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2011 FORD S-Max OEM Service and Repair Workshop Manual

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Positive Lead	Measurement / Action	Negative Lead
C1463A-4	Ω	C2431A-4
C1463A-5	Ω	C2431A-17

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AI5

No	REPAIR the circuit in question.

AI3 CHECK THE PSCM (POWER STEERING CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: PSCM (power steering control module) C1463A and C1463B.
- Connect negative battery cable.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1463A-1	V	Ground
C1463A-3	V	Ground

Positive Lead	Measurement / Action	Negative Lead

AI5 CHECK FOR CORRECT PSCM (POWER STEERING CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PSCM (power steering control module) connectors and related in-line 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 PSCM (power steering control module) connectors and related in-line 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 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, REFER to: Power Steering (211-02 Power Steering, Diagnosis and Testing).
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 AJ : THE RCM (RESTRAINTS CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell 14for schematic and connector information.
Refer to Wiring Diagrams Cell 46for schematic and connector information.

Normal Operation and Fault Conditions The RCM (restraints control module) communicates on the HS-CAN2 (high-speed controller area network 2) . REFER to: Controller Area Network (CAN) Module Communications Network - Electric - System Operation and Component Description (418-00A Controller Area Network (CAN) Module Communications Network, Description and Operation).

Possible Sources

- Wiring, terminals and connectors
- BCM (body control module)

- Ignition ON.
- Using a diagnostic scan tool, carry out the network test.

Does the BCM (body control module) pass the network test?

Yes	GO to AJ3

No	DIAGNOSE a module communication concern. GO to Pinpoint Test N

AJ3 RETRIEVE THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out a BCM (body control module) self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	DIAGNOSE the Diagnostic Trouble Codes (DTCs). REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

No	GO to AJ4

AJ4 CHECK THE RCM (RESTRAINTS CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- REPOWER the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C310A-19	V	Ground

Is the voltage greater than 11 volts?

Yes	CONNECT all disconnected connectors. GO to AJ7

No	REPAIR the circuit in question.

AJ7 CHECK FOR CORRECT RCM (RESTRAINTS CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the RCM (restraints control module) connectors and related in-line 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 RCM (restraints control module) connectors and related in-line connectors. Make sure they seat and latch correctly.
- REPOWER the SRS (supplemental restraint system) .
  REFER to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).
- 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 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 service article instructions. If no service articles address this concern, INSTALL a new RCM (restraints control module) . REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint 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.

AK2 CHECK THE RFA (REMOTE FUNCTION ACTUATOR) MODULE GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3860-6	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AK3

No	REPAIR the circuit.

AK3 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) CIRCUITS BETWEEN THE RFA (REMOTE FUNCTION ACTUATOR) MODULE AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM (gateway module A) C2431A.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3860-16	Ω	C2431A-10
C3860-17	Ω	C2431A-23

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AK4

Refer to Wiring Diagrams Cell 109for schematic and connector information.

Normal Operation and Fault Conditions The RGTM (rear gate trunk module) communicates on the MS-CAN (medium speed-controller area network) 2. REFER to: Controller Area Network (CAN) Module Communications Network - Electric - System Operation and Component Description (418-00A Controller Area Network (CAN) Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals and connector
- RGTM (rear gate trunk module)

Visual Inspection and Pre-checks

- Verify BCMC (body control module C) [BJB (battery junction box)] fuse 37 (30A) is OK.

AL1 CHECK THE REMOTE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
- Disconnect the diagnostic scan tool cable from the remote DLC (data link connector) .
- Inspect the remote DLC (data link connector) pins 3, 4, 5, 11, and 16 for spreading or damage using a Rotunda flex probe with the dimensions: 1.5mm width x 0.80mm thickness.

Are any pin fit concerns or damage observed with remote DLC (data link connector) pins 3, 4, 5, 11, and 16?

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 remote DLC (data link connector) .

No	GO to AL2

AL2 CHECK THE RGTM (REAR GATE TRUNK MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: RGTM (rear gate trunk module) C4623.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead

C2431A-11	Ω	Ground
C2431A-24	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to AL5

No	REPAIR the circuit in question.

AL5 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) 2 (+) AND MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) 2 (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2431A-11	V	Ground
C2431A-24	V	Ground

Are the voltages greater than 6 volts?

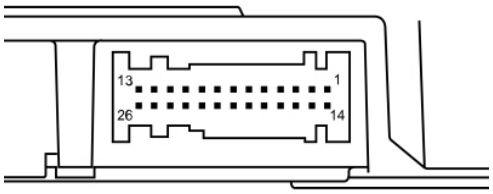
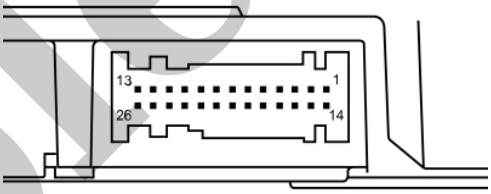
Yes	REPAIR the circuit in question.

No	GO to AL6

No	REPAIR the circuits.

AL8 CHECK THE GWM (GATEWAY MODULE A) MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) 2 TERMINATION RESISTOR (COMPONENT SIDE)

- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E342878 C2431A-11 (Component Side)	Ω	 E342878 C2431A-24 (Component Side)

Is the resistance between 108 ohms and 132 ohms?

Yes	CONNECT all disconnected connectors. GO to AL9

No	INSTALL a new GWM (gateway module A) . If equipped with 8-inch center display screen/12.3-inch center display screen, REFER to: Gateway Module A (GWM) - Electric, Vehicles With: 8 Inch Center Display Screen/12 Inch Center Display Screen (418-00A Controller Area Network (CAN) Module Communications Network, Removal and Installation). If equipped with 15-inch center display screen, REFER to: Gateway Module A (GWM) - Electric, Vehicles With: 15.5 Inch Center Display Screen (418-00A Controller Area Network (CAN) Module Communications Network, Removal and Installation).

- Verify BCM (body control module) fuse 31 (10A) is OK.

AM1 CHECK THE RTM (RADIO TRANSCEIVER MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: RTM (radio transceiver module) C9026.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C9026-6	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to AM2

No	VERIFY BCM (body control module) fuse 31 (10A) 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.

AM2 CHECK THE RTM (RADIO TRANSCEIVER MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C9026-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AM3