DTC P0A05 - Input Power Supply Fault

Orion Product	Fault Supported
Orion BMS [Original] (24 - 180 Cell)	**YES**
Orion BMS 2 (24 - 180 Cell)	**YES**
Orion JR (16 Cell)	**NO**

FAULT DESCRIPTION

The Orion BMS has multiple input power sources for operation. Of these inputs that are used, the **minimum voltage must be at least 9vDC** and a **maximum voltage of no more than 30vDC**. If the BMS is not receiving stable voltage this fault will be set indicating that it cannot properly operate.

Fault Code	Fault Description	Possible Trouble Area
P0A05: Subcode 1	Input power supply voltage to the BMS is too low	• Main I/O Wire Assembly • Power Supply Fuse • External Power Supply
P0A05: Subcode 2	Input power supply voltage to the BMS is too high	• Main I/O Wire Assembly • Power Supply Fuse • External Power Supply

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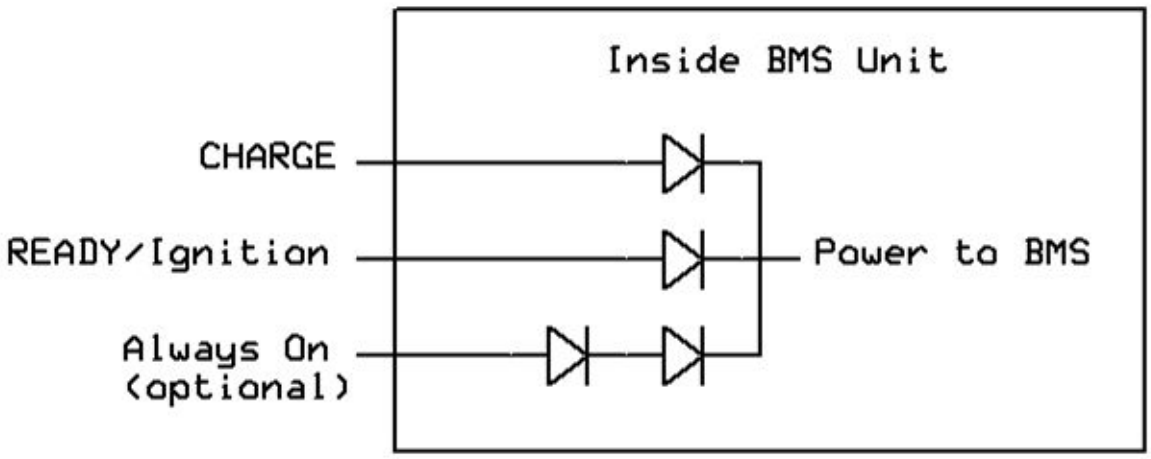
FAULT BEHAVIOR

This fault will trigger **Voltage Failsafe Mode** which will inhibit certain BMS functions including **Current Sensor operation** and **Relay Output operation**. This failsafe condition will be cleared once proper power is restored to the BMS.

FAULT THRESHOLDS

Fault will trigger when **ONE** of the following conditions are satisfied	(a) **OR** (b)
(a) Voltage of BMS input power is too low	Input power voltage to the BMS is lower than 9vDC for more than 5 seconds.
(b) Voltage of BMS input power is too high	Input power voltage to the BMS is higher than 32vDC for more than 5 seconds.

WIRING DIAGRAM



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DIAGNOSTIC STEPS

1.	**Measure the voltage of the power supply to the BMS with a meter.** Manually measure the voltage being supplied to the BMS. If the measured power input voltage is lower than 12v nominal (9vDC absolute minimum) OR higher than 30vDC then this will need to be resolved. The BMS requires a minimum nominal voltage of 12v on any power inputs. Keep in mind that the voltage may vary at different times (such as a brownout due to an intermittendly bad DC:DC converter). High or low operating voltages can be caused by a bad ground connection or corroded connector contacts. **NOTE**: This fault does not apply to the Orion JR.
2.	**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. Additionally this freeze frame data may be requested by Technical Support if further assistance is required. **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.
3.	**If the problem persists, contact technical support.** If all above steps fail to determine the cause of the fault then additional support is needed. **Please contact the company or reseller that the BMS was originally purchased from for additional questions, warranty claims, repair requests and technical support.**

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