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2017 FORD Mustang Convertible OEM Service and Repair Workshop Manual

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Condition	Possible Sources	Actions
System voltage high	REFER to pinpoint test	GO to Pinpoint Test F
System voltage low or battery is discharged	REFER to pinpoint test	GO to Pinpoint Test G
Charging system warning indicator is never or always On	REFER to pinpoint test	GO to Pinpoint Test H

Pinpoint Tests

PINPOINT TEST A : BATTERY MONITORING SENSOR FAULTS

Refer to Wiring Diagrams Cell 012-5 for schematic and connector information.

Normal Operation and Fault Conditions The BCM (body control module) monitors the battery state of charge using the battery monitoring sensor attached to the negative battery cable. Battery voltage is hardwired to the battery monitoring sensor and data is transferred from the battery monitoring sensor to the BCM (body control module) via a LIN (local interconnect network) circuit. **DTC Fault Trigger**

Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B11DB:02	Battery Monitoring Module 'A': General Signal Failure	This DTC (diagnostic trouble code) sets if the BCM (body control module) receives corrupted data from the battery monitoring sensor over the LIN (local interconnect network) .
BCM (body control module) B11DB:08	Battery Monitoring Module 'A': Bus Signal/Message Failures	This DTC (diagnostic trouble code) sets if the BCM (body control module) receives corrupted data from the battery monitoring sensor over the LIN (local interconnect network) .
BCM (body control module) B11DB:09	Battery Monitoring Module 'A': Component Failures	This DTC (diagnostic trouble code) sets if the BCM (body control module) detects a fault on the battery monitoring sensor LIN (local interconnect network) .
BCM (body control module) B11DB:11	Battery Monitoring Module 'A': Circuit Short To Ground	This DTC (diagnostic trouble code) sets if the BCM (body control module) detects low voltage on the battery monitoring sensor LIN (local interconnect network) .

No	REPAIR any corrosion in the battery cable connections. REPAIR any damaged, bent or pushed-out pins.
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A2 RETRIEVE BCM (BODY CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE)

- Ignition ON.
- Using a diagnostic scan tool, clear all DTC (diagnostic trouble code) in all modules.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test.

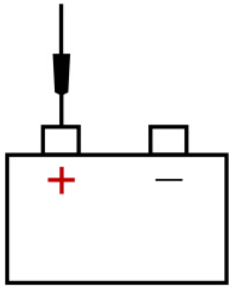

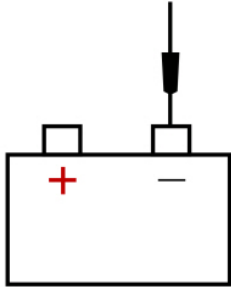
Did the DTC (diagnostic trouble code) return?

Yes	GO to A3
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No	For any PCM (powertrain control module) or BCM (body control module) DTC (diagnostic trouble code) refer to DTC (diagnostic trouble code) charts in this section. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.
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A3 CHECK THE BMS (BATTERY MONITORING SENSOR) SUPPLY VOLTAGE

- Ignition OFF.
- Disconnect BMS (battery monitoring sensor) C1689 .
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
		

- Ignition OFF.
- Disconnect BCM (body control module) C2280F .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1689-1	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A6
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No	REPAIR the circuit.
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A6 CHECK THE BATTERY MONITORING SENSOR LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1689-1	Ω	C2280F-4

Is the resistance less than 3 ohms?

Yes	<p>INSTALL a new battery monitoring sensor.</p> <p>REFER to: Battery Monitoring Sensor (414-01 Battery, Mounting and Cables, Removal and Installation).</p> <p>CLEAR all Diagnostic Trouble Codes and PERFORM self-test again.</p>
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No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.
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PINPOINT TEST B : B11DB:49

Normal Operation and Fault Conditions

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B11DB:49	Battery Monitoring Module 'A': Internal Electronic Failure	Sets in the BCM (body control module) when an internal electronic failure is detected.

Possible Sources

- BCM (body control module)

B1 RETRIEVE BCM (BODY CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC (diagnostic trouble code) .
- Wait 10 seconds.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test.

Is DTC (diagnostic trouble code) B11DB:49 recorded?

Yes	INSTALL new battery monitoring sensor. REFER to: Battery Monitoring Sensor (414-01 Battery, Mounting and Cables, Removal and Installation).
No	The system is operating correctly at this time.

PINPOINT TEST C : B11DB:55

Normal Operation and Fault Conditions

PINPOINT TEST D : B130C:12 AND B130C:14

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B130C:12	Load Shed Control: Circuit Short To Battery	The DTC (diagnostic trouble code) sets in the BCM (body control module) , when load shed control circuit is detected short to Battery.
BCM (body control module) B130C:14	Load Shed Control: Circuit Short To Ground Or Open	DTC (diagnostic trouble code) sets in the BCM (body control module) , when load shed control circuit is detected short to ground or Open.

Possible Sources

- BMS (battery monitoring sensor)

D1 INSPECT THE BMS (BATTERY MONITORING SENSOR)

- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test.

