

## **URGENT - Medical Device Correction**

### **Philips SureSigns VS & VM Monitors, and View Station (VSV) User Maintenance of Lithium Ion Batteries**

Dear Customer,

A problem has been detected in the Philips SureSigns Monitors (VS2/3/4, VM3/4/6/8 & VSV), that, if it were to re-occur, could pose a risk for patients or users. This Field Safety Notice is intended to inform you about:

- what the problem is and under what circumstances it can occur
- the actions that should be taken by the customer / user in order to prevent risks for patients or users
- the actions planned by Philips to correct the problem.

**This document contains important information for the continued safe and proper use of your equipment**

Please review the following information with all members of your staff who need to be aware of the contents of this communication. It is important to understand the implications of this communication.

Please retain a copy with the equipment Instruction for Use.

Philips has received several reports in which SureSigns monitors with lithium ion batteries that have exceeded their specified replacement interval have overheated or ignited. These batteries should be replaced every 3 years or upon reaching 300 charge-discharge cycles. Although the monitors can display the battery's status, the existing labeling for these monitors does not include full instructions on when to replace the batteries or the potential hazards if they fail to do so. Philips is therefore issuing a SureSigns Monitors (VS2/3/4, VM3/4/6/8 & VSV) *Service Guide addendum* with information to assist with managing the battery and its replacement. The *Service Guide Addendum* is included with this letter.

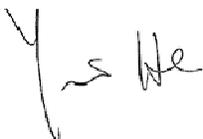
Please refer to the following pages, which provide information on how to identify affected devices and instructions for actions to be taken. Follow the "Action to be taken by Customer/User" section of the notice. This notice has been reported to the appropriate Regulatory Agency.

Additionally, Philips is developing a system software update for the SureSign monitors that will make it easier for users to manage the monitors' battery over its lifetime. You will be notified when the software update is available. In the interim it is safe to use your monitor if the directions in this notice, the *Instructions for Use* and the *Service Guide addendum* are followed.

Philips sincerely regrets the inconvenience that this may cause you. Your satisfaction with Philips' products and with our response to this issue is very important to us. Please contact *your local Philips representative* with questions or concerns about this correction:

**0800 80 3000**

Sincerely,



Yini He  
Director of Quality and Regulatory Affairs

**AFFECTED PRODUCTS**

The affected products are all SureSigns Monitors and Viewing Stations manufactured through May 3, 2018 that are capable of operating under battery power and have batteries presently installed.

Specifically, the following SureSigns Vital Signs Monitors with software releases up to and including A.07.24

Product	Description
863069	SureSigns VS3 NBP
863070	SureSigns VS3 NBP, Temp
863071	SureSigns VS3 NBP, SpO2
863072	SureSigns VS3 NBP, SpO2, Rec
863073	SureSigns VS3 NBP, SpO2, Temp
863074	SureSigns VS3 NBP, SpO2, Temp, Rec
863079	SureSigns VS2 NBP
863080	SureSigns VS2 NBP, SPO2
863081	SureSigns VS2 NBP, SpO2, Temp
863082	SureSigns VS2 NBP, SpO2, Temp, Rec
863283	SureSigns VS4 NBP, SPO2
863286	SureSigns VS4 Government Bundle

Additionally, the following SureSigns Patient Monitors with software releases up to and including A.03.96.

Product	Description
863063	SureSigns VM 4 Patient Monitor
863064	SureSigns VM 6 Patient Monitor
863065	SureSigns VM 6 Patient Monitor
863066	SureSigns VM 8 Patient Monitor
863068	SureSigns VM 8 Patient Monitor
863077	SureSigns VM 3 Patient Monitor
863085	SureSigns VM 4 Patient Monitor
863086	SureSigns VM 6 Patient Monitor
863317	SureSigns VM 8 SE Patient Monitor
863287	SureSigns VM4 Government Bundle
863288	SureSigns VM6 Government Bundle
863289	SureSigns VM8 Government Bundle

Lastly, the following SureSigns View Station (VSV) with software releases up to and including A.00.50.

Product	Description
863067	Vital Signs View Station (VSV)

NOTE: The VSi (863275, 863276, 863277), VS2+ (863278, 863279) and VM1 (863264, 863265, 863266) are not affected by this Field Safety Notice.

<p><b>PROBLEM DESCRIPTION</b></p>	<p>Philips has received several reports in which monitors with lithium ion batteries that had exceeded their battery life expectancy have overheated or ignited. These batteries should be replaced every 3 years or upon reaching 300 charge-discharge cycles.</p> <p>Although the Philips SureSigns VS &amp; VM Monitors and View Station (VSV) can display actual information on either or both battery age and charge-discharge cycles, the existing labeling does not include full instructions on how to use this information to determine when to replace the battery.</p>
<p><b>HAZARD INVOLVED</b></p>	<p>An overheated battery may in turn cause the device case to overheat and possibly melt or cause the device to ignite, which can cause injury to a patient, nearby users, or cause damage to property.</p>
<p><b>HOW TO IDENTIFY AFFECTED PRODUCTS</b></p>	<p>You can determine whether your device is affected by identifying the software revision. This can be performed by;</p> <ul style="list-style-type: none"> <li>a) Locate and verify the model number of your SureSigns Monitor, found on the cover page of the <i>Instructions for Use</i>.</li> <li>b) Locate and verify the revision screen in the monitor software (System Menu / Rotate Wheel / Software Version Revision) or</li> </ul> <p>To determine if your device is capable of battery operation, verify in the bottom right corner of the monitor's display if a battery symbol is exhibited.</p> <div style="text-align: center;">  <p>The image shows six Philips SureSigns monitors arranged in two rows. The top row contains VS3 and VS4. The bottom row contains VM4, VM6, VM8, and VSV. Each monitor is labeled with its model name above it. The monitors are white with black screens displaying various vital signs and waveforms.</p> </div>

