INNOVA
AUTOMOTIVE MADE EASY

DIGITAL OBD2 CAR READER



OWNER'S MANUAL

The Easiest And Best Way To Troubleshoot 1996 and Newer OBD2 Vehicles!

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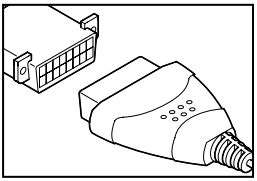
LIMITED WARRANTY AND SERVICE PROCEDURES

The Manufacturer warrants to the original purchaser that this unit is free of defects in materials and workmanship under normal use and maintenance for a period of one (1) year from the date of original purchase. If the unit fails within the one (1) year period, it will be repaired or replaced, at the Manufacturer's option, at no charge, when returned prepaid to the Technical Service Center with Proof of Purchase. The sales receipt may be used for this purpose. Installation labor is not covered under this warranty.

All replacement parts, whether new or re-manufactured, assume as their warranty period for only the remaining time of this warranty. This warranty does not apply to damage caused by improper use, accident, abuse, improper voltage, service, fire, flood, lightning, or other acts of God, or if the product was altered or repaired by anyone other than the Manufacturer's Technical Service Center. Consequential and incidental damages are not recoverable under this warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

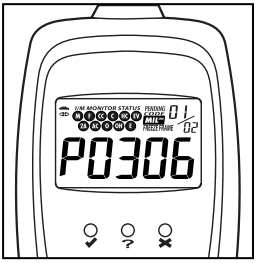
This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. No portion of this warranty may be copied or duplicated without the expressed written permission from the Manufacturer.

Easy To Use . . . .



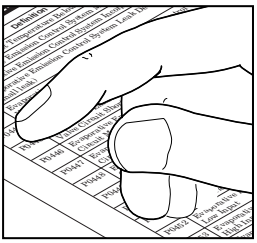
- Connect the Car Reader to the vehicle's test connector.
- Turn the ignition key "On." DO NOT start the engine.
- The Car Reader will automatically link to the vehicle's computer.

Easy To View . . . .



- The Car Reader retrieves stored codes and displays I/M Readiness status.
- Codes are displayed on the Car Reader's LCD display screen; I/M Readiness status is displayed by LED indicators.

Easy To Define . . . .



- Locate fault code(s) in the Fault Code Definition list.

SAFETY FIRST!

This manual describes common test procedures used by experienced service technicians. Many test procedures require precautions to avoid accidents that can result in personal injury, and/or damage to your vehicle or test equipment. Always read your vehicle's service manual and follow its safety precautions before and during any test or service procedure. **ALWAYS** observe the following general safety precautions:



When an engine is running, it produces carbon monoxide, a toxic and poisonous gas. To prevent serious injury or death from carbon monoxide poisoning, operate the vehicle **ONLY** in a **well-ventilated** area.



To protect your eyes from propelled objects as well as hot or caustic liquids, **always** wear **approved** safety eye protection.



When an engine is running, many parts (such as the coolant fan, pulleys, fan belt etc.) turn at high speed. To avoid serious injury, always be aware of moving parts. Keep a safe distance from these parts as well as other potentially moving objects.



Engine parts become very hot when the engine is running. To prevent severe burns, avoid contact with hot engine parts.



Before starting an engine for testing or trouble-shooting, make sure the parking brake is engaged. Put the transmission in **park** (for automatic transmission) or **neutral** (for manual transmission). Block the drive wheels with suitable blocks.



Connecting or disconnecting test equipment when the ignition is **ON** can damage test equipment and the vehicle's electronic components. Turn the ignition **OFF** before connecting the Code Reader to or disconnecting the Code Reader from the vehicle's Data Link Connector (DLC).



To prevent damage to the on-board computer when taking vehicle electrical measurements, always use a digital multimeter with at least 10 megOhms of impedance.



