

| Technical Service Bulletin Number | Revision Level | Date | Group Number |
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| TSB130151 | | | |

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Cummins Inc.

Technical Service Bulletin

Subject

ISX12 G CM2180 EJ Coolant Level Sensor Wiring in Kenworth™ T600, T800, and W900 Chassis

Issue

Some Kenworth™ T600, T800, and T900 chassis, equipped with ISX12 G engines, were built with incorrect original equipment manufacturer (OEM) wiring to the coolant level sensor. This incorrect wiring makes them more susceptible to low coolant Fault Codes 2448, 197, and 235, and an audible low coolant warning with a coolant expansion tank at the full level. The 3-terminal float-type coolant level sensor wiring harness has been incorrectly built with a 5V supply to pin A. Providing a 5V power supply to pin A results in a high signal voltage and a coolant level indication that is lower than actual.

Verification

Verify that the coolant level sensor type is a float-type (Figure 1) and check the wiring to the connector. This connector should **only** contain two wires populated at pins B and C. If three wires are present, remove the 5V supply from pin A to restore the sensor to normal operation.



Figure 1: Float-Type Coolant Level Sensor.

See the following table for affected engine, serial numbers, and vehicle identification numbers.

| Affected Engine Serial Numbers and Vehicle Identification Numbers | | | |
|---|-------------------------------|------------------------|-------------------------------|
| ISX12 G CM2180 EJ | | Alpha and Beta Engines | |
| Engine Serial Number | Vehicle Identification Number | Engine Serial Number | Vehicle Identification Number |
| 75017884 | 1NKAD39X0EJ385845 | 75002444 | 1NKAD39X4CJ332739 |
| 75017887 | 1NKAD39X0ER354158 | 75002445 | 1NKAD39X0CJ312147 |
| 75018865 | 1NKAD39X0ER354161 | 75002448 | 1NKAD38X2CJ311521 |
| 75019011 | 1NKAD39X1ER354167 | 75002449 | 1NKAD38X6CJ311845 |
| 75018658 | 1NKAD39X1ER354153 | 75003699 | 1NKAL39X3CJ311688 |
| 75018009 | 1NKAD39X1EJ367905 | 75003700 | 1NKAD39X3CJ311106 |
| 75019165 | 1NKAD39X1EJ399950 | 75009001 | 1NKAD39X3DR338390 |
| 75018862 | 1NKAD39X2ER354159 | 75009697 | N/A |
| 75018943 | 1NKAD39X2ER354162 | 75010690 | 1NKAA38X4DJ360407 |
| 75018558 | 1NKAD39X3ER354154 | 75010692 | 1NKAD39XXDJ350499 |
| 75019137 | 1NKAD39X3ER354168 | 75010693 | N/A |
| 75019166 | 1NKAD39X3EJ399948 | 75010928 | 1NKAA38X2DJ360406 |
| 75019167 | 1NKAD39X3EJ399951 | 75015448 | 1NKDX EX0EJ368297 |
| 75019120 | 1NKAD39X4ER354163 | – | – |
| 75019169 | 1NKAD39X5EJ399952 | – | – |
| 75018684 | 1NKAD39X5ER354155 | – | – |
| 75019168 | 1NKAD39X5EJ399949 | – | – |
| 75019010 | 1NKAD39X6ER354164 | – | – |
| 75018836 | 1NKAA38X0EJ367808 | – | – |
| 75018834 | 1NKAA38X0EJ367811 | – | – |
| 75017886 | 1NKAA38X1EJ367803 | – | – |
| 75018010 | 1NKAA38X1EJ367820 | – | – |
| 75018832 | 1NKAA38X2EJ367812 | – | – |
| 75018835 | 1NKAA38X2EJ367809 | – | – |
| 75017776 | 1NKAA38X3EJ367821 | – | – |
| 75018899 | 1NKAA38X4EJ367813 | – | – |
| 75018900 | 1NKAA38X6EJ367814 | – | – |
| 75018898 | 1NKAA38X8EJ367815 | – | – |
| 75018833 | 1NKAA38X9EJ367810 | – | – |

