

 Preview Solution CBR-2502-2

Mack Chassis - Battery Sensor Diagnostic and Calibration Procedure - PR (4) - AN (4)

Published 5 January 2026

Valid For

Mack model - PR(4) and AN (4)

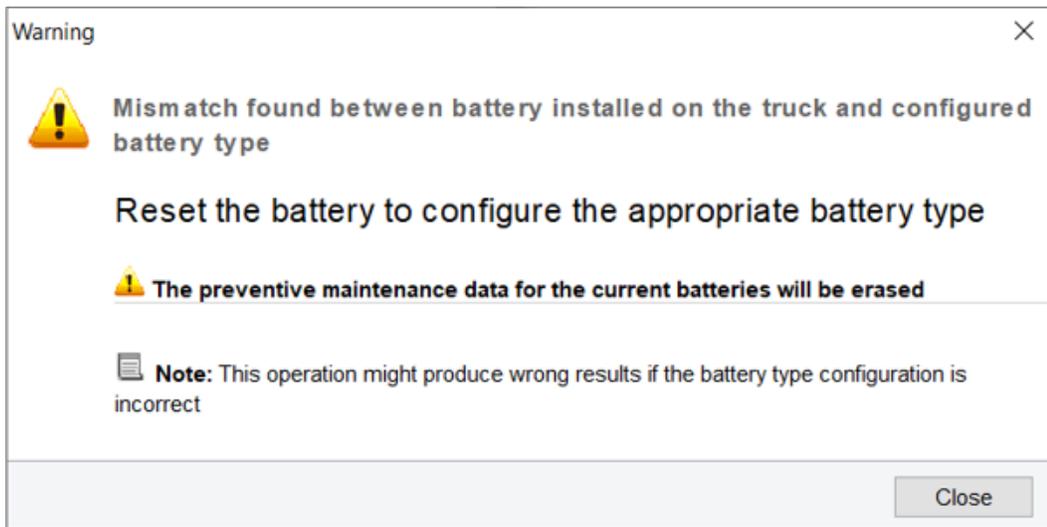
Model Year 2025 to current

This CBR solution provides guidelines for ensuring the correct position of battery sensor modules and battery sensor harnesses on the Mack PR (4) and AN (4) chassis, as well as the Battery Sensor Diagnostic and Calibration Procedure.

Battery Sensor Concerns

Problem Observed	What Is Seen In
Battery Sensor Sub-HW mismatch in Control Unit Data after VMCU campaign	Calibration Failure / Pro with x54 and/or x56 and.
Missing calibration	x54 - Fault codes – e.g.: C11854, etc
Invalid / Incompatible Configuration	x56 - Fault codes – e.g.: C11856, etc
Invalid / Incompatible Software Component	x57 - Fault codes – e.g.: C11857, etc

Note: If you see this message:



Please refer to **CBR-2544**.

Battery Sensor Module Position

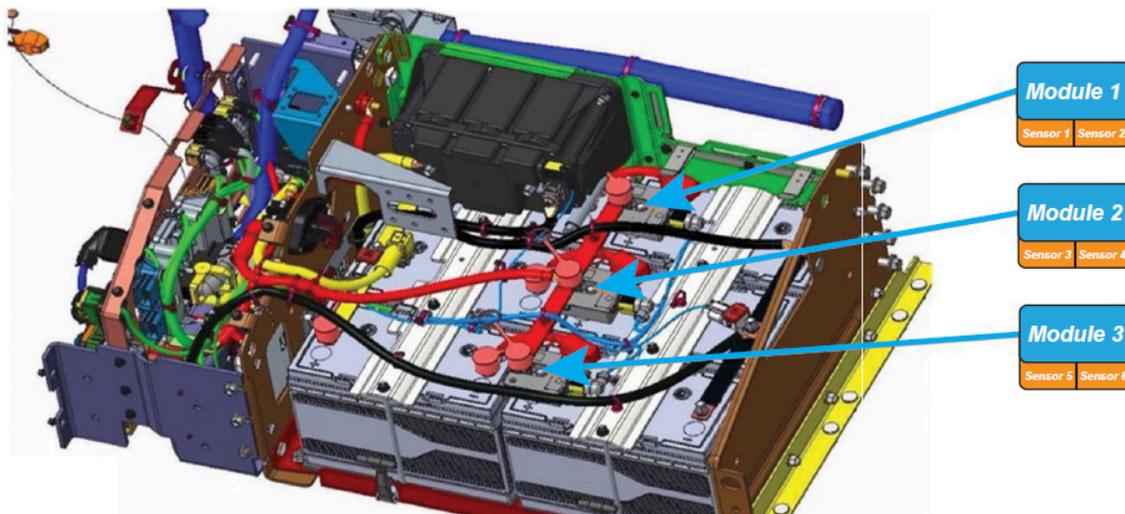
4-Battery Configuration:

- **Battery Sensor Module 1:** Install on the inboard-most set of batteries.
- **Battery Sensor Module 2:** Install on the outboard-most set of batteries.

