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2004 FORD Mondeo Sedan OEM Service and Repair Workshop Manual

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- If PID (parameter identification) is above 65% discharge the high voltage battery until value is 65% or less by turning on climate control or performing a road test.
- CONNECT a known good DC (direct current) fast charge station to the vehicle charge port and charge the high voltage battery for a minimum of 15 minutes.
- STOP the DC (direct current) fast charge session using the normal stop button and DISCONNECT the EVSE from the vehicle charge port.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Is DTC (diagnostic trouble code) P0EEE:00 present?

Yes	Install a new charge port. REFER to: Charge Port - Electric (414-03B High Voltage Battery Charging System, Removal and Installation). REPEAT the pinpoint test step. If the DTC (diagnostic trouble code) returns, GO to N5

No	Concern is not present at this time. DTC (diagnostic trouble code) (s) may have set due to a faulty EVSE (Electric Vehicle Supply Equipment) or high environmental temperatures.

N5 CHECK FOR CORRECT SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) MODULE OPERATION

- Ignition OFF.
- Disconnect SOBDM (secondary on-board diagnostic control module A) C1821A .
- Inspect SOBDM (secondary on-board diagnostic control module A) C1821A.
- For:
  - water – install new water seal or connector
  - corrosion – install new connector or terminals – clean module terminals/pins
  - damaged or bent pins – install new terminals/pins
  - pushed-out pins – install new terminals/pins
- Connect the SOBDM (secondary on-board diagnostic control module A) C1821A. Make sure it seats and latches correctly.
- Using a diagnostic scan tool, clear the SOBDM (secondary on-board diagnostic control module A) Diagnostic Trouble Codes (DTCs).
- Access the BECM (battery energy control module) and monitor the BATT_CHAR_[SOC] (Battery Pack State of Charge (SOC)) (%) PID (parameter identification)
- If PID (parameter identification) is above 65% discharge the high voltage battery until value is 65% or less by turning on climate control or performing a road test.

SOBDM (secondary on-board diagnostic control module A) P2E4F:12	Battery Charger Coupler Temperature Sensor 'D' Circuit: Circuit Short To Battery	This DTC (diagnostic trouble code) sets if the SOBDM (secondary on-board diagnostic control module A) senses a short to voltage on the thermistor circuit.
SOBDM (secondary on-board diagnostic control module A) P2E4F:13	Battery Charger Coupler Temperature Sensor 'D' Circuit: Circuit Open	This DTC (diagnostic trouble code) sets if the SOBDM (secondary on-board diagnostic control module A) senses an open on the thermistor circuit.
SOBDM (secondary on-board diagnostic control module A) P2E4F:1A	Battery Charger Coupler Temperature Sensor 'D' Circuit: Circuit Resistance Below Threshold	This DTC (diagnostic trouble code) sets if the SOBDM (secondary on-board diagnostic control module A) senses low resistance from a shorted thermistor or circuits.

Possible Sources

- Wiring, terminals or connectors
- Charge Port Coupler Temperature Sensor "D" (part of charge port)
- SOBDM (secondary on-board diagnostic control module A)

O1 CLEAR SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS) AND REPEAT SELF TEST

- DISCONNECT the EVSE from the vehicle charge port (if connected).
- Ignition ON.
- Using a diagnostic scan tool, clear the SOBDM (secondary on-board diagnostic control module A) DTCs.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Are DTCs P2E4F:11, P2E4F:12, P2E4F:13, and/or P2E4F:1A retrieved?

Yes	GO to O3

No	GO to O2

O2 COMPARE CHARGE PORT COUPLER TEMPERATURE SENSOR PID (PARAMETER IDENTIFICATION) S

0°C (32°F) - 10°C (51°F)	93,011 ohms - 151,917 ohms
10°C (50°F) - 20°C (68°F)	58,614 ohms - 93,011 ohms
20°C (68°F) - 30°C (86°F)	37,925 ohms - 58,614 ohms
30°C (86°F) - 40°C (104°F)	25,139 ohms - 37,925 ohms
40°C (104°F) - 50°C (122°F)	16,690 ohms - 25,139 ohms

Is the resistance value correct for the temperature?

