropriate sized NIBP cuff and hose
- Oral/axillary temperature probe with disposable probe covers or Exergen temporal scanner

## Basic Operations

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Once power has been applied, a visual indicator on the display indicates the current patient and workflow modes. The monitor will operate in the mode selected until it is changed. NIBP and temperature functions are affected by changing between Adult, Pediatric, and Neonate patient modes.

### To power ON the monitor

1. Press the On/Off button on the lower front panel.



The boot-up sequence follows (approximately 25 to 30 seconds):

- On/Off button illuminates green;
- Spacelabs Healthcare splash screen shows;
- Touchscreen turns blank for approximately five seconds; and
- Two audio tones sound to confirm that the main speaker functions, followed by two higher-pitch audio tones to confirm that the second speaker functions.


### To power OFF the monitor

1. Press and hold the On/Off button for two seconds.

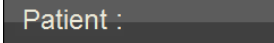

### To set the Patient Type

1. Touch the **Patient Type** icon; or   
Touch the **Setup** key, and then touch **Patient Information**.
2. Touch the **Patient Type** drop-down arrow  and select **Adult**, **Pediatric**, or **Neonatal**.
3. Touch **OK**.

### To set the Workflow mode

1. Touch the **Setup** key.
2. Touch the **Workflow** drop-down arrow  and select **Continuous** or **Spot Check**.
3. Touch **Close** to apply the new setting.  
The display momentarily goes blank, and then shows **CONT** (Continuous) or **SPOT** (Spot Check) in the upper right corner of the screen.

### To enter patient demographic information (admit patient)

1. Touch the Patient button (on the top left corner of screen); or  Touch the **Setup** key, and then touch **Patient Information**.
2. Select the field buttons and drop-down arrows  and use the on-screen keyboard to complete the **Patient Information** fields.

*NOTE: You can also enter the **ID** with the optional bar code reader. If the monitor is connected to the network, you can touch the **Query** button (after the **ID** is entered) and other patient information will be automatically entered.*

3. Touch **OK** when done.

### To discharge a patient (Continuous (CONT) mode only)

1. Touch the Patient button; or Touch the **Setup** key, and then touch **Patient Information**.
2. Touch **Discharge**.
3. Touch **OK** (discharge patient).

## Alarms and Messages

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The DM4 provides audible and visual indications to alert users of physiological conditions or technical issues.

- In Spot Check (SPOT) mode, the monitor can provide error messages that alert the user of equipment issues that are preventing patient monitoring (for example, **NIBP cuff leak**).

*NOTE: There are no limit alarms in Spot Check mode.*

- In Continuous (CONT) mode, the monitor can provide equipment error messages, as well as limit alarms. You can access the alarm limit settings of a parameter by touching the parameter zone.

### To silence audio alerts

1. Touch the **Silence** key.

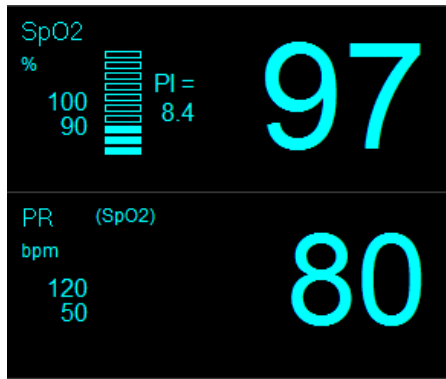
### To pause audio and visual alarm indications

1. Touch the **Setup** key.
2. Touch **Alarm Pause**.

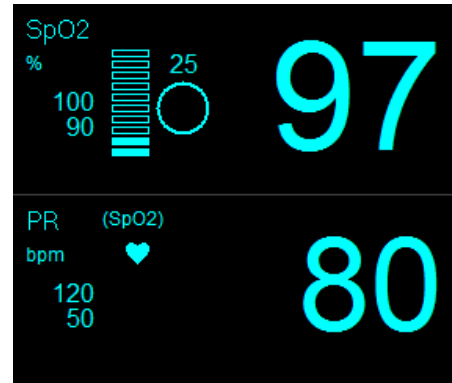
## Measurements

Designed for bedside and portable usage, the DM4 monitors pulse oximetry (SpO<sub>2</sub>), pulse rate (PR), noninvasive blood pressure (NIBP), and temperature.

### SpO<sub>2</sub>



*Masimo*



*Nellcor*

### To measure SpO<sub>2</sub> and Pulse Rate (PR) in Spot Check mode

1. Apply the sensor to the patient.
  - The message **SpO<sub>2</sub> searching** shows until a signal is acquired and SpO<sub>2</sub> data shows.
  - SpO<sub>2</sub> and PR measurements with a timestamp show in the SpO<sub>2</sub> and PR zones.
2. Remove the sensor from the patient.

