



DTC Summaries

V8 AJ26 Engine Management – 1997

OBD II MONITORING CONDITIONS:

When testing for DTC reoccurrence, it can be determined if the Service Drive Cycle was of sufficient length by performing a PDU "Systems Readiness Test".

The Systems Readiness Test occurs automatically when DTC retrieval is initiated.

If DTC P1000 is stored in memory, the on-board diagnostic tests **have not** been completed.

If DTC P1111 is stored in memory, all on-board diagnostic tests **have** been completed.

To identify which portions of the Systems Readiness Test have not been completed, access OBD Logger from PDU Toolbox. PDU will report in the following manner:

- Module ECM:

The following tests have been identified as incomplete:

Catalyst
Evaporative purge system
O2 Sensor
EGR system

Refer to page 2 for important information regarding the use of this Summary.

NOTES

| | |
|------------------------------|---|
| MONITORING CONDITIONS | "SERVICE DRIVE CYCLE" For the particular DTC. Operate the vehicle as described to check for a reoccurrence of the DTC. |
| OBD II | Y YES – indicates that the DTC is an OBD II DTC. N NO – indicates that the DTC is a non OBD II DTC. |
| CHECK ENGINE MIL (CK ENG) | 1 1 TRIP – indicates that the CHECK ENGINE MIL is activated by a fault occurring during ONE "TRIP". 2 2 TRIPS – indicates that the CHECK ENGINE MIL is activated by a fault occurring during TWO CONSECUTIVE "TRIPS". N NO – indicates that the CHECK ENGINE MIL is not activated |
| OTHER | N None 1 1 "TRIP" to activate indicator(s). 2 2 CONSECUTIVE "TRIPS" to activate indicator(s). R RED MIL A AMBER MIL M MESSAGE |
| DEFAULT ACTION | ECM default action; Logged – DTC stored in memory buffer; Flagged – DTC stored in memory / CHECK ENGINE MIL activated. |
| POSSIBLE CAUSES | HIGH VOLTAGE – High voltage can be either EMS sensor supply voltage (5 volt) or B+ voltage. |

REFERENCE: It is recommended that the applicable "Electrical Guide" be referenced when using the information contained in this document.

