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2009 FORD Kuga OEM Service and Repair Workshop Manual

Go to manual page

- Wiring, terminals and connector
- WACM (wireless accessory charging module)

Visual Inspection and Pre-checks

- Verify BCM (body control module) fuse 3 (7.5A) is OK.

AS1 CHECK THE WACM (WIRELESS ACCESSORY CHARGING MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: WACM (wireless accessory charging module) C390.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C390-1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to AS2

No	VERIFY BCM (body control module) fuse 3 (7.5A) 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.

AS2 CHECK THE WACM (WIRELESS ACCESSORY CHARGING MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C390-5	Ω	Ground

Is the resistance less than 3 ohms?

- Reconnect the WACM (wireless accessory charging 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 WACM (wireless accessory charging module) . REFER to: Wireless Accessory Charging Module (WACM) (414-06 Accessory Charging, 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 AT : U0001:09

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

Normal Operation and Fault Conditions 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).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
GWM (gateway module A) U0001:09	High Speed CAN Communication Bus: Component Failures	The module could not communicate on a network at a point in time. The fault is not currently present since the module had to communicate with the diagnostic scan tool to report this DTC (diagnostic trouble code) .

Possible Sources

- Intermittent fault with the HS-CAN (high-speed controller area network) .
- GWM (gateway module A)

AT1 RETRIEVE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE

The module was unable to communicate on the network at a point in time. The fault is not currently present since the module had to communicate with the diagnostic scan tool to report this Diagnostic Trouble Code (DTC).

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the GWM (gateway module A) .
- Wait at least 10 seconds.
- Using a diagnostic scan tool, carry out the GWM (gateway module A) self-test.

Is the DTC (diagnostic trouble code) 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 GWM (gateway module A) . REFER to: Gateway Module A (GWM) (418-00A Controller Area Network (CAN) Module Communications Network, Removal and Installation).

No	The system is operating correctly at this time.

PINPOINT TEST AV : U2100:00 OR U2200:00

Normal Operation and Fault Conditions

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).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition

	FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new GWM (gateway module A) . REFER to: Gateway Module A (GWM) (418-00A Controller Area Network (CAN) Module Communications Network, Removal and Installation).

No	The system is operating correctly at this time.

PINPOINT TEST AW : U3000:04, U3000:43 OR U3000:49

Normal Operation and Fault Conditions

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).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
GWM (gateway module A) U3000:04	Control Module: System Internal Failures	Sets in the GWM (gateway module A) when a general system failure is detected.
GWM (gateway module A) U3000:43	Control Module: Special Memory Failure	Sets in the GWM (gateway module A) when a failure is detected in the special memory.
GWM (gateway module A) U3000:49	Control Module: Internal Electronic Failure	Sets in the GWM (gateway module A) when an internal failure is detected.

Possible Sources

- GWM (gateway module A)

AW1 RETRIEVE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs).
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the GWM (gateway module A) self-test.

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

Normal Operation and Fault Conditions The GWM (gateway module A) monitors the supplied voltage and sets a DTC (diagnostic trouble code) if it falls below a threshold. 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).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
GWM (gateway module A) U3003:16	Battery Voltage: Circuit Voltage Below Threshold	Sets in continuous memory and during the on-demand self-test when the GWM (gateway module A) detects the supply voltage below 10 volts.

Possible Sources

- Previous low battery voltage
- Wiring, terminals, or connectors
- Charging system concern
- GWM (gateway module A)

AY1 RECHECK FOR LOW VOLTAGE DTC (DIAGNOSTIC TROUBLE CODE)

- Ignition ON.
- Using a diagnostic scan tool, clear the low voltage DTC (diagnostic trouble code) .
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the GWM (gateway module A) self-test.

Is DTC (diagnostic trouble code) U3003:16 still present?

Yes	GO to AY2

No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to a previous low battery voltage condition.

AY2 CHECK FOR CHARGING SYSTEM DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the PCM (powertrain control module) KOEO (key on, engine off) and KOER (key on, engine running) self-tests.

Are any voltage-related Diagnostic Trouble Codes (DTCs) present?

- Ignition ON.
- Measure and record the battery voltage.
- Using a diagnostic scan tool, monitor the GWM (gateway module A) voltage supply PID (parameter identification) :
  - GWM (gateway module A) :
    Access the GWM (gateway module A) and monitor the VPWR (Module Supply Voltage) (V) PID (parameter identification)

Is the voltage reading within 0.2 volt of the recorded battery voltage?

Yes	GO to AY8

No	GO to AY5

AY5 CHECK THE GWM (GATEWAY MODULE A) VOLTAGE SUPPLY CIRCUIT FOR HIGH RESISTANCE

- Ignition OFF.
- Disconnect GWM (gateway module A) C2431A .
- Ignition ON.
- Measure and record the battery voltage.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2431A-13	V⎓	Ground

Is the voltage reading within 0.2 volt of the recorded battery voltage?

Yes	GO to AY6

No	REPAIR the circuit for high resistance.

AY6 CHECK THE GWM (GATEWAY MODULE A) GROUND CIRCUIT FOR HIGH RESISTANCE

- corrosion (install new connectors or terminals - clean module pins)
- damaged or bent pins - install new terminals pins
- pushed-out pins - install new pins as necessary

- Reconnect the GWM (gateway module A) 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 GWM (gateway module A) . REFER to: Gateway Module A (GWM) (418-00A Controller Area Network (CAN) Module Communications Network, 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 AZ : U3003:17

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

Normal Operation and Fault Conditions The GWM (gateway module A) monitors the supplied voltage and sets a DTC (diagnostic trouble code) if it rises above a threshold. 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).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
GWM (gateway module A) U3003:17	Battery Voltage: Circuit Voltage Above Threshold	Sets in continuous memory and during the on-demand self-test when the GWM (gateway module A) detects the supply voltage is greater than 16 volts.

Possible Sources

- Charging system concern

- Using a diagnostic scan tool, clear the GWM (gateway module A) DTC (diagnostic trouble code) .
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the GWM (gateway module A) self-test.

Is DTC (diagnostic trouble code) U3003:17 still present?

Yes	GO to AZ4

No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set previously during battery charging or while jump starting the vehicle.

AZ4 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM (gateway module A) connector.
- Repair:
  - corrosion (install new connectors or terminals - clean module pins)
  - damaged or bent pins - install new terminals pins
  - pushed-out pins - install new pins as necessary
- Reconnect the GWM (gateway module A) 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 GWM (gateway module A) . REFER to: Gateway Module A (GWM) (418-00A Controller Area Network (CAN) Module Communications Network, 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.

Gateway Module A (GWM) - Electric, Vehicles With: 15.5 Inch Center Display Screen

418-00A Controller Area Network (CAN) Module Communications Network	***2022 F-150***
Removal and Installation	***Procedure revision date: 04/22/2022***

Gateway Module A (GWM) - Electric, Vehicles With: 15.5 Inch Center Display Screen

Removal

All vehicles

NOTE

Removal steps in this procedure may contain installation details.

1. **NOTE**

   If installing a new module, it is necessary to upload the module configuration information to the scan tool prior to removing the module. This information must be downloaded into the new module after installation.

   Using a diagnostic scan tool, begin the PMI (programmable module installation) process for the GWM (gateway module A) following the on-screen instructions.

2. Remove the APIM (SYNC module) .

   Refer to: SYNC Module [APIM] - Vehicles With: 15.5 Inch Center Display Screen(415-00 Information and Entertainment System - General Information, Removal and Installation).

Vehicles With: Satellite Radio