<p><b>ACTION TO BE TAKEN BY CUSTOMER / USER</b></p>	<p>Upon receipt of this notification, carefully read the enclosed SureSigns Addendum to the <i>Service Guide</i>. Promptly perform the Battery Maintenance that is called out in the Addendum for each of your affected Philips SureSigns VS &amp; VM Monitors and View Station (VSV) by determining if the <i>Battery Information Screen</i> indicates if the battery cycle count exceeds the limit of 300 cycles, or the battery is older than three (3) years. If so, the battery needs to be replaced. The replacement battery can be ordered using the standard Philips replacement processes.</p> <p>Details on how to replace the battery can be found in the Philips SureSigns VS &amp; VM Monitors and View Station (VSV) <i>Service Guide</i>.</p> <p>Review this information with all staff members who are responsible for device management of the Philips SureSigns VS &amp; VM Monitors and View Station (VSV).</p> <p>Please store the <i>Service Guide Addendum</i> with your Philips SureSigns VS &amp; VM Monitors and View Station (VSV) Service Guide documentation.</p> <p>Complete and return the response card provided.</p>
<p><b>ACTIONS PLANNED BY PHILIPS</b></p>	<p>In addition to providing the <i>Service Guide Addendum</i> and this notice, Philips plans to release a customer installable, software update for SureSigns Monitors (VS2/3/4, VM3/4/6/8 &amp; VSV) that will provide system warnings to assist users in managing the battery replacement cycle. You will be notified when the customer installable software update is available.</p> <p>In the interim, it is safe to use your monitor if the directions in this notice, the <i>Instructions for Use</i> and <i>Service Guide Addendum</i> are followed.</p>
<p><b>FURTHER INFORMATION AND SUPPORT</b></p>	<p>If you need any further information or support concerning this issue, please contact your local Philips representative:</p> <p><b>0800 80 3000</b></p>

July 2018

**URGENT - Medical Device Correction  
SureSigns VS and VM Monitors & VSV – Service Guide  
Addendum**

**Customer Reply for FSN86000255B  
VS and VM Monitor & View Station (VSV) Service Guide Addendum**

Please complete and mail to [customercare.ch@philips.com](mailto:customercare.ch@philips.com)

Contact Name	
Telephone Number	
Email Address	
Facility Name	
Street Address City, State, Zip	

**Please send this completed form to the email address provided above.**

**CUSTOMER ACKNOWLEDGEMENT:**

That the VS, VM & VSV Service Guide Addendum has been attached to the first page of the Maintaining the Battery section to ensure that it is not misplaced and is stored with the Instructions for Use for ready reference.

Confirm that all VS and VM monitors & View Station (VSV) batteries have been ordered and/or replaced if the *Battery Information Screen* indicates the battery has been in used longer than 3 years or the discharge/charge cycles is greater than 300.

\_\_\_\_\_  
CUSTOMER NAME (please print)

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
CUSTOMER SIGNATURE

\_\_\_\_\_  
DATE

Please email the completed reply form to [customercare.ch@philips.com](mailto:customercare.ch@philips.com). If you experience difficulty carrying out the instructions contained in this communication, contact your local Philips representative:

**0800 80 3000**

## SureSigns VS2/VS3/VS4 Vital Signs Monitors Service Guide Addendum – Replacement for Battery Maintenance Information

This addendum replaces the “Maintaining the Battery” section in Chapter 2 of the SureSigns VS2, VS3 and VS4 Vital Signs Monitors Service Guide. Please store it with your monitor documentation. Models are listed in the table at the end of this document.

### Maintaining the Battery

#### About the Battery

The rechargeable lithium ion battery used in the VS series vital signs monitors is a smart battery with built-in circuitry that communicates battery status information to the monitor. Battery power lasts a minimum of four (4) hours of continuous monitoring with no printing and one NBP measurement every 15 minutes.

To properly maintain the battery and prevent damage to the monitor, observe these guidelines:

- If a battery shows damage or signs of leakage, replace it **immediately**.
- **Never** use a faulty battery in a monitor.
- **Never** dispose of the battery in a normal waste container.
- **Never** leave a battery inside the monitor if the monitor is not being used for a long period of time.
- **Never** store a battery that is charged to more than 50% capacity.

#### NOTES:

- *Images shown are from a VS4 vital signs monitor. The VS2 and VS3 may appear slightly different.*
- *For information about the battery status indicator, please see the Instructions for Use provided with your monitor.*

### Viewing Battery Information

As a battery ages, its capacity decreases, and the battery status indicator becomes increasingly less accurate as the total number of charges and discharges increase. You can view the **Battery Info** screen to display information about the battery. Ensure that the monitor is connected to AC power before attempting to review battery information.



**NOTE:** If a VS3 monitor with a **Hardware ID** (displayed on the **System Menu**) of 1-1-A1 is disconnected from AC power, the **Battery Info** window displays the following message: **No data from battery. Please see Service Guide.** To view the information about the battery, reconnect the monitor to AC power.

**To view information about the battery:**

1. On the main screen, touch **System**.

**NOTE:** The VS4 vital signs monitor utilizes a touch screen. On a VS2 or VS3 monitor, you must rotate the control wheel to highlight the desired menu option, then press the wheel to select it.

2. Touch **System Admin** and enter the administrator password (default is 215). The **System Admin Menu** appears.
3. Touch **Diagnostics** to open the **System Diagnostics** menu.

