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## 2018 FORD Mustang Convertible OEM Service and Repair Workshop Manual

Go to manual page

| | | |
|---|---|---|
| C1689-2 | V | Ground |

**Is the voltage within 0.5 volt of the recorded battery voltage?**

| | |
|---|---|
| **Yes** | GO to K4 |

| | |
|---|---|
| **No** | VERIFY BJB (battery junction box) fuse 201(300A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short. |

**K4 CHECK THE BATTERY MONITORING SENSOR LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE**

- Ignition OFF.
- Disconnect BCM (body control module) C2280F .
- Disconnect BMS (battery monitoring sensor) C1689 .
- Ignition ON.
- Measure:

| Positive Lead | Measurement / Action | Negative Lead |
|---|---|---|
| C1689-1 | V | Ground |

**Is any voltage present?**

| | |
|---|---|
| **Yes** | REPAIR the circuit. |

| | |
|---|---|
| **No** | GO to K5 |

**K5 CHECK THE BATTERY MONITORING SENSOR LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO GROUND**

- Ignition OFF.

**K7 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION**

- Ignition OFF.
- Disconnect and inspect all BCM (body control module) connectors.
- Repair:
  - corrosion (install new connector or terminals – clean module pins)
  - damaged or bent pins – install new terminals/pins
  - pushed-out pins – install new pins as necessary
- Reconnect the BCM (body control module) connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

**Is the concern still present?**

| | |
|---|---|
| **Yes** | CHECK OASIS (Online Automotive Service Information System) for any applicable Technical Service Bulletins (TSBs). If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW the TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new BCM (body control module) .<br>REFER to: Body Control Module (BCM)<br>(419-10 Multifunction Electronic Modules, Removal and Installation). |

| | |
|---|---|
| **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. |

**PINPOINT TEST L : 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)

| | |
|---|---|
| **No** | GO to M2 |

**M2 RELEARN THE BATTERY MONITOR SYSTEM (BMS) STATUS**

- Using the service scan tool, run the BMS (battery monitoring sensor) reset function.
- Using a diagnostic scan tool, perform the BCM (body control module) self-test.

**Is the B11DB:55 still stored?**

| | |
|---|---|
| **Yes** | Locate the part number on the BMS (battery monitoring sensor) installed and ensure it is the correct BMS (battery monitoring sensor) for this vehicle using the Ford Parts catalog. Replace the BMS (battery monitoring sensor) with the correct component.<br>REFER to: Battery Monitoring Sensor<br>(414-01 Battery, Mounting and Cables, Removal and Installation). |

| | |
|---|---|
| **No** | Verify repairs are completed and that the customer symptom has been resolved. |

**PINPOINT TEST N : BATTERY CURRENT SENSOR FAULTS**

**Normal Operation and Fault Conditions**

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

**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 | This DTC (diagnostic trouble code) sets in the BCM (body control module) when the BCM (body control module) senses a short in the battery current sensor control circuit. |
| BCM (body control module) B130C:14 | Load Shed Control: Circuit Short To Ground Or Open | This DTC (diagnostic trouble code) sets in the BCM (body control module) when the BCM (body control module) senses an open or ground in the battery current sensor control circuit. |

- Inspect the battery current sensor for the following:
  - physical damage
  - corrosion
  - disconnected electrical connector
  - battery ground cable routed through the battery current sensor
  - debris between the battery current sensor and the battery ground cable

**Are any of these conditions found during inspection?**

| | |
|---|---|
| **Yes** | REPAIR as necessary or INSTALL a new battery current sensor. REFER to: Battery Current Sensor (414-01 Battery, Mounting and Cables, Removal and Installation). |

| | |
|---|---|
| **No** | GO to N2 |

**N2 CHECK THE BATTERY CURRENT SENSOR REFERENCE VOLTAGE CIRCUIT**

- Ignition OFF.
- Disconnect Battery current sensor C3888 .
- Ignition ON.
- Measure:

| Positive Lead | Measurement / Action | Negative Lead |
|---|---|---|
| C3888-1 | V | Ground |

