Technical Service Bulletin

SUBJECT:	No: TSB-24-54-007
ADDITIONAL INFO FOR AIR BAG DIAGNOSIS SENSOR UNIT AND DTCs – SERVICE MANUAL REVISION	DATE: **October 2024**
	MODEL: **Outlander Plug-In Hybrid**

CIRCULATE TO:	[ ] GENERAL MANAGER	[**X**] PARTS MANAGER	[**X**] TECHNICIAN
[**X**] SERVICE ADVISOR	[**X**] SERVICE MANAGER	[**X**] WARRANTY PROCESSOR	[ ] SALES MANAGER

PURPOSE
This TSB provides additional information to the service procedure for Air Bag Diagnosis Sensor Unit and DTCs in the applicable Service Manuals:

AFFECTED VEHICLES
2025 Outlander Plug-In Hybrid

AFFECTED SERVICE MANUAL
- 2025 Outlander Plug-In Hybrid Service Manual

PROCEDURE
Please use the following chart as a guide to replace the indicated pages in the affected Service Manual, Group 54, Restraints, SRS Airbag sections.

Applicable Manual	Pub. No.	Applicable Title	Content
2025 OUTLANDER PHEV Service Manual	MSCD-027B-2025	RESTRAINTS └ SRS AIRBAG └ REMOVAL AND INSTALLATION └ AIR BAG DIAGNOSIS SENSOR UNIT └ Removal and Installation	Attached sheet 2
		RESTRAINTS └ SRS AIRBAG CONTROL SYSTEM └ SYSTEM DESCRIPTION └ DIAGNOSIS SYSTEM (AIR BAG DIAGNOSIS SENSOR UNIT) └ M.U.T.-III SE Function	Attached sheet 3
		RESTRAINTS └ SRS AIRBAG CONTROL SYSTEM └ ECU DIAGNOSIS INFORMATION └ AIR BAG DIAGNOSIS SENSOR UNIT └ DTC Index	Attached sheet 4
		RESTRAINTS └ SRS AIRBAG CONTROL SYSTEM └ BASIC INSPECTION └ ADDITIONAL SERVICE WHEN REPLACING AIR BAG DIAGNOSIS SENSOR UNIT └ Work Procedure	Attached sheet 5
		Add below "RESTRAINTS └ SRS AIRBAG CONTROL SYSTEM └ DTC/CIRCUIT DIAGNOSIS └ AIR BAG DIAGNOSIS SENSOR UNIT └ U2112-87 CAN COMM ERR (EBA) └ Diagnosis Procedure"	Attached sheet 6
		Add below "RESTRAINTS └ SRS AIRBAG CONTROL SYSTEM └ DTC/CIRCUIT DIAGNOSIS └ AIR BAG DIAGNOSIS SENSOR UNIT └ U2152-87 CAN COMM ERR (ADAS CONTROL UNIT) └ Diagnosis Procedure"	Attached sheet 7
		Add below "RESTRAINTS └ SRS AIRBAG CONTROL SYSTEM └ DTC/CIRCUIT DIAGNOSIS └ AIR BAG DIAGNOSIS SENSOR UNIT └ U215F-87 CAN COMM ERR (LASER/RADAR) └ Diagnosis Procedure"	Attached sheet 8

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REMOVAL AND INSTALLATION

AIR BAG DIAGNOSIS SENSOR UNIT

Removal and Installation

WARNING:

