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2001 FORD Mondeo Hatchback OEM Service and Repair Workshop Manual

Go to manual page

For a severe leakage fault the ignition must be left OFF for a minimim of 1 minute or the Diagnostic Trouble Codes (DTC) may not repeat and the leakage PID values may not be valid.

- 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).
- Disconnect GFM2 (generic function module 2) C3003C .
- Connect High Voltage Battery C293 (if not previously connected) .
- Connect GFM3 (generic function module 3) C4631C (vehicles equipped with dual inverters ONLY) .
- Connect DCACA (Direct Current/Alternating Current Converter Module A) (if not previously connected) C4632C .
- Connect SOBDMC (secondary on-board diagnostic control module C) (if not previously connected) C3471B .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Ignition ON
- Using a diagnostic scan tool, view BECM (battery energy control module) PIDs.
- Select the following BECM (battery energy control module) PIDs:
  - Access the BECM (battery energy control module) and monitor the LEAKRESPOS (Leakage Resistance (Bus +)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESNEG (Leakage Resistance (Bus -)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAK_RES_OVERALL (Leakage Resistance (Overall)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESCON (Leakage Resistance (Battery Contactors Open)) (Ohm) PID (parameter identification)
- **NOTE**

  For a severe leakage fault the Diagnostic Trouble Codes (DTCs) must be cleared or the vehicle may not start.

  Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- **NOTE**

  For a severe leakage fault the ignition must be left OFF for a minimim of 1 minute or the

- Disconnect GFM3 (generic function module 3) C4631C .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Ignition ON
- Using a diagnostic scan tool, view BECM (battery energy control module) PIDs.
- Select the following BECM (battery energy control module) PIDs:
  - Access the BECM (battery energy control module) and monitor the LEAKRESPOS (Leakage Resistance (Bus +)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESNEG (Leakage Resistance (Bus -)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAK_RES_OVERALL (Leakage Resistance (Overall)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESCON (Leakage Resistance (Battery Contactors Open)) (Ohm) PID (parameter identification)
- **NOTE**

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  Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- **NOTE**

  For a severe leakage fault the ignition must be left OFF for a minimim of 1 minute or the Diagnostic Trouble Codes (DTC) may not repeat and the leakage PID values may not be valid.

  Ignition OFF for a minimum of 1 minute.
- **NOTE**

  Once the ignition is switched to ON the scan tool requires 10 seconds to re-establish the connection. Once the connection is established there will be 10 seconds of viewable data before the contactors open and the PID values default to a normal value of 1.6M ohms making it appear the vehicle fault is no longer present. This does not apply to a mild leakage fault.

  While viewing datalogger, switch the ignition ON and select continue.

Are LEAKRESPOS, LEAKRESNEG and LEAK_RES_OVERALL read greater than 400,000 ohms for at least 10 seconds?

For a severe leakage fault the Diagnostic Trouble Codes (DTCs) must be cleared or the vehicle may not start.

Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).

- **NOTE**

  For a severe leakage fault the ignition must be left OFF for a minimim of 1 minute or the Diagnostic Trouble Codes (DTC) may not repeat and the leakage PID values may not be valid.

  Ignition OFF for a minimum of 1 minute.

