



# InnovaMass 240i/241i Quick Tuning Guide

This Quick Tuning Guide is applicable for models:  
InnovaMass® 240i/241i

This guide is intended to offer specific information to make adjustments to your meter settings in the field and do basic troubleshooting through your local display or the Smart Interface Portal (SIP) software.

**IMPORTANT.** Before installing meter, follow the steps below.

## Step 1. Download Manual

To get more technical information on the InnovaMass 240i/241i, refer to the InnovaMass 240i/241i Instruction Manual and the Smart Interface Portal (SIP) Manual. Download the most current 240i/241i manuals and software at [www.sierrainstruments.com/download/series](http://www.sierrainstruments.com/download/series)

## Step 2. Download Software- Get Apps

Download the most current SIP software at [www.sierrainstruments.com/sip/innovamass](http://www.sierrainstruments.com/sip/innovamass). **Important.** If you are going to be installing your meter in a location that does not have Internet connection, you must download and save installation software to a USB stick.

## Use ValidCal™ Diagnostics for Quick Meter Validation

Once your meter is powered on and your SIP software is installed, the meter will report any hardware faults by displaying a flashing "!" on both the local display and the Smart Interface Portal (SIP). Hover over the "!" on the SIP to get a description of the detected error and click the "!" to automatically run the ValidCal Diagnostic tests. You can also select the "ValidCal Diagnostics" quick key on the main menu. To run the ValidCal diagnostics test, click "run tests" (See Figure 1). To further analyze the problem, use the Meter Tuning function on the SIP (See page 2).

You can also use your local display keys for ValidCal Diagnostics, refer to the InnovaMass 240i/241i Instruction Manual, Chapter 3.

## ValidCal Hardware Validation Error Codes & Troubleshooting

Here is a list of possible error codes from the ValidCal hardware diagnostic (See Figure 1) and solutions to address each error code. For more troubleshooting information, go to the ValidCal Diagnostics troubleshooting section in the InnovaMass SIP Manual, p. 17.

Hardware Diagnostic Errors	Troubleshooting & Solutions
<b>Flow Sensor Issues</b>	The sensor may have been damaged which can be caused by water hammer or excessive velocity. <ul style="list-style-type: none"> <li>Go to the Low-High FTP button (See Figure 1) to check the highest velocity recorded.</li> <li>The maximum velocity spec is 30 fps for a liquid; 300 fps for a gas. If these velocities have been exceeded, the sensor may have been damaged.</li> <li>Pull the probe and check for visible damage.</li> </ul>
<b>Temperature Issues or Overrange</b>	Standard Temperature Ranges: -40°F to +392°F [-40°C to +200°C] <ul style="list-style-type: none"> <li>Go to the Low-High FTP button (See Figure 1) to check if the meter's temperature limits have been exceeded.</li> <li>The meter may need to be returned to the factory. If this is not immediately possible, go to the Meter Tuning screen and enter your temperature in the "Fluid Properties Section".</li> </ul>
<b>Pressure XDCR Issues or Over-range</b>	Pressure Ranges: No pressure input (incompressible liquids); MP1: 30 psia; MP2: 100 psia; MP3: 300 psia; MP4: 500 psia <ul style="list-style-type: none"> <li>Go to the Low-High FTP button (See Figure 1) to check if the meter's pressure limits have been exceeded.</li> <li>The meter may need to be returned to the factory. If this is not immediately possible, go to the Meter Tuning screen (See Figure 2) and enter your pressure in the "Fluid Properties Section".</li> </ul>
<b>SD Card Issues</b>	240/241i meters have one SD Card for storing meter data. <ul style="list-style-type: none"> <li>If the SD card is missing or damaged, contact Sierra for a replacement SD card.</li> </ul>
<b>UART Issues</b>	240/241i meters have multiple Universal Asynchronous Receiver/Transmitters (UART) for communications (e.g.USB) <ul style="list-style-type: none"> <li>If the UART is malfunctioning, damaged or disconnected, contact Sierra for remote troubleshooting.</li> <li>The meter may need to be returned to the factory.</li> </ul>
<b>MCU Voltage Issues</b>	240/241i meters have a Microcontroller (MCU) with a nominal voltage range. <ul style="list-style-type: none"> <li>If the MCU is malfunctioning, contact Sierra for remote troubleshooting.</li> <li>The meter may need to be returned to the factory.</li> </ul>
<b>Main Board Button Stuck</b>	240/241i meters have display buttons for navigation and data entry. <ul style="list-style-type: none"> <li>Attempt to unstick the buttons manually.</li> <li>Contact Sierra for remote troubleshooting.</li> <li>The meter may need to be returned to the factory.</li> </ul>
<b>Digital Communications Failure</b>	240/241i meters can be ordered with Digital Communications (Hart, Profibus DR, Foundation Fieldbus). <ul style="list-style-type: none"> <li>If the digital communications malfunctions, contact Sierra for remote troubleshooting.</li> <li>The meter may need to be returned to the factory. If this is not immediately possible, output via 4-20 mA, RS-232, or USB is available.</li> </ul>
<b>Signal Noise</b>	240/241i meters are sensitive to background noise in the application environment (e.g., 60 Hz/50 Hz from power lines). <ul style="list-style-type: none"> <li>Go to the Meter Tuning main screen (See Figure 2) to check the Ok and minimum noise level. Click the "AutoSet" button to reset these values if necessary.</li> <li>The meter's earth ground may be faulty. Verify the meter is properly earth grounded.</li> </ul>



Figure 1. SIP ValidCal Diagnostic Test Results showing all systems are OK