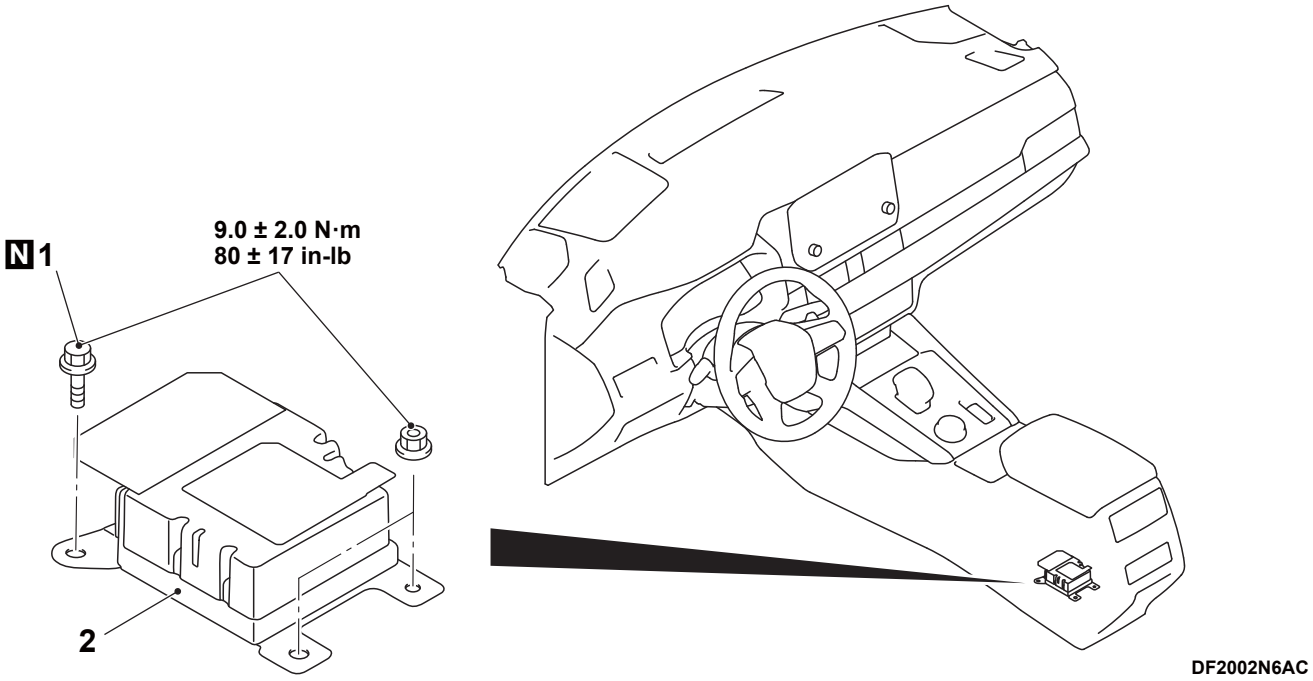
- ***Before servicing, electric motor switch OFF, disconnect 12V battery negative terminal and wait for 3 minutes or more (discharges electricity held in the additional power supply circuit of the air bag diagnosis sensor unit).***
- ***Battery posts, terminals and related accessories contain lead and lead compounds. WASH HANDS AFTER HANDLING.***
- ***Before disconnecting the air bag sensor unit harness connector, be sure to disconnect each harness connector of the air bag modules, seat belt pre-tensioners and lap pre-tensioner to prevent air bag deployment by static electricity and seat belt pre-tensioner operation.***
- ***Never use air tools or electric tools for servicing (prevents the air bag diagnosis sensor unit from activating unexpectedly due to vibration).***
- ***To prevent damage to the air bag diagnosis sensor unit, never impact it***
- ***Replace air bag diagnosis sensor unit if it is dropped or sustains an impact.***
- ***Replace air bag diagnosis sensor unit of deployed driver air bag module, deployed passenger air bag module, deployed driver knee air bag module, deployed front side air bag module, deployed front center air bag module, deployed curtain air bag module, deployed seat belt pre-tensioner or deployed lap pre-tensioner.***

<Changed>

- ***When the air bag diagnosis sensor unit is replaced, perform the additional service procedures. Refer to Restraints – SRS Airbag Control System – Basic Inspection – Additional Service When Replacing Air Bag Diagnosis Sensor Unit .***

Pre-removal Operation

Change the power supply mode of the electric motor switch to OFF.



DF2002N6AC

			Removal steps
		•	Disconnect the 12V battery negative (–) terminal.
		•	Center console (Refer to Floor Console Assembly)
		1.	Ground bolt
<<A>>		2.	Air bag diagnosis sensor unit
			Installation steps
		2.	Air bag diagnosis sensor unit
	>>A<<	1.	Ground bolt
		•	Center console (Refer to Floor Console Assembly)
		•	Connect the 12V battery negative (–) terminal.
	>>B<<	•	Post-installation inspection

DIAGNOSIS SYSTEM (AIR BAG DIAGNOSIS SENSOR UNIT)

M.U.T.-III SE Function

APPLICATION ITEM

M.U.T.-III SE performs the following functions.

Diagnosis mode	Description
Diagnostic Trouble Code	Display DTC which air bag diagnosis sensor unit memorizes
Data List	This item is displayed, but cannot be supported.
Special Function	• Air bag diagnosis sensor unit part number is displayed. • With Failure History, diagnosis results previously erased by a reset operation can be displayed on M.U.T.-III SE screen. • Change the factory mode to OFF. <Added>

DIAGNOSTIC TROUBLE CODE

Refer to DTC Index .

FREEZE FRAME DATA (FFD)

The air bag diagnosis sensor unit records the following vehicle condition at the time a particular DTC is detected, and displays on M.U.T.-III SE.