**Is the voltage between 4.8 and 5.2 volts?**

| | |
|---|---|
| **Yes** | GO to N6 |

| | |
|---|---|
| **No** | If the voltage is less than 4.8 volts, GO to N4 If the voltage is greater than 5.2 volts, GO to N3 |

**N3 CHECK THE BATTERY CURRENT SENSOR REFERENCE VOLTAGE CIRCUIT FOR A SHORT TO VOLTAGE**

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

| Positive Lead | Measurement / Action | Negative Lead |
|---|---|---|
| C3888-1 | Ω | Ground |

**Is the resistance greater than 10,000 ohms?**

| | |
|---|---|
| **Yes** | GO to N5 |

| | |
|---|---|
| **No** | REPAIR the circuit. |

**N5 CHECK THE BATTERY CURRENT SENSOR REFERENCE VOLTAGE CIRCUIT FOR AN OPEN**

- Measure:

| Positive Lead | Measurement / Action | Negative Lead |
|---|---|---|
| C3888-1 | Ω | C2280F-3 |

**Is the resistance less than 3 ohms?**

| | |
|---|---|
| **Yes** | GO to N13 |

| | |
|---|---|
| **No** | REPAIR the circuit. |

**N6 CHECK THE BATTERY CURRENT SENSOR SIGNAL RETURN CIRCUIT**

- Measure:

| | | |
|---|---|---|
| C3888-2 | Ω | C2280F-19 |

**Is the resistance less than 3 ohms?**

| | |
|---|---|
| **Yes** | GO to N13 |

| | |
|---|---|
| **No** | REPAIR the circuit. |

**N9 CHECK THE BATTERY CURRENT SENSOR FEEDBACK CIRCUIT FOR A SHORT TO VOLTAGE**

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

| Positive Lead | Measurement / Action | Negative Lead |
|---|---|---|
| C3888-3 | V | Ground |

**Is any voltage present?**

| | |
|---|---|
| **Yes** | REPAIR the circuit. |

| | |
|---|---|
| **No** | GO to N10 |

**N10 CHECK THE BATTERY CURRENT SENSOR FEEDBACK CIRCUIT FOR A SHORT TO GROUND**

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

| | | |
|---|---|---|
| C3888-3 | Ω | C3888-1 |
| C3888-3 | Ω | C3888-2 |

**Are the resistance greater than 10,000 ohms?**

| | |
|---|---|
| **Yes** | GO to N13 |

| | |
|---|---|
| **No** | REPAIR the affected circuit. |

**N13 CHECK THE BATTERY CURRENT SENSOR CONNECTION**

| | |
|---|---|
| **Yes** | Check OASIS (Online Automotive Service Information System) for any applicable TSB (Technical Service Bulletin) s. If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW the TSB (Technical Service Bulletin) instructions. If no TSB (Technical Service Bulletin) s address this concern, INSTALL a new BCM.<br>REFER to: Body Control Module (BCM)<br>(419-10 Multifunction Electronic Modules, Removal and Installation). |

| | |
|---|---|
| **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. |

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

**Normal Operation and Fault Conditions**

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

**Possible Sources**

- Wiring, terminals or connectors
- IPC (instrument panel cluster) procedures.
- Generator

**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 Aid & Information > Warning Indicators/Messages/Chimes > Charging System > Flashes | GO to Pinpoint Test A |
| Driver Aid & Information > Warning Indicators/Messages/Chimes > Charging System > Flashes | GO to Pinpoint Test F |
| Driver Aid & Information > Warning Indicators/Messages/Chimes > Charging System > Flashes | GO to Pinpoint Test G |
| Driver Aid & Information > Warning Indicators/Messages/Chimes > Charging System > Stays On | GO to Pinpoint Test A |
| Driver Aid & Information > Warning Indicators/Messages/Chimes > Charging System > Stays On | GO to Pinpoint Test F |