SERVICE BULLETIN

MITSUBISHI MOTORS

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CORRECTION	ISSUE NO. : MSB-15EXL54-502	DATE : 2015-09-09
SUBJECT : Error in writing of the troubleshooting of P1028, P1047, and P1049 in PHEV-ECU		<DESTINATION/MODEL> (EU/MMAL/NZ) <M/Y> 14-16
GROUP : Gr:54(Chassis electrical)		OUTLANDER PHEV(GG0W)

1. Description :

Please refer to the attached document for the correction of the error in writing existing in the applicable service manual.

2. Affected service manuals :

Please refer to the attached document (Attached sheet 1)

3. About the details :

Please refer to the attached document (Attached sheets 5-7)

Attached sheet 1

For overseas market

<EU>

Applicable manual	Pub No.	Applicable title (INFO ID)	Contents
2014 OUTLANDER / OUTLANDER PHEV WORKSHOP MANUAL	CGFE14E2-CD (ENG) CGFF14E2-CD (FRE) CGFG14E2-CD (GER) CGFS14E2-CD (SPA) CGFI14E2-CD (ITA)	Code No. P1028: Front motor shutdown circuit(1) (M549-23-220-01600-01)	Attached sheet 5
		Code No. P1047: Rear motor shutdown circuit(1) (M549-23-240-01000-01)	Attached sheet 6
		Code No. P1049: Generator shutdown circuit(1) (M549-23-260-01400-01)	Attached sheet 7
2014.5 OUTLANDER / OUTLANDER PHEV WORKSHOP MANUAL	CGFE14E3-CD (ENG) CGFF14E3-CD (FRE) CGFG14E3-CD (GER) CGFS14E3-CD (SPA) CGFI14E3-CD (ITA)	Code No. P1028: Front motor shutdown circuit(1) (M549-23-220-01601-01)	Attached sheet 5
		Code No. P1047: Rear motor shutdown circuit(1) (M549-23-240-01001-01)	Attached sheet 6
		Code No. P1049: Generator shutdown circuit(1) (M549-23-260-01401-01)	Attached sheet 7
2016 OUTLANDER/ OUTLANDER PHEV Workshop Manual	CGFE16E1-CD (ENG) CGFF16E1-CD (FRE) CGFG16E1-CD (GER) CGFS16E1-CD (SPA) CGFI16E1-CD (ITA)	Code No. P1028: Front motor shutdown circuit(1) (M549-23-220-01602-01)	Attached sheet 5
		Code No. P1047: Rear motor shutdown circuit(1) (M549-23-240-01002-01)	Attached sheet 6
		Code No. P1049: Generator shutdown circuit(1) (M549-23-260-01402-01)	Attached sheet 7

<MMAL/NZ>

Applicable manual	Pub No.	Applicable title (INFO ID)	Contents
2014 OUTLANDER / OUTLANDER PHEV WORKSHOP MANUAL	MMAL:AU900408 NZ:DRAFT	Code No. P1028: Front motor shutdown circuit(1) (M549-23-220-02700-01)	Attached sheet 5
		Code No. P1047: Rear motor shutdown circuit(1) (M549-23-240-02100-01)	Attached sheet 6
		Code No. P1049: Generator shutdown circuit(1) (M549-23-260-02500-01)	Attached sheet 7
2016 OUTLANDER / OUTLANDER PHEV WORKSHOP MANUAL	MMAL: AU900504 NZ:DRAFT	Code No. P1028: Front motor shutdown circuit(1) (M549-23-220-04900-01)	Attached sheet 5
		Code No. P1047: Rear motor shutdown circuit(1) (M549-23-240-01002-01)	Attached sheet 6
		Code No. P1049: Generator shutdown circuit(1) (M549-23-260-01402-01)	Attached sheet 7

<Incorrect>

Code No. P1028: Front motor shutdown circuit(1)

⚠ CAUTION

- **If there is any problem in the CAN bus lines, an incorrect diagnosis code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table).**
- **Whenever ECU is replaced, ensure that the CAN bus lines are normal.**

TROUBLE JUDGEMENT

The PHEV-ECU sets diagnosis code No. P1028 when the front motor shut down circuit fails.

