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2008 FORD S-Max OEM Service and Repair Workshop Manual

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No	CLEAR the DTC (diagnostic trouble code) . The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.
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AY2 CHECK THE NETWORK COMMUNICATION

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

Does the RFA (remote function actuator) module pass the network test?

Yes	GO to AY3
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No	GO to Pinpoint Test AK
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AY3 CHECK FOR NON-NETWORK DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the self-test for the module in question (GWM (gateway module A)) setting the DTC (diagnostic trouble code) .

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the appropriate DTC (diagnostic trouble code) Chart in this section.
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No	GO to AY4
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AY4 CHECK FOR NON-NETWORK RFA (REMOTE FUNCTION ACTUATOR) MODULE DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the RFA (remote function actuator) module self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Passive Anti-Theft System (PATS) (419-01D Passive Anti-Theft System (PATS) - Vehicles With: Phone as a Key, Diagnosis and Testing).
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- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to AY7
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No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.
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AY7 CHECK FOR CORRECT RFA (REMOTE FUNCTION ACTUATOR) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the RFA (remote function actuator) module 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 RFA (remote function actuator) 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	<p>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 RFA (remote function actuator) module.</p> <p>REFER to: Remote Function Actuator (RFA) Module (419-01D Passive Anti-Theft System (PATs) - Vehicles With: Phone as a Key, Removal and Installation).</p>
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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.
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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).

No The system is operating correctly at this time.

PINPOINT TEST BA : U2100:00 OR U2200:00

Normal Operation and Fault Conditions

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).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
GWM (gateway module A) U2100:00	Initial Configuration Not Complete: No Sub Type Information	Sets due to incomplete or incorrect PMI (programmable module installation) procedures.
GWM (gateway module A) U2200:00	Control Module Configuration Memory Corrupt: No Sub Type Information	Sets in the GWM (gateway module A) when module data corruption is identified.

Possible Sources

- Incomplete or incorrect PMI (programmable module installation) procedures.
- GWM (gateway module A)

BA1 RETRIEVE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCs)

- Check vehicle service history for recent service actions related to the GWM (gateway module A) .
- 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: [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).

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)

BB1 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.

Is DTC (diagnostic trouble code) U3000:04, U3000:43 or U3000:49 recorded?

Yes	<p>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) .</p> <p>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).</p> <p>If equipped with 15-inch center display screen, REFER to: Gateway Module A (GWM) - Electric, Vehicles With: 15.5 Inch Center Display Screen</p>
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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)

BD1 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 BD2
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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.
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BD2 CHECK FOR CHARGING SYSTEM DIAGNOSTIC TROUBLE CODES (DTCS)

No GO to [BD5](#)

BD5 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		Ground


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

Yes GO to [BD6](#)

No REPAIR the circuit for high resistance.

BD6 CHECK THE GWM (GATEWAY MODULE A) GROUND CIRCUIT FOR HIGH RESISTANCE

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2431A-13		C2431A-14

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

Yes GO to [BD7](#)

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).

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 BE : U3003:17

Refer to Wiring Diagrams Cell 14 for 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 - Electric - 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
- GWM (gateway module A)

NOTE

Yes	GO to BE4
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.
BE4 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION	
<ul style="list-style-type: none"> Ignition OFF. Disconnect and inspect the GWM (gateway module A) connector. Repair: <ul style="list-style-type: none"> 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	<p>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) .</p> <p>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).</p> <p>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).</p>
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.



Controller Area Network (CAN) Module Communications Network

418-00A Controller Area Network (CAN) Module Communications Network	2022 F-150
Diagnosis and Testing	Procedure revision date: 07/12/2022

Controller Area Network (CAN) Module Communications Network

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC (diagnostic trouble code)	Description	Action
GWM (gateway module A)	U0001:09	High Speed CAN Communication Bus: Component Failure	GO to Pinpoint Test AT
GWM (gateway module A)	U1A01:00	Communication Link: No Sub Type Information	GO to Pinpoint Test AU
GWM (gateway module A)	U2100:00	Initial Configuration Not Complete: No Sub Type Information	GO to Pinpoint Test AV
GWM (gateway module A)	U2200:00	Control Module Configuration Memory Corrupt: No Sub Type Information	GO to Pinpoint Test AV