The vehicle's battery produces highly flammable hydrogen gas. To prevent an explosion, keep all sparks, heated items and open flames away from the battery.



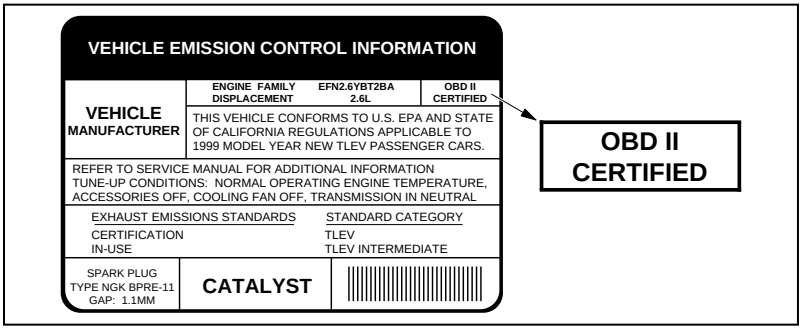
Don't wear loose clothing or jewelry when working on an engine. Loose clothing can become caught in the fan, pulleys, belts, etc. Jewelry is highly conductive, and can cause a severe burn if it makes contact between a power source and ground.

VEHICLES COVERED

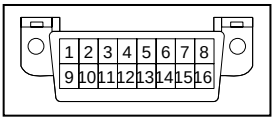
The Car Reader is designed to work on all OBD 2 compliant vehicles. All 1996 and newer vehicles (cars and light trucks) sold in the United States are OBD 2 compliant. This includes all Domestic, Asian and European vehicles.

Some 1994 and 1995 vehicles are OBD 2 compliant. To find out if a 1994 or 1995 vehicle is OBD 2 compliant, check the following:

1. **The Vehicle Emissions Control Information (VECI) Label.** This label is located under the hood or by the radiator of most vehicles. If the vehicle is OBD 2 compliant, the label will state "**OBD II Certified**."



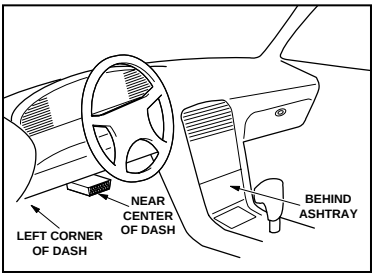
2. Government Regulations require that all OBD 2 compliant vehicles **must** have a "common" sixteen-pin **Data Link Connector (DLC)**.



Some 1994 and 1995 vehicles have 16-pin connectors but are not OBD 2 compliant. Only those vehicles with a Vehicle Emissions Control Label stating "OBD II Certified" are OBD 2 compliant.

Data Link Connector (DLC) Location

The 16-pin DLC is usually located under the instrument panel (dash), within 12 inches (300 mm) of center of the panel, on the driver's side of most vehicles. It should be easily accessible and visible from a kneeling position outside the vehicle with the door open.



On some Asian and European vehicles the DLC is located behind the "ashtray" (the ashtray must be removed to access it) or on the far left corner of the dash. If the DLC cannot be located, consult the vehicle's service manual for the location.

