

Date 9 May2005
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P/N 810-2167-00 Rev A

Service Bulletin Type: Informational

Audience: All Welch Allyn Micropaq/Acuity Customers

Product Applicability: Micropaq Model 402 & 404

Software Version: 1.50.00 or greater (Micropaq software at time of this Bulletin release is version 1.50.00)

Change Summary: Micropaq Patient Alarms response changes with software update from version $\leq 1.40.00$ to 1.50.00 or greater.

Reason: This software update was due to IEC 60601- 2- 49 and European CE mark requirements. Micropaq DFU (Directions for Use) changes have been implemented, Reference DFU P/N 810-1177-05 Rev A

Result of change: Micropaq customers returning monitors at $\leq 1.40.00$ software versions for service will receive from Welch Allyn an Exchange, or repaired Micropaq with 1.50.XX version software. Change in Micropaq software affects monitors Alarm response.

Identification: A clear capillary sticker will be placed on all new, exchanged, or repaired Micropaq monitors containing 1.50.00 or greater software.

Reference: Micropaq DFU 810-1177-05 Rev A (or greater)

Alarm Changes: The attached pages describe the changes in Alarm Management (pages are reproduced from the Micropaq DFU 810-1177-05 Rev A).
For further information or assistance please contact Welch Allyn Technical Support at: 1-800-289-2501

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Alarms & Alerts

About Alarms and Alerts

Alarms provide a warning about a patient condition (such as a vital sign limit violation).

Alerts provide a warning about an equipment condition that needs attention (such as a low battery or detached ECG lead).

Alarms and alerts may be detected either by the Micropaq or by the network. While connected to the network, alarms or alerts are displayed at the Micropaq and at the Acuity Central Station. Alarms have a higher priority than alerts.

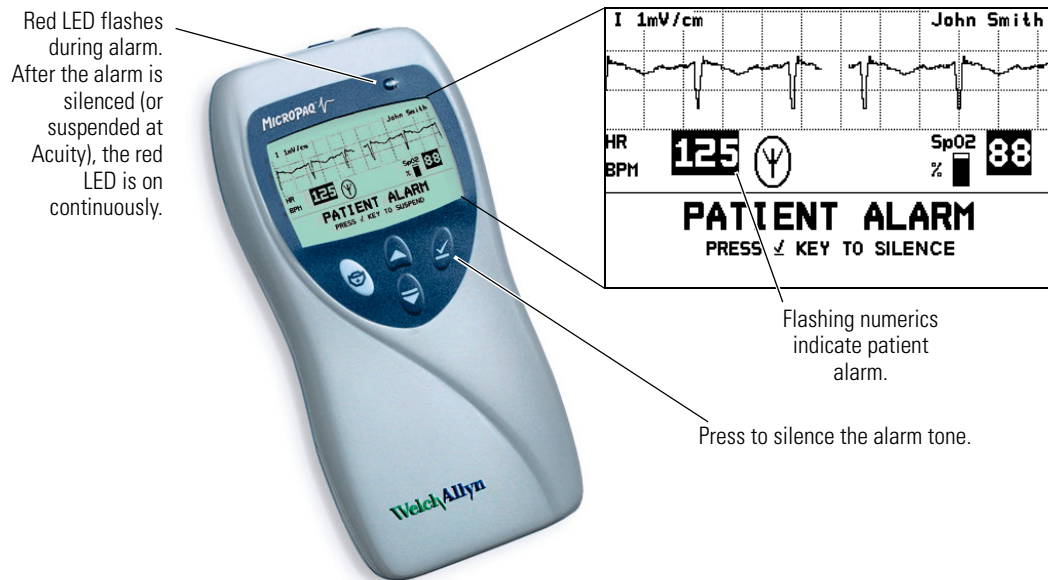
Alarm Holdoffs


To help minimize false alarms, the Micropaq briefly delays or “holds off” triggering alarms for limit violations for HR/PR or SpO₂. After the alarm holdoff period begins, if the monitor detects that the patient’s vital sign has returned to acceptable limits, the monitor cancels the alarm holdoff. The next time a vital sign limit is violated, the monitor starts a new holdoff period.