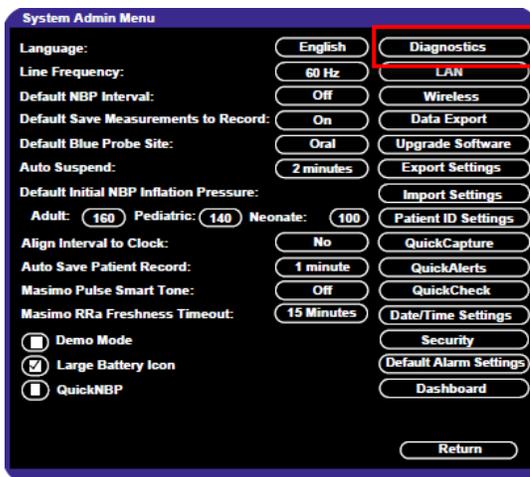


Figure 1 System Admin Menu

4. Touch **Battery Info** to open the **Battery Info** screen.

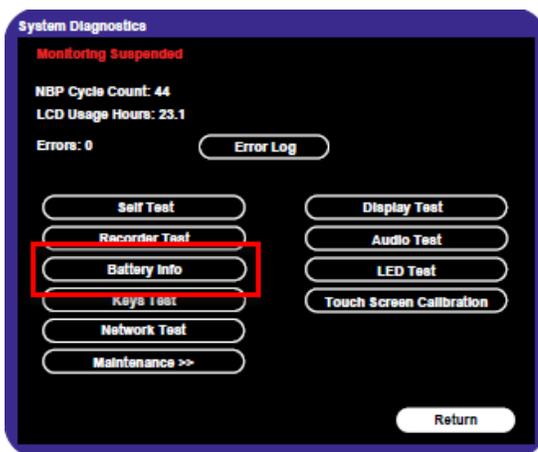


Figure 2 System Diagnostics

5. To view the list of results, select the list to activate scrolling.

The **Battery Info** screen provides detailed information about battery capacity and charging status, including:

- **Cycle Count:** The number of full charge and discharge cycles calculated by the battery.
- **Max Error:** The expected margin of error in the state of the charge calculation. The **Max Error** value is the difference between the **Relative Charge** value and the **Absolute Charge** value.
- **Relative Charge:** The predicted remaining battery capacity, expressed as a percentage of **Full Capacity**. The value in the **Relative Charge** decreases as the battery ages. The Battery Status icon is a graphic representation of the relative charge.
- **Absolute Charge:** The predicted remaining battery capacity, expressed as a percentage of **Design Capacity**.
- **Full Capacity:** The predicted capacity of the battery when it is fully charged. The value in the **Full Capacity** field decreases as the battery ages. The difference between the value in the **Full Capacity** field and the value in the **Design Capacity** field is an indication of battery condition.
- **Design Capacity:** The capacity of a new battery.

If the battery cycle count exceeds the recommended limit of **300 cycles**, or if the battery is older than **three (3) years**, the battery will need to be replaced (see Figure 3).

**NOTE:** *On VS3 monitors, battery manufacture date will be displayed only on software version A.02 or higher. If your VS3 monitor is running an older version of software, please see **Determining Battery Age**.*

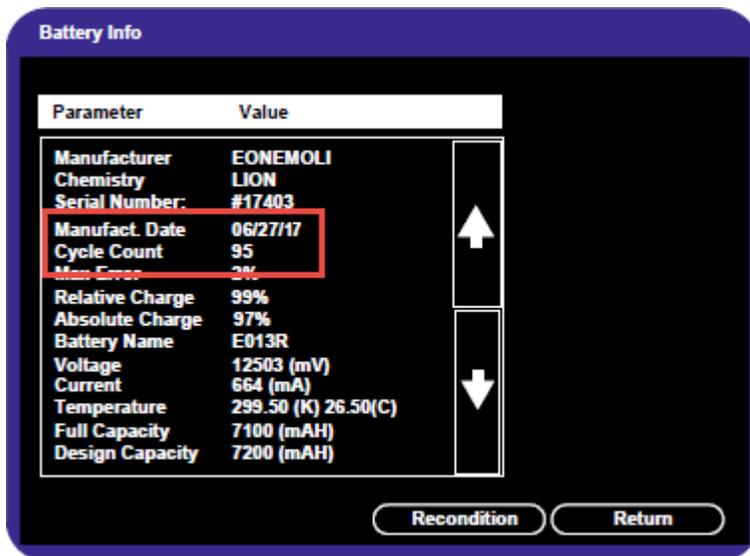


Figure 3 Battery Info Screen

**NOTE:** *If the message, “No data from battery. Please see Service Guide.” appears, you must reseat the battery. Refer to your VS series Service Guide for more information.*

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## WARNING

The risk of battery failure increases with age, when a battery remains in use past 300 charge-discharge cycles or 3 years. Such failures can result in overheating that in rare cases can cause the battery to ignite.

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## Determining Battery Age

You can visually verify the battery manufacture date by checking the battery label. To determine the age of your battery, you will need to remove it from the monitor and check the battery label. See **Replacing the Battery** for instructions on safely removing the battery from your monitor. You should also check any spare batteries you may have on hand.

If the battery has a blue label as shown in Figure 4, the manufacturing date will be printed on the label.



Figure 4 Battery product label

If your label looks like one of the examples in Figure 5, or any other type of label other than the label in Figure 4, you will need to replace the battery.