CONTROLS AND INDICATORS

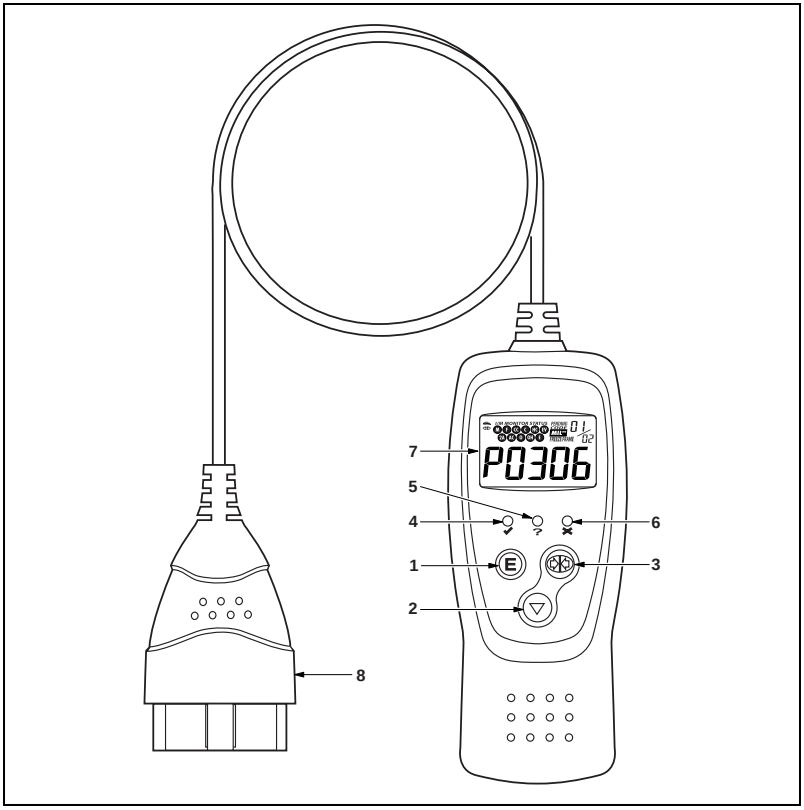


Figure 1. Controls and Indicators

See Figure 1 for the locations of items 1 through 9, below.

1. **ERASE button** - Erases Diagnostic Trouble Codes (DTCs) and "Freeze Frame" data from your vehicle's computer, and resets Monitor status.

2. **SCROLL button** - Scrolls the LCD display to view DTCs when more than one DTC is present.

3. **LINK button** - Links the Car Reader with the vehicle's PCM to retrieve DTCs from the computer's memory, and to view I/M Readiness Monitor status.

4. ✓ **GREEN LED** - Indicates that all engine systems are running normally (all Monitors on the vehicle are active and performing their diagnostic testing, and no DTCs are present).

5. **?** **YELLOW LED** - Indicates there is a possible problem. A “Pending” DTC is present and/or some of the vehicle's emission monitors have not run their diagnostic testing.

6. ✕ **RED LED** - Indicates there is a problem in one or more of the vehicle's systems. The red LED is also used to show that DTC(s) are present. DTCs are shown on the Car Reader's LCD display. In this case, the Multifunction Indicator ("Check Engine") lamp on the vehicle's instrument panel will light steady on.
7. **LCD Display** - Displays test results, Car Reader functions and Monitor status information. See **DISPLAY FUNCTIONS**, below, for details.
8. **CABLE** - Connects the Car Reader to the vehicle's Data Link Connector (DLC).

DISPLAY FUNCTIONS

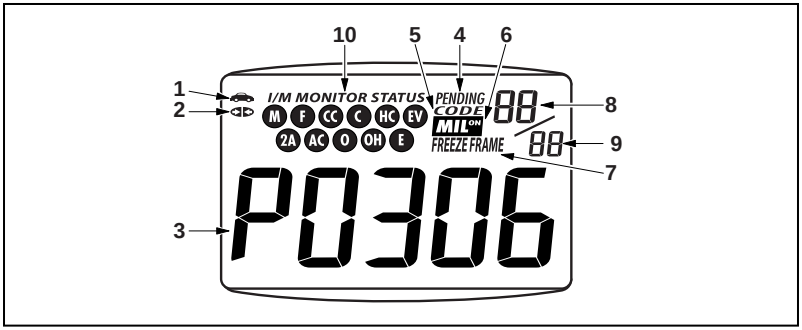


Figure 2. Display Functions

See Figure 2 for the locations of items 1 through 13, below.