Vital Sign	Alarm Holdoff Period
HR	3 seconds
% SpO ₂ or PR	10 seconds

Respond to a Patient Alarm at Micropaq

When a patient alarm occurs, the Micropaq produces an audible tone (if audible tones are enabled). Life-threatening arrhythmia alarms beep at a faster pace than other vital sign alarms (see “Patient Alarm and Equipment Alert Specifications” on page 65). The Micropaq also displays a message similar to the following:




1. Check the patient and provide appropriate care.
2. To silence the alarm tone at the monitor and the Acuity Central Station for 90 seconds, press .

While the alarm tone is silenced, visual alarm indications continue, and the red alarm indicator on the monitor changes from a flashing display to a continuous display.

If the alarm condition still exists after 90 seconds, the alarm tone resumes.

Note If you silence an alarm at the *Micropaq* and another patient alarm or an equipment alert occurs during the silence period, the tone resumes at the *Micropaq*. At *Acuity*, only life-threatening arrhythmia alarms interrupt the silence period.

If you suspend an alarm at *Acuity*, only life-threatening arrhythmia alarms interrupt the silence period at the *Micropaq* and *Acuity*.

To access the Main Menu during silencing, press .

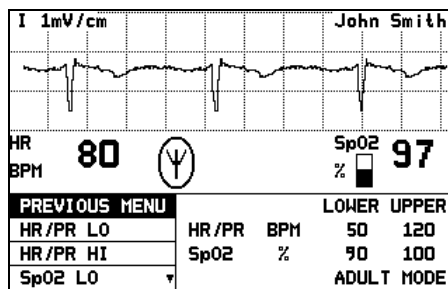
3. To reset the alarm tone at the monitor and Acuity before the 90 seconds has elapsed, press ▲ at the Micropaq, or press **Resume** at the Acuity Central Station.
4. After caring for the patient, make sure that the appropriate alarm limits are set and that alarms are on.

Customize Patient Alarm Limits at the Micropaq



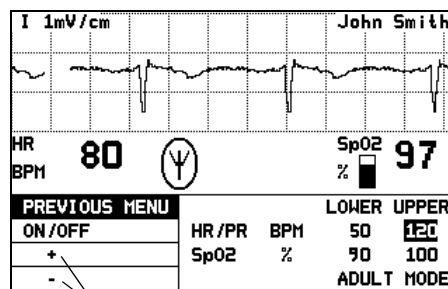
WARNING If the patient’s name has not yet been assigned to the Micropaq, do not adjust any alarm limits until **after** the patient name and ID are confirmed at Acuity. When the patient name and ID are confirmed at Acuity, Acuity downloads the default settings and patient alarm limits for that Acuity unit, thereby overriding any custom alarm limits that were set at the Micropaq before selecting the patient.

1. Press ▼ to display the Main Menu.
2. Press ▼ to highlight **LIMITS**, then press ✓ to display the Alarm Limits Adjust Menu:



Alarm limits can be adjusted for HR/PR and SpO₂.

3. To change an alarm limit, press ▼ or ▲ to highlight the desired limit, then press ✓ to display the Threshold Adjustment Menu:





Select + or - to change the limit.

- Scroll and select the + or - selections to change the limit as desired.
- To turn the highlighted limit on or off, scroll to **ON/OFF** and press ✓.



WARNING If you turn off any alarm limits, be sure to restore the appropriate alarm limits before you resume monitoring. *Only life-threatening arrhythmias will be indicated at the Micropaq and Acuity (if connected) when alarms are turned off.*

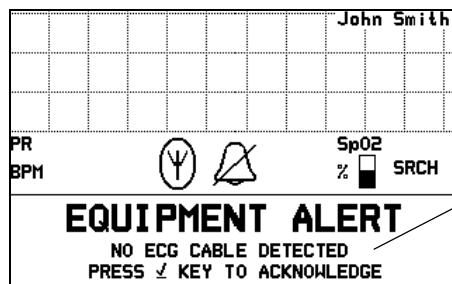
- To change other limits, scroll to **PREVIOUS MENU**, press , then select another limit to change.
- When you have completed all changes, scroll to **PREVIOUS MENU**, then **EXIT** on the Alarm Limits Adjust Menu and press  to return to the normal monitoring screen.

Note While the Micropaq is connected to Acuity, settings can be changed either at the Micropaq or at Acuity.


Respond to an Equipment Alert at the Micropaq


When the network or Micropaq detects an equipment problem, the Micropaq produces an audible alert tone (if audible tones are enabled). Equipment alerts beep at a slower pace than patient vital sign alarms (see [“Patient Alarm and Equipment Alert Specifications”](#) on page 65).


