



Technical Service Bulletin

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Pack Management Unit Fault Codes

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Warranty Statement

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

Contents

Product Affected

- BES CM0904 EV104B
- BES CM2450 EV105B
- BES CM2450 EV107B

Issue Summary

Symptom:

- BES CM0904 EV104B
 - Woodward 0904 Fault Code 54
 - Woodward 0904 Fault Code 55
- BES CM2450 EV105B and BES CM2450 EV107B
 - Fault Code 12144
 - Fault Code 12146

Root Cause:

- Pack management unit contactor low-voltage wiring harness damaged.

Verification

- Connect to pack management unit.
 - Refer to the Calibrate procedure in Energy Storage / Electronic Controls / Pack Management Unit for required tools.
- Disconnect low-voltage connector labeled BMC SERVICE near pack management unit.
- Connect data link 3-pin adapter to BMC SERVICE connector. See Figure 1.

- Connect Kvaser datalink connector to 3-pin adapter.
- Connect Kvaser datalink connector to laptop. Use Xpand service tool.



Figure 1, BMC SERVICE Connector

- Open XPAND service tool
 - Select Kvaser from Hardware section
 - Select 250 kbps from baud rate section
 - Select channel 1 from CAN Channel.
 - See Figure 2.

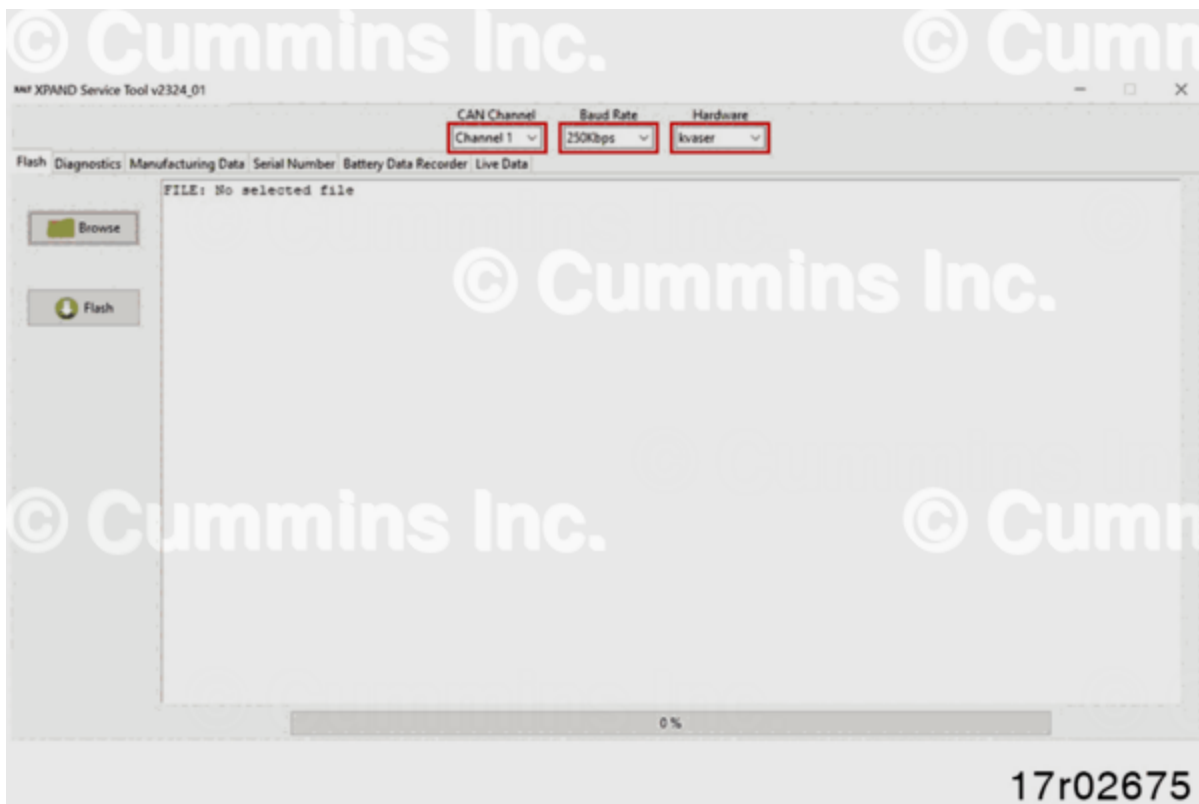


Figure 2, XPAND Service Tool

- Read diagnostic trouble codes from XPAND service tool
 - Select 'Diagnostics' from the top left application bar.
 - Select 'Read DTC' from application bar
 - Check if the following DTCs are ACTIVE or Permanent
 - SPN 517001 FMI 3, 4, 24, or 25
 - SPN 517002 FMI 3, 4, 24, or 25
 - See Figure 3.

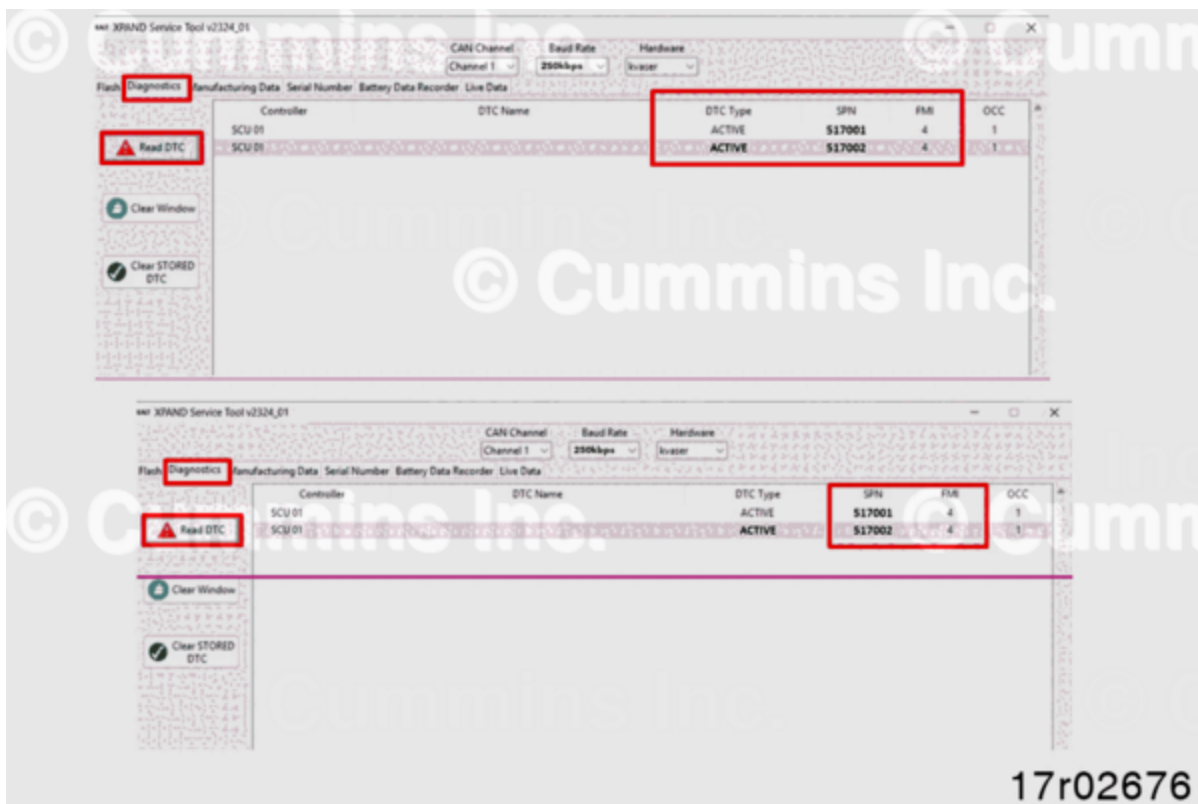


Figure 3, XPAND Service Tool Diagnostics

- If any of the fault codes listed above are ACTIVE or Permanent, proceed to Resolution section.
- If none of the fault codes listed above are ACTIVE or Permanent, continue with published troubleshooting.

