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2011 FORD Kuga OEM Service and Repair Workshop Manual

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Visual Inspection and Pre-checks

- Verify BCM (body control module) fuse 13 (7.5A) is OK.

AJ1 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect negative battery cable.
- Disconnect the diagnostic scan tool cable from the remote DLC (data link connector) .
- Disconnect GWM (gateway module A) C2431A .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2431A-8	Ω	C2431A-21

Is the resistance between 108 and 132 ohms?

Yes	GO to AJ3

No	GO to AJ2

AJ2 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE SCCM (STEERING COLUMN CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: SCCM (steering column control module) C226A.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C226A-5	Ω	C2431A-8
C226A-6	Ω	C2431A-21

C226A-8	Ω	Ground

Is the resistance less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AJ5

No	REPAIR the circuit.

AJ5 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SCCM (steering column control module) connector.
- 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 SCCM (steering column control module) connector. Make sure it seats and latches 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, INSTALL a new SCCM (steering column control module) . If equipped with adaptive steering, REFER to: Steering Column Control Module (SCCM) - Vehicles With: Adaptive Steering (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). If not equipped with adaptive steering, REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, 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 MULTI-CONTOUR SEAT RELAY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCMC (body control module C) [BJB (battery junction box)] C1035C .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035C-50	Ω	C3385-1

Is the resistance less than 3 ohms?

Yes	REFER to the Wiring Diagrams manual to identify the possible voltage supply circuit concern.

No	REPAIR the open circuit.

AK3 CHECK THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3385-16	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AK4

No	REPAIR the circuit.

	FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new SCMG (driver multi-contour seat module) . REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10A Front Seats, 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 AL : THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell 14for schematic and connector information.
Refer to Wiring Diagrams Cell 120for schematic and connector information.
Normal Operation and Fault Conditions The SCMH (passenger multi-contour seat module) communicates on the MS-CAN (medium speed-controller area network) 1. REFER to: Controller Area Network (CAN) Module Communications Network - System Operation and Component Description (418-00A Controller Area Network (CAN) Module Communications Network, Description and Operation).
Possible Sources

- Fuse
- Wiring, terminals and connector
- SCMH (passenger multi-contour seat module)

Visual Inspection and Pre-checks

- Verify BCMC (body control module C) [BJB (battery junction box)] fuse 134 (25A) is OK.

AL1 CHECK THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: SCMH (passenger multi-contour seat module) C3386.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3386-1	V	Ground

C3386-16	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AL4

No	REPAIR the circuit.

AL4 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) 1 CIRCUITS BETWEEN THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

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

Positive Lead	Measurement / Action	Negative Lead
C3386-5	Ω	C2431A-3
C3386-4	Ω	C2431A-16

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AL5

No	REPAIR the circuit in question.

AL5 CHECK FOR CORRECT SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) OPERATION

- Ignition OFF.

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 300 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.

AM1 CHECK THE SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: SOBDMC (secondary on-board diagnostic control module C) C1458A
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1458A-M1	V	Ground
C1458A-K2	V	Ground

Are the voltages greater than 11 volts?

Yes	GO to AM2

No	VERIFY BCMC (body control module C) [BJB (battery junction box)] fuse 5 (5A) and 24 (10A) are OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AM3 CHECK THE SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) WAKE-UP CIRCUIT FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1458A-K1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to AM4

No	DIAGNOSE a SOBDMC (secondary on-board diagnostic control module C) wake-up concern at the BCM (body control module) . REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

AM4 CHECK THE SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1458A-L4	Ω	Ground
C1458A-M4	Ω	Ground

Are the resistances less than 3 ohms?

- damaged or bent pins - install new terminals/pins
- pushed-out pins - install new pins as necessary

- Reconnect the SOBDMC (secondary on-board diagnostic control module C) 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, INSTALL a new SOBDMC (secondary on-board diagnostic control module C) . REFER to: Inverter System Controller [SOBDMC] (303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), 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 AN : THE TCCM (TRANSFER CASE 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 34for schematic and connector information.

Normal Operation and Fault Conditions The TCCM (transfer case control module) communicates on the FD-CAN (Flexible Data Rate Controller Area Network) . REFER to: Controller Area Network (CAN) Module Communications Network - System Operation and Component Description
(418-00A Controller Area Network (CAN) Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals and connector
- TCCM (transfer case control module)

Visual Inspection and Pre-checks

- Verify BCMC (body control module C) [BJB (battery junction box)] fuses 64 (25A) and 82 (25A) are OK.

AN1 CHECK THE TCCM (TRANSFER CASE CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.

Yes	GO to AN3

No	REPAIR the circuit.

AN3 CHECK THE FD-CAN (FLEXIBLE DATA RATE CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE TCCM (TRANSFER CASE CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: TCCM (transfer case control module) C2371A.
- Disconnect GWM (gateway module A) C2431A .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2371A-10	Ω	C2431A-4
C2371A-20	Ω	C2431A-17

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AN4

No	REPAIR the circuit in question.

AN4 CHECK FOR CORRECT TCCM (TRANSFER CASE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the TCCM (transfer case 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