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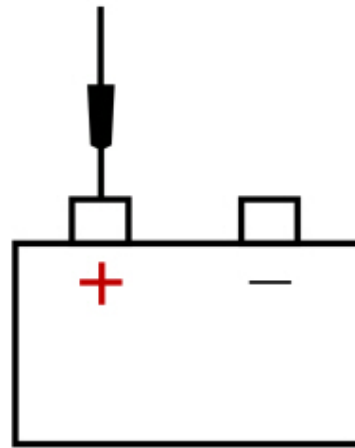
2011 FORD Mondeo Hatchback OEM Service and Repair Workshop Manual

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C1721-1



E142358



12V BATTERY POST (B+)

Does the test lamp illuminate?

Yes

GO to [AH7](#)

No

Remove G107 and clean mounting surface. Reinstall the ground bolt and retest. If the concern remains REPAIR the circuit.

AH7 CHECK THE HIGH VOLTAGE BATTERY COOLANT PUMP CONTROL CIRCUIT FOR A SHORT TO VOLTAGE

- Disconnect High Voltage Battery C144 .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1721-3		Ground

Is there any voltage present?

Yes

REPAIR the circuit. Clear the BECM (battery energy control module) DTC's. Repeat the self-test.

No	REPAIR the circuit. Clear the BECM (battery energy control module) DTC's. Repeat the self-test.
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AH10 CHECK THE HIGH VOLTAGE BATTERY COOLANT PUMP CIRCUITS FOR A SHORT TOGETHER

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1721-1	Ω	C1721-2
C1721-1	Ω	C1721-3
C1721-2	Ω	C1721-3

Is the resistance greater than 10,000 ohms?

Yes	GO to AH11
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No	REPAIR the circuits. Clear the BECM (battery energy control module) DTC's. Repeat the self-test.
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AH11 CLEAR ALL BECM (BATTERY ENERGY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES

- Inspect C1721 and C144 for:
 - corrosion (replace connector or terminals – clean module pins)
 - damaged or bent pins – replace terminals/pins
 - pushed-out pins – replace pins as necessary
- Reconnect all disconnected connectors. Make sure they seat and latch correctly.
- Ignition ON.
- Using a diagnostic scan tool, CLEAR all BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).

REFER to: [High Voltage Battery - Electric](#)(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).

- Remove the high voltage battery cover.

REFER to: [High Voltage Battery Cover - Electric](#)(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).

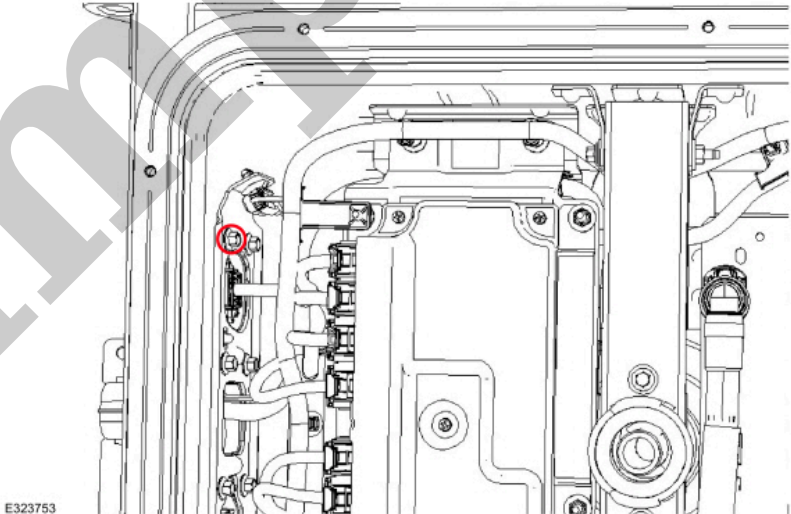
- DISCONNECT all the BECM (battery energy control module) connectors in sequence.

REFER to: [Battery Energy Control Module \(BECM\) - Electric](#)(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).

- Measure:

NOTE

Any of the connector mounting bolts can be utilized for case ground.

Positive Lead	Measurement / Action	Negative Lead
C4816B-9	Ω	 E323753 CASE GROUND

Is the resistance greater than 10,000 ohms?

Yes	GO to AH15
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No	INSTALL a new wiring harness. REFER to: High Voltage Battery Wiring Harness - Electric
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Yes	<p>INSTALL a new high voltage battery connector assembly.</p> <p>REFER to: High Voltage Battery Connector Assembly - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).</p> <p>Re-install the high voltage battery cover and the high voltage battery. Repower the high voltage system. REFER to: High Voltage System De-energizing - Electric (414-03A High Voltage Battery, Mounting and Cables, General Procedures).</p> <p>Clear the BECM (battery energy control module) DTC's. Repeat the self-test.</p>
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No	<p>INSTALL a new wiring harness.</p> <p>REFER to: High Voltage Battery Wiring Harness - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).</p> <p>Re-install the high voltage battery cover and the high voltage battery. Repower the high voltage system. REFER to: High Voltage System De-energizing - Electric (414-03A High Voltage Battery, Mounting and Cables, General Procedures).</p> <p>Clear the BECM (battery energy control module) DTC's. Repeat the self-test.</p>
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AH15 CHECK THE HIGH VOLTAGE BATTERY COOLANT PUMP CONTROL CIRCUIT INSIDE THE HIGH VOLTAGE BATTERY PACK FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4816B-9	Ω	C144-19 (male side)

Is the resistance less than 3 ohms?