PDU DATALOGGER ACRONYMS

| | | | | | |
|----------|--|---------|--|---------|---|
| ACCREQ | A/C compressor clutch request | FP | Fuel pump | PPS1 | Pedal position sensor track A |
| ACHPS | A/C refrigerant high pressure switch | FPRLY | Fuel pump relay | PPS2 | Pedal position sensor track B |
| ACLPS | A/C refrigerant low pressure switch | GUARD1 | Mechanical guard sensor | RPM | Engine speed |
| ADV | Ignition timing advance (Cyl 1, A bank) | O2SB1D | Oxygen sensor (downstream) A bank | SPS | Sensor power supply monitor |
| BARO | Barometric pressure sensor | O2SB2D | Oxygen sensor (downstream) B bank | STFT1 | Short term fuel trim A bank |
| BAT1+ | Battery B+ supply to ECM | HO2SB1U | Heated oxygen sensor (upstream) A bank | STFT2 | Short term fuel trim B bank |
| CLV | Calculated load value | HO2SB2U | Heated oxygen sensor (upstream) B bank | STFTB1D | Short term fuel trim A bank downstream |
| CRANKREQ | Crank request (from BPM) | | | STFTB1U | Short term fuel trim A bank upstream |
| CRUISEA | Cruise control accel / decel switch | HTDSC | Heated windshield request | STFTB2D | Short term fuel trim B bank downstream |
| CRUISEB | Cruise resume / cancel switch | IAT | Intake air temperature | STFTB2U | Short term fuel trim B bank upstream |
| CRUISEC | Cruise cancel switch | KS1A | Knock sensor 1 A bank | TPS | Throttle position sensor |
| CRUISED | Cruise control set / inch / decel switch | KS1B | Knock sensor 1 B bank | TPS1 | Throttle position sensor track 1 |
| CRUISEO | Cruise control ON / OFF switch | KS4A | Knock sensor 4 A bank | TPS2 | Throttle position sensor track 2 |
| CRUISER | Cruise control resume switch | KS4B | Knock sensor 4 B bank | TTP | Target throttle position |
| CRUISES | Cruise control set / inch / accel switch | KSFA | Knock sensor fail A bank | VSS | Vehicle speed |
| CRUISEC1 | Cruise control cancel switch | KSF B | Knock sensor fail B bank | VSVRM | Vacuum switching valve release monitor |
| DTC1 | Number of DTCs logged this trip | LTFT1 | Long term fuel trim A bank | VSVAM | Vacuum switching valve atmosphere monitor |
| DTCS | Number of permanent DTCs logged | LTFT2 | Long term fuel trim B bank | VSVVM | Vacuum switching valve vacuum monitor |
| ECT | Engine coolant temperature | MAF | Mass air flow | VVTBM | Variable valve timing (B bank) monitor |
| EGR | Exhaust gas recirculation | MAFGND1 | MAFS ground | | |
| EVAP | Evaporative emission system monitor | MAFS1 | Mass air flow sensor | | |
| FANF | Cooling fan fast | MPROBE | Measurement probe (RED) | | |
| FANFRLY | Cooling fan relay fast | PKBRAKE | Park brake switch | | |
| FANS | Cooling fan slow | PNPS | Park / neutral position switch (rotary switch) | | |
| FANSRLY | Cooling fan relay slow | | | | |
| FBRAKE2 | Brake switch | | | | |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---------------------------------|---|--------|--------|-------------|---|---|
| P0101 | MAFS range / performance | Engine at normal operating temperature; drive 43 – 59 mph (70 – 95 km/h); 1500 – 2500 rpm; > 10 seconds | Y | 2 | 2 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Substitutes throttle angle for engine load measurement – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR | Blocked air cleaner Air intake leak Engine breather leak Throttle control malfunction (TPS) MAFS to ECM sensing circuit high resistance MAFS to ECM sensing circuit intermittent short circuit to ground MAFS supply circuit high resistance MAFS failure |
| P0102 | MAFS sense circuit low voltage | Ignition ON > 5 seconds | Y | 2 | 1 [A, M] | When AMBER MIL is activated (DTC logged; first trip), ECM: – Substitutes throttle angle for engine load measurement – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR | Blocked air filter MAFS to ECM sensing circuit high resistance or open circuit MAFS to ECM sensing circuit intermittent short circuit to ground MAFS supply circuit open circuit or short circuit to ground MAFS failure |
| P0103 | MAFS sense circuit high voltage | Ignition ON > 5 seconds | Y | 2 | 1 | When AMBER MIL is activated [A, M] (DTC logged; first trip), ECM: – Substitutes throttle angle for engine load measurement – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR | MAFS to ECM reference ground circuit open circuit MAFS to ECM sensing circuit short circuit to high voltage MAFS failure |
| P0106 | BARO circuit low voltage | Ignition ON > 5 seconds | Y | 2 | N | None | BARO failure (internal ECM fault) |
| P0107 | BARO circuit high voltage | Ignition ON > 5 seconds | Y | 2 | N | None | BARO failure (internal ECM fault) |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|----------|---|--|
| P0111 | IATS range / performance | Engine idle > 40 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Substitutes fixed temperature of 50 °C (122 °F) | Blocked air cleaner Air intake leak Engine breather leak IATS to ECM wiring open circuit or high resistance IATS to ECM sensing circuit short circuit to high voltage IATS failure |
| P0112 | IATS sense circuit high voltage (low air temperature) | Ignition ON > 5 seconds | Y | 2 | N | When DTC is logged (first trip), ECM: – Substitutes fixed temperature of 50 °C (122 °F) | IATS to ECM wiring open circuit or high resistance IATS to ECM sensing circuit short circuit to high voltage IATS failure |
| P0113 | IATS sense circuit low voltage (high air temperature) | Ignition ON > 5 seconds | Y | 2 | N | When DTC is logged (first trip), ECM: – Substitutes fixed temperature of 50 °C (122 °F) | IATS to ECM wiring short circuit to ground IATS failure |
| P0116 | ECTS range / performance | Engine coolant temperature ambient; start engine; drive at normal operating temperature > 13 mph (20 km/h) > 3 minutes | Y | 2 | 2 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Substitutes transmission fluid temperature (via CAN) – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR – Inhibits VVT | Low coolant level Contaminated coolant Engine thermostat failure ECTS to ECM sensing circuit high resistance when hot ECTS to ECM sensing circuit intermittent high resistance ECTS failure |
| P0117 | ECTS sense circuit high voltage (low coolant temperature) | Ignition ON > 5 seconds | Y | 2 | 1 [A, M] | When AMBER MIL is activated (DTC logged; first trip), ECM: – Substitutes transmission fluid temperature (via CAN) – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR – Inhibits VVT | ECTS disconnected ECTS to ECM sensing circuit high resistance, open circuit or short circuit to high voltage ECTS failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------------|--|--|
| P0118 | ECTS sense circuit low voltage (high coolant temperature) | Ignition ON > 5 seconds | Y | 2 | 1 [A, M] | Refer to P0117 Default Action | Engine overheat condition ECTS to ECM wiring short circuit to ground ECTS failure |
| P0121 | TPS circuit range / performance | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | When RED MIL is activated (DTC logged; first trip), ECM: – Defaults throttle to mechanical guard mode – Inhibits idle speed control – Inhibits cruise control – Inhibits traction control / stability control – Inhibits power limiting | TPS to ECM wiring open circuit or high resistance TPS to ECM sensing circuits ("1" or "2") short circuit to high voltage TPS failure |
| P0122 | TPS circuit "1" low voltage | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | Refer to P0121 Default Action | TPS to ECM sensing circuit "1" (TPS pin 3) open circuit or high resistance TPS failure |
| P0123 | TPS circuit "1" high voltage | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | Refer to P0121 Default Action | TPS to ECM sensing circuit "1" (TPS pin 3) short circuit to high voltage TPS failure |
| P0125 | ECTS response (for closed loop fuel control) | Engine coolant temperature ambient; start engine; run engine to > 60 °C (140 °F) > 2 minutes | Y | 2 | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Substitutes transmission fluid temperature (via CAN) – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR – Inhibits VVT | Low coolant level Contaminated coolant Engine thermostat failure ECTS to ECM sensing circuit high resistance, open circuit or short circuit to high voltage |
| P0131 | HO2S sense circuit low voltage – A bank, upstream (1) | Engine at normal operating temperature; drive at steady speed > 40 mph (60 km/h); engine speed 1300 – 4500 rpm > 1 minute 20 seconds | Y | 2 | N | None | HO2S disconnected HO2S to ECM wiring open circuit HO2S short circuit to ground HO2S failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------|--|---|
| P0132 | HO2S sense circuit high voltage – A bank, upstream (1) | Engine at normal operating temperature; drive at steady speed > 3 mph (4 km/h) | Y | 2 | N | None | HO2S sensing circuit short circuit to high voltage HO2S ground (BRD – braided shield) open circuit HO2S failure |
| P0133 | HO2S sense circuit slow response – A bank, upstream (1) | Engine at normal operating temperature; drive at 50 – 62 mph (80 – 100 km/h); engine speed 1500 – 2500 rpm >10 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits A bank closed loop fuel metering – Inhibits A bank adaptive fuel metering | Engine misfire HO2S disconnected HO2S mechanical damage HO2S to ECM wiring intermittent open circuit HO2S sensing circuit short circuit to high voltage HO2S short circuit to ground HO2S ground (BRD – braided shield) open circuit HO2S heater circuit fault Exhaust leak Low exhaust temperature Injector flow partially blocked Catalyst efficiency decrease HO2S failure |
| P0135 | HO2S heater circuit malfunction – A bank, upstream (1) | Engine at normal operating temperature; drive at steady speed > 20 mph (30 km/h) | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits A bank closed loop fuel metering – Inhibits A bank adaptive fuel metering – Inhibits A bank downstream O2S control | HO2S disconnected HO2S heater power supply open circuit HO2S heater to ECM wiring short circuit or open circuit HO2S heater failure |
| P0137 | O2S sense circuit low voltage – A bank, downstream (2) | Ambient temperature < 70 °C (158 °F); engine at normal operating temperature; drive at steady speed > 13 mph (20 km/h) > 1 minute 10 seconds | Y | 2 | N | None | O2S disconnected O2S to ECM wiring open circuit O2S short circuit to ground O2S failure |
| P0138 | O2S sense circuit high voltage – A bank, downstream (2) | Ambient temperature < 70 °C (158 °F); engine at normal operating temperature; drive at steady speed > 13 mph (20 km/h) > 1 minute 10 seconds | Y | 2 | N | None | O2S sensing circuit short circuit to high voltage O2S ground (BRD – braided shield) open circuit O2S failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------|--|---|
| P0140 | O2S sense circuit no activity – A bank, downstream (2) | Engine at normal operating temperature; drive > 13 mph (20 km/h); engine speed > 1500 rpm; > 1 minute | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits A bank downstream O2S control | O2S disconnected O2S mechanical damage O2S to ECM wiring open circuit O2S sensing circuit short circuit to high voltage O2S short circuit to ground O2S ground (BRD – braided shield) open circuit Exhaust leak Low exhaust temperature O2S failure |
| P0151 | HO2S sense circuit low voltage – B bank, upstream (1) | Engine at normal operating temperature; drive at steady speed > 40 mph (60 km/h); engine speed 1300 – 4500 rpm > 1 minute 20 seconds | Y | 2 | N | None | HO2S disconnected HO2S to ECM wiring open circuit HO2S short circuit to ground HO2S failure |
| P0152 | HO2S sense circuit high voltage – B bank, upstream (1) | Engine at normal operating temperature; drive at steady speed > 3 mph (4 km/h) | Y | 2 | N | None | HO2S sensing circuit short circuit to high voltage HO2S ground (BRD – braided shield) open circuit HO2S failure |
| P0153 | HO2S sense circuit slow response – B bank, upstream (1) | Engine at normal operating temperature; drive at 50 – 62 mph (80 – 100 km/h); engine speed 1500 – 2500 rpm >10 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits B bank closed loop fuel metering – Inhibits B bank adaptive fuel metering | Engine misfire HO2S disconnected HO2S mechanical damage HO2S to ECM wiring intermittent open circuit HO2S sensing circuit short circuit to high voltage HO2S short circuit to ground HO2S ground (BRD – braided shield) open circuit HO2S heater circuit fault Exhaust leak Low exhaust temperature Injector flow partially blocked Catalyst efficiency decrease HO2S failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------|--|---|
| P0155 | HO2S heater circuit malfunction – B bank, upstream (1) | Engine at normal operating temperature; drive at steady speed > 20 mph (30 km/h) | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits B bank closed loop fuel metering – Inhibits B bank adaptive fuel metering – Inhibits B bank downstream O2S control | HO2S disconnected HO2S heater power supply open circuit HO2S heater to ECM wiring short circuit or open circuit HO2S heater failure |
| P0157 | O2S sense circuit low voltage – B bank, downstream (2) | Ambient temperature < 70 °C (158 °F); engine at normal operating temperature; drive at steady speed > 13 mph (20 km/h) > 1 minute 10 seconds | Y | 2 | N | None | O2S disconnected O2S to ECM wiring open circuit O2S short circuit to ground |
| P0158 | O2S sense circuit high voltage – B bank, downstream (2) | Ambient temperature < 70 °C (158 °F); engine at normal operating temperature; drive at steady speed > 13 mph (20 km/h) > 1 minute 10 seconds | Y | 2 | N | None | O2S sensing circuit short circuit to high voltage O2S ground (BRD – braided shield) open circuit O2S failure |
| P0160 | O2S sense circuit no activity – B bank, downstream (2) | Engine at normal operating temperature; drive > 13 mph (20 km/h); engine speed > 1500 rpm; > 1 minute | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits B bank downstream O2S control | O2S disconnected O2S mechanical damage O2S to ECM wiring open circuit O2S sensing circuit short circuit to high voltage O2S short circuit to ground O2S ground (BRD – braided shield) open circuit Exhaust leak Low exhaust temperature O2S failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|----------------------------|---|--------|--------|-------------|--|---|
| P0171 | A bank combustion too lean | Engine at normal operating temperature; drive at steady speed > 40 mph; engine speed 1300 – 4500 rpm > 1 minute 20 seconds | Y | 2 | 2 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits downstream O2S control If DTC P0174 is also flagged, ECM: – Limits engine speed to 3000 rpm – Inhibits canister purge* – Inhibits EGR * Inhibited when "lean" fault is first detected | Engine misfire Air intake leak between MAFS and throttle Fuel filter, system blockage Fuel injector blockage Fuel pressure regulator failure (low fuel pressure) Low fuel pump output HO2S harness wiring condition fault Exhaust leak (before catalyst) ECM receiving incorrect signal from one or more of the following components: ECTS, MAFS, IATS, TPS |
| P0172 | A bank combustion too rich | Engine at normal operating temperature; drive at steady speed > 40 mph; engine speed 1300 – 4500 rpm > 1 minute 20 seconds | Y | 2 | 2 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits downstream O2S control If DTC P0175 is also flagged, ECM: – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR | Blocked air filter Fuel system return blockage Leaking fuel injector(s) Fuel pressure regulator failure (high fuel pressure) ECM receiving incorrect signal from one or more of the following components: ECTS, MAFS, IATS, TPS |
| P0174 | B bank combustion too lean | Engine at normal operating temperature; drive at steady speed > 40 mph; engine speed 1300 – 4500 rpm > 1 minute 20 seconds | Y | 2 | 2 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits downstream O2S control If DTC P0171 is also flagged, ECM: – Limits engine speed to 3000 rpm – Inhibits canister purge* – Inhibits EGR * Inhibited when "lean" fault is first detected | Engine misfire Air intake leak between MAFS and throttle Fuel filter, system blockage Fuel injector blockage Fuel pressure regulator failure (low fuel pressure) Low fuel pump output HO2S harness wiring condition fault Exhaust leak (before catalyst) ECM receiving incorrect signal from one or more of the following components: ECTS, MAFS, IATS, TPS |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|--|---|--------|--------|-------------|--|---|
| P0175 | B bank combustion too rich | Engine at normal operating temperature; drive at steady speed > 40 mph; engine speed 1300 – 4500 rpm > 1 minute 20 seconds | Y | 2 | 2 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits downstream O2S control If DTC P0172 is also flagged, ECM: – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR | Blocked air filter Fuel system return blockage Leaking fuel injector(s) Fuel pressure regulator failure (high fuel pressure) ECM receiving incorrect signal from one or more of the following components: ECTS, MAFS, IATS, TPS |
| P0201 | Fuel injector circuit malfunction – cylinder A1 (1) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR If DTCs for all A bank injectors are flagged: – Inhibits A bank closed loop fuel metering – Inhibits A bank adaptive fuel metering – Inhibits A bank downstream O2S control | Injector disconnected Injector harness wiring open or short circuit Injector failure |
| P0202 | Fuel injector circuit malfunction – cylinder A2 (2) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | Refer to P0201 Default Action | Injector disconnected Injector harness wiring open or short circuit Injector failure |
| P0203 | Fuel injector circuit malfunction – cylinder A3 (3) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | Refer to P0201 Default Action | Injector disconnected Injector harness wiring open or short circuit Injector failure |
| P0204 | Fuel injector circuit malfunction – cylinder A4 (4) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | Refer to P0201 Default Action | Injector disconnected Injector harness wiring open or short circuit Injector failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------------|---|--|
| P0205 | Fuel injector circuit malfunction – cylinder B1 (5) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR If DTCs for all B bank injectors are flagged: – Inhibits B bank closed loop fuel metering – Inhibits B bank adaptive fuel metering – Inhibits B bank downstream O2S control | Injector disconnected Injector harness wiring open or short circuit Injector failure |
| P0206 | Fuel injector circuit malfunction – cylinder B2 (6) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | Refer to P0205 Default Action | Injector disconnected Injector harness wiring open or short circuit Injector failure |
| P0207 | Fuel injector circuit malfunction – cylinder B3 (7) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | Refer to P0205 Default Action | Injector disconnected Injector harness wiring open or short circuit Injector failure |
| P0208 | Fuel injector circuit malfunction – cylinder B4 (8) | Engine at normal operating temperature; run engine > 30 seconds; engine speed 500 – 2500 rpm | Y | 2 | 1 [A, M] | Refer to P0205 Default Action | Injector disconnected Injector harness wiring open or short circuit Injector failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|------------------------------|--|--------|--------------|-------------|--|---|
| P0222 | TPS circuit "2" low voltage | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | When RED MIL is activated (DTC logged; first trip), ECM: <ul style="list-style-type: none"> - Defaults throttle to mechanical guard mode - Inhibits idle speed control - Inhibits cruise control - Inhibits traction control / stability control - Inhibits power limiting | TPS to ECM sensing circuit "2" (TPS pin 2) open circuit or high resistance TPS failure |
| P0223 | TPS circuit "2" high voltage | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | Refer to P0222 Default Action | TPS to ECM sensing circuit "2" (TPS pin 2) short circuit to high voltage TPS failure |
| P0300 | Random misfire detected | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: <ul style="list-style-type: none"> - Limits engine speed to 3000 rpm - Inhibits closed loop fuel metering - Inhibits adaptive fuel metering - Inhibits canister purge - Inhibits EGR | Cylinder compression low Worn camshaft / broken valve spring(s) Fuel delivery pressure (low / high) Fuel injector(s) blocked / leaking Fuel injector(s) continuously open Fuel contamination Fuel injector circuit fault(s) (Injector DTCs also flagged) Spark plug failure / fouled / incorrect gap ECM to ignition module primary circuit fault(s) (Cylinder misfire detected DTC also flagged) Ignition module to ignition coil primary circuit fault(s) (Cylinder misfire detected DTC also flagged) Ignition module ground circuit open circuit, high resistance Ignition coil failure Ignition module failure |

** If, on the first trip, the misfire is severe enough to cause excess exhaust emission, individual cylinder DTC plus DTC P1316 will be flagged; CHECK ENGINE MIL will flash.

If, on the first trip, the misfire is severe enough to cause catalyst damage, individual cylinder DTC plus DTC P1313 (A bank) or P1314 (B bank) will be flagged; CHECK ENGINE MIL will flash.

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|------------------------------------|--|--------|--------------|-------------|--|--------------------------------|
| P0301 | Misfire detected – cylinder A1 (1) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Limits engine speed to 3000 rpm – Inhibits A bank closed loop fuel metering – Inhibits A bank adaptive fuel metering – Inhibits canister purge – Inhibits EGR | Refer to P0300 Possible Faults |
| P0302 | Misfire detected – cylinder A2 (2) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | Refer to P0301 Default Action | Refer to P0300 Possible Faults |
| P0303 | Misfire detected – cylinder A3 (3) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | Refer to P0301 Default Action | Refer to P0300 Possible Faults |
| P0304 | Misfire detected – cylinder A4 (4) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | Refer to P0301 Default Action | Refer to P0300 Possible Faults |
| P0305 | Misfire detected – cylinder B1 (5) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Limits engine speed to 3000 rpm – Inhibits B bank closed loop fuel metering – Inhibits B bank adaptive fuel metering – Inhibits canister purge – Inhibits EGR | Refer to P0300 Possible Faults |
| P0306 | Misfire detected – cylinder B2 (6) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | Refer to P0305 Default Action | Refer to P0300 Possible Faults |
| P0307 | Misfire detected – cylinder B3 (7) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | Refer to P0305 Default Action | Refer to P0300 Possible Faults |
| P0308 | Misfire detected – cylinder B4 (8) | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 or 2 ** | 1 [A, M] | Refer to P0305 Default Action | Refer to P0300 Possible Faults |

** If, on the first trip, the misfire is severe enough to cause excess exhaust emission, individual cylinder DTC plus DTC P1316 will be flagged; CHECK ENGINE MIL will flash.

If, on the first trip, the misfire is severe enough to cause catalyst damage, individual cylinder DTC plus DTC P1313 (A bank) or P1314 (B bank) will be flagged; CHECK ENGINE MIL will flash.

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------|--|--|
| P0327 | KS sense circuit out of range (low voltage) – A bank | Ignition ON > 5 seconds | Y | 2 | N | When DTC is logged (first trip), ECM: – Sets ignition retard to maximum | Poor sensor contact with the cylinder block KS to ECM sense circuit short circuit to ground KS failure |
| P0328 | KS sense circuit out of range (high voltage) – A bank | Ignition ON > 5 seconds | Y | 2 | N | When DTC is logged (first trip), ECM: – Sets ignition retard to maximum | Poor sensor contact with the cylinder block KS to ECM sense circuit high resistance or open circuit KS to ECM sense circuit short circuit to high voltage KS failure |
| P0332 | KS sense circuit out of range (low voltage) – B bank | Ignition ON > 5 seconds | Y | 2 | N | When DTC is logged (first trip), ECM: – Sets ignition retard to maximum | Poor sensor contact with the cylinder block KS to ECM sense circuit short circuit to ground KS failure |
| P0333 | KS sense circuit out of range (high voltage) – B bank | Ignition ON > 5 seconds | Y | 2 | N | When DTC is logged (first trip), ECM: – Sets ignition retard to maximum | Poor sensor contact with the cylinder block KS to ECM sense circuit high resistance or open circuit KS to ECM sense circuit short circuit to high voltage KS failure |
| P0335 | CKPS circuit malfunction | Crank engine > 5 seconds – engine will not start; or start engine, run steady > 1000 rpm; or engine stall, ignition ON | Y | 2 | N | None | CKPS disconnected CKPS gap incorrect / foreign matter on sensor face CKPS sensing circuit open circuit, short circuit to ground, short circuit to high voltage CKPS failure |
| P0340 | CMPS circuit malfunction | Crank engine > 5 seconds | Y | 2 | N | When fault is detected, ECM: – Guesses camshaft position (engine starts 50% of time – rough running) | CMPS disconnected CMPS gap incorrect / foreign matter on sensor face CMPS sensing circuit open circuit, short circuit to ground, short circuit to high voltage CMPS failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|--|--|--------|--------|-------------|--|--|
| P0351 | Ignition coil (A1) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | When fault is detected, ECM: – Inhibits individual cylinder fuel injection – Inhibits A bank closed loop fuel metering – Inhibits A bank downstream O2S control | ECM to ignition module primary circuit open circuit, short circuit to ground, high resistance Ignition module to ignition coil primary circuit open circuit, short circuit to ground, high resistance Ignition module ground circuit open circuit, high resistance Ignition coil failure Ignition module failure |
| P0352 | Ignition coil (A2) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | Refer to P0351 Default Action | Refer to P0351 Possible Causes |
| P0353 | Ignition coil (A3) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | Refer to P0351 Default Action | Refer to P0351 Possible Causes |
| P0354 | Ignition coil (A4) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | Refer to P0351 Default Action | Refer to P0351 Possible Causes |
| P0355 | Ignition coil (B1) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | When fault is detected, ECM: – Inhibits individual cylinder fuel injection – Inhibits B bank closed loop fuel metering – Inhibits B bank downstream O2S control | Refer to P0351 Possible Causes |
| P0356 | Ignition coil (B2) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | Refer to P0355 Default Action | Refer to P0351 Possible Causes |
| P0357 | Ignition coil (B3) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | Refer to P0355 Default Action | Refer to P0351 Possible Causes |
| P0358 | Ignition coil (B4) primary / secondary circuit malfunction | Run engine steady < 3000 rpm > 5 seconds | Y | 2 | 1 [A, M] | Refer to P0355 Default Action | Refer to P0351 Possible Causes |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|--|--|--------|--------|-------|--|--|
| P0400 | EGR flow malfunction | Engine at normal operating temperature; normal, varied driving for 3 minutes; then decel. / accel. 50 – 60 mph (80 – 95 km/h), within 6 seconds between 1700 – 2050 rpm | Y | 2 | N | None | EGR valve connector pins high resistance EGR pipe / exhaust manifold leak EGR pipe blocked EGR valve stuck open / closed, blocked EGR valve failure |
| P0405 | EGR drive circuits open circuit | Ignition ON > 5 seconds | Y | 2 | N | None | EGR valve power supply circuit open circuit EGR valve to ECM drive circuit pair – EGR pins 1/3, 4/6 open circuit, high resistance EGR valve failure (stepper motor open circuit) |
| P0406 | EGR drive circuits short circuit | Ignition ON > 5 seconds | Y | 2 | N | When fault is detected, ECM: – Inhibits EGR | EGR valve to ECM drive circuit pair – EGR pins 1/3, 4/6 short circuit to ground or high voltage EGR valve failure (stepper motor short circuit) |
| P0420 | Catalyst efficiency below threshold – A bank | Ambient (IATS) temperature > 20 °C (68 °F); engine at normal operating temperature; normal, varied driving for 3 minutes; then, constant steady throttle 50 – 60 mph (80 – 95 km/h), 1500 – 2300 rpm > 15 seconds; then, constant steady throttle 30 – 38 mph (50 – 60 km/h), 1100 – 1900 rpm > 15 seconds | Y | 2 | N | None | HO2S / O2S disconnected HO2S / O2S to ECM wiring fault HO2S heater to ECM wiring fault HO2S heater failure Upstream HO2S failure Downstream O2S failure Catalyst failure |
| P0430 | Catalyst efficiency below threshold – B bank | Ambient (IATS) temperature > 20 °C (68 °F); engine at normal operating temperature; normal, varied driving for 3 minutes; then, constant steady throttle 50 – 60 mph (80 – 95 km/h), 1500 – 2300 rpm > 15 seconds; then, constant steady throttle 30 – 38 mph (50 – 60 km/h), 1100 – 1900 rpm > 15 seconds | Y | 2 | N | None | HO2S / O2S disconnected HO2S / O2S to ECM wiring fault HO2S heater to ECM wiring fault HO2S heater failure Upstream HO2S failure Downstream O2S failure Catalyst failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|-------------------------------------|---|--------|--------|-------|---|--|
| P0441 | EVAP system incorrect purge flow | Engine at normal operating temperature; vehicle stationary; brakes applied; gear "D"; idle > 10 minutes (from engine start); fuel tank > 1/4 full | Y | 2 | N | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Inhibits adaptive fuel metering – Inhibits canister purge | EVAPP to ECM drive circuit open circuit, short circuit, high resistance EVAPP power supply circuit open circuit EVAPP to engine purge pipe damaged / blocked / leaking EVAPP operating vacuum hose leak / blockage EVAPP failure |
| P0444 | EVAPP valve circuit open circuit | Engine at normal operating temperature; vehicle stationary; brakes applied; gear "D"; idle > 10 seconds | Y | 2 | N | Refer to P0441 Default Action | EVAPP to ECM drive circuit open circuit or high resistance EVAPP failure |
| P0445 | EVAPP valve circuit short circuit | Engine at normal operating temperature; vehicle stationary; brakes applied; gear "D"; idle > 10 seconds | Y | 2 | N | Refer to P0441 Default Action | EVAPP to ECM drive circuit short circuit to ground EVAPP failure |
| P0460 | Fuel level sense signal performance | Drive > 30 miles (48 km) | Y | 2 | N | None | Fuel level sensor to instrument pack circuits intermittent short or open circuit, high resistance Fuel level sensor failure Instrument pack fault (incorrect fuel level data) |
| P0506 | Idle rpm lower than expected | Engine at normal operating temperature; transmission at normal operating temperature; gear "N"; idle > 1 minute 40 seconds (no electrical load, A/C compressor, radiator fans, brake pedal switching during period) | Y | 2 | N | None | Air intake blockage Accessory drive overload (defective / seized component) Throttle valve stuck closed Throttle assembly failure |
| P0507 | Idle rpm higher than expected | Engine at normal operating temperature; transmission at normal operating temperature; gear "N"; idle > 1 minute 40 seconds (no electrical load, A/C compressor, radiator fans, brake pedal switching during period) | Y | 2 | N | None | Intake air leak between MAFS and throttle Intake air leak between throttle and engine Engine breather leak Cruise control vacuum failure Throttle valve stuck open Throttle assembly failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--------------------------|--------|--------|-------------|---|--|
| P0560 | Vehicle voltage malfunction | Ignition ON > 35 seconds | Y | 2 | N | None | ECM battery power supply open circuit, high resistance ECM ignition power supply open circuit, high resistance |
| P0566 | Cruise control CANCEL switch ON fault | Ignition ON > 75 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | Cruise control switches internal steering wheel short circuit to ground Steering wheel cassette reel short circuit to ground Cassette reel to ECM circuit short circuit to ground CANCEL switch failure (stuck ON) |
| P0567 | Cruise control RESUME switch ON fault | Ignition ON > 75 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | Cruise control switches internal steering wheel short circuit to ground Steering wheel cassette reel short circuit to ground Cassette reel to ECM circuit short circuit to ground RESUME switch failure (stuck ON) |
| P0568 | Cruise control switch ground malfunction | Ignition ON > 5 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | Cruise control switches internal steering wheel open circuit Steering wheel cassette reel open circuit or high resistance Cassette reel to ECM circuit (ACCEL / DECEL) open circuit or high resistance ACCEL / DECEL switch failure |
| P0569 | Cruise control DECEL / SET (SET-) switch ON fault | Ignition ON > 10 minutes | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | Cruise control switches internal steering wheel short circuit to ground Steering wheel cassette reel short circuit to ground Cassette reel to ECM circuit short circuit to ground DECEL / set switch failure (stuck ON) |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--------------------------|--------|--------|-------------|--|---|
| P0570 | Cruise control ACCEL / SET (SET+) switch ON fault | Ignition ON > 10 minutes | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | Cruise control switches internal steering wheel short circuit to ground Steering wheel cassette reel short circuit to ground Cassette reel to ECM circuit short circuit to ground ACCEL / set failure (stuck ON) |
| P0603 | ECM data corrupted | Ignition ON > 5 seconds | Y | 1 | N | None | ECM failure |
| P1000 | System checks not complete since last memory clear | "System Readiness Test" | N | N | N | None | See page 1 |
| P1104 | MAFS ground malfunction | Ignition ON > 5 seconds | Y | 2 | 1 [A, M] | When AMBER MIL is activated (DTC logged; first trip), ECM: – Substitutes throttle angle for engine load measurement – Limits engine speed to 3000 rpm – Inhibits canister purge – Inhibits EGR | MAFS to ECM reference ground circuit open circuit, short circuit to high voltage, high resistance MAFS to ECM sensing circuit open circuit MAFS failure |
| P1111 | System checks complete since last memory clear | "System Readiness Test" | N | N | N | None | See page 1 |
| P1121 | Pedal position sensor circuit "A" range / performance | Ignition ON > 5 seconds | N | N | 1 [A, M] | None | Pedal position sensor to ECM sense circuit "A" (sensor pin 5) open circuit, short circuit or high resistance Sensor power supply fault Sensor reference ground fault Pedal position sensor failure |
| P1122 | Pedal position sensor circuit "A" low voltage | Ignition ON > 5 seconds | N | N | 1 [A, M] | None | Pedal position sensor to ECM sense circuit "A" (sensor pin 5) wire open circuit or high resistance Sensor power supply fault Pedal position sensor failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|-------------------------|--------|--------|-------------|--|--|
| P1123 | Pedal position sensor circuit "A" high voltage | Ignition ON > 5 seconds | N | N | 1 [A, M] | None | Pedal position sensor to ECM sense circuit "A" (sensor pin 5) wire short circuit to high voltage Pedal position sensor failure |
| P1221 | Pedal position sensor circuit "B" range / performance | Ignition ON > 5 seconds | N | N | 1 [A, M] | None | Pedal position sensor to ECM sense circuit "B" (sensor pin 3) open circuit, short circuit or high resistance Sensor power supply fault Sensor reference ground fault Pedal position sensor failure |
| P1222 | Pedal position sensor circuit "B" low voltage | Ignition ON > 5 seconds | N | N | 1 [A, M] | None | Pedal position sensor to ECM sense circuit "B" (sensor pin 3) wire open circuit or high resistance Sensor power supply fault Pedal position sensor failure |
| P1223 | Pedal position sensor circuit "B" high voltage | Ignition ON > 5 seconds | N | N | 1 [A, M] | None | Pedal position sensor to ECM sense circuit "B" (sensor pin 3) wire short circuit to high voltage Pedal position sensor failure |
| P1224 | Throttle control position error | Ignition ON > 3 minutes | Y | 2 | 1 [R, M] | When RED MIL is activated (DTC logged; first trip), ECM: – Defaults throttle to mechanical guard mode – Inhibits idle speed control – Inhibits cruise control – Inhibits traction control / stability control – Inhibits power limiting | Throttle adaptations not performed after battery disconnect TPS disconnected TPS to ECM sense circuits open circuit, high resistance Throttle motor power relay failure Throttle motor power relay to ECM circuit fault Throttle motor power relay power supply open circuit ECM ground circuit fault (relay coil drive) Throttle motor to ECM drive circuits open circuit, short circuit, high resistance Throttle motor failure Throttle assembly failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------------|--|--|
| P1226 | Mechanical guard sensor range / performance | Ignition ON > 5 seconds | Y | 2 | 1 [A, M] | When AMBER MIL is activated (DTC logged; first trip), ECM: – Inhibits cruise control | Mechanical guard sensor to ECM sense circuit open circuit, short circuit or high resistance Sensor power supply fault Sensor reference ground fault Mechanical guard sensor failure Mechanical guard actuator seized / spring broken |
| P1227 | Mechanical guard sensor circuit low voltage | Ignition ON > 5 seconds | Y | 2 | 1 [A, M] | When AMBER MIL is activated (DTC logged; first trip), ECM: – Inhibits cruise control | Mechanical guard sensor to ECM sense circuit open circuit or high resistance Sensor power supply fault Mechanical guard sensor failure |
| P1228 | Mechanical guard sensor circuit high voltage | Ignition ON > 5 seconds | Y | 2 | 1 [A, M] | When AMBER MIL is activated (DTC logged; first trip), ECM: – Inhibits cruise control | Mechanical guard sensor to ECM sense circuit short circuit to high voltage Mechanical guard sensor failure |
| P1229 | Throttle motor control circuit malfunction | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | When RED MIL is activated (DTC logged; first trip), ECM: – Defaults throttle to mechanical guard mode – Inhibits idle speed control – Inhibits cruise control – Inhibits traction control / stability control – Inhibits power limiting | Throttle motor disconnected Throttle motor to ECM drive circuits short circuit or open circuit Throttle motor failure |
| P1230 | Fuel pump relay malfunction | Ignition ON > 5 seconds | Y | 2 | N | None | Fuel pump relay failure Fuel pump relay to ECM circuit fault Fuel pump relay coil power supply open circuit ECM ground circuit fault (relay coil drive) |
| P1235 | VSV 1 circuit range / performance (mechanical guard position) | Drive with cruise control engaged > 15 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | Vacuum leak / blockage between the throttle elbow and the throttle vacuum actuator Vacuum actuator failure Mechanical guard actuator seized / spring broken |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|--|-------------------------|--------|--------|-------------|--|--|
| P1236 | VSV 1 (vacuum) circuit failure | Ignition ON > 5 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | VSV 1 disconnected VSV 1 to ECM drive circuit high resistance, open circuit or short circuit VSV 1 power supply open circuit VSV 1 failure |
| P1237 | VSV 2 (atmosphere) circuit failure | Ignition ON > 5 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | VSV 2 disconnected VSV 2 to ECM drive circuit high resistance, open circuit or short circuit VSV 2 power supply open circuit VSV 2 failure |
| P1238 | VSV 3 (release) circuit failure | Ignition ON > 5 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | VSV 3 disconnected VSV 3 to ECM drive circuit high resistance, open circuit or short circuit VSV 3 ground circuit fault VSV 3 failure |
| P1240 | Sensor reference voltage malfunction (TPS, pedal position and mechanical guard sensors) (ECM pins EM10-21, EM11-8) | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | When RED MIL is activated (DTC logged; first trip), ECM: – Defaults throttle to mechanical guard mode – Inhibits idle speed control – Inhibits cruise control – Inhibits traction control / stability control – Inhibits power limiting | ECM to throttle sensors reference voltage circuit short circuit to ground, short circuit to high voltage, open circuit, high resistance TPS, pedal position and mechanical guard sensor(s) failure(s) |
| P1241 | Sensor power supply low voltage (TPS, pedal position and mechanical guard sensors) (ECM pins EM10-21, EM11-8) | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | Refer to P1240 Default Action | ECM to throttle sensors reference voltage circuit short circuit to ground TPS, pedal position and mechanical guard sensor(s) failure(s) |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|---|--------|--------|-------------|-------------------------------|--|
| P1242 | Sensor power supply high voltage (TPS, pedal position and mechanical guard sensors) (ECM pins EM10-21, EM11-8) | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | Refer to P1240 Default Action | ECM to throttle sensors reference voltage circuit open circuit, high resistance, short circuit to high voltage TPS, pedal position and mechanical guard sensor(s) failure(s) |
| P1243 | Sensor reference ground malfunction (throttle sensors, ECTS, IATS) (ECM pins EM10-20, EM11-12) | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | Refer to P1240 Default Action | ECM to sensors reference ground circuit open circuit, high resistance Throttle sensor(s), ECTS, IATS failure(s) |
| P1245 | Engine crank signal low voltage | Start engine; idle | Y | 2 | N | None | Starter relay coil to ECM / BPM circuit open circuit |
| P1246 | Engine crank signal high voltage | Start engine; drive / accelerate > 13 mph (20 km/h) 1200 – 3000 rpm decelerate to stop; repeat (5 times total) | Y | 2 | N | None | Starter relay coil to ECM / BPM circuit short circuit to B+ voltage BPM failure |
| P1250 | Engine load malfunction | Engine at normal operating temperature; drive vehicle; accelerate from 3500 to 6000 rpm within 6 seconds; drive 43 – 59 mph (70 – 95 km/h); 1500 – 2500 rpm; > 10 seconds | N | N | N | None | Air intake leak Engine breather leak TPS circuit fault (DTC P0121) Throttle valve spring failure |
| P1251 | Throttle position malfunction (engine off) | Drive vehicle; decelerate to stop, ignition OFF > 5 seconds (foot off accelerator); ignition ON | N | N | N | None | TPS to ECM wiring open circuit or high resistance TPS to ECM sensing circuits (* 1* or * 2*) short circuit to high voltage TPS failure Throttle motor disconnected Throttle motor to ECM drive circuits short circuit or open circuit Throttle motor failure Throttle assembly failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|--|---|--------|--------|-------------|---|--|
| P1252 | Mechanical guard position malfunction (cruise control) | Drive vehicle; engage cruise control > 5 seconds | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | VSV 1,2,3 vacuum and/or electrical circuit fault(s) open circuit, short circuit or high resistance Mechanical guard sensor to ECM sense circuit Mechanical guard sensor failure Mechanical guard actuator seized / spring broken Throttle vacuum actuator fault |
| P1253 | Mechanical guard position malfunction (engine off) | Engine at normal operating temperature; drive / accelerate from 3500 to 6000 rpm within 6 seconds; decelerate to stop, ignition OFF > 5 seconds (foot off accelerator); ignition ON | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | VSV 1,2,3 vacuum and/or electrical circuit fault(s) Mechanical guard sensor to ECM sense circuit open circuit, short circuit or high resistance Mechanical guard sensor failure Mechanical guard actuator seized / spring broken Throttle vacuum actuator fault |
| P1260 | Security input (not used – NAS) | Ignition ON > 10 seconds | N | N | N | None | KTM to ECM circuit short circuit, high resistance or open circuit KTM failure |
| P1313 | Misfire rate catalyst damage – A bank (1) Note: This DTC will flag only when accompanied by a random or individual cylinder misfire DTC: P0300; P0301 – P0304 | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Limits engine speed to 3000 rpm – Inhibits A bank closed loop fuel metering – Inhibits A bank adaptive fuel metering – Inhibits canister purge – Inhibits EGR | Cylinder compression low Worn camshaft / broken valve spring(s) Fuel delivery pressure (low / high) Fuel injector(s) blocked / leaking Fuel injector(s) continuously open Fuel contamination Fuel injector circuit fault(s) (Injector DTCs also flagged) Spark plug failure / fouled / incorrect gap ECM to ignition module primary circuit fault(s) (Cylinder misfire detected DTC also flagged) Ignition module to ignition coil primary circuit fault(s) (Cylinder misfire detected DTC also flagged) Ignition module ground circuit open circuit, high resistance Ignition coil failure Ignition module failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------------|--|--|
| P1314 | Misfire rate catalyst damage – B bank (2) Note: This DTC will flag only when accompanied by an individual cylinder misfire DTC: P0300 – P0308. | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Limits engine speed to 3000 rpm – Inhibits B bank closed loop fuel metering – Inhibits B bank adaptive fuel metering – Inhibits canister purge – Inhibits EGR | Refer to P1313 Possible Causes |
| P1316 | Misfire excess emission Note: This DTC will flag only when accompanied by an individual cylinder misfire DTC: P0300 – P0308. | Engine at idle, or steady between 500 – 2500 rpm; > 2 minutes 30 seconds | Y | 1 | 1 [A, M] | When CK ENG MIL is activated (DTC flagged; second trip), ECM: – Limits engine speed to 3000 rpm – Inhibits closed loop fuel metering – Inhibits adaptive fuel metering – Inhibits canister purge – Inhibits EGR | Refer to P1313 Possible Causes |
| P1336 | CKPS / CMPS sensors synchronization malfunction | Run engine > 5 seconds | Y | 2 | N | None | CKPS / CMPS disconnected CKPS / CMPS gap incorrect / foreign matter on sensor face CKPS / CMPS sensing circuit open circuit, short circuit to ground, short circuit to high voltage CKPS / CMPS failure |
| P1367 | Ignition monitor (ignition module 1) | Run engine > 5 seconds < 3000 rpm | Y | 2 | 1 [A, M] | When fault is detected, ECM: – Limits engine speed to 3000 rpm | Ignition module 1 disconnected Ignition module 1 to ECM circuits open circuit, short circuit to ground or short circuit to B+ voltage Ignition module 1 ground circuit fault Ignition coil relay failure Ignition coil open / short circuit Ignition module 1 failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|---|--------|--------|-------------|---|--|
| P1368 | Ignition monitor (ignition module 2) | Run engine > 5 seconds < 3000 rpm | Y | 2 | 1 [A, M] | When fault is detected, ECM: – Limits engine speed to 3000 rpm | Ignition module 2 disconnected Ignition module 2 to ECM circuits open circuit, short circuit to ground or short circuit to B+ voltage Ignition module 2 ground circuit fault Ignition coil relay failure Ignition coil open / short circuit Ignition module 2 failure |
| P1392 | VVT solenoid circuit open circuit – A bank | Ignition ON > 5 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged: second trip), ECM: – Inhibits VVT | ECM to VVT solenoid valve circuit open circuit, high resistance, short circuit to high voltage VVT solenoid valve failure |
| P1393 | VVT solenoid circuit short circuit – A bank | Ignition ON > 5 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged: second trip), ECM: – Inhibits VVT | ECM to VVT solenoid valve short circuit to ground VVT solenoid valve failure |
| P1396 | VVT solenoid malfunction – B bank | Engine at normal operating temperature; drive > 13 mph (20 km/h) > 1700 rpm > 5 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged: second trip), ECM: – Inhibits VVT | ECM to VVT solenoid valve circuit fault (refer to P1392, P1393) VVT solenoid valve actuator sticking Oil supply fault VVT unit fault Camshaft drive fault CKPS / CMPS circuits fault(s) (refer to P0335, P0340) |
| P1397 | VVT solenoid circuit open circuit – B bank | Ignition ON > 5 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged: second trip), ECM: – Inhibits VVT | ECM to VVT solenoid valve open circuit, high resistance, short circuit to high voltage VVT solenoid valve failure |
| P1398 | VVT solenoid circuit short circuit – B bank | Ignition ON > 5 seconds | Y | 2 | N | When CK ENG MIL is activated (DTC flagged: second trip), ECM: – Inhibits VVT | ECM to VVT solenoid valve short circuit to ground VVT solenoid valve failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|--|--------|--------|-------|---|--|
| P1475 | Radiator fans slow (series) circuit malfunction | Engine at normal operating temperature; fans cycle ON / OFF | N | N | N | None | Radiator fan control relay module to ECM "series" drive circuit (relay pin 9) fault Relay coil ignition power supply open circuit ECM ground circuit fault (relay coil drive) ECTS circuit malfunction (refer to P0116) |
| P1476 | Radiator fans fast (parallel) circuit malfunction | Engine at normal operating temperature; fans cycle ON / OFF | N | N | N | None | Radiator fan control relay module to ECM "parallel" drive circuit (relay pin 7) fault Relay coil ignition power supply open circuit ECM ground circuit fault (relay coil drive) ECTS circuit malfunction (refer to P0116) |
| P1516 | Gear change PARK / NEUTRAL driving malfunction | Engine at normal operating temperature; drive 50 – 63 mph (80 – 100 km/h) 1800 – 2200 rpm > 30 seconds | Y | 2 | N | None | Transmission rotary switch to ECM circuit open circuit or high resistance Rotary switch failure D – 4 switch to TCM circuit open circuit or high resistance D – 4 switch fault |
| P1517 | Engine cranking PARK / NEUTRAL malfunction | Start engine | N | N* | N | When fault is detected, ECM: – Inhibits fuel injection | Transmission rotary switch to ECM circuit open circuit or high resistance Rotary switch failure |

* If engine will not start, CHECK ENGINE MIL will remain on.

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|---|---|--------|--------|-------------|--|--|
| P1571 | Brake switch malfunction | Drive vehicle; engage cruise control > 10 seconds disengage cruise control; repeat (5 total cycles) | N | N | 1 [A, M] | When fault is detected, ECM: – Inhibits cruise control | Brake switch to ECM circuit open circuit, short circuit to ground, high resistance Brake switch ignition switched ground circuit open circuit Brake switch failure Brake cancel switch to ECM circuit open circuit, short circuit to ground, high resistance Brake cancel switch to cruise control switch to ECM circuit open circuit, short circuit to ground, high resistance Brake cancel switch ignition switched power supply open circuit Brake cancel switch failure Cruise control switch failure |
| P1606 | EMS control relay malfunction | Ignition ON; ignition OFF; ignition ON > 5 seconds | N | N | None | None | ECM control relay failure ECM control relay to ECM circuit fault ECM control relay coil power supply open circuit ECM ground circuit fault (relay coil drive) |
| P1609 | ECM microprocessor-to- microprocessor communication failure | Ignition ON > 5 seconds | Y | 2 | N | None | ECM FCCP (programming) circuit (ECM pin EM11-3) short circuit to ground ECM failure |
| P1611 | Throttle angle malfunction | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | When RED MIL is activated (first trip), ECM: – Defaults throttle to mechanical guard mode – Inhibits idle speed control – Inhibits cruise control – Inhibits traction / stability control – Inhibits power limiting | TPS circuit fault (refer to P0121) Pedal position sensor circuit fault (refer to P01121) Throttle assembly failure ECM failure |

| DTC | FAULT DESCRIPTION | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES |
|-------|-----------------------------|-------------------------|--------|--------|-------------|--|---|
| P1612 | Throttle offset malfunction | Ignition ON > 5 seconds | Y | 2 | 1 [R, M] | Refer to P1611 Default Action | TPS circuit fault (refer to P0121) Pedal position sensor circuit fault (refer to P01121) Throttle assembly failure ECM failure |
| P1637 | CAN ABS/TCCM token missing | Ignition ON > 5 seconds | Y | 2 | N | When fault is detected, ECM: – Inhibits cruise control (Idle speed control quality deteriorates) | CAN open circuit fault – ABS/TCCM to ECM CAN short circuit fault ABS/TCCM failure ECM failure |
| P1638 | CAN INST token missing | Ignition ON > 5 seconds | Y | 1 | N | None (Engine speed and coolant temperature data missing at instrument pack) | CAN open circuit fault – INST to ECM CAN short circuit fault INST failure ECM failure |
| P1642 | CAN circuit malfunction | Ignition ON > 5 seconds | Y | 1 | N | When fault is detected, ECM: – Inhibits cruise control (All CAN data unavailable) | CAN short circuit fault Control module failure – check for additional flagged DTC(s) to locate control module source |
| P1643 | CAN TCM token missing | Ignition ON > 5 seconds | Y | 2 | N | When fault is detected, ECM: – Limits throttle to 30% (Torque reduction request data missing results in harsh transmission shifts) | CAN open circuit fault – TCM to ECM CAN short circuit fault TCM failure ECM failure |