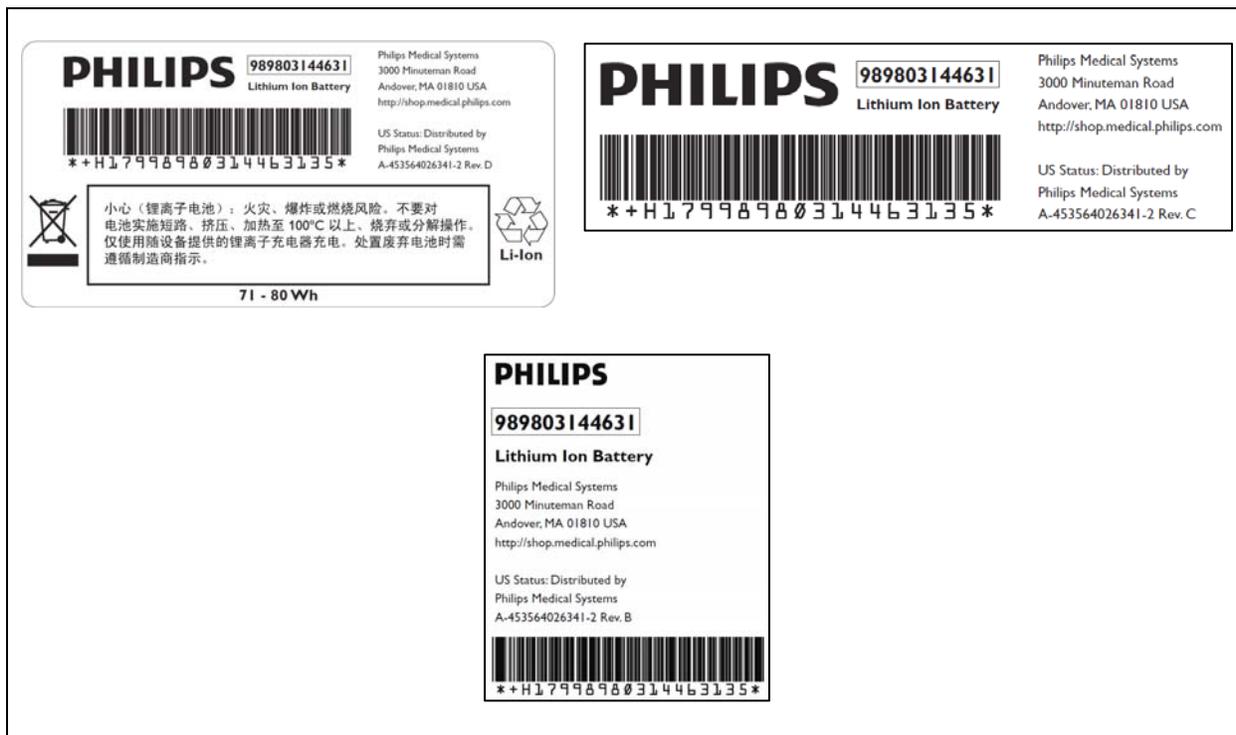


Figure 5 Battery product labels

## Reconditioning the Battery

Reconditioning the battery reduces the **Max Error** value, in turn, increases the accuracy of the **Relative Charge**. Philips recommends that you condition the battery by fully discharging and recharging it when the **Max Error** is 10% or greater.

### To recondition the battery:

1. Open the Battery Info window (see **Viewing Battery Information**).
2. Disconnect the monitor from AC power.
3. Rotate the wheel to select **Recondition**, then press the wheel. The **Relative Charge** percentage will decrease to 0%.
4. When the monitor shuts down, reconnect the monitor to AC power and allow the battery to recharge to 100%.
5. Repeat steps 1 - 4.

**NOTE:** If the battery does not recharge after four reconditioning cycles, replace it.

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## Replacing the Battery

Replace the battery if the following conditions occur:

- After reconditioning, if the monitor operates for less than one hour on a fully charged battery before the low battery (Low Batt) alarm occurs, or
- The Max Error cannot be brought  $\leq 8\%$  after several recondition cycles, or
- The Full Capacity is 50% or less of the Design Capacity.

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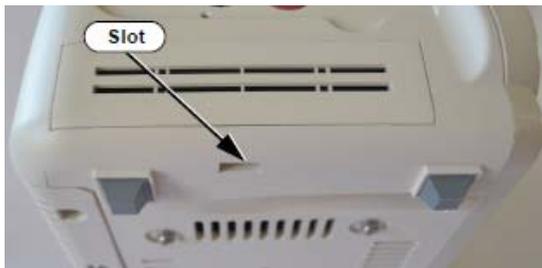
### WARNING

**Dispose of aged batteries in an environmentally responsible manner. Do not dispose of the battery in normal waste containers. Consult your hospital administrator to find out about local arrangements.**

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To replace the battery:

1. Shut down the monitor.
2. Disconnect the AC power cord from the rear of the monitor.
3. Tip the monitor and insert a flathead screwdriver into the slot in the bottom of the case under the battery cover.



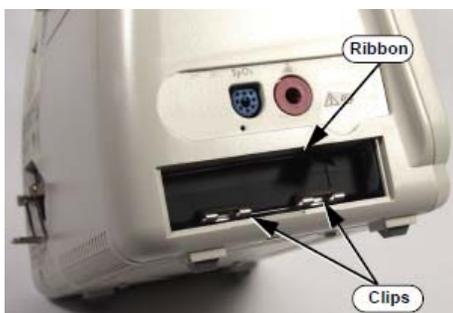
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### CAUTION

**Do not try to remove the battery cover by inserting the screwdriver into the vents in the cover. This can damage the battery case cover.**

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4. Twist the screwdriver slightly to pop the battery cover off of the case.
5. Press down on the battery retaining clips and pull the old battery out of the monitor using the ribbon.



6. Orient the replacement battery so that the contacts and ribbon are on the right.
7. Insert the replacement battery into the empty compartment, and push until the battery snaps into place behind the metal retaining clips.
8. Replace the battery cover by inserting it into the battery opening with the two tabs facing up.
9. Snap the cover into place by pressing it firmly against the monitor case.

## Ordering a Replacement Battery

To order a replacement lithium ion battery, contact your Philips Customer Care center. For information on how to contact Philips Customer Care for your country, go to <http://www.healthcare.philips.com>. Select your country and language, then navigate to the Customer Care page.

Product	Description	Battery PN*	Battery PN**
863069	SureSigns VS3 NBP	989803194541 (11.1V 7800 mAh, ME202EK)	989803144631 (11.1V 7200 mAh, ME202CJ)
863070	SureSigns VS3 NBP/Temp		
863071	SureSigns VS3 NBP/SPO2		
863072	SureSigns VS3 NBP/SPO2/Rec		
863073	SureSigns VS3 NBP/SPO2/Temp		
863074	SureSigns VS3 NBP/SPO2/Temp/Rec		
863079	SureSigns VS2 NBP		
863080	SureSigns VS2 NBP/SPO2		
863081	SureSigns VS2 NBP/SPO2/Temp		
863082	SureSigns VS2 NBP/SPO2/Temp/Rec		
863283	SureSigns VS4 NBP/SPO2		
863286	SureSigns VS4 Government Bundle		

\* World-wide, except China

\*\* China only



## Battery Messages and Alarms

The condition of the battery is reported by technical alarms and error codes.