Yes	<p>CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new BECM (battery energy control module) .</p> <p>REFER to: Battery Energy Control Module (BECM) - Electric</p>
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Clear the BECM (battery energy control module) DTC's. Repeat the self-test
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AH17 ACTIVE COMMAND THE COOLANT PUMP ON AND MONITOR THE COOLANT PUMP STATUS

- Access the BECM (battery energy control module) and control the COOL_PMP_A_CMD (Coolant Pump - A- Control Speed - Commanded) (%) PID (parameter identification)
- Using the scan tool, active command the coolant pump to 100%.
- Access the BECM (battery energy control module) and monitor the COOLPMP_A_STAT (Coolant Pump - A- Control Diagnostic Status) PID (parameter identification)
- With the help of an assistant, perform a wiggle test on the coolant pump wiring harness while monitoring the coolant pump status PID (parameter identification) .

Did the coolant pump status PID (parameter identification) change to a fault status during the wiggle test?

Yes

REPAIR the wiring and/or connector concern. Clear the BECM (battery energy control module) DTC's. Repeat the self-test.

No

The concern is not present at this time.

PINPOINT TEST AI : P2BC5:00, P2BC6:00, P2BCC:00

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

Normal Operation and Fault Conditions The DC (direct current) charge contactors are downstream of the main contactors and are utilized during DC (direct current) charging. When the main and DC (direct current) charge contactors are closed a high voltage circuit is completed from the high voltage battery to the DC (direct current) terminals at the charge port. When the ignition is turned on, the BECM (battery energy control module) checks the operation of the contactors. The BECM (battery energy control module) monitors the voltage at the sense circuits downstream of the contactors to verify if they open and close correctly. If a fault is detected the wrench indicator will illuminate for each DTC (diagnostic trouble code) and DC (direct current) fast charging is disabled. For DTC (diagnostic trouble code) P2BC5:00 the fault is latched until the DTC (diagnostic trouble code) cleared using a scan tool. **DTC Fault Trigger Conditions**

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
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AI1 REVIEW ALL BECM (BATTERY ENERGY CONTROL MODULE) DTCS

- Review all the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).

Are Diagnostic Trouble Codes (DTCs) P2BC7:00, P2BC9:00, P2BCA:00, P2BCE:00, P2BD0:00, P2BD1:00, and/or U3012:00 present?

Yes	REFER to the BECM (battery energy control module) DTC (diagnostic trouble code) chart and diagnose the Diagnostic Trouble Codes (DTCs) first.
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No	GO to AI2
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AI2 CHECK THE CONTACTOR VOLTAGE SENSE CIRCUIT CONNECTOR FOR BEING FULLY SEATED

- Ignition OFF.
- Depower the high voltage system.
REFER to: [High Voltage System De-energizing - Electric](#)(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Remove the high voltage battery.
REFER to: [High Voltage Battery - Electric](#)(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).
- Remove the high voltage battery cover.
REFER to: [High Voltage Battery Cover - Electric](#)(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).
- Disconnect all the BECM (battery energy control module) connectors in sequence.
REFER to: [Battery Energy Control Module \(BECM\) - Electric](#)(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).
- CHECK the High Voltage Battery Junction Box - positive C4815F for being fully seated.

Was the connector fully seated?

Yes	<p>INSTALL a new high voltage battery junction box.</p> <p>REFER to: High Voltage Battery Junction Box - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).</p> <p>Re-install the high voltage battery cover and the high voltage battery into the vehicle. Repower the high voltage system. REFER to: High Voltage System De-energizing - Electric (414-03A High Voltage Battery, Mounting and Cables, General Procedures).</p> <p>GO to AI3</p>
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DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BECM (battery energy control module) P2BC7:00	Battery Charging System Positive Contactor 'B' Control Circuit/Open: No Sub Type Information	Sets when BECM (battery energy control module) senses the positive charging contactor control circuit is faulted.
BECM (battery energy control module) P2BC9:00	Battery Charging System Positive Contactor 'B' Control Circuit Low: No Sub Type Information	Sets if BECM (battery energy control module) senses undercurrent on the positive charging contactor control circuit.
BECM (battery energy control module) P2BCA:00	Battery Charging System Positive Contactor 'B' Control Circuit High: No Sub Type Information	Sets if BECM (battery energy control module) senses overcurrent on the positive charging contactor control circuit.