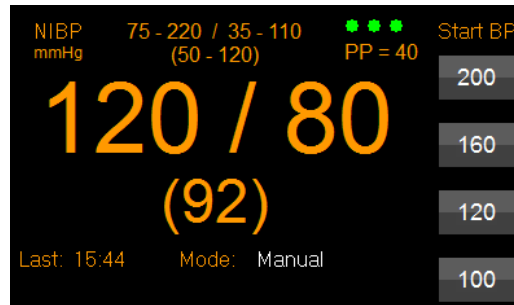
### To measure SpO<sub>2</sub> and PR in Continuous mode

1. If necessary, touch the SpO<sub>2</sub> zone to change the alarm limits or other settings.
2. Apply the sensor to the patient.
  - The message **SpO<sub>2</sub> searching** shows until a signal is acquired and SpO<sub>2</sub> data shows.
  - SpO<sub>2</sub> and PR measurements with a timestamp show in the SpO<sub>2</sub> and PR zones.
  - SpO<sub>2</sub> and PR measurement records are saved to trends.
3. When SpO<sub>2</sub> monitoring is complete, remove the sensor from the patient.  
The **SpO<sub>2</sub> check sensor placement** alarm shows.
4. To silence the alarm, touch the **Silence** key; or  
Touch the SpO<sub>2</sub> zone, and then touch **SpO<sub>2</sub> Alarm Acknowledge**.



## NIBP

The DM4 monitor uses a motion tolerant oscillometric measurement technique to determine systolic, diastolic, and mean arterial pressure and pulse rate. When the monitor is in Continuous (CONT) mode, you can take automatic NIBP measurements at preset intervals. If there is no SpO<sub>2</sub> data, the data shown in the Pulse Rate (PR) zone is derived from NIBP.



**NOTE:** Touch **Stop** to stop a measurement in process and deflate the cuff. Quickly touch the **Start/Stop** button twice to clear NIBP data.

### To measure NIBP in Spot Check mode

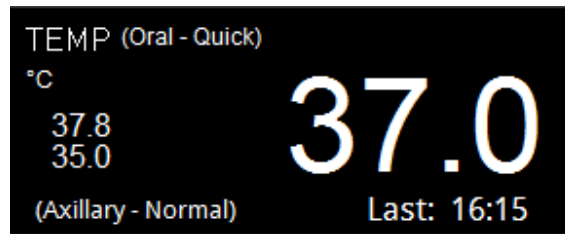
1. Apply the appropriate sized cuff to the patient.
2. Touch **Start** or (if enabled) one of the four initial inflation pressures under **Start BP**.
  - The above buttons change to **Stop** during measurement.
  - NIBP measurements show in the NIBP and (if no SpO<sub>2</sub> is available) PR zones.

### To measure NIBP in Continuous mode

1. If necessary, touch the NIBP zone to change the alarm limits, **Mode**, or other settings.
2. Apply the appropriate sized cuff to the patient.
3. Touch **Start** or (if enabled) one of the four initial inflation pressures under **Start BP**.
  - The above buttons change to **Stop** during measurement.
  - NIBP measurements show in the NIBP and (if no SpO<sub>2</sub> is available) PR zones.
  - NIBP measurement records are saved to trends.
4. When NIBP monitoring is complete, remove the cuff from the patient.

## FILAC Temperature

If the FILAC 3000 option is installed, you can measure temperature from an oral or axillary site. In the Oral-Quick mode, the FILAC thermometer measures body temperature in about 3 to 5 seconds. The measurement time for axillary temperatures is about 8 to 12 seconds.



***CAUTION: Never use the FILAC temperature probe without a probe cover. Failure to correctly place temperature probe back into the isolation chamber well may result in the failure of the next predictive temperature measurement.***

### To measure temperature with the FILAC probe in Spot Check mode

1. If necessary, touch the TEMP zone to change the **TEMP Site** or **TEMP Mode**.
2. Apply a new temperature probe cover and place the probe in the appropriate patient site.
  - The monitor generates an audible tone when the measurement is complete.
  - The temperature measurement with a time stamp shows in the TEMP zone.
3. Properly dispose of the probe cover and reinsert the probe in the holder.

### To measure temperature with the FILAC probe in Continuous mode

1. If necessary, touch the TEMP zone to change the alarm limits, **TEMP Site**, or **TEMP Mode**.
2. Apply a new temperature probe cover and place the probe in the appropriate patient site.
  - The monitor generates an audible tone when the measurement is complete.
  - The temperature measurement with a time stamp shows in the TEMP zone.
  - Temperature measurement records are saved to trends.
3. Properly dispose of the probe cover and reinsert the probe in the holder.
  - The monitor generates a two-tone audio alert to indicate that the probe is fully seated.

## Exergen Temperature

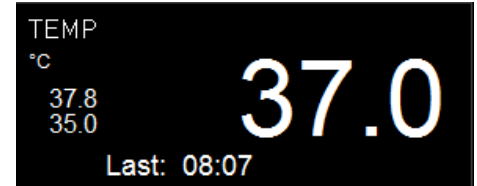
If the monitor is not configured for FILAC thermometry, you can measure temperature with the Exergen Temporal Artery Thermometer (scanner).