### Technical Alarms

The following battery technical alarms appear in the monitor's message area:

- **Low Batt:** remaining battery power is less than 30%.
- **Extreme Low Batt:** remaining battery power is less than 21%.

### Error Codes

An error code (for example, **257 System Error**, indicating a battery charger power failure) appears in the Error Log. To view the Error Log, see “Viewing, Printing, and Exporting the Error Log, on page 4-38 of the Service Guide. For a complete list of error codes and the actions to take, see Chapter 4, “Troubleshooting,” in the Service Guide.

## SureSigns VM Series Vital Signs Monitors Service Guide Addendum Replacement for Battery Maintenance Information

This addendum replaces the “Maintaining the Battery” section in Chapter 2 of the SureSigns VM3, VM4, VM6 and VM8 Vital Signs Monitors Service Guides Please store it with your monitor documentation.

### Maintaining the Battery

#### About the Battery

The rechargeable lithium ion battery used in the VM series vital signs monitors is a smart battery with built-in circuitry that communicates battery status information to the monitor. Battery power lasts a minimum of three (3) hours of continuous monitoring with no printing and one NBP measurement every 15 minutes for a VM series monitor.

To properly maintain the battery and prevent damage to the monitor, observe these guidelines:

- If a battery shows damage or signs of leakage, replace it **immediately**.
- **Never** use a faulty battery in a monitor.
- **Never** dispose of the battery in a normal waste container.
- **Never** leave a battery inside the monitor if the monitor is not being used for a long period of time.
- **Never** store a battery that is charged to more than 50% capacity.

**NOTE:** *For information about the battery status indicator, please see the Instructions for Use provided with your monitor.*

#### Viewing Battery Information

As a battery ages, its capacity decreases, and the battery status indicator becomes increasingly less accurate as the total number of charges and discharges increase. You can view the **Battery Info** screen to display information about the battery. Ensure that the monitor is connected to AC power before attempting to review battery information.

#### To view information about the battery:

1. On the main screen of your monitor, rotate the wheel to highlight **System**, then press the wheel.
2. Rotate the wheel to highlight **System Admin** then press the wheel.



- In the window that appears, enter the administrator password (default is 215). Rotate the wheel to highlight **OK**, then press the wheel. The **System Admin Menu** appears.
- Rotate the wheel to highlight **Diagnostics**, then press the wheel.

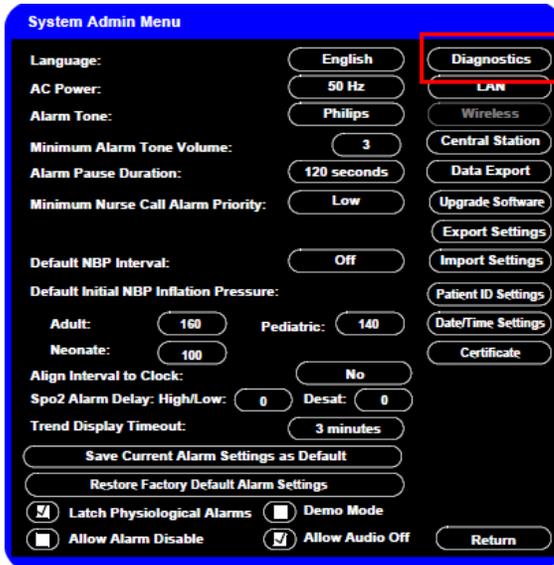


Figure 1 System Admin Menu

- On the **Diagnostics** screen, rotate the wheel to highlight **Battery Info**. Press the wheel to open the **Battery Info** screen.

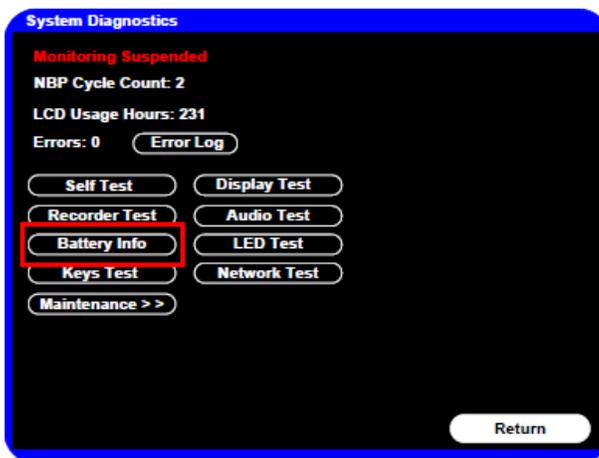


Figure 2 System Diagnostics

- To view the entire list of results, rotate the wheel to highlight the list, then press the wheel to activate scrolling.

The **Battery Info** screen provides detailed information about battery capacity and charging status, including:

- **Cycle Count:** The number of full charge and discharge cycles calculated by the battery.
- **Max Error:** The expected margin of error in the state of the charge calculation. The Max Error value is the difference between the **Relative Charge** value and the **Absolute Charge** value.
- **Relative Charge:** The predicted remaining battery capacity, expressed as a percentage of **Full Capacity**. The value in the **Relative Charge** decreases as the battery ages. The Battery Status icon is a graphic representation of the relative charge.
- **Absolute Charge:** The predicted remaining battery capacity, expressed as a percentage of **Design Capacity**.
- **Full Capacity:** The predicted capacity of the battery when it is fully charged. The value in the **Full Capacity** field decreases as the battery ages. The difference between the value in the **Full Capacity** field and the value in the **Design Capacity** field is an indication of battery condition.
- **Design Capacity:** The capacity of a new battery.

If the battery cycle count exceeds the recommended limit of **300 cycles**, or if the battery is older than **three (3) years**, the battery will need to be replaced (see Figure 3).