1. **Vehicle icon** - Indicates whether or not the Car Reader is being properly powered through the vehicle's Data Link Connector (DLC). A visible icon indicates that the Car Reader is being powered through the vehicle's DLC connector.
2. **Link icon** - Indicates whether or not the Car Reader is communicating (linked) with the vehicle's on-board computer. When visible, the Car Reader is communicating with the computer. If the Link icon is not visible, the Car Reader is not communicating with the computer.
3. **DTC Display Area** - Displays the Diagnostic Trouble Code (DTC) number. Each fault is assigned a code number that is specific to that fault.
4. **Pending icon** - Indicates the currently displayed DTC is a "Pending" code.
5. **CODE icon** - Identifies the Code Number Sequence display area.
6. **MIL icon** - Indicates the status of the Malfunction Indicator Lamp (MIL). The MIL icon is visible only when a DTC has commanded the MIL on the vehicle's dashboard to light.
7. **FREEZE FRAME icon** - Indicates that "Freeze Frame" data has been stored in the vehicle's computer for the currently displayed DTC.

8. **Code Number Sequence** - The Car Reader assigns a sequence number to each DTC that is present in the computer's memory, starting with "01." This helps keep track of the number of DTCs present in the computer's memory. Code number "01" is always the highest priority code, and the one for which "Freeze Frame" data has been stored.
9. **Code Enumerator** - Indicates the total number of codes retrieved from the vehicle's computer.
10. **Monitor icons** - Indicates which Monitors are supported by the vehicle under test, and whether or not the associated Monitor has run its diagnostic testing (Monitor status). When a Monitor icon is solid, it indicates that the associated Monitor has completed its diagnostic testing. When a Monitor icon is flashing, it indicates that the vehicle supports the associated Monitor, but the Monitor has not yet run its diagnostic testing.



The I/M Monitor Status icons are associated with INSPECTION and MAINTENANCE (I/M) READINESS STATUS. Some states require that all vehicle Monitors have run and completed their diagnostic testing before a vehicle can be tested for Emissions (Smog Check). A maximum of eleven Monitors are used on OBD 2 systems. Not all vehicles support all eleven Monitors. When the Car Reader is linked to a vehicle, only the icons for Monitors that are supported by the vehicle under test are visible on the display.

Following is a list of Monitor icons and their associated Monitors.

- M = Misfire Monitor
- F = Fuel System Monitor
- CC = Comprehensive Component Monitor
- C = Catalyst Monitor
- HC = Heated Catalyst Monitor
- EV = Evaporative System Monitor
- 2A = Secondary Air System Monitor
- AC = Air Conditioning System Refrigerant (R-12) Monitor
- O = Oxygen Sensor Monitor
- OH = Oxygen Sensor Heater Monitor
- E = Exhaust Gas Recirculation (EGR) Monitor

BEFORE YOU BEGIN

Fix any known mechanical problems before performing any test. See your vehicle's service manual or a mechanic for more information. Check the following areas **before** starting any test:

- Check the engine oil, power steering fluid, transmission fluid (if applicable), engine coolant and other fluids for proper levels. Top off low fluid levels if needed.
- Make sure the air filter is clean and in good condition. Make sure all air filter ducts are properly connected. Check the air filter ducts for holes, rips or cracks.
- Make sure all engine belts are in good condition. Check for cracked, torn, brittle, loose or missing belts.
- Make sure mechanical linkages to engine sensors (throttle, gearshift position, transmission, etc.) are secure and properly connected. See your vehicle's service manual for locations.
- Check all rubber hoses (radiator) and steel hoses (vacuum/fuel) for leaks, cracks, blockage or other damage. Make sure all hoses are routed and connected properly.
- Make sure all spark plugs are clean and in good condition. Check for damaged, loose, disconnected or missing spark plug wires.
- Make sure the battery terminals are clean and tight. Check for corrosion or broken connections. Check for proper battery and charging system voltages.
- Check all electrical wiring and harnesses for proper connection. Make sure wire insulation is in good condition, and there are no bare wires.
- Make sure the engine is mechanically sound. If needed, perform a compression check, engine vacuum check, timing check (if applicable), etc.