M.U.T.-III SE screen item	Indication/Unit	Description
ODO/TRIP METER	mile	Total mileage (Odometer value) of the moment a particular DTC is detected.
DTC count	count	DTC detection number of times.

SPECIAL FUNCTION

Function name	Description
ECU Information	Air bag diagnosis sensor unit part number is displayed.
Failure History	With Failure History, the history of malfunction part memorized by air bag sensor unit in the past can be displayed on M.U.T.-III SE screen.
Factory Mode OFF	Change the factory mode to OFF.

<Added>

SRS AIRBAG CONTROL SYSTEM

DTC	Diagnostic item	SRS air bag warning light	Reference
B102A-09	Front seat belt pre-tensioner RH	ON	DTC Description
B102A-11	Front seat belt pre-tensioner RH	ON	DTC Description
B102A-12	Front seat belt pre-tensioner RH	ON	DTC Description
B102A-13	Front seat belt pre-tensioner RH	ON	DTC Description
B102A-1A	Front seat belt pre-tensioner RH	ON	DTC Description
B102A-1B	Front seat belt pre-tensioner RH	ON	DTC Description
B102A-55	Front seat belt pre-tensioner RH	ON	DTC Description
B1036-16	Ignition voltage	ON	DTC Description
B1036-17	Ignition voltage	ON	DTC Description
B1040-22	Vehicle speed	OFF	DTC Description
B1041-82	Vehicle speed signal	OFF	DTC Description
B107B-55	ECU setting	ON	DTC Description
B12B5-97	Frontal collision	ON	DTC Description
B12B6-97	Side collision	ON	DTC Description
B12B7-97	Rollover detection	ON	DTC Description
B12B9-97	Rear collision	ON	DTC Description
B12BA-97	Air bag disposal completion	ON	DTC Description
B1500-92	DOOR SATELLITE SENSOR	ON	DTC Description
U2112-81	CAN comm err (EBA)	OFF	DTC Description
U2117-81	CAN comm err (DCM)	OFF	Attached sheet 6 (1/3 to 2/3)
U2140-81	CAN comm err (ECM)	OFF	DTC Description
U2141-81	CAN comm err (TCM)	OFF	DTC Description
U2143-81	CAN comm err (VCM/HCM)	OFF	DTC Description
U2148-81	CAN comm err (brake control unit)	OFF	DTC Description
U2148-83	CAN comm err (brake control unit)	OFF	DTC Description
U214E-81	CAN comm err (combination meter)	OFF	DTC Description
U214F-81	CAN comm err (BCM)	OFF	DTC Description
U2152-81	CAN comm err (ADAS control unit)	OFF	DTC Description
U2154-81	CAN comm err (MIU)	OFF	Attached sheet 7 (1/6 to 2/6)
U2159-81	CAN comm err (EPS)	OFF	Attached sheet 7 (4/6 to 5/6)
U215B-81	CAN comm err (IPDM E/R)	OFF	DTC Description
U215F-81	CAN comm err (laser/radar)	OFF	DTC Description
U2165-81	CAN comm err (SONAR)	OFF	Attached sheet 8 (1/9 to 2/9)
U216E-81	CAN comm err (Side radar)	OFF	Attached sheet 8 (4/9 to 5/9)
U2175-81	CAN comm err (AVM)	OFF	Attached sheet 8 (7/9 to 8/9)
U2176-81	CAN comm err (CCM/ST angle sensor)	OFF	DTC Description

<Added>
<Added>
<Added>

Network-DTC

DTC	Diagnostic item	SRS air bag warning light	Reference
U0073-00	Control module comm Bus A Off	OFF	DTC Logic
U2112-87	CAN comm err (EBA)	OFF	DTC Logic
U2117-87	CAN comm err (DCM)	OFF	Attached sheet 6 (3/3)
U2140-87	CAN comm err (ECM)	OFF	DTC Logic
U2141-87	CAN comm err (TCM)	OFF	DTC Description
U2143-87	CAN comm err (VCM/HCM)	OFF	DTC Logic
U2148-87	CAN comm err (brake control unit)	OFF	DTC Logic
U214E-87	CAN comm err (combination meter)	OFF	DTC Description
U214F-87	CAN comm err (BCM)	OFF	DTC Description
U2152-87	CAN comm err (ADAS control unit)	OFF	DTC Logic