**NOTE:** Battery manufacture date will be displayed on software version A.02 or higher. If your monitor is running an older version of software, please see **Determining Battery Age**,

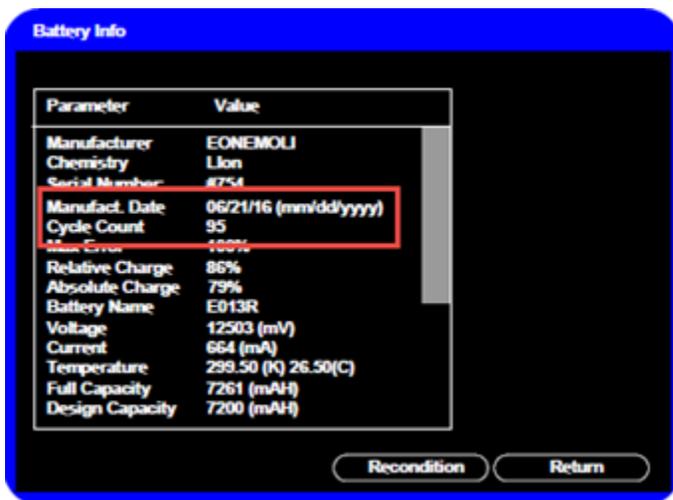


Figure 3 Battery Info Screen

**NOTE:** If the message “No data from battery. Please see Service Guide.” appears, you must reset the battery. Refer to your VM series Service Guide for more information.

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## WARNING

The risk of battery failure increases with age, when a battery remains in use past 300 charge-discharge cycles or 3 years. Such failures can result in overheating that in rare cases can cause the battery to ignite.

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### Determining Battery Age

If your monitor is running a software version lower than A.02, you will need to visually verify the battery manufacture date. To determine the age of your battery, you will need to remove it from the monitor and check the battery label. See **Replacing the Battery** for instructions on safely removing the battery from your monitor. You should also check any spare batteries you may have on hand.

If the battery has a blue label as shown in Figure 4, the manufacturing date will be printed on the label.



Figure 4 Battery product label

If your label looks like one of the examples in Figure 5, or any other type of label other than the label in Figure 4, you will need to replace the battery.

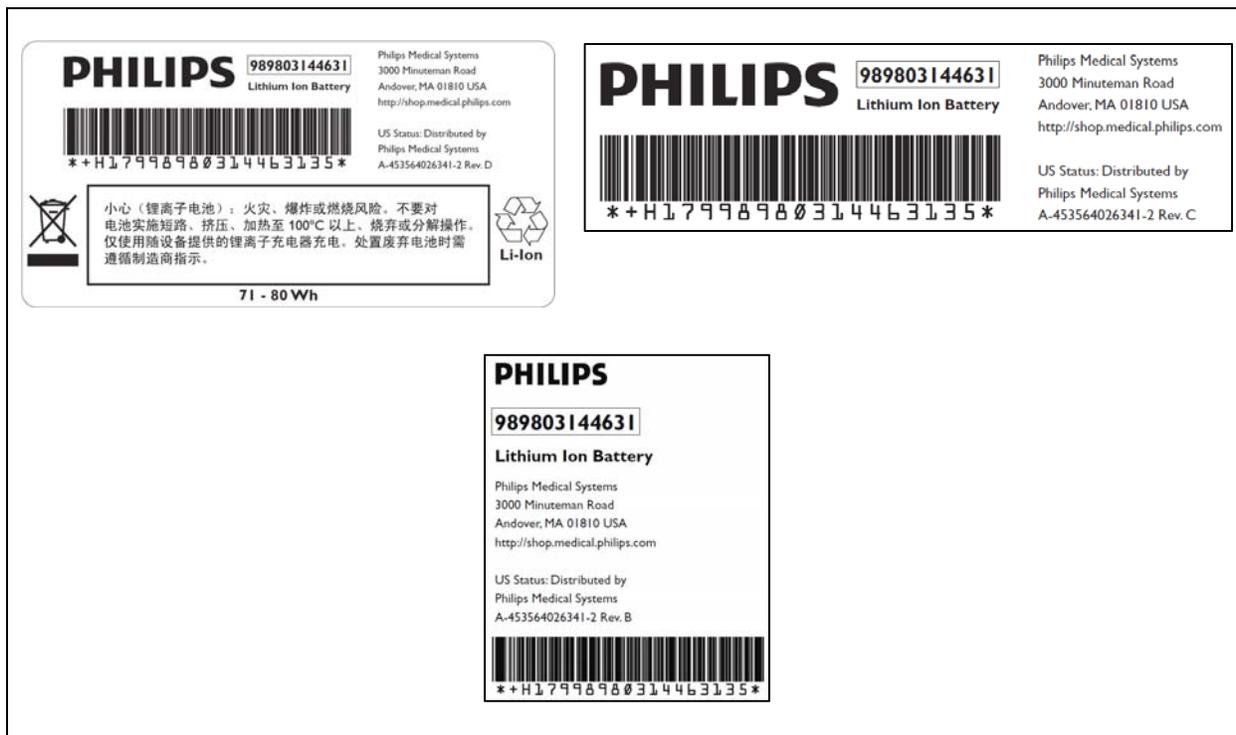


Figure 5 Battery product labels

## Reconditioning the Battery

Reconditioning the battery reduces the **Max Error** value, in turn, increases the accuracy of the **Relative Charge**. Philips recommends that you condition the battery by fully discharging and recharging it when the **Max Error** is 10% or greater.

### To recondition the battery:

1. Open the Battery Info window (see **Viewing Battery Information**).
2. Disconnect the monitor from AC power.
3. Rotate the wheel to select **Recondition**, then press the wheel. The **Relative Charge** percentage will decrease to 0%.
4. When the monitor shuts down, reconnect the monitor to AC power and allow the battery to recharge to 100%.
5. Repeat steps 1 - 4.

