DTC P0A09 - Internal Hardware Fault

Product Family	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 code indicates that the Orion BMS has determined that an internal hardware fault has occurred. If this error message occurs, please download the associated freeze frame data and contact the factory or authorized dealer for assistance. Please save the freeze frame data and send it along with any other relevant information to the factor as it may be crucial for appropriately repairing the unit.

Fault Code	Fault Description	Possible Trouble Area
P0A09: Subcode 14	Invalid battery profile settings detected (settings are corrupted or have not yet been initialized) **Operational Impact:** The BMS will assume a default profile configuration in this state, which is intended to bring the application to a risk addressed state where all primary outputs are off and CAN traffic is suspended.	● Battery Management System ● Configuration Settings
P0A09: Subcode 15	Internal communication failure with onboard non-volatile configuration memory storage **Operational Impact:** The BMS will assume a	● Battery Management System

	default profile configuration in this state, which is intended to bring the application to a risk addressed state where all primary outputs are off and CAN traffic is suspended.	
P0A09: Subcode 16	Analog 0-5v output driver module failure **Operational Impact:** Analog 0-5v outputs may not function properly.	• Battery Management System
P0A09: Subcode 17	Internal communication failure with onboard non-volatile historical memory storage **Operational Impact:** Historical data may not be collected properly and previously collected data may no longer be retrievable.	• Battery Management System
P0A09: Subcode 8000 - 8007	Internal voltage rail fault (voltage out of range) **Operational Impact:** The BMS will not perform any actions directly as a result of these subcodes, however underlying conditions (legitimate problems with the voltage supply rails) may result in abnormal behavior and operation.	• Battery Management System
P0A09: Subcode 8008 / 8010	Internal watchdog redundancy fault. **This fault may occur if there are no cells enabled (loaded) in the battery profile settings.**	• Configuration Settings • Battery Management System

FAULT BEHAVIOR

This fault is **Primarily Informational Only**, however specific subcodes may result in reduced operation / functionality. Please see the Fault Description table above for details.

DIAGNOSTIC STEPS

| 1. | **Download the freeze frame for the fault code using the BMS Utility.**

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>

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.

Steps to download the Freeze Frame:

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. |
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| 2. | **Contact technical support.**

Please contact the company or reseller that the BMS was originally purchased from for additional questions, warranty claims, repair requests and technical support. |