<Added>

DTC	Diagnostic item	SRS air bag warning light	Reference	
U2154-87	CAN comm err (MIU)	OFF	Attached sheet 7 (3/6)	
U2159-87	CAN comm err (EPS)	OFF	Attached sheet 7 (6/6)	<Added>
U215B-87	CAN comm err (IPDM E/R)	OFF	DTC Description	
U215F-87	CAN comm err (laser/radar)	OFF	DTC Logic	
U2165-87	CAN comm err (SONAR)	OFF	Attached sheet 8 (3/9)	
U216E-87	CAN comm err (Side radar)	OFF	Attached sheet 8 (6/9)	
U2175-87	CAN comm err (AVM)	OFF	Attached sheet 8 (9/9)	<Added>
U2176-87	CAN comm err (CCM/ST angle sensor)	OFF	DTC Logic	

ADDITIONAL SERVICE WHEN REPLACING AIR BAG DIAGNOSIS SENSOR UNIT

Work Procedure

1. REPLACE AIR BAG DIAGNOSIS SENSOR UNIT

Replace air bag diagnosis sensor unit.

>>

GO TO 2.

2. WRITING VEHICLE SPECIFICATION

Perform configuration for air bag diagnosis sensor unit. Refer to Description.

>>

GO TO 3.

3. PERFORM THE FACTORY MODE OFF

1. Change the power supply mode of the electric motor switch to ON.
2. Select "Factory Mode OFF" in "Special Function" screen of "AIR BAG".
3. Check the item No.1: Factory Mode and perform the follwing procedures by the set value.

   ON: Select "OK" and change the set value to "OFF".

   OFF: No action required, work completed.

>>

WORK END

<Added>

U2117-81 CAN comm err (DCM)

DTC Description

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2117-81	CAN comm err (DCM) [Controller area network communication error (DCM)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- TCU
- Air bag diagnosis sensor unit

FAIL-SAFE

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DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC U2117-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

<Added>

Diagnosis Procedure

WARNING:

- ***Before servicing, electric motor switch OFF, disconnect 12V battery negative terminal, and wait at least 3 minutes or more. (To discharge backup capacitor.)***
- ***Never use unspecified tester or other measuring device.***

1. CHECK DTC PRIORITY

If DTC U2117-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK TCU SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self-diagnosis" of "IVC".

Is any DTC detected?

YES >>

Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.

NO >>

Replace air bag diagnosis sensor unit.

<Added>

U2117-87 CAN comm err (DCM)

DTC Logic

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart.

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2117-87	CAN comm err (DCM) [Controller area network communication error (TCU)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When the air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- TCU
- Air bag diagnosis sensor unit

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON and wait for 2 seconds or more.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

Diagnosis Procedure

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication system.

>>

INSPECTION END

<Added>

U2154-81 CAN comm err (MIU)

DTC Description

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2154-81	CAN comm err (MIU) [Controller area network communication error (AV control unit)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- AV control unit
- Air bag diagnosis sensor unit

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC U2154-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

<Added>

Diagnosis Procedure

WARNING:

- ***Before servicing, electric motor switch OFF, disconnect 12V battery negative terminal, and wait at least 3 minutes or more. (To discharge backup capacitor.)***
- ***Never use unspecified tester or other measuring device.***

1. CHECK DTC PRIORITY

If DTC U2154-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK AV CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self-diagnosis" of "MULTI AV".

Is any DTC detected?

YES >>

Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.

NO >>

Replace air bag diagnosis sensor unit.

<Added>

U2154-87 CAN comm err (MIU)

DTC Logic

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart.

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2154-87	CAN comm err (MIU) [Controller area network communication error (AV control unit)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- AV control unit
- Air bag diagnosis sensor unit

FAIL-SAFE

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DTC CONFIRMATION PROCEDURE

1. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON and wait for 2 seconds or more.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

Diagnosis Procedure

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication system.

>>

INSPECTION END

<Added>

U2159-81 CAN comm err (EPS)

DTC Description

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2159-81	CAN comm err (EPS) [Controller area network communication error (power steering control module)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Power steering control module
- Air bag diagnosis sensor unit

FAIL-SAFE

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DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC U2159-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

<Added>

Diagnosis Procedure

WARNING:

- ***Before servicing, electric motor switch OFF, disconnect 12V battery negative terminal, and wait at least 3 minutes or more. (To discharge backup capacitor.)***
- ***Never use unspecified tester or other measuring device.***

1. CHECK DTC PRIORITY

If DTC U2159-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK POWER STEERING CONTROL MODULE SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self-diagnosis" of "EPS/DAST 3".

Is any DTC detected?

YES >>

Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.

NO >>

Replace air bag diagnosis sensor unit.

<Added>

U2159-87 CAN comm err (EPS)

DTC Logic

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart.