PROBABLE CAUSES

- Damaged harness or connector
- Malfunction of PDU
- Malfunction of PHEV-ECU

DIAGNOSIS PROCEDURE

STEP 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – Troubleshooting). On completion, go to Step 2.

STEP 2. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn on the power supply mode of the electric motor switch.

(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Check the signal line for short circuit (PHEV-ECU connector and PDU connector).

- Check the wiring harness between PHEV-ECU (MSDN terminal) connector and the PDU (MSDN terminal) connector.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the connector or wiring harness.

STEP 4. M.U.T.-III other system diagnosis code

Use M.U.T.-III to check whether the Front EMCU related diagnosis code is set or not.

Q: Is the diagnosis code set?

YES : Troubleshoot for the relevant diagnosis code.

NO : Go to Step 5.

STEP 5. Check the voltage at the PDU connector (MSDN terminal).

Disconnect the front MCU connector with the power supply mode of the electric motor switch turned on (not READY), and then check the voltage.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the PHEV-ECU.Then go to Step 8.

STEP 6. M.U.T.-III data list (Front EMCU)

Check that the following data list display contents are normal.

Data list

- Item 5: Front EMCU shutdown request

Check condition	Normal condition
The PHEV-ECU does not request the EMCU to shut down the high voltage with the power supply mode of the electric motor switch turned on.	No
The PHEV-ECU requests the EMCU to shut down the high voltage with the power supply mode of the electric motor switch turned on.	Yes

Q: Is the check result normal?

YES : Go to Step 7.

NO : Replace the PDU.Then go to Step 7 .

STEP 7. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn on the power supply mode of the electric motor switch.

(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?

<Correct>

Insert the attached sheet 5 (3/3)

Attached sheet 5 (2/3)

<Incorrect>

YES : Replace the PHEV-ECU.Then go to Step 8.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction)

STEP 8. Check whether the diagnosis code is set again.
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn on the power supply mode of the electric motor switch.
(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?
YES : Return to Step 1.
NO : The procedure is complete.

<Correct>

Insert the attached sheet 5 (3/3)

<Correct>

Code No. P1028: Front motor shutdown circuit(1)

TROUBLE JUDGEMENT

The PHEV-ECU sets diagnosis code No. P1028 when the front motor shut down circuit fails.

NOTE: Diagnosis code No. P1028 may be set when the voltage of the auxiliary battery drops.

PROBABLE CAUSES

- The auxiliary battery is flat.
- Malfunction of the auxiliary battery
- Loose auxiliary battery terminal
- Damaged harness or connector
- Malfunction of power drive unit
- Malfunction of PHEV-ECU

DIAGNOSIS PROCEDURE

STEP 1. Check the voltage at the power drive unit connector (MSDN terminal).

1. Disconnect the FMCU connector with the power supply mode of the electric motor switch turned on (not READY).
2. Check the voltage between the power drive unit connector (MSDN terminal) and body earth.

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 3.
NO : Go to Step 2.

STEP 2. Check the signal line for short circuit (PHEV-ECU connector and power drive unit connector).

- Check the wiring harness between PHEV-ECU (MSDN terminal) connector and the power drive unit (MSDN terminal) connector.

Q: Is the check result normal?
YES : Replace the PHEV-ECU.
NO : Repair the connector or wiring harness.

STEP 3. M.U.T.-III data list (FEMCU)

Check that the following data list display contents are normal.

Data list

- Item No.25: HW shutdown

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the power drive unit.

STEP 4. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn on the power supply mode of the electric motor switch.
(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?
YES : Replace the PHEV-ECU.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).

<Incorrect>

Code No. P1047: Rear motor shutdown circuit(1)

⚠ CAUTION

- **If there is any problem in the CAN bus lines, an incorrect diagnosis code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table).**
- **Whenever ECU is replaced, ensure that the CAN bus lines are normal.**

TROUBLE JUDGEMENT

The PHEV-ECU sets diagnosis code No. P1047 when the rear motor shut down circuit fails.