| Affected Engine Serial Numbers and Vehicle Identification Numbers | | | |
|--|--------------------------------------|-------------------------------|--------------------------------------|
| ISX12 G CM2180 EJ | | Alpha and Beta Engines | |
| Engine Serial Number | Vehicle Identification Number | Engine Serial Number | Vehicle Identification Number |
| 75019007 | 1NKAA38XXEJ367816 | – | – |
| 75018683 | 1NKAD39X7ER354156 | – | – |
| 75019008 | 1NKAD39X8ER354165 | – | – |
| 75018864 | 1NKAD39X9ER354160 | – | – |
| 75018011 | 1NKAD39X9EJ385844 | – | – |
| 75018682 | 1NKAD39X9ER354157 | – | – |
| 75019009 | 1NKAD39XXER354166 | – | – |
| 75017883 | 1NKAD39XXEJ389272 | – | – |
| 75017882 | 1NKAL39X3EJ367746 | – | – |
| 75018554 | 1NKDD39X0EJ368217 | – | – |
| 75019164 | 1NKDD39X0EJ368220 | – | – |
| 75019457 | 1NKDD39X0EJ368234 | – | – |
| 75019290 | 1NKDD39X1EJ368226 | – | – |
| 75019301 | 1NKDD39X1EJ367819 | – | – |
| 75018926 | 1NKDD39X1EJ400656 | – | – |
| 75019160 | 1NKDD39X2EJ368235 | – | – |
| 75019163 | 1NKDD39X2EJ368221 | – | – |
| 75019006 | 1NKDD39X2EJ368218 | – | – |
| 75018927 | 1NKDD39X3EJ400657 | – | – |
| 75019286 | 1NKDD39X3EJ368227 | – | – |
| 75019458 | 1NKDD39X3EJ368230 | – | – |
| 75019162 | 1NKDD39X4EJ368219 | – | – |
| 75019161 | 1NKDD39X4EJ368222 | – | – |
| 75019452 | 1NKDD39X5EJ368231 | – | – |
| 75019454 | 1NKDD39X5EJ368228 | – | – |
| 70519181 | 1NKDD39X6EJ359943 | – | – |
| 75018955 | 1NKDD39X6EJ400653 | – | – |
| 75019287 | 1NKDD39X6EJ368223 | – | – |
| 75017885 | 1NKDD39X7EJ369591 | – | – |
| | | | |

| Affected Engine Serial Numbers and Vehicle Identification Numbers | | | |
|---|-------------------------------|------------------------|-------------------------------|
| ISX12 G CM2180 EJ | | Alpha and Beta Engines | |
| Engine Serial Number | Vehicle Identification Number | Engine Serial Number | Vehicle Identification Number |
| 75019455 | 1NKDD39X7EJ368229 | – | – |
| 75019456 | 1NKDD39X7EJ368232 | – | – |
| 75018881 | 1NKDD39X8EJ400654 | – | – |
| 75019617 | 1NKDD39X8EJ400377 | – | – |
| 75019180 | 1NKDD39X8EJ359944 | – | – |
| 75019289 | 1NKDD39X8EJ368224 | – | – |
| 75018555 | 1NKDD39X9EJ368216 | – | – |
| 75019453 | 1NKDD39X9EJ368233 | – | – |
| 75018882 | 1NKDD39XXEJ400655 | – | – |
| 75019288 | 1NKDD39XXEJ368225 | – | – |
| 75019300 | 1NKDD39XXEJ367818 | – | – |
| 75015448 | 1NKDX3EX6EJ368297 | – | – |

Resolution

To resolve this issue; remove the 5V supply wire if connected to the sensor. Refer to the OEM service manual for the proper correction procedure.

NOTE: This document only applies to the float-type coolant level sensors. The correct wiring of this sensor is two wires at pin position B and C; A 5V supply wire to pin A is not necessary.

Figure 2 shows the correct wiring of a float-type coolant level sensor for the engine configurations listed above.



Figure 2: Float-Type Coolant Level Sensor Wiring

Repair of these components is the responsibility of the OEM. Cummins® Warranty will **not** cover this situation. Upon completion of the repair, documentation of the work performed should be submitted to the OEM for reimbursement.

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.

Document History

| Date | Details |
|-----------|----------------|
| 2013-10-7 | Module Created |
| 2014-1-21 | Correction |

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