- **NOTE**

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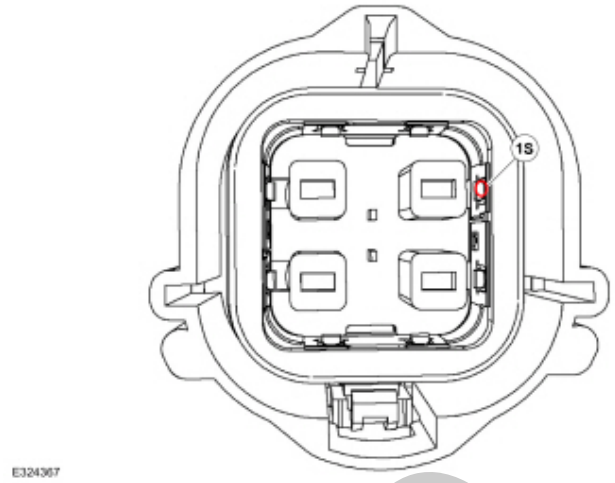
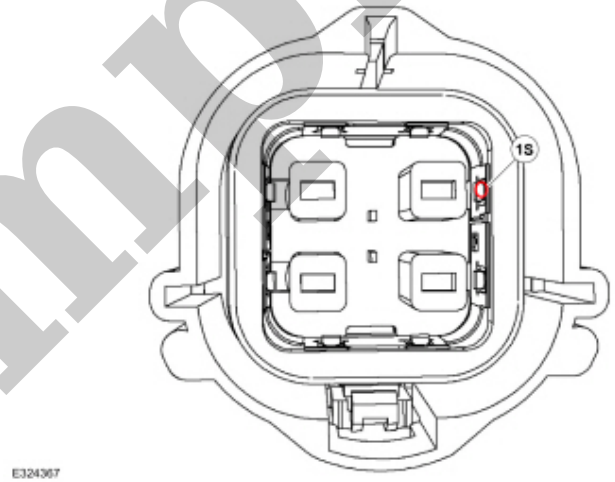
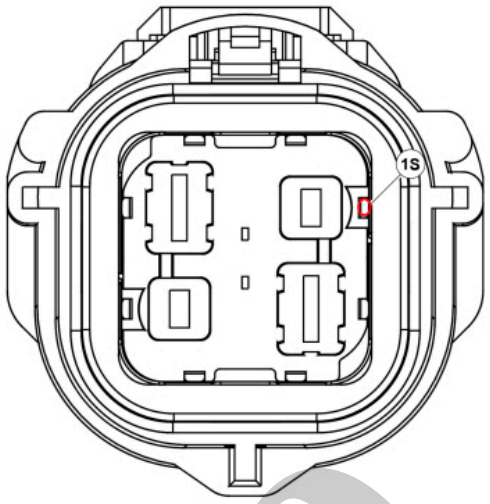
  While viewing datalogger, switch the ignition ON and select continue.

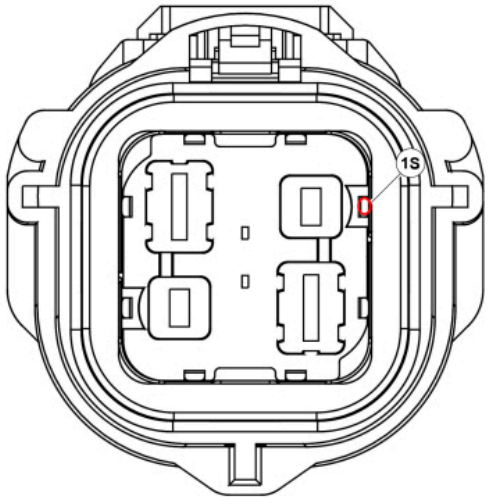
Are LEAKRESPOS, LEAKRESNEG and LEAK_RES_OVERALL read greater than 400,000 ohms for at least 10 seconds?

Yes	INSTALL a new 2.4kW DCACA (Direct Current/Alternating Current Converter Module A) . REFER to: Direct Current/Alternating Current (DC/AC) Inverter - Electric, Vehicles With: Pickup Bed Power Outlet (414-05 Voltage Converter/Inverter, Removal and Installation).
No	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 front Inverter System Controller (ISC). REFER to: Inverter System Controller [SOBDMB] (302-01 Front Electric Drive Assembly, Removal and Installation). Repower the high voltage system. REFER to: High Voltage System De-energizing - Electric (414-03A High Voltage Battery, Mounting and Cables, General Procedures).

C295-2	Ω	 C295-1S (shield)
C295-3	Ω	 C295-1S (shield)

C1815B-4	Ω	 C4236D-1S (shield)

DCDC (direct current/direct current converter control module)

Positive Lead	Measurement / Action	Negative Lead
C1457A-1	Ω	 C4236D-1S (shield)

REFER to: Battery Disconnect and Connect - Electric(414-01 Battery, Mounting and Cables, General Procedures).

- CONNECT any of the high voltage components where prevously disconnected during testing:
- Connect High Voltage Battery C293 .
- Connect High Voltage Battery C294 .
- Connect High Voltage Battery C295 .
- Connect SOBDM (secondary on-board diagnostic control module A) C1821C .
- Connect GFM2 (generic function module 2) C3003C (vehicles equipped with dual chargers ONLY) .
- Connect GFM3 (generic function module 3) C4631C (vehicles equipped with duel inverters ONLY) .
- Connect DCACA (Direct Current/Alternating Current Converter Module A) C4632C .
- Connect ACCMB (Air Conditioning Control Module B) (max trailer tow vehicles ONLY) C1039B .
- Connect SOBDMB (Secondary On-Board Diagnostic Control Module B (SOBDMB)) C1458B .
- Connect Cabin Coolant Heater C1815B .
- Connect SOBDMC (secondary on-board diagnostic control module C) C3471B .
- Connect DC/DC Converter Control Module C1457A .
- Connect ACCM (air conditioning control module) C1832B .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Ignition ON
- Using a diagnostic scan tool, view BECM (battery energy control module) PIDs.
- Select the following BECM (battery energy control module) PIDs:
  - Access the BECM (battery energy control module) and monitor the LEAKRESPOS (Leakage Resistance (Bus +)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESNEG (Leakage Resistance (Bus -)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAK_RES_OVERALL (Leakage Resistance (Overall)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESCON (Leakage Resistance (Battery Contactors Open)) (Ohm) PID (parameter identification)
- **NOTE**

  For a severe leakage fault the Diagnostic Trouble Codes (DTCs) must be cleared or the vehicle may not start.

  Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- **NOTE**

- 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).
- Disconnect Cabin Coolant Heater C1815B .
- Disconnect DC/DC Converter Control Module C1457A .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Ignition ON
- Using a diagnostic scan tool, view BECM (battery energy control module) PIDs.
- Select the following BECM (battery energy control module) PIDs:
  - Access the BECM (battery energy control module) and monitor the LEAKRESPOS (Leakage Resistance (Bus +)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESNEG (Leakage Resistance (Bus -)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAK_RES_OVERALL (Leakage Resistance (Overall)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESCON (Leakage Resistance (Battery Contactors Open)) (Ohm) PID (parameter identification)
- **NOTE**

  For a severe leakage fault the Diagnostic Trouble Codes (DTCs) must be cleared or the vehicle may not start.

  Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- **NOTE**

  For a severe leakage fault the ignition must be left OFF for a minimim of 1 minute or the Diagnostic Trouble Codes (DTC) may not repeat and the leakage PID values may not be valid.

  Ignition OFF for a minimum of 1 minute.
- **NOTE**

  Once the ignition is switched to ON the scan tool requires 10 seconds to re-establish the connection. Once the connection is established there will be 10 seconds of viewable data before the contactors open and the PID values default to a normal value of 1.6M ohms

- Access the BECM (battery energy control module) and monitor the LEAKRESCON (Leakage Resistance (Battery Contactors Open)) (Ohm) PID (parameter identification)

- **NOTE**

  For a severe leakage fault the Diagnostic Trouble Codes (DTCs) must be cleared or the vehicle may not start.

  Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).

- **NOTE**

  For a severe leakage fault the ignition must be left OFF for a minimim of 1 minute or the Diagnostic Trouble Codes (DTC) may not repeat and the leakage PID values may not be valid.

  Ignition OFF for a minimum of 1 minute.

- **NOTE**

  Once the ignition is switched to ON the scan tool requires 10 seconds to re-establish the connection. Once the connection is established there will be 10 seconds of viewable data before the contactors open and the PID values default to a normal value of 1.6M ohms making it appear the vehicle fault is no longer present. This does not apply to a mild leakage fault.

  While viewing datalogger, switch the ignition ON and select continue.

Are LEAKRESPOS, LEAKRESNEG and LEAK_RES_OVERALL read greater than 400,000 ohms for at least 10 seconds?

Yes	GO to S16

No	GO to S15

S15 MONITOR THE LEAKAGE RESISTANCE PIDS WITH THE CABIN COOLANT HEATER ISOLATED

- 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).

Yes	INSTALL new cabin coolant heater. REFER to: Cabin Coolant Heater - Electric (412-00 Climate Control System - General Information, Removal and Installation).

No	INSTALL a new DCDC (direct current/direct current converter control module) . REFER to: Direct Current/Direct Current (DC/DC) Converter Control Module - Electric (414-05 Voltage Converter/Inverter, Removal and Installation).

S16 MONITOR THE LEAKAGE RESISTANCE PIDS WITH THE SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) ISOLATED

- 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).
- Connect ACCM (air conditioning control module) C1832B .
- Repower the high voltage system.
  REFER to: High Voltage System De-energizing - Electric(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Ignition ON
- Using a diagnostic scan tool, view BECM (battery energy control module) PIDs.
- Select the following BECM (battery energy control module) PIDs:
  - Access the BECM (battery energy control module) and monitor the LEAKRESPOS (Leakage Resistance (Bus +)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESNEG (Leakage Resistance (Bus -)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAK_RES_OVERALL (Leakage Resistance (Overall)) (Ohm) PID (parameter identification)
  - Access the BECM (battery energy control module) and monitor the LEAKRESCON (Leakage Resistance (Battery Contactors Open)) (Ohm) PID (parameter identification)
- **NOTE**

  For a severe leakage fault the Diagnostic Trouble Codes (DTCs) must be cleared or the vehicle may not start.

  Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).