PROBABLE CAUSES

- Damaged harness or connector
- Malfunction of rear EMCU
- Malfunction of PHEV-ECU

DIAGNOSIS PROCEDURE

STEP 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – Troubleshooting). On completion, go to Step 2.

STEP 2. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn on the power supply mode of the electric motor switch.

(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Check the signal line for short circuit (PHEV-ECU connector and rear EMCU connector).

- Check the wiring harness between PHEV-ECU (RSDN terminal) connector and the rear EMCU (RSDN terminal) connector.

Q: Is the diagnosis code set?

YES : Go to Step 4.

NO : Repair the connector or wiring harness.

STEP 4. M.U.T.-III other system diagnosis code

Use M.U.T.-III to check whether the rear EMCU related diagnosis code is set or not.

Q: Is the diagnosis code set?

YES : Troubleshoot for the relevant diagnosis code.

NO : Go to Step 5.

STEP 5. Check the voltage at the rear EMCU connector (RSDN terminal).

Disconnect the rear MCU connector with the power supply mode of the electric motor switch turned on (not READY), and then check the voltage.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the PHEV-ECU.Then go to Step 8.

STEP 6. M.U.T.-III data list (Rear EMCU)

Check that the following data list display contents are normal.

Data list

- Item 5: Rear EMCU shutdown request

Check condition	Normal condition
The PHEV-ECU does not request the EMCU to shut down the high voltage with the power supply mode of the electric motor switch turned on.	No
The PHEV-ECU requests the EMCU to shut down the high voltage with the power supply mode of the electric motor switch turned on.	Yes

Q: Is the check result normal?

YES : Go to Step 7.

NO : Replace the rear EMCU.Then go to Step 7.

STEP 7. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn on the power supply mode of the electric motor switch.

(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?

<Correct>

Insert the attached sheet 6 (3/3)

<Incorrect>

YES : Replace the PHEV-ECU. Then go to Step 8.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction).

STEP 8. Check whether the diagnosis code is set again.
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn on the power supply mode of the electric motor switch.
(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?
YES : Return to Step 1.
NO : The procedure is complete.

<Correct>

Insert the attached sheet 6 (3/3)

<Correct>

Code No. P1047: Rear motor shutdown circuit(1)

TROUBLE JUDGEMENT

The PHEV-ECU sets diagnosis code No. P1047 when the rear motor shut down circuit fails.

NOTE: Diagnosis code No. P1047 may be set when the voltage of the auxiliary battery drops.

PROBABLE CAUSES

- The auxiliary battery is flat.
- Malfunction of the auxiliary battery
- Loose auxiliary battery terminal
- Damaged harness or connector
- Malfunction of REMCU
- Malfunction of PHEV-ECU

DIAGNOSIS PROCEDURE

STEP 1. Check the voltage at the REMCU connector (RSDN terminal).

1. Disconnect the MCU connector with the power supply mode of the electric motor switch turned on (not READY).
2. Check the voltage between the REMCU connector (RSDN terminal) and body earth.

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 3.
NO : Go to Step 2.

STEP 2. Check the signal line for short circuit (PHEV-ECU connector and REMCU connector).

- Check the wiring harness between PHEV-ECU (RSDN terminal) connector and the REMCU (RSDN terminal) connector.

Q: Is the diagnosis code set?
YES : Replace the PHEV-ECU.
NO : Repair the connector or wiring harness.

STEP 3. M.U.T.-III data list <REMCU>

Check that the following data list display contents are normal.

Data list

- Item No.25: HW shutdown

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the REMCU.

STEP 4. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn on the power supply mode of the electric motor switch.
(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?
YES : Replace the PHEV-ECU.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).

<Incorrect>

Code No. P1049: Generator shutdown circuit(1)

⚠ CAUTION

- **If there is any problem in the CAN bus lines, an incorrect diagnosis code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table).**
- **Whenever ECU is replaced, ensure that the CAN bus lines are normal.**

TROUBLE JUDGEMENT

The PHEV-ECU sets diagnosis code No. P1049 when the generator shut down circuit fails.