The Micropaq also displays a flashing yellow light (LED) and an equipment alert message similar to the following:



The Micropaq has detected that the ECG cable has been disconnected from the Micropaq.


- In this instance, press  to acknowledge (dismiss) the alert tone and clear the message.

If the message says “PRESS  TO SILENCE,” when you press , the tone is silenced for 90 seconds instead of dismissed.

If the Micropaq displays a chest diagram with a missing lead flashing, you can press  to silence the tone.

Some alerts do not give you the option to acknowledge the alert or silence the tone. For these alerts, to remove the message and tone, you must correct the problem.








2. If possible, determine what caused the problem and correct it.

Note After you press  to acknowledge or silence some types of alerts, the yellow LED remains on (either flashing or steady yellow) until you correct the problem.

For low battery alerts and no Acuity connection alerts, specific icons also flash.

For a list of possible messages and suggested responses, see [“Alert Messages and Display Information”](#) on page 40.

Alert Messages and Display Information

Message and Display Information	Possible Cause(s) and Suggested Response
LOW BATTERY	The monitor will shut down within approximately 30 minutes or less due to a low battery. <ul style="list-style-type: none"> Replace the battery as soon as possible.
VERY LOW BATTERY	The monitor will shut down within approximately 5 minutes or less due to a low battery. <ul style="list-style-type: none"> Replace the battery as soon as possible.
BATTERY TOO LOW SHUT DOWN IN PROGRESS	The battery is so low the monitor has to shut down operation. <ul style="list-style-type: none"> Replace the battery immediately.
ACUITY CONNECTION LOST	The monitor is not connected to the network. <ul style="list-style-type: none"> Press  to acknowledge and silence the tone and cancel the message. While disconnected from the network, the off-network icon and the yellow LED continue to flash. <p>NOTE: The monitor will continue to attempt to reconnect until it is successful.</p>
EXCESSIVE ECG OFFSET REPLACE ELECTRODES ^a	The monitor detects poor ECG electrode contact. <ul style="list-style-type: none"> Check and replace ECG electrodes as needed.
Chest icon is displayed with flashing ECG electrode(s). ^a	The monitor detects that one or more ECG electrodes are disconnected. <ul style="list-style-type: none"> Check and replace or reconnect electrodes as needed.
NO ECG CABLE DETECTED	<ul style="list-style-type: none"> If the ECG cable has been intentionally removed from the Micropaq, press  to cancel the alert tone. If the ECG cable has been unintentionally removed, plug it back into the monitor. Check the patient and monitor to make sure ECG monitoring resumes properly.
NO SPO2 SENSOR DETECTED	The SpO ₂ sensor has been disconnected for more than 5 seconds. <ul style="list-style-type: none"> If disconnection is intentional, press  to acknowledge and silence the tone. If disconnection is not intentional, reconnect the sensor or replace the sensor and reconnect.
DEFECTIVE SPO2 SENSOR ^a or UNRECOGNIZED SPO2 SENSOR ^a	The SpO ₂ sensor is either defective or not recognized. <ul style="list-style-type: none"> Replace the SpO₂ sensor with a new, compatible SpO₂ sensor.
<key name> KEY STUCK ^a	During the power-up self test, the monitor detected that a key is stuck ( ,  ,  , or ). This can happen if you accidentally press a key down before the Main Menu is displayed during power-up. <ul style="list-style-type: none"> Remove and then reinsert the battery to power up again and see if the key is still stuck. If it is, contact your biomedical engineering department.
System Error Thread: <nnn> Error ID: <nnn>	The equipment problem is so serious the monitor cannot be used. <ul style="list-style-type: none"> Contact your biomedical engineering department.

a. This alert message can be acknowledged from Acuity, but not from Micropaq.

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Monitor Patient at Acuity

While the Micropaq is connected to the FlexNet network, patient data gathered by the Micropaq is continuously stored at Acuity. You can access this patient information at the Acuity Central Station and perform administrative functions, including:

- Admit (and discharge) a patient in the Acuity unit.
- Edit the patient description (name, physician, etc.).
- Review and print patient data such as trends and waveforms.
- Suspend patient alarm tones for 90 seconds and resume the alarm tones

For more information about using the Acuity Central Workstation, refer to:

- *Acuity Directions For Use*