Possible Sources

- Wiring, terminals or connectors
- High voltage battery junction box
- BECM (battery energy control module)

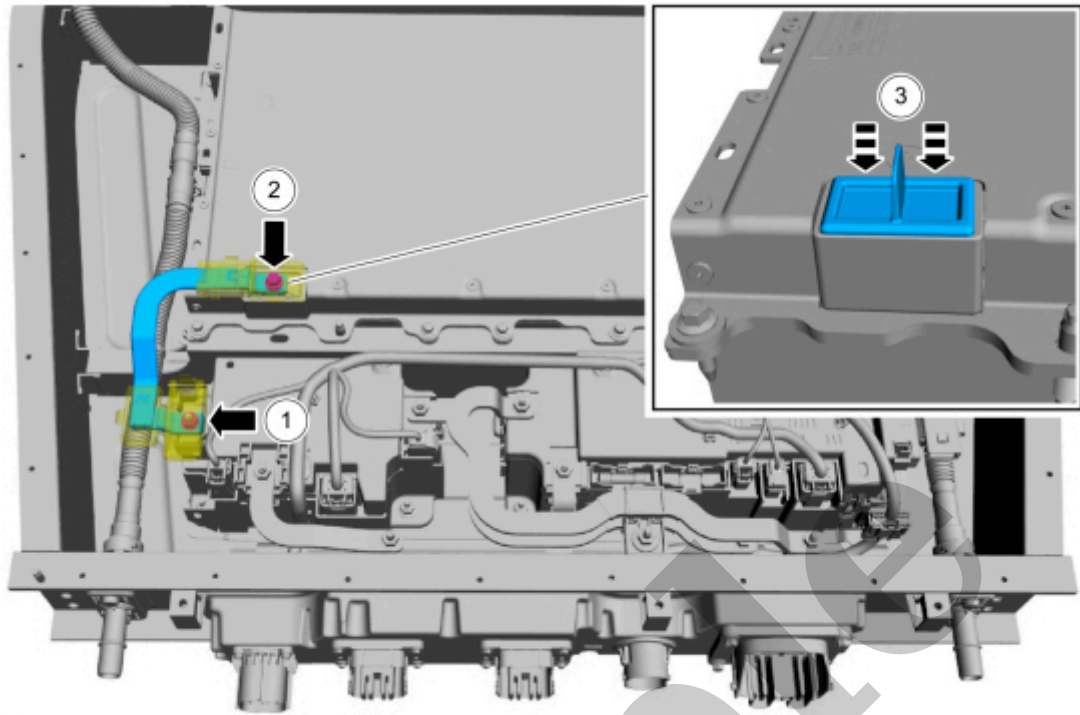
WARNING

To prevent the risk of high-voltage shock, always follow precisely all warnings and service instructions, including instructions to depower the system. The high-voltage system utilizes approximately 450 volts DC, provided through high-voltage cables to its components and modules. The high-voltage cables and wiring are identified by orange harness tape or orange wire covering. All high-voltage components are marked with high-voltage warning labels with a high-voltage symbol. Failure to follow these instructions may result in serious personal injury or death.

NOTICE

Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE



E376354

- Disconnect High Voltage Battery Junction Box C4815G .
- Measure:

NOTE

Any of the BECM (battery energy control module) bracket mounting nuts or high voltage battery pack case can be utilized for case ground.

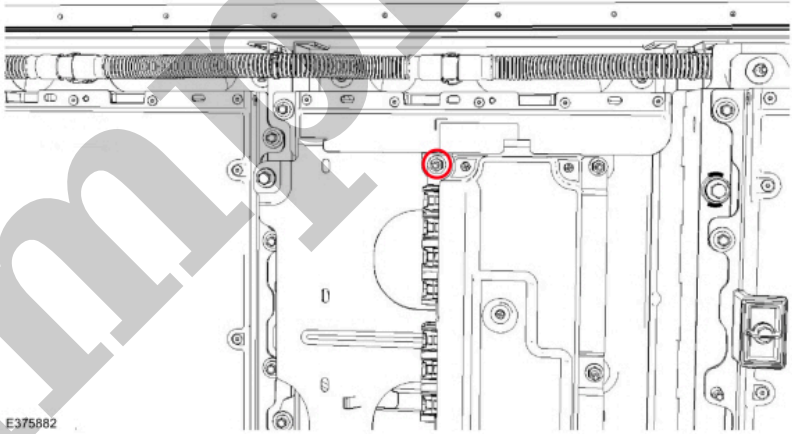
Positive Lead	Measurement / Action	Negative Lead
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AJ3 CONFIRM THE LOCATION OF THE GROUNDED CIRCUIT

- Disconnect BECM (battery energy control module) low voltage inline C4239 .
- Measure:

NOTE

Any of the BECM (battery energy control module) bracket mounting nuts or high voltage battery pack case can be utilized for case ground.

Positive Lead	Measurement / Action	Negative Lead
C4815G-4	Ω	 CASE GROUND