



## EME GROUND CONNECTION MONITORING FAULTS - CCM - DRIVE. CHECK AS SOON AS POSSIBLE

### MODEL

F15 PHEV (X5 xDrive40e)
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### SITUATION

The following check control messages are displayed:

- CCM 794 - Drive. Check as soon as possible

One or more of the following faults may be stored in the EME (electrical machine electronics):

Fault code	Text
222275	DCDC, monitoring, ageing of ground strap connection
222276	EME, ground connection monitoring: Threshold value 2 exceeded
222B26	EME, ground connection monitoring, sensor signal: Short circuit to B+
222B28	EME, ground connection monitoring, sensor signal: Too great

### CAUSE

Corrosion on body grounding points for the EME - DC/DC converter's ground connection monitoring cable and related components:

- Ground monitoring Sensor line to chassis grounding point
- 12 V system negative battery cable
- Equipotential bonding line (potential compensation line)

### CORRECTION

1. Verify there is no chafing or tension on the harness leading to EME connector A190\*1B.
2. Verify that there is no damage to the pins on the EME connector.
3. Replace ground connection monitoring cable (61 12 9 353 059).
4. Replace the ground connection monitoring cable body grounding point nut (07 14 6 973 709).
5. Torque body grounding point nut (07 14 6 973 709) to 8NM.
6. Replace the negative battery cable (12 42 8 614 224) including flange nuts (07 14 3 413 174)
7. Replace the equipotential bonding line (12 42 8 654 915) including flange nut (07 14 3 413 174) and Torx screw (07 11 9 908 284).
8. See important notes below and follow the procedure in **Attachment 1**.



Note:

- All contact surfaces of the grounding points (especially on the body) must be cleaned with a fine wire brush to ensure proper electrical conductivity.
- Follow the proper torque procedure and specifications when replacing the grounding point fasteners.
- Review and adhere to the procedure for tightening the equipotential bonding screw connections
  - Refer to **Attachment 2** - Form for equipotential bonding screw connection
- The EME sensor line, negative battery cable and equipotential bonding line are labelled as grounding cable in the EPC (Electronic Parts Catalogue).
- Replacing the EME will not provide a solution to this situation.



**Important warning for working on the high-voltage systems on the F15 PHEV:**

**Only properly trained personnel, who have passed all applicable technical training courses, should perform any maintenance or repairs on any Hybrid or Electric Vehicle. Work performed by unqualified persons may result in severe injury or damage to the vehicle. Additional information is found in Repair Instruction 61 00...Observe safety instructions when handling electric vehicles.**

## PROCEDURE

Refer to **Attachment 1**.

- Procedure to remove and replace the EME grounding cables and fasteners: F15PHEV.
- Observe the note concerning handling the wiring harnesses and the lines. Refer to Repair Operation REP 6100... Notes on handling wiring harnesses and cables.
- Use a suitable tool for the repair wiring harness. Refer to Repair Operation REP 6113... Special tools for wiring harness repairs.

## PARTS INFORMATION

Part Number	Description	Quantity
61 12 9 353 059	Grounding cable	1
07 14 6 973 709	Replacement nut	1
12 42 8 614 224	Grounding cable	1
07 14 3 413 174	Replacement nut	2
12 42 8 654 915	Grounding cable	1
07 11 9 908 284	Replacement Torx screw	1
82 14 1 467 704	BMW antifreeze/coolant	As needed

## WARRANTY INFORMATION

Covered under the terms of the BMW New Vehicle Limited Warranty for Passenger Cars and Light Trucks or the BMW Certified Pre-Owned Program.

<b>Defect Code:</b>	<b>6112667500</b>	<b>Grounding cable / ground cable / equipotential bonding (hybrid/e-vehicle) corroded</b>
<b>Labor Operation:</b>	<b>Labor Allowance:</b>	<b>Description:</b>
00 00 006	Refer to AIR	Performing vehicle test (with vehicle diagnosis system - checking faults) (Main work)
Or:		
00 00 556	Refer to AIR	Performing vehicle test (with vehicle diagnosis system - checking faults) (Plus work)
And:		
61 21 528	Refer to AIR	Connect an approved battery charger/power supply (indicated in AIR as Charging battery)
And:		
61 25 910	Refer to AIR	Recharging high-voltage battery unit (to high voltage charging socket)
And:		
12 36 518	Refer to AIR	Remove and install electrical machine electronics (EME) (To the point of access, inspecting and replacing the cables as described in the repair procedure attachment)

And, as needed:

#### Sublet - Bulk Materials

<b>Sublet Code 4</b>	See the sublet reimbursement calculations below	Reimbursement for the repair-related bulk materials (Do not use part numbers for claim submission)
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Sublet reimbursement calculation for claiming the applicable repair-related bulk materials (BMW part numbers) is at the dealer net price for the quantities used plus your centers handling.

BMW Antifreeze/Coolant: Claim for the amount that is needed to replace what was drained with a 50/50 coolant/water solution.

Enter this material cost in sublet and itemize the amount on the repair order and in claim comment section.

## ATTACHMENTS

View PDF attachment [Attachment 1 Procedure to inspect and repair the EME grounds.](#)

View PDF attachment [Attachment 2 Form for equipotential bonding screw connection.](#)

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