6-Battery Configuration:

- **Battery Sensor Module 1:** Install on the inboard-most set of batteries.
- **Battery Sensor Module 2:** Install on the middle set of batteries.
- **Battery Sensor Module 3:** Install on the outboard-most set of batteries.

Refer to the image below for detailed positioning of battery sensor modules.



Battery Sensor Identification

PTT Identification	Actual Identification
Battery Sensor Module 3, Sensor 1	Battery Sensor Module 1, Sensor 1
Battery Sensor Module 3, Sensor 2	Battery Sensor Module 1, Sensor 2
Battery Sensor Module 3, Sensor 3	Battery Sensor Module 2, Sensor 3

Battery Sensor Module 3, Sensor 4	Battery Sensor Module 2, Sensor 4
Battery Sensor Module 3, Sensor 5	Battery Sensor Module 3, Sensor 5
Battery Sensor Module 3, Sensor 6	Battery Sensor Module 3, Sensor 6

Post-Correction Operations

After performing any corrections to the battery sensors or their harnesses, the following operations must be completed:

1. **Operation 3113-22-03-01:** Programming for all battery sensors.
2. **Operation 1700-08-03-33:** Calibration for all battery sensors.

Ensure both operations are performed to maintain system integrity and performance.

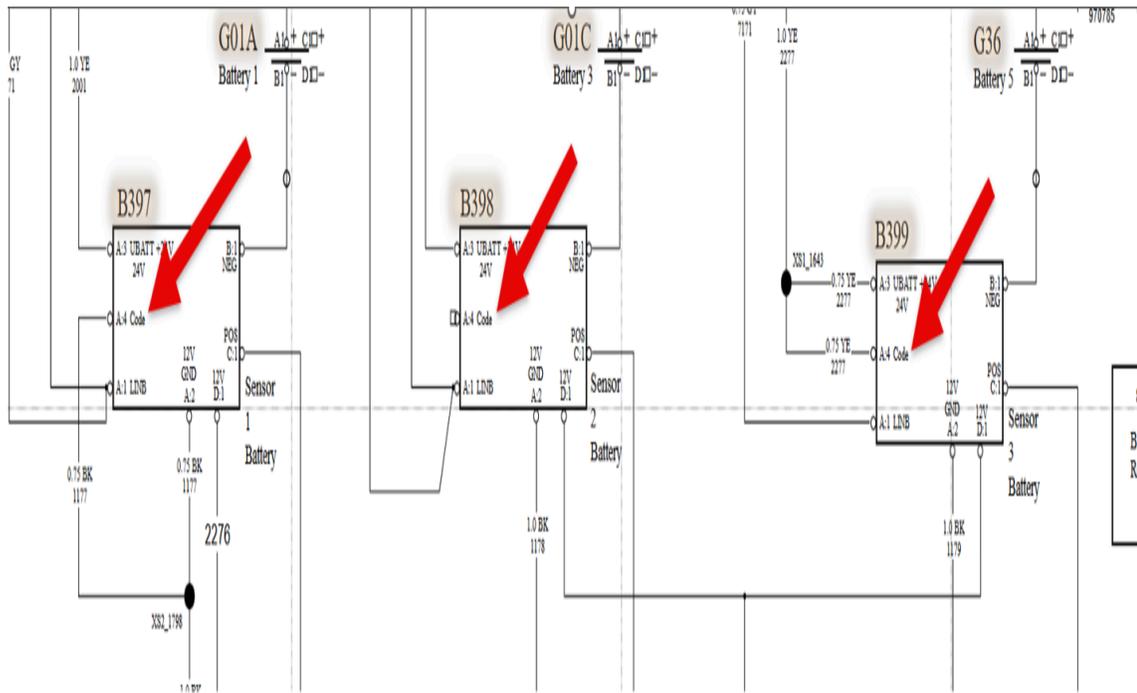
Harness Label Issues

If harness labels are:

- Damaged
- Missing
- Illegible

Use the following method to determine the correct harness positioning:

1. **Use a Multimeter:**
 - Measure the voltage to the code pin of each harness.
 - Cross-reference the voltage readings with the vehicle's electrical schematic to confirm the correct harness position.