**NOTE:** If the battery does not recharge after four reconditioning cycles, replace it.

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## Replacing the Battery

Replace the battery if the following conditions occur:

- After reconditioning, if the monitor operates for less than one hour on a fully charged battery before the low battery (**Low Batt**) alarm occurs, or
- The **Max Error** cannot be brought  $\leq 8\%$  after several recondition cycles, or
- The **Full Capacity** is 50% or less of the **Design Capacity**.

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### WARNING

**Dispose of aged batteries in an environmentally responsible manner. Do not dispose of the battery in normal waste containers. Consult your hospital administrator to find out about local arrangements.**

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**To replace the battery:**

1. Shut down the monitor.
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3. Tip the monitor and insert a flathead screwdriver into the slot in the bottom of the case under the battery cover.



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### CAUTION

**Do not try to remove the battery cover by inserting the screwdriver into the vents in the cover. This can damage the battery case cover.**

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4. Twist the screwdriver slightly to pop the battery cover off of the case.
5. Press down on the battery retaining clips and pull the old battery out of the monitor using the ribbon.



6. Orient the replacement battery so that the contacts and ribbon are on the right.
7. Insert the replacement battery into the empty compartment, and push until the battery snaps into place behind the metal retaining clips.
8. Replace the battery cover by inserting it into the battery opening with the two tabs facing up.
9. Snap the cover into place by pressing it firmly against the monitor case.

## Ordering a Replacement Battery

To order a replacement lithium ion battery, contact your Philips Customer Care center. For information on For more information on how to contact Philips Customer Care for your country, go to <http://www.healthcare.philips.com>. Select your country and language, then navigate to the Customer Care page.

Product	Description	Battery PN*	Battery PN**
863063	SureSigns VM 4 Patient Monitor	989803194541 (11.1V 7800 mAh, ME202EK)	989803144631 (11.1V 7200 mAh, ME202CJ)
863064	SureSigns VM 6 Patient Monitor		
863065	SureSigns VM 6 Patient Monitor		
863066	SureSigns VM 8 Patient Monitor		
863068	SureSigns VM 8 Patient Monitor		
863077	SureSigns VM 3 Patient Monitor		
863085	SureSigns VM 4 Patient Monitor		
863086	SureSigns VM 6 Patient Monitor		
863317	SureSigns VM 8 SE Patient Monitor		
863287	SureSigns VM 4 Government Bundle		
863288	SureSigns VM 6 Government Bundle		
863289	SureSigns VM 8 Government Bundle		

\* World-wide, except China

\*\* China only



## Battery Messages and Alarms

The condition of the battery is reported by technical alarms and error codes.

### Technical Alarms

The following battery technical alarms appear in the monitor's message area:

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- **Extreme Low Batt:** remaining battery power is less than 21%.

### Error Codes

An error code (for example, **257 System Error**, indicating a battery charger power failure) appears in the Error Log. To view the Error Log, see “Viewing, Printing, and Exporting the Error Log, on page 4-33 of the Service Guide. For a complete list of error codes and the actions to take, see Chapter 4, “Troubleshooting,” in the Service Guide.

## SureSigns Vital Signs ViewStation Service Guide Addendum Replacement for Battery Maintenance Information

This addendum replaces the “Battery Maintenance and Indicators” section in Chapter 4 of the SureSigns Vital Signs ViewStation (VSV) Service Guide. Please store it with your monitor documentation.

### Battery Maintenance and Indicators

#### About the Battery

The rechargeable lithium ion battery used in the Vital Signs ViewStation is a smart battery with built-in circuitry that communicates battery status information to the monitor. Battery power lasts a minimum of four (4) hours of continuous monitoring with no printing.

To properly maintain the battery and prevent damage to the monitor, observe these guidelines:

- If a battery shows damage or signs of leakage, replace it **immediately**.
- **Never** use a faulty battery in a monitor.
- **Never** dispose of the battery in a normal waste container.
- **Never** leave a battery inside the monitor if the monitor is not being used for a long period of time.
- **Never** store a battery that is charged to more than 50% capacity.

#### Battery Charge Indicators

You can check the level of charge in a battery by any of the following:

- The battery charging LED;
- The battery status pane;
- Battery messages and alarms.

For information on the battery charging LED and battery status pane, see “Charging the Battery” on page 2-2 of the Service Guide.



## Viewing Battery Information

As a battery ages, its capacity decreases, and the battery status indicator becomes increasingly less accurate as the total number of charges and discharges increase. You can view the **Battery Test** screen to display information about the battery. Ensure that the monitor is connected to AC power before attempting to review battery information.

### To view information about the battery:

1. On the main screen of your VSV, rotate the wheel to highlight **System**, then press the wheel.
2. Rotate the wheel to highlight **System Admin** then press the wheel.
3. In the window that appears, enter the administrator password (default is 215). Rotate the wheel to highlight **OK**, then press the wheel. The **System Admin Menu** appears.
4. Rotate the wheel to highlight **Diagnostics**, then press the wheel.



Figure 1 System Admin Menu

5. On the **Diagnostics** screen, rotate the wheel to highlight **Battery Test**. Press the wheel to open the **Battery Test** screen.



Figure 2 System Diagnostics

The **Battery Test** screen provides detailed information about battery capacity and charging status. If the charging cycle count exceeds the recommended limit of **300 cycles** or is older than **three (3) years**, the battery will need to be replaced (see cycle count in Figure 3).