Resolution

- Remove pack management unit lid.
 - Refer to published procedure in Service Suite under
 - Energy Storage
 - Electronic Controls
 - Pack Management Unit
 - Disassemble and Assemble
- Inspect contactor low-voltage wiring insulation. If any of the following conditions are found, repair as necessary:
 - Breaks
 - Cuts
 - Damage caused by contact with pack management unit lid
- Email ServiceEngineering.Parts@cummins.com to request repair kit.
 - Repair kit will be provided at no cost .
- Install repair kit.
 - Apply adhesive pad, Part Number ESC102912, to back of pack management unit lid. See Figure 4.

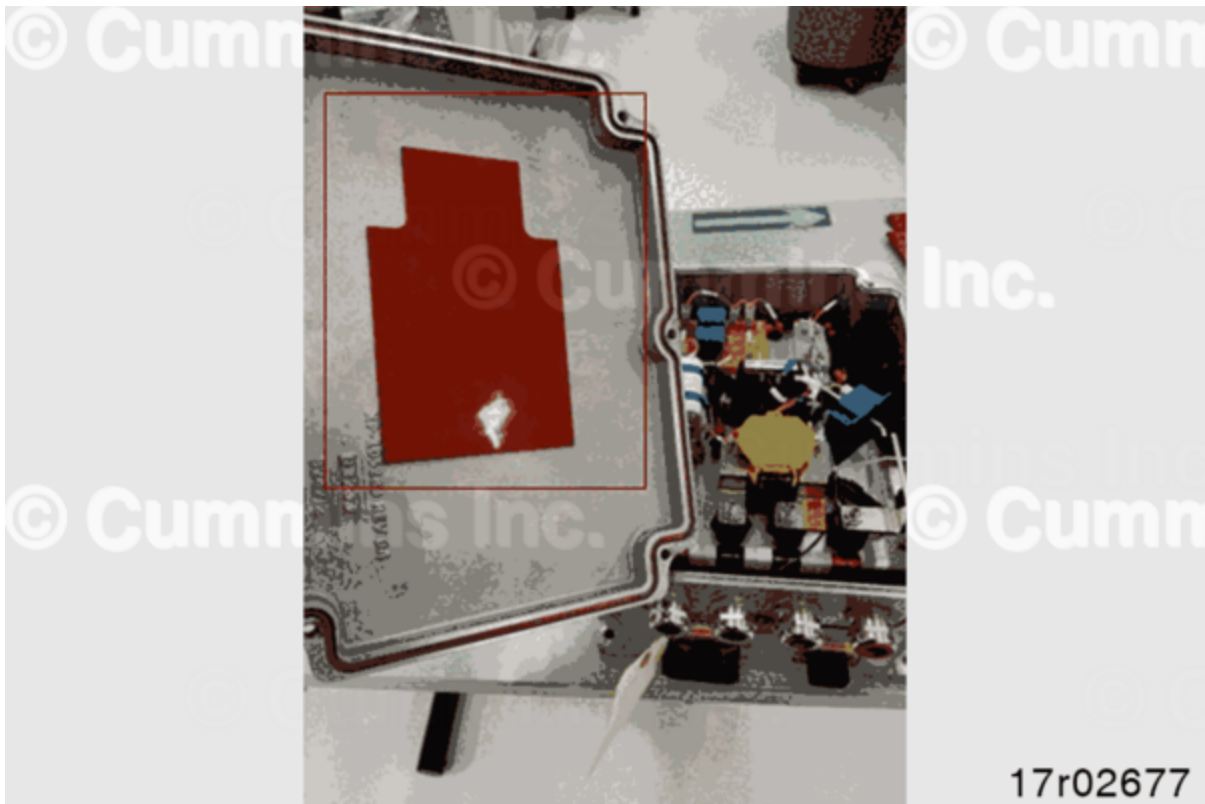


Figure 4, Adhesive pad provided (Part Number ESC 102912) applied on the back of the Pack management unit lid

- Apply electrical tape to contactor low-voltage harness. See Figure 5.