Sensor identification in schematic	Code pin	Battery sensor names	Installation position in 6 battery configuration
B397	GND	BATS3_1	Close to frame
B398	Open	BATS3_2	Middle
B399	24V	BATS3_3	Away from frame

Scenario : Battery Sensor Modules and/or CCIOM offline.

Control Unit Data Mismatch

The product data and central systems data do not match.

- There is sub hardware registered in central systems that are missing in the product.
- There are control units that are locked for software download.

Blocking mismatch detected. Resolve the mismatch to get the full list of programming operations. Select an item in the table to view details about the control unit.

Readout Time: 2/24/2025 12:24 PM

Control Unit	Product Data	Central Data	Hardware	Sub hardware	Software
Forward Looking Camera (FLC)	✓	✓	✓	✓	✓
Vehicle Master Control Unit (VMCU)	✓	✓	✓	✗	✓
Living Environment Control Module (LECM)	✓	✓	✓	✓	✓
Rear Chassis I/O Module (RCIOM)	✓	✓	✓	✓	✓
Instrument Cluster (IC)	✓	✓	✓	✓	✓
Center Chassis I/O Module (CCIOM)	✓	✓	✓	✗	✓
Forward Looking Radar (FLR)	✓	✓	✓	✓	✓

Details (Center Chassis I/O Module (CCIOM))

Sub hardware ✗

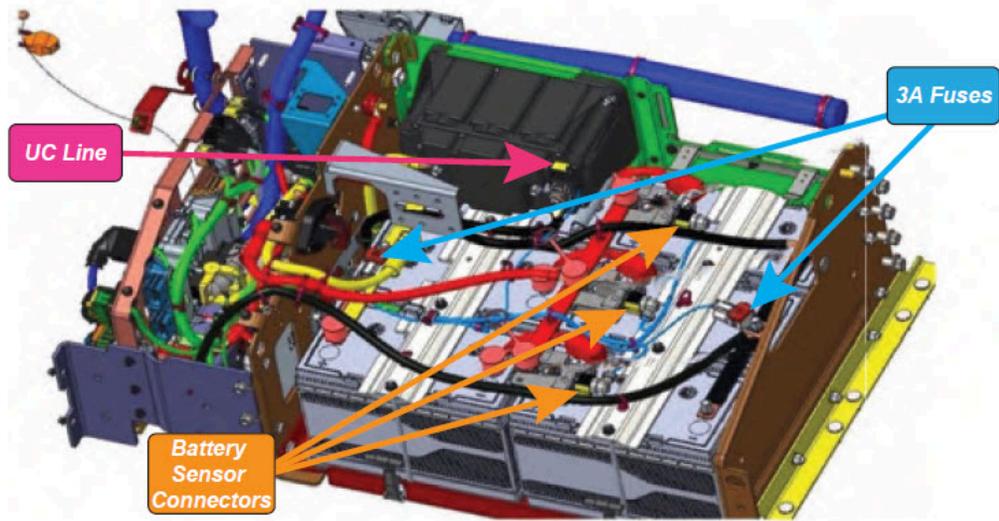
	Part Number	Serial Number
	Product Data	Central Data
Sub hardware	-	23360304
	Product Data	Central Data
Battery Sensor, SOC/SOH	-	24696834
Battery Sensor, SOC/SOH	-	24696834
Battery Sensor, SOC/SOH	-	24696834

Software ✓

Close

- **Battery Sensor Modules and/or CCIOM Offline**

1. Turn the **Maintenance Disconnect Switch (MDS)** off.
2. Unplug each individual battery sensor. (pictured below)
3. Unplug the communication line from the UltraCapacitor. (pictured below)
4. Wait 3 minutes.
5. While waiting, inspect the 3A fuses mounted on the 24V and Ground bus bars.(pictured below)
6. Reconnect the UltraCapacitor communication line.
7. Ensure ground wire is installed. Reference impact operation **3111-16-02-01 - Battery Sensor, replace.**
8. Reconnect the battery sensors.
9. Turn the **MDS** on.
10. Run truck for 30 seconds, turn truck off, then return to on pre-run mode. Check DTC's.



Note: Ensure the battery sensor part number is correctly populated in the Product Date field, and verify there are no mismatches with battery sensors before performing calibration or programming operations.

Related links and attachments

No links or attachments available



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