VEHICLE SERVICE MANUALS

Always refer to the manufacturer's service manual for your vehicle before performing any test or repair procedures. Contact your local car dealership, auto parts store or bookstore for availability of these manuals.

CODE RETRIEVAL PROCEDURE

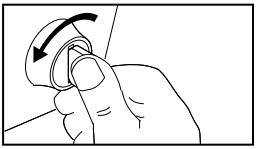
Never replace a part based only on the DTC definition. Each DTC has a set of testing procedures, instructions and flow charts that must be followed to confirm the location of the problem. This information is found in the vehicle's service manual. Always refer to the vehicle's service manual for detailed testing instructions.

*Check your vehicle thoroughly before performing any test. See **Preparation for Testing** on page 7 for details.*

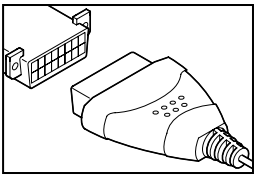
***ALWAYS** observe safety precautions whenever working on a vehicle. See **Safety Precautions** on page 2 for more information.*

1. Turn the ignition off.

2. Locate the vehicle's 16-pin Data Link Connector (DLC). See page 3 for connector location.



3. Connect the Car Reader's cable connector to the vehicle's DLC. The cable connector is keyed and will only fit one way.



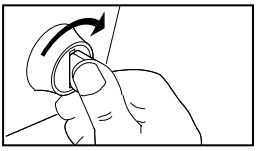
- If you have problems connecting the cable connector to the DLC, rotate the connector 180° and try again.

  If you still have problems, check the DLC on the vehicle and on the Car Reader. Refer to your vehicle's service manual to properly check the vehicle's DLC.

- After the Car Reader's test connector is properly connected to the vehicle's DLC, the Vehicle icon should display to confirm a good power connection.

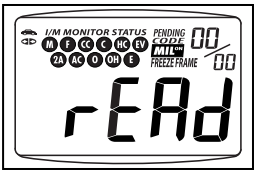
4. Turn the ignition on. **DO NOT** start the engine.

5. The Car Reader will automatically link to the vehicle's computer.



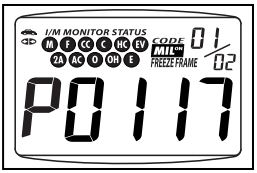
- The LCD display will show "**rEAd**." If the LCD display is blank, it indicates there is no power at the vehicle's DLC. Check your fuse panel and replace any burned-out fuses.

  If replacing the fuse(s) does not correct the problem, see your vehicle's repair manual to locate the proper computer (PCM) fuse/circuit. Perform any necessary repairs before continuing.



- After 4-5 seconds, the Car Reader will **retrieve** and **display** any Diagnostic Trouble Codes that are in the vehicle's computer memory.

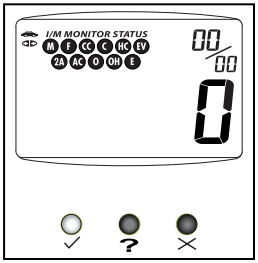
- If an error message (**Err**, **Err1** or **Err2**) is shown on the Car Reader's LCD display, it indicates there is a communication problem. This means that the Car Reader is unable to communicate with the vehicle's computer. Do the following:



- Turn the ignition key off, wait 5 seconds and turn the key back on to reset the computer.
- Make sure your vehicle is OBD 2 compliant. See VEHICLES COVERED on page 2 for vehicle compliance verification information.

6. Read and interpret the Diagnostic Trouble Codes using the LCD display and the green, yellow and red LEDs.

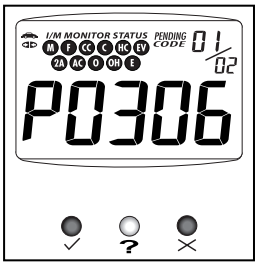
The green, yellow and red LEDs are used (