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2159-87	CAN comm err (EPS) [Controller area network communication error (power steering control module)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Power steering control module
- Air bag diagnosis sensor unit

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON and wait for 2 seconds or more.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

Diagnosis Procedure

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication system.

>>

INSPECTION END

<Added>

U2165-81 CAN comm err (SONAR)

DTC Description

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2165-81	CAN comm err (SONAR) [Controller area network communication error (sonar control unit)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Sonar control unit
- Air bag diagnosis sensor unit

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC U2165-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

<Added>

Diagnosis Procedure

WARNING:

- ***Before servicing, electric motor switch OFF, disconnect 12V battery negative terminal, and wait at least 3 minutes or more. (To discharge backup capacitor.)***
- ***Never use unspecified tester or other measuring device.***

1. CHECK DTC PRIORITY

If DTC U2165-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index.

NO >>

GO TO 2.

2. CHECK SONAR CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self-diagnosis of "SONAR".

Is any DTC detected?

YES >>

Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.

NO >>

Replace air bag diagnosis sensor unit.

<Added>

U2165-87 CAN comm err (SONAR)

DTC Logic

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart.

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2165-87	CAN comm err (SONAR) [Controller area network communication error (sonar control unit)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Sonar control unit
- Air bag diagnosis sensor unit

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON and wait for 2 seconds or more.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

Diagnosis Procedure

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication system.

>>

INSPECTION END

<Added>

U216E-81 CAN comm err (Side radar)

DTC Description

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U216E-81	CAN comm err (Side radar) [Controller area network communication error (side radar)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Side radar
- Air bag diagnosis sensor unit

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC U216E-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

<Added>

Diagnosis Procedure

WARNING:

- ***Before servicing, electric motor switch OFF, disconnect 12V battery negative terminal, and wait at least 3 minutes or more. (To discharge backup capacitor.)***
- ***Never use unspecified tester or other measuring device.***

1. CHECK DTC PRIORITY

If DTC U216E-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK IPDM E/R SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self-diagnosis" of "IPDM E/R".

Is any DTC detected?

YES >>

Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.

NO >>

Replace air bag diagnosis sensor unit.

<Added>

U216E-87 CAN comm err (Side radar)

DTC Logic

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart.

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U216E-87	CAN comm err (Side radar) [Controller area network communication error (side radar)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Side radar
- Air bag diagnosis sensor unit

FAIL-SAFE

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DTC CONFIRMATION PROCEDURE

1. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON and wait for 2 seconds or more.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

Diagnosis Procedure

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication system.

>>

INSPECTION END

<Added>

U2175-81 CAN comm err (AVM)

DTC Description

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2175-81	CAN comm err (AVM) [Controller area network communication error (around view monitor)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Around view monitor control unit
- Air bag diagnosis sensor unit

FAIL-SAFE

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DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC U2175-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

<Added>

Diagnosis Procedure

WARNING:

- ***Before servicing, electric motor switch OFF, disconnect 12V battery negative terminal, and wait at least 3 minutes or more. (To discharge backup capacitor.)***
- ***Never use unspecified tester or other measuring device.***

1. CHECK DTC PRIORITY

If DTC U2175-81 is displayed with Network-DTC, first perform the trouble diagnosis for Network-DTC.

Is applicable DTC detected?

YES >>

Perform diagnosis of applicable. Refer to DTC Index .

NO >>

GO TO 2.

2. CHECK AROUND VIEW MONITOR CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self-diagnosis" of "Multi Around Monitor".

Is any DTC detected?

YES >>

Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DTC Index .

NO >>

Replace air bag diagnosis sensor unit.

<Added>

U2175-87 CAN comm err (AVM)

DTC Logic

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart.

DTC DETECTION LOGIC

DTC	M.U.T.-III SE screen items (Trouble diagnosis content)	DTC Detection Condition	
U2175-87	CAN comm err (AVM) [Controller area network communication error (around view monitor)]	Diagnosis condition	When electric motor switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	When air bag diagnosis sensor unit cannot send or receive the CAN communication signals.
		Diagnosis delay time	2 seconds or more.

POSSIBLE CAUSE

- Around view monitor control unit
- Air bag diagnosis sensor unit

FAIL-SAFE

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DTC CONFIRMATION PROCEDURE

1. CHECK SELF-DIAG RESULT

With M.U.T.-III SE

1. Electric motor switch ON and wait for 2 seconds or more.
2. Perform "Self-diagnosis" mode of "AIR BAG" using M.U.T.-III SE.

Is malfunctioning part detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END

Diagnosis Procedure

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication system.

>>

INSPECTION END

<Added>