



# Preliminary Information

## PIP5790B ECM Connector Terminals Corroded Contaminated with Coolant Oil DTC MIL Stall Crank No Start Drivability Misfire Rough Run

Product Investigation Review Required

Models

| Brand:   | Model: | Model Years: | VIN: |     | Engine:             | Transmissions: |
|----------|--------|--------------|------|-----|---------------------|----------------|
|          |        |              | from | to  |                     |                |
| Cadillac | ATS    | 2013 - 2019  | All  | All | 2.0 LTG and 2.5 LCV | All            |
| Cadillac | CTS    | 2014 - 2019  | All  | All | 2.0 LTG and 2.5 LCV | All            |

|                            |  |
|----------------------------|--|
| Involved Region or Country | North America  |
| Condition                  | <p>Vehicle may exhibit intermittent MIL illumination, vehicle may also exhibit stalling, cylinder misfire or crank no start all conditions typically with any combination of codes.</p> <p>Some of these codes may be and are not limited to: P0014 P0013 P0017 P0192 P0236 P0237 P0300 P0335 P0336 P0340 P0341 P0365 P0366 P0420 P0452 P0641 P2096 P2123 P2138 P2227 P2228 P2618.</p> |
| Cause                      | <p>The ECM connectors X1, X2 and / or X3 may have more than one corroded terminal due to electrical fretting.</p> <p>The connector(s) may not have any corroded terminals and may be contaminated with coolant or engine oil.</p>  |

**Correction:**

If you have one or more of the conditions mentioned above and possibly additional DTCs not listed, perform the following.

Disconnect all three ECM connectors X1, X2 and X3 from the ECM.

Remove the terminal guide from each of the three ECM connectors so all the metal terminals can be seen.

With a bright light, inspect all the terminals for green corrosion, coolant or oil in all three connectors regardless of what diagnostic trouble codes you have.

**NOTE: Every terminal in all three ECM connectors MUST be inspected. If circuits are corroded or liquid contaminated, those circuits can back feed into other circuits that are not corroded and set diagnostic trouble codes for those systems they are associated with.**

**Corroded Terminals:**

Any terminal that has signs of green corrosion on them need to be replaced with terminated leads.

Do NOT clean the terminals as you will NOT be able to clean the contact area and will have poor connections and set codes intermittently.

Solder all terminated leads and cover with shrink tubing. Do NOT use crimp connectors to splice the circuits together.

If the ECM terminals inside the ECM socket have corrosion on them, the ECM must be replaced.

### Coolant Contaminated Connector:

If there is coolant seen in any ECM connector, look to see if the engine coolant temperature sensor circuits are in that connector.

If they are, unplug the engine coolant temperature sensor connector and inspect it for signs of coolant.

If it has signs of coolant in it, replace the engine coolant temperature sensor, the engine coolant temperature sensor connector, all the associated circuits and terminated leads all the way into the ECM connector.

Solder all terminated leads and cover with shrink tubing. Do NOT use crimp connectors to splice the circuits together.

If the coolant source is not from the coolant wicking up the engine coolant temperature circuits and into the ECM, inspect the coolant reservoir and "Y" hose located above the ECM for leaks. Replace reservoir or "Y" hose as needed.

If the coolant was leaking down onto the ECM from the reservoir or "Y" hose, the ECM may have to be replaced depending how coolant saturated the ECM and ECM sockets are.

Shake the ECM and listen for any coolant inside the ECM sloshing around. Replace the ECM if coolant is heard inside the ECM.

If coolant is not heard inside the ECM and only in the ECM socket, clean the ECM sockets out with electrical contact cleaner and blow out with compressed air.

### Engine Oil Contaminated Connector:

If there is engine oil seen in any ECM connector, look to see if the engine oil pressure sensor circuits are in that connector.

If they are, unplug the engine oil pressure sensor connector and inspect it for signs of engine oil.