Yes	GO to O5

No	INSTALL a new charge port. REFER to: Charge Port - Electric (414-03B High Voltage Battery Charging System, Removal and Installation). GO to O4

O4 CHECK FOR SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the SOBDM (secondary on-board diagnostic control module A) DTCs.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Are DTCs P0EE7:11, P0EE7:12, P0EE7:13, and/or P0EE7:1A retrieved?

Yes	GO to O5

No	The vehicle concern has been repaired.

O5 CHECK THE CHARGE PORT TEMPERATURE SENSOR "D" CIRCUITS FOR A SHORT TO VOLTAGE

- Disconnect SOBDM (secondary on-board diagnostic control module A) C1821A .

No	REPAIR the circuit.

O7 CHECK THE CHARGE PORT TEMPERATURE SENSOR "D" CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1821A-A3	Ω	C302-3 (female side)
C1821A-D4	Ω	C302-4 (female side)

Is the resistance less than 3 ohms?

Yes	GO to O8

No	REPAIR the circuit.

O8 CHECK THE CHARGE PORT TEMPERATURE SENSOR "D" CIRCUITS FOR BEING SHORTED TOGETHER

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1821A-A3	Ω	C1821A-D4

Is the resistance greater than 10,000 ohms?

- Ignition OFF.
- Disconnect SOBDM (secondary on-board diagnostic control module A) C1821A .
- Inspect SOBDM (secondary on-board diagnostic control module A) C1821A (harness and component sides).
- For:
  - water – install new water seal or connector
  - corrosion – install new connector or terminals – clean module terminals/pins
  - damaged or bent pins – install new terminals/pins
  - pushed-out pins – install new terminals/pins
- Connect the SOBDM (secondary on-board diagnostic control module A) C1821A. Make sure it seats and latches correctly.
- Ignition ON.
- Using a diagnostic scan tool, clear the SOBDM (secondary on-board diagnostic control module A) DTCs.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Are DTCs P2E4F:11, P2E4F:12, P2E4F:13, and/or P2E4F:1A retrieved?

Yes	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 SOBDM (secondary on-board diagnostic control module A) . REFER to: Secondary On-Board Diagnostic Control Module A (SOBDM) - Electric (414-03B High Voltage Battery Charging System, 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 P : P2E53:00

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

Normal Operation and Fault Conditions The SOBDM (secondary on-board diagnostic control module A) monitors the charge port temperature using two temperature sensors during DC (direct current) fast charging. The temperature sensor "D" is hardwired to the SOBDM (secondary on-board diagnostic control module A) . If the temperature becomes excessive, DTC (diagnostic trouble code) P2E53:00 sets and the

Yes	Install a new charge port. REFER to: Charge Port - Electric (414-03B High Voltage Battery Charging System, Removal and Installation).

No	GO to P3

P3 COMPARE CHARGE PORT COUPLER TEMPERATURE SENSOR "D" PID (PARAMETER IDENTIFICATION) TO AMBIENT TEMPERATURE

NOTE

Verify the vehicle has not been connected to an EVSE for a minimum of 1 hour in a climate controlled building.

- Ignition ON.
- Using a diagnostic scan tool, view SOBDM (secondary on-board diagnostic control module A) PIDs.
- Access the SOBDM (secondary on-board diagnostic control module A) and monitor the BC_COUPL_TEMP_D (Battery Charger Coupler Temperature -D-) (Deg C) PID (parameter identification)

Is the PID (parameter identification) value within 10°C (18°F) of ambient temperature?