Is load shed control circuit short to Battery / ground or Open?

Yes	CHECK the vehicle service history for recent service actions related to this module. This DTC (diagnostic trouble code) sets due to incomplete or incorrect PMI (programmable module installation) procedures. INSTALL As-Built data from PTS (Professional Technician System) s following diagnostic scan tool instructions under Module Programming>As-Built.
No	The system is operating correctly at this time.

PINPOINT TEST E : P057F

Normal Operation and Fault Conditions

CHECK the vehicle service history for recent service actions related to this module.

DTC Fault Trigger Conditions

Refer to Wiring Diagrams Cell 12 for schematic and connector information.

Normal Operation and Fault Conditions REFER to: [Direct Current/Direct Current \(DC/DC\) Converter Control Module](#)

(414-05 Voltage Converter/Inverter, Diagnosis and Testing).

Possible Sources

- Wiring, terminals or connectors
- DC (direct current) / DC (direct current) Converter Control Module
- PCM (powertrain control module)

Diagnostic steps are not provided for this symptom or DTC. REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

PINPOINT TEST H : CHARGING SYSTEM WARNING INDICATOR IS NEVER OR ALWAYS ON

Refer to Wiring Diagrams Cell 12 for schematic and connector information.

Normal Operation and Fault Conditions

RETRIEVE DTC (diagnostic trouble code) s from all modules. If any charging system DTC (diagnostic trouble code) s are found, Refer to DTC (diagnostic trouble code) Chart in this section. If no charging system DTC (diagnostic trouble code) s are found, REFER to: Instrumentation, Message Center and Warning Chimes (413-01) .

Possible Sources

- Wiring, terminals or connectors
- IPC (instrument panel cluster) procedures
- PCM (powertrain control module)
- BCM (body control module)
- DC (direct current) DC (direct current)

Diagnostic steps are not provided for this symptom or DTC. REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

BCM (body control module)	B11DB:55	Battery Monitoring Module "A": Not Configured	GO to Pinpoint Test C
BCM (body control module)	B11DB:9A	Battery Monitoring Module "A": Component or System Operating Conditions	GO to Pinpoint Test A
BCM (body control module)	B130C:12	Load Shed Control: Circuit Short To Battery	GO to Pinpoint Test D
BCM (body control module)	B130C:14	Load Shed Control: Short To Ground or Open	GO to Pinpoint Test D
BCM (body control module)	B1489:11	Battery Monitoring System (BMS) Sensor Power: Circuit Short To Ground	GO to Pinpoint Test A
PCM (powertrain control module)	P057F:00	Battery State of Charge Performance: No Sub Type Information	GO to Pinpoint Test E

Global Customer Symptom Code (GCSC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

Global Customer Symptom Code Chart

Customer Symptom	Action
Driver Aides & Information > Warning Indicators/Messages/Chimes > Charging System > Stays On	GO to Pinpoint Test F
Driver Aides & Information > Warning Indicators/Messages/Chimes > Charging System > Stays On	GO to Pinpoint Test G
Driver Aides & Information > Warning Indicators/Messages/Chimes > Charging System > Stays On	GO to Pinpoint Test H

Inspection and Verification

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Normal Operation and Fault Conditions The BCM (body control module) monitors the battery state of charge using the battery monitoring sensor attached to the negative battery cable. Battery voltage is hardwired to the battery monitoring sensor and data is transferred from the battery monitoring sensor to the BCM (body control module) via a LIN (local interconnect network) circuit. **DTC Fault Trigger**

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BCM (body control module) B11DB:08	Battery Monitoring Module 'A': Bus Signal/Message Failures	This DTC (diagnostic trouble code) sets if the BCM (body control module) receives corrupted data from the battery monitoring sensor over the LIN (local interconnect network) .
BCM (body control module) B11DB:09	Battery Monitoring Module 'A': Component Failures	This DTC (diagnostic trouble code) sets if the BCM (body control module) detects a fault on the battery monitoring sensor LIN (local interconnect network) .
BCM (body control module) B11DB:11	Battery Monitoring Module 'A': Circuit Short To Ground	This DTC (diagnostic trouble code) sets if the BCM (body control module) detects low voltage on the battery monitoring sensor LIN (local interconnect network) .
BCM (body control module) B11DB:9A	Battery Monitoring Module 'A': Component or System Operating Conditions	This DTC (diagnostic trouble code) sets if the BCM (body control module) receives corrupted data from the battery monitoring sensor over the LIN (local interconnect network) .
BCM (body control module) B1489:11	Battery Monitoring System (BMS) Sensor Power: Circuit Short To Ground	This DTC (diagnostic trouble code) sets if the BCM (body control module) receives no data from the battery monitoring sensor over the LIN (local interconnect network) .

Possible Sources

- Battery monitoring sensor
- BCM (body control module)

No

For any PCM (powertrain control module) or BCM (body control module) DTC (diagnostic trouble code) refer to DTC (diagnostic trouble code) charts in this section. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

A3 CHECK THE BMS (BATTERY MONITORING SENSOR) SUPPLY VOLTAGE

Sample