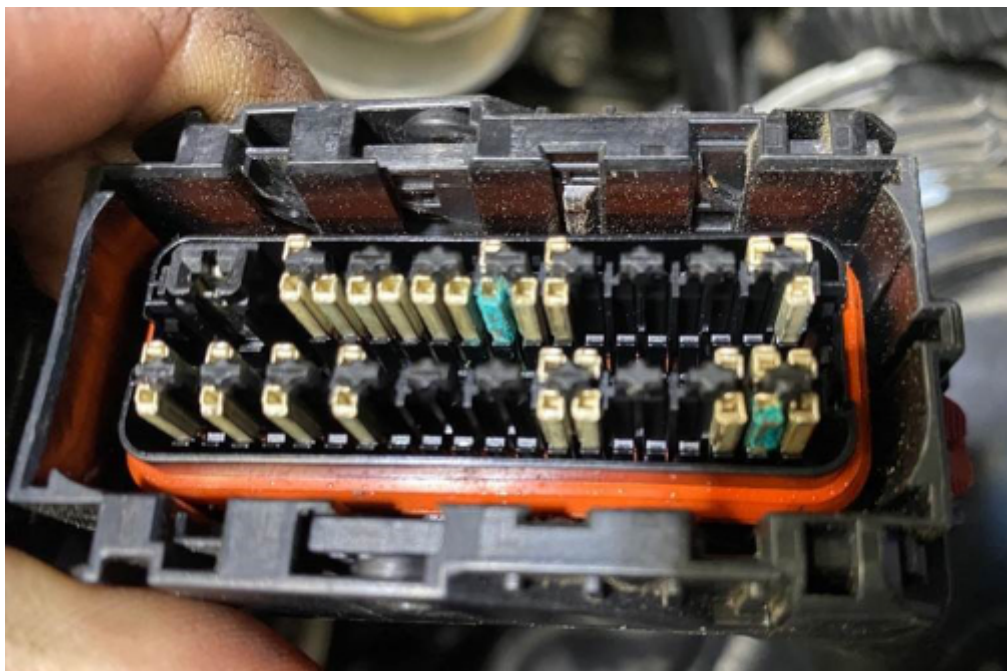
If it has signs of engine oil in it, replace the engine oil pressure sensor, the engine oil pressure sensor connector, all the associated circuits and terminated leads all the way into the ECM connector.

Solder all terminated leads and cover with shrink tubing. Do NOT use crimp connectors to splice the circuits together.

Inspect the ECM connector socket for any signs of engine oil. If there is engine oil seen, use electrical contact cleaner and compressed air to clean the socket.

If the ECM socket is saturated with engine oil and it is suspected it has entered inside the ECM, replace the ECM.

### Corroded Terminals In ECM Connector As Seen With Terminal Guide Removed



Terminal Guide That Was Removed From Connector



Coolant "Y" Hose From Coolant Reservoir



Coolant "Y" Hose Leak





**NOTE: This PI will be updated or changed to a bulletin as more information becomes available.**

Parts Information

| Description                                  | Part Number  | Quantity |
|--|--------------|----------|
| Terminated Lead At ECM                       | Refer to EPC | 1        |
| Sensor, Engine Coolant Temperature           |              | 1        |
| Connector, Engine Coolant Temperature Sensor |              | 1        |
| Module, Engine Control                       |              | 1        |
| Wire, TXL / GXL Primary Wire                 |              | 1        |

Warranty Information

For vehicles repaired under the Powertrain coverage, use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

**Note: Emission Warranty Coverage Code E applies to Labor Operation 4087658**

| Labor Operation | Description   | Labor Time     |
|-----------------|---|----------------|
| 4087658 (*)     | Repair wiring / connectors due to coolant / oil contamination | 0.0 - 1.0 Hrs. |
| Add Time        | Replace engine coolant temperature sensor                     | 2.0 Hrs.       |
| Add Time        | Replace surge tank inlet hose                                 | 0.7 Hrs.       |
| Add Time        | Replace oil pressure sensor                                   | 3.0 Hrs.       |
| Add Time        | Replace ECM   | 0.9 Hrs.       |
| Add Time        | To fill coolant system  | 0.3 Hrs.       |

**\*This is a unique Labor Operation for Bulletin use only.**

Version History

|          |   |
|----------|---|
| Version  | <b>3</b>  |
| Modified | 03/17/2021 - Created on.<br>01/05/2021 - Added P0300 and P2096<br>04/07/2022 - Added Emissions warranty coverage and CTS vehicles |



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