

ECM Diagnostic Trouble Codes

The Malfunction Indicator Lamp (MIL) will be "ON" if the malfunction exists under the conditions listed below. If the malfunction clears, the lamp will go out and the Diagnostic Trouble Code (DTC) will be stored in the ECM. Any DTC's stored will be erased if no problem reoccurs within 50 engine starts. The amount of time after the malfunction occurs before the MIL illuminates is calibratable. (Instantly or up to one minute).

Many of the DTC tables include a functional check of the system that may pinpoint a problem. However, it is important to remember that the DTC tables are specifically designed for use only when a DTC is set. Therefore, a thorough understanding of the normal operation of the system being diagnosed is necessary, and use of the tables for this purpose is at the discretion of the technician.

NOTICE: Some DTC's are referred to as "Latching Codes." A latching code will cause the MIL lamp to stay "ON" during an ignition cycle whether the malfunction is corrected or not. This also means you can not clear the DTC during the same ignition cycle.

Diagnostic Trouble Code (DTC) Table

DTC	Description
DTC 14	Engine Coolant Temperature (ECT) Sensor Circuit. Coolant Sensor Voltage High. (Low Temperature Indicated)
DTC 15	Engine Coolant Temperature (ECT) Sensor Circuit. Coolant Sensor Voltage Low. (High Temperature Indicated)
DTC 21	Throttle Position (TP) Sensor Circuit. Throttle Position Sensor Skewed High.
DTC 21	Throttle Position (TP) Sensor Circuit. Throttle Position Sensor Voltage High.
DTC 22	Throttle Position (TP) Sensor Circuit. Throttle Position Sensor Voltage Low.
DTC 23	Intake Air Temperature (IAT) Sensor Circuit. Manifold Temperature Sensor Voltage High. (Low Temperature Indicated)
DTC 25	Intake Air Temperature (IAT) Sensor Circuit. Manifold Temperature Sensor Voltage Low. (High Temperature Indicated)
DTC 33	Manifold Absolute Pressure (MAP) Sensor Circuit. Manifold Pressure Sensor Voltage High.
DTC 34	Manifold Absolute Pressure (MAP) Sensor Circuit. Manifold Pressure Sensor Voltage Low.
DTC 41	EST Fault - EST A Fault. (Cylinder/Coil #1) or (5.0/5.7L Ignition Control Circuit)
DTC 41	EST Fault - EST B Fault. (Cylinder/Coil #8)
DTC 41	EST Fault - EST C Fault. (Cylinder/Coil #7)
DTC 41	EST Fault - EST D Fault. (Cylinder/Coil #2)
DTC 41	EST Fault - EST E Fault. (Cylinder/Coil #6)
DTC 41	EST Fault - EST F Fault. (Cylinder/Coil #5)
DTC 41	EST Fault - EST G Fault. (Cylinder/Coil #4)
DTC 41	EST Fault - EST H Fault. (Cylinder/Coil #3)
DTC 44	ESC System Cannot Detect Knock. Knock Sensor (KS) 1 Circuit Inactive.
DTC 44	ESC System Cannot Detect Knock. Knock Sensor (KS) 2 Circuit Inactive. (6.0/8.1L only)
DTC 51	ECM Calibration Checksum Failure.
DTC 81	Exhaust Temperature Switch Circuit. (If Applicable) * See Note. Oil/CAT Low. (High Exhaust Temperature Indicated - 248° ± 5° F.)
DTC 81	Optional CAN BUS 3-wire Oil Pressure Sensor Circuit (If Applicable). Oil/CAT Low. (Low Oil Pressure Indicated - < 10 psi)

Diagnostic Trouble Code (DTC) Table (cont'd)

DTC	Description
DTC 81	Crankshaft Position (CKP) Sensor Circuit Fault. Crank Signal Fault. (Hard or No Start, Backfire, No Power)
DTC 81	Camshaft Position (CMP) Sensor Circuit Fault. CAM Signal Fault. (No Symptom)
DTC 81	DEPSPWR Circuit. DEPSPWR Out of Range. (Hard or No Start, No Symptom)
DTC 81	5 Volt Reference Circuit. 5 Volt Reference Malfunction. (Hard Start, Rough, Rich Exhaust)
DTC 81	Fuel Pump Relay Circuit. Fuel Pump Low/Open. (No Fuel Pump Operation)
DTC 81	Fuel Pump Relay Circuit. Fuel Pump High. (No Fuel Pump Operation)
DTC 81	Injector Driver A Circuit. Inj A High. [Cylinders 1,4,6,7 (6.0/8.1L) / Cylinders 2,3,5,8 (5.0/5.7L)]
DTC 81	Injector Driver A Circuit. Inj A Low/Open. [Cylinders 1,4,6,7 (6.0/8.1L) / Cylinders 2,3,5,8 (5.0/5.7L)]
DTC 81	Injector Driver B Circuit. Inj B High. [Cylinders 2,3,5,8 (6.0/8.1L) / Cylinders 1,4,6,7 (5.0/5.7L)]
DTC 81	Injector Driver B Circuit. Inj B Low/Open. [Cylinders 2,3,5,8 (6.0/8.1L) / Cylinders 1,4,6,7 (5.0/5.7L)]

* **NOTE:** Exhaust Temperature Switches ARE NOT used on engines using the 3-wire CAN BUS Oil Pressure Sensor. If a DTC 81 OIL/CAT trouble code is displayed on your scan tool; verify your engine configuration to determine which DTC 81 OIL/CAT diagnostic procedure to perform.

Logged Warnings

Using Diacom, these warnings will be displayed under the “Codes” tab. They can be cleared the same as the trouble codes. Unlike trouble codes, these warnings do not turn on the MIL nor can they be flashed out through the MIL, using the DTC tool.

Diacom Description	Affected Circuit(s)	Power Reduction Mode
Engine Over Temperature Telltale Set	Engine Overheating based on ECT value	Enabled when ECT value >220°F
Low System Voltage Telltale Set	Indicates battery/charging system voltage low	No action, set when voltage <10v
General Warning 1 Telltale Set	(J1-19) Transmission Over-temp >235°F	Enabled when trans sw closes
*General Warning 2 Telltale Set	(J1-4) Low Oil Pressure (if using a single-wire oil pressure switch) <10 psi	Enabled when oil sw closes
*Low Oil Pressure Telltale Set	(J2-20) Low Oil Pressure (if using a 3-wire CAN BUS oil pressure sensor)	Enabled, when oil press. <10 psi, also DTC 81 - Oil/CAT Low set.

‘Power Reduction Mode’ limits engine RPM to 2000. Above 2000 RPM the ECM will disable half of the fuel injectors. Reducing engine RPM below 1200 will restore normal engine operation, until RPM exceeds 2000. Using Diacom, you can verify that the engine is going into RPM Reduction by observing the “RPM Reduction Control” data display. The displayed value will change from “OFF” to “ON” when the engine exceeds 2000 RPM.

* **NOTE:** Depending on the configuration of the engine, you will only see one of the Low Oil Pressure Logged Warnings. General Warning 2 IS NOT used on engines using the 3-wire CAN BUS Oil Pressure Sensor. You could see the General Warning 2 and DTC 81 OIL/CAT Low Set on an engine equipped with the low oil pressure switch and exhaust temperature switches. In this case, General Warning 2 indicates a low oil pressure condition was detected; and the DTC 81 OIL/CAT Low indicates the exhaust temperature exceeded 248° F, usually caused by a lack of raw water flow through the exhaust system.