PROBABLE CAUSES

- Damaged harness or connector
- Malfunction of GCU
- Malfunction of PHEV-ECU

DIAGNOSIS PROCEDURE

STEP 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – Troubleshooting). On completion, go to Step 2.

STEP 2. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn on the power supply mode of the electric motor switch.

(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Check the signal line for short circuit (PHEV-ECU connector and rear GCU connector).

- Check the wiring harness between PHEV-ECU (GSDN terminal) connector and the GCU (GSDN terminal) connector.

Q: Is the diagnosis code set?

YES : Go to Step 4.

NO : Repair the connector or wiring harness.

STEP 4. M.U.T.-III other system diagnosis code

Use M.U.T.-III to check whether the GCU related diagnosis code is set or not.

Q: Is the diagnosis code set?

YES : Troubleshoot for the relevant diagnosis code.

NO : Go to Step 5.

STEP 5. Check the voltage at the PHEV-ECU connector (GSDN terminal).

Disconnect the GCU connector with the power supply mode of the electric motor switch turned on (not READY), and then check the voltage.

OK: System voltage

Q: Is the diagnosis code set?

YES : Go to Step 6.

NO : Replace the PHEV-ECU.Then go to Step 8.

STEP 6. M.U.T.-III data list (GCU)

Check that the following data list display contents are normal.

Data list

- Item 5: GCU shutdown request

Check condition	Normal condition
The PHEV-ECU does not request the GCU to shut down the high voltage with the power supply mode of the electric motor switch turned on.	No
The PHEV-ECU requests the GCU to shut down the high voltage with the power supply mode of the electric motor switch turned on.	Yes

Q: Is the check result normal?

YES : Go to Step 7.

NO : Replace the PDU.Then go to Step 7 .

STEP 7. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn on the power supply mode of the electric motor switch.

(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?

<Correct>

Insert the attached sheet 7 (3/3)

<Incorrect>

YES : Replace the PHEV-ECU.Then go to Step 8.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).

STEP 8. Check whether the diagnosis code is set again.
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn on the power supply mode of the electric motor switch.
(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?
YES : Return to Step 1.
NO : The procedure is complete.

<Correct>

Insert the attached sheet 7 (3/3)

<Correct>

Code No. P1049: Generator shutdown circuit(1)

TROUBLE JUDGEMENT

The PHEV-ECU sets diagnosis code No. P1049 when the generator shut down circuit fails.

NOTE: Diagnosis code No. P1049 may be set when the voltage of the auxiliary battery drops.

PROBABLE CAUSES

- The auxiliary battery is flat.
- Malfunction of the auxiliary battery
- Loose auxiliary battery terminal
- Damaged harness or connector
- Malfunction of GCU
- Malfunction of PHEV-ECU

DIAGNOSIS PROCEDURE

STEP 1. Check the voltage at the PHEV-ECU connector (GSDN terminal).

1. Disconnect the GCU connector with the power supply mode of the electric motor switch turned on (not READY).
2. Check the voltage between the PHEV-ECU connector (GSDN terminal) and body earth.

OK: System voltage

Q: Is the diagnosis code set?
YES : Go to Step 3.
NO : Go to Step 2.

STEP 2. Check the signal line for short circuit (PHEV-ECU connector and rear GCU connector).

- Check the wiring harness between PHEV-ECU (GSDN terminal) connector and the GCU (GSDN terminal) connector.

Q: Is the diagnosis code set?
YES : Replace the PHEV-ECU.
NO : Repair the connector or wiring harness.

STEP 3. M.U.T.-III data list <GCU>

Check that the following data list display contents are normal.

Data list

- Item No.25: HW shutdown

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the power drive unit.

STEP 4. Check whether the diagnosis code is set again.

Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn on the power supply mode of the electric motor switch.
(3) Check if the diagnosis code is set.

Q: Is the diagnosis code set?
YES : Replace the PHEV-ECU.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).