### To measure temperature with the Exergen scanner in Spot Check mode

1. Make sure the Exergen scanner is connected to the USB port on the back of the monitor.
2. Take a measurement with the Exergen scanner.
  - The temperature measurement with a timestamp shows in the TEMP zone.

### To measure temperature with the Exergen scanner in Continuous mode

1. Make sure the Exergen scanner is connected to the USB port on the back of the monitor.
2. If necessary, touch the TEMP zone to change the alarm limits.
3. Take a measurement with the Exergen scanner.
  - The temperature measurement with a timestamp shows in the TEMP zone.
  - Temperature measurement records are saved to trends.



## Trends

The DM4 can store up to 1,000 vital signs records and up to 72 hours of continuous trend data (FIFO). When the monitor is in Continuous (CONT) mode, measurements are *automatically* saved to trends and (if enabled) sent to the electronic medical record (EMR) system. When the monitor is in Spot Check (SPOT) mode, measurements can be *manually* saved to trends and selected records sent to the EMR system.

Trends							
Date	Time	Patient ID	NIBP	SpO2	PR	TEMP	PI
12/17	10:56	...08807164	--- / --- (---)	97	80	98.6	10.0
	10:55	...08807164	--- / --- (---)	97	80	---	10.0
	10:54	...08807164	120 / 80 (92)	97	80 (NIBP)	---	10.0
	10:50	...08807164	--- / --- (---)	97	80	---	10.0
	10:45	...08807164	--- / --- (---)	97	80	---	10.0
	10:42	...08807164	120 / 80 (92)	97	80 (NIBP)	---	10.0
	10:40	...08807164	--- / --- (---)	97	80	---	10.0
	10:35	...08807164	--- / --- (---)	97	80	---	---

▲ ▼ Show 5 min intervals ◀ ▶

**Continuous Trends**

Trends - Spot Check							
Sent	Date	Time	Patient ID	SpO2	PR	NIBP	TEMP
✓	12/17	11:13	DM_17_106729469	97	80	120 / 80 (92)	98.6
✓		11:12	DM_17_040455842	97	80	120 / 80 (92)	
✓		11:08	DM_17_160661363	97	80	120 / 80 (92)	

▲ ▼ Send Delete Filter Close

**Spot Check Trends**

### To show trends

1. Touch the **Trends** key.

### To save a snapshot of measurements to trends

1. Touch the **Save** key.

### To send Spot Check trends to the EMR system (if enabled)

1. Touch the **Trends** key.
2. Touch **Send**.

### To print trends

1. Touch the **Trends** key.
2. Touch the **Print** key.

### To delete all trends

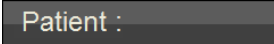
1. Touch the **Setup** key.
2. Touch **Administrator**.
3. Touch **Clear Trends**.
4. Touch **OK**.

## DM4 / EMR Procedures

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The Workflow mode of the monitor and the type of medical record system determine which DM4 / EMR procedure to use to send vital signs measurements (trends) to the EMR.

### Spot Check mode—networked

1. Touch the Patient button (on the top left corner of screen); or  Patient :  
Touch the **Setup** key, and then touch **Patient Information**.

2. Enter the patient **ID** or scan the patient name band.
3. Touch **Query** to complete the patient information.
4. Touch **OK**.

The patient ID or name shows on the Patient button.

5. Take the vital signs of the patient.
6. Touch **Save**.
7. Touch **Trends**.
8. Touch **Send**.

A check mark shows under **Sent** for each sent measurement record.

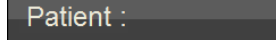
9. Repeat the previous steps for the next patient.



### Spot Check mode—offline/batch

1. Touch the Patient button (on the top left corner of screen); or Touch the **Setup** key, and then touch **Patient Information**.
  2. Enter the patient **ID**.
  3. Touch **OK**.
- The patient ID or name shows on the Patient button.
4. Take the vital signs of the patient.
  5. Touch **Save**.
  6. Repeat the previous steps for the other patients.
  7. Connect the DM4 to the network with the network cable.
  8. Touch **Trends**.
  9. Touch **Send**.

A check mark shows under **Sent** for each sent measurement record.

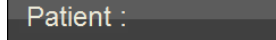
Patient :

## Continuous mode

1. Touch the Patient button (on the top left corner of screen); or  
Touch the **Setup** key, and then touch **Patient Information**.
2. Enter the patient **ID** or scan the patient name band.
3. Touch **Query** to complete the patient information.
4. Touch **OK**.

The patient ID or name shows on the Patient button.

5. Connect the patient to the DM4 and begin monitoring.  
Vital signs are automatically stored in the monitor's **Trends** for 72 hours (FIFO) and sent over the network to the EMR.
6. When done monitoring the patient, touch the Patient button; or  
Touch the **Setup** key, and then touch **Patient Information**.
7. Touch **Discharge**.
8. Touch **OK (discharge patient)**.

A screenshot of a dark grey button with the text "Patient :" in white.

*NOTE: This document is intended as a quick start guide. For more detailed information, refer to the DM4 Operations Manual (P/N 070-2916-xx).*

### **Contact Information**

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