



DTC P0A1F - Internal Cell Communication Fault

Orion Product	Fault Supported
Orion BMS [Original] (24 - 180 Cell)	YES
Orion BMS 2 (24 - 180 Cell)	YES
Orion JR [Original] (16 Cell)	YES
Orion JR 2 (16 Cell)	YES

FAULT DESCRIPTION

This error indicates that the Orion BMS has encountered an error trying to communicate with the isolated circuitry that measure cell tap voltages. This error can be caused by external electrical noise if the BMS is not properly grounded or by an internal hardware failure.

Fault Code	Fault Description	Possible Trouble Area
P0A1F	An internal communication fault (cell voltage measurement) was detected.	<ul style="list-style-type: none">Battery Management System

FAULT BEHAVIOR

This fault will trigger **Voltage Failsafe Mode** which will inhibit the BMS from allowing charging or discharging of the battery pack.

DIAGNOSTIC STEPS

1.	<p>Ensure that the BMS case is properly grounded.</p> <p>Orion BMS / Orion BMS 2:</p> <p>The vast majority of cases of this error are caused by grounding issues. In most applications, the enclosure of the BMS should be grounded to the application chassis which would also be connected to the 12/24v ground, however in some applications without a grounded chassis, it may be necessary to ground the BMS enclosure to the negative wire on the 12/24v power supply or another ground. Please refer to the wiring manual for more information.</p> <p>Orion JR / Orion JR 2:</p> <p>Because the Orion JR / Orion JR 2 enclosure is plastic, it does not need to be grounded. It is still important that the power ground wire be securely connected to the power source ground (whether that be the battery pack itself, or an external power supply). Additionally, it is important to verify that the correct ground wire is being used (there is also a thermistor ground wire that is a similar color which might be used by mistake for this purpose).</p>
2.	<p>Remove all sources of noise and determine if the error returns.</p> <p>Sources of noise include battery chargers, inverters, DC:DC converters and power supplies for the 12v / 24v power source (on Orion BMS / Orion 2 BMS). Additionally, some Earth ground connections may also conduct significant electrical noise. If the error persists even when all devices generating noise are disconnected and turned off, the BMS should be tested by an authorized dealer or the factory to determine if the BMS unit is working properly.</p>
3.	<p>Download the freeze frame for the fault code using the BMS Utility.</p> <p>The BMS will normally produce a freeze frame on the "Diagnostic Trouble Codes" screen in the BMS Utility when this fault code occurs that contains a comprehensive list of BMS data parameters at the time the fault occurred. It is strongly recommended that the freeze frame be downloaded from the BMS and saved to disk before the fault is cleared again as this data may assist in the future if further diagnostics are required. <u>Additionally this freeze frame data may be requested by Technical Support if further assistance is required.</u></p> <p>NOTE: Only Fault Codes with a (F) next to them have freeze frame data available for download. If there is no (F) next to the fault, there is no stored freeze frame available and this step can be skipped.</p>

	<p>Steps to download the Freeze Frame:</p> <ol style="list-style-type: none">1) Connect to the BMS using the Orion BMS utility.2) Click the "Diagnostic Trouble Codes" tab at the top.3) Select the correct fault code by clicking on the ID on the left side of the screen to initiate the Freeze Frame retrieval.4) Once the retrieval process is complete, click the "Export (CSV)" button to save the freeze frame data to the computer disk.
4.	<p>Contact technical support.</p> <p>Please contact the company or reseller that the BMS was originally purchased from for additional questions, warranty claims, repair requests and technical support.</p>