



DTC P0560 - Redundant Power Supply Fault

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

FAULT DESCRIPTION

The Orion BMS has multiple input power sources for operation. The Always On Power (Pin 1) power supply input provides the BMS with the ability to enter a low power sleep while the main power sources are off to keep power consumption to a minimum. This sleep mode allows for a faster boot-up sequence as well as the retention of certain information. If the BMS detects that this supply line is no longer available (and the power supply is enabled in the BMS profile settings) it will set a fault code to alert the operator.

IMPORTANT NOTE: The Always On power supply is not required on the Orion BMS and can be disabled in the BMS profile settings on the "General Settings" tab. If the power supply is disabled then the fault code will not be set.

| Fault Code | Fault Description | Possible Trouble Area |
|---------------------|---|---|
| P0560: Subcode 1 | <u>Always On Power (Pin 1)</u> is not energized when the power supply is enabled in the BMS profile settings. | <ul style="list-style-type: none"> • Main I/O Wire Assembly • Power Supply Fuse • Configuration Settings |
| P0560: Subcode 2 | <u>Always On Power (Pin 1)</u> is energized AND <u>Ignition Signal (Pin 13)</u> is energized but neither | <ul style="list-style-type: none"> • Main I/O Wire Assembly • Power Supply Fuse |

| | | |
|--|---|--|
| | <u>Ready Power (Pin 2)</u> nor <u>Charge Power (Pin 3)</u> are energized. | <ul style="list-style-type: none"> • Configuration Settings |
|--|---|--|

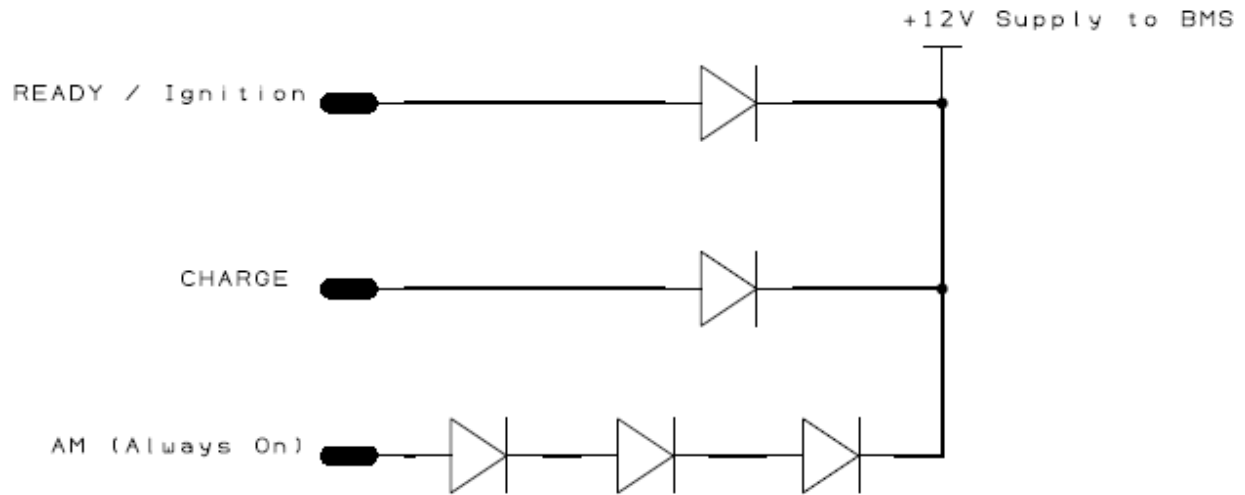
FAULT BEHAVIOR

This fault is **Informational Only** and does not alter the operation of the BMS in any way.

FAULT THRESHOLDS

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| Fault will trigger when ONE of the following conditions are satisfied | (a) OR (b) |
| (a) Voltage measured at <u>Always On Power (Pin 1)</u> | Measured voltage on <u>Always On Power (Pin 1)</u> is lower than 9vDC for more than 5 seconds and the Always On power source is enabled in the BMS profile settings. |
| (b) <u>Always On Power (Pin 1)</u> and <u>Ignition Signal (Pin 13)</u> is energized but <u>Ready Power (Pin 2)</u> and <u>Charge Power (Pin 3)</u> are not energized | If Always On power is energized as well as the Ignition Signal input (keep awake), but neither Charge Power nor Ready Power are energized then the BMS assumes one of the primary power sources has failed. |

WIRING DIAGRAM



Above diagram indicates how the power supplies are handled internal to the BMS.

DIAGNOSTIC STEPS

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| 1. | Determine if the BMS should have the Always On power source. If the application does not require the use of Always On power then this power supply can be disabled on the "Fault Settings" tab of the BMS profile settings. It is OK to have the Always On power supply energized even if the <u>Always On Power (Pin 1)</u> power supply is disabled in the profile settings. |
| 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. <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. |

| | |
|------------------|---|
| | <ul style="list-style-type: none"> 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. |
| <p>3.</p> | <p>Review the wiring for the Always On power supply input.</p> <p>Inspect the fan blower control signal wiring and the fan monitor wiring for breaks or cuts.</p> <ul style="list-style-type: none"> a) Disconnect the Main I/O harness from the BMS and measure the <u>Always On Power (Pin 1)</u> pin on the connector with a multimeter against <u>Ground (Pin 12)</u>. This should read at least 9vDC for proper operation. b) Inspect any and all fuses that are inline with the power going to the Always On power supply input on the BMS and replace any blown fuses. The fuse must be no larger than 5A. c) Verify the Ground (Pin 12) is connected and undamaged. d) Wiggle the wiring at the BMS to determine if a connection might be loose. |
| <p>4.</p> | <p>If the problem persists, contact technical support.</p> <p>If all above steps fail to determine the cause of the fault then additional support is needed.</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> |