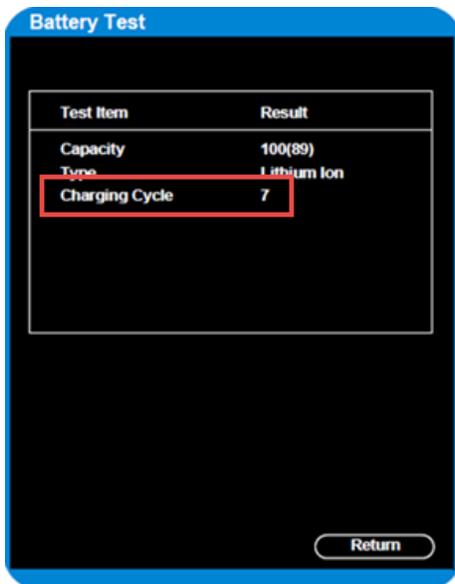


Figure 3 Battery Test Screen

**NOTE:** *If the message “No data from battery. Please see Service Guide.” appears, you must reset the battery. Refer to your VSV Service Manual for more information.*

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## WARNING

The risk of battery failure increases with age, when a battery remains in use past 300 charge-discharge cycles or 3 years. Such failures can result in overheating that in rare cases can cause the battery to ignite.

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## Determining Battery Age

To determine the age of your battery, you will need to remove it from the VSV and check the battery label. See **Replacing the Battery** for instructions on safely removing the battery from your VSV. You should also check any spare batteries you may have on hand.

If the battery has a blue label as shown in Figure 4, the manufacturing date will be printed on the label.



Figure 4 Battery product label

If your label looks like one of the examples in Figure 5, or any other type of label other than the label in Figure 4, you will need to replace the battery.

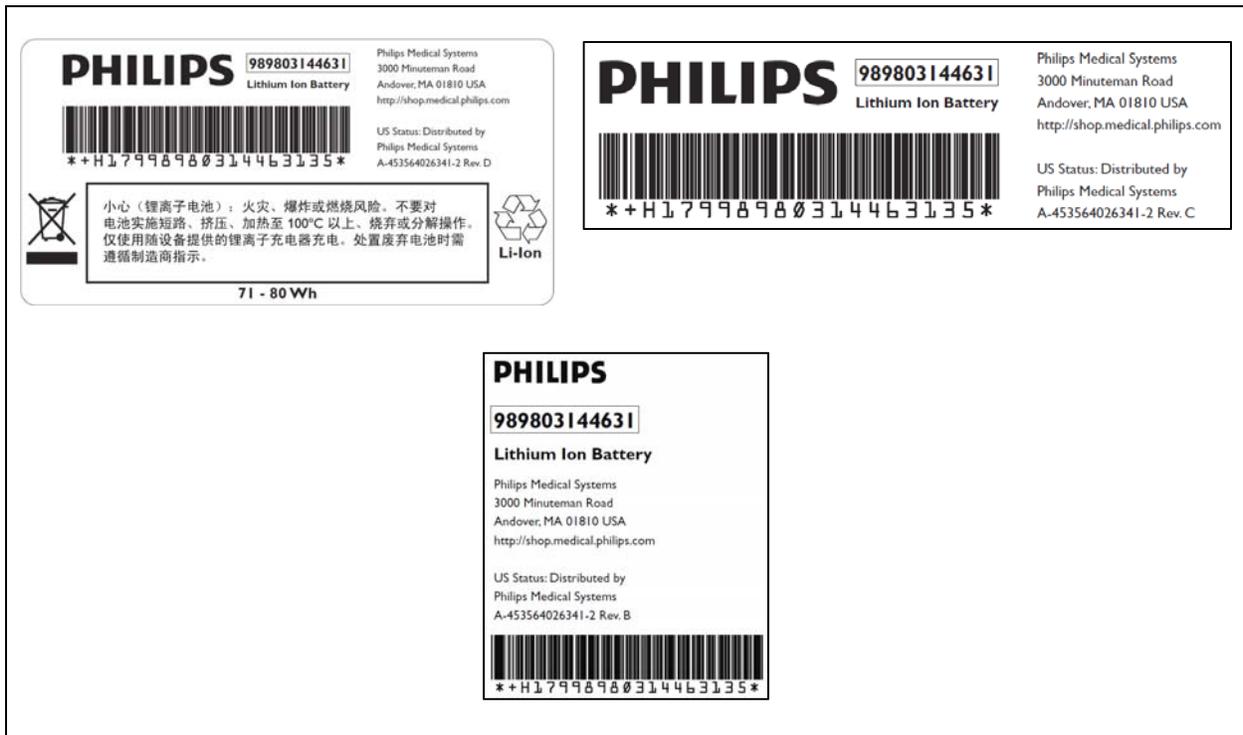


Figure 5 Battery product labels

## Replacing the Battery

To replace the battery:

1. Shut down the VSV.
2. Disconnect the AC power cord from the rear of the monitor.
3. Tip the VSV and insert a flathead screwdriver into the slot in the bottom of the case under the battery cover.



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## CAUTION

**Do not try to remove the battery cover by inserting the screwdriver into the vents in the cover. This can damage the battery case cover.**

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4. Twist the screwdriver slightly to pop the battery cover off of the case.
5. Press down on the battery retaining clips and pull the old battery out of the monitor using the ribbon.



6. Orient the replacement battery so that the contacts and ribbon are on the right.
7. Insert the replacement battery into the empty compartment, and push until the battery snaps into place behind the metal retaining clips.
8. Replace the battery cover by inserting it into the battery opening with the two tabs facing up.
9. Snap the cover into place by pressing it firmly against the monitor case.

## Ordering a Replacement Battery

To order a replacement lithium ion battery, contact your Philips Customer Care center. For information on how to contact Philips Customer Care for your country, go to <http://www.healthcare.philips.com>. Select your country and language, then navigate to the Customer Care page.

Product	Description	Battery PN*	Battery PN**
863067	Vital Signs ViewStation	989803194541 (11.1V 7800 mAh, ME202EK)	989803144631 (11.1V 7200 mAh, ME202CJ)

\* World-wide, except China

\*\* China only



## Battery Messages and Alarms

A technical alarm could indicate a low and/or improperly functioning battery. For a complete list of battery-related technical alarms, refer to the *SureSigns Vital Signs ViewStation Instructions for Use*.

In addition, a service error code could indicate a problem with the battery. Service error codes are written to the Error Log. For a complete list of error codes and actions to take, see “Error Codes” on page 5-13 of the Service Guide.