Yes	GO to P4

No	Install a new charge port. REFER to: Charge Port - Electric (414-03B High Voltage Battery Charging System, Removal and Installation). REPEAT the pinpoint test step. If the PID (parameter identification) value is still NOT within 10°C (18°F) of ambient temperature, GO to P5

P4 CLEAR DIAGNOSTIC TROUBLE CODES (DTCS) AND CARRY OUT SELF-TEST OF THE SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A)

- Using a diagnostic scan tool, clear the SOBDM (secondary on-board diagnostic control module A) Diagnostic Trouble Codes (DTCs).
- Access the BECM (battery energy control module) and monitor the BATT_CHAR_[SOC] (Battery Pack State of Charge (SOC)) (%) PID (parameter identification)

- CONNECT a known DC (direct current) good fast charge station to the vehicle DC (direct current) charge port and charge the high voltage battery for a minimum of 15 minutes.
- STOP the DC (direct current) fast charge session using the normal stop button and DISCONNECT the EVSE from the vehicle DC (direct current) charge port.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Is DTC (diagnostic trouble code) P2E53:00 present?

Yes	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 SOBDM (secondary on-board diagnostic control module A) . REFER to: Secondary On-Board Diagnostic Control Module A (SOBDM) - Electric (414-03B High Voltage Battery Charging System, 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 Q : B15A1:01, B15A1:02, B15A1:08, B15A1:49, B15A1:9A

Refer to Wiring Diagrams Cell 12for schematic and connector information.
Normal Operation and Fault Conditions The Charge Status Indicator (CSI) is a component that indicates the current Customer State-of-Charge (CSoC) and charging operations of Battery Electric vehicles. When plugged into an external power source (110 or 220 volts), the SOBDM (secondary on-board diagnostic control module A) activates the LED (light emitting diode) s around the charge port inlet. The Charge Status Indicator (CSI) displays charging, charging faults, and charging status. The Charge Status Indicator (CSI) is monitored for faults. Presence of these DTC (diagnostic trouble code) s illuminates the Charger Service Required indicator in the IPC (instrument panel cluster) , however charging is not affected. **DTC Fault Trigger Conditions**

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SOBDM (secondary on-board diagnostic	Charge Status Indicator 'A': General Electrical Failure	This DTC (diagnostic trouble code) sets when the SOBDM (secondary on-board diagnostic control module A) received a

- Using a diagnostic scan tool, clear the SOBDM (secondary on-board diagnostic control module A) DTCs.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Are any of the following DTCs B15A1:01, B15A1:02, B15A1:08, B15A1:49 and/or B15A1:9A reported?

Yes	For DTC (diagnostic trouble code) s B15A1:01, B15A1:02 and/or B15A1:49 INSTALL a new Charge Status Indicator (CSI), REFER to: Charge Status Indicator (CSI) - Electric (414-03B High Voltage Battery Charging System, Removal and Installation). Test for normal operation. If the DTC (diagnostic trouble code) is still present, GO to Q8 For DTC (diagnostic trouble code) s B15A1:08, GO to Q2 For DTC (diagnostic trouble code) B15A1:9A, no action is necessary.

No	Concern is not present at this time.

Q2 CHECK THE CHARGE STATUS INDICATOR (CSI) INLINE CONNECTOR FOR BEING FULLY SEATED

- Check the Charge Status Indicator (CSI) inline C1806 for being fully seated.

Were any concerns found?

Yes	Reseat the connector. Using a diagnostic scan tool, clear the SOBDM (secondary on-board diagnostic control module A) DTCs and repeat the SOBDM (secondary on-board diagnostic control module A) self-test. If the DTC (diagnostic trouble code) is still present, GO to Q3

No	GO to Q3

Q3 CHECK THE CHARGE STATUS INDICATOR (CSI) B+ CIRCUIT

- Disconnect Charge Status Indicator (CSI) C1806 .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead

No	Remove G129 and clean mounting surface. Reinstall the ground bolt and retest. If the concern remains REPAIR the circuit.

Q5 CHECK THE CHARGE STATUS INDICATOR (CSI) LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE

- Disconnect SOBDM (secondary on-board diagnostic control module A) C1821A .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1806-3 (female side)	V	Ground

Is any voltage present?

Yes	REPAIR the circuit.

No	GO to Q6

Q6 CHECK THE CHARGE STATUS INDICATOR (CSI) LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1806-3 (female side)	Ω	Ground

Is the resistance greater than 10,000 ohms?