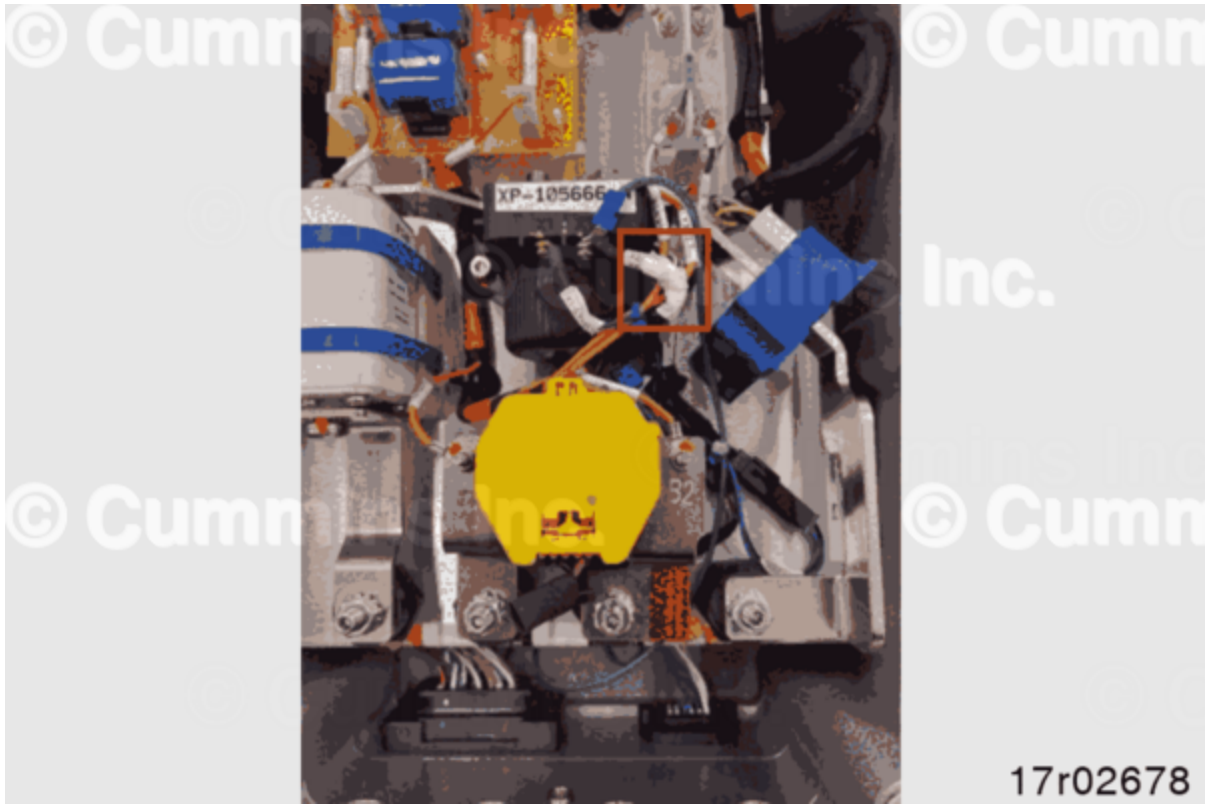


Figure 5, Electrical tape applied on contactor low voltage wiring harness

- Calibrate pack management unit. Refer to published procedure for calibrating pack management unit.
- If any of the following diagnostic trouble codes are active after calibration, follow local technical escalation process:
 - SPN 517001 FMI 3, 4, 24, or 25
 - SPN 517002 FMI 3, 4, 24, or 25

Document History

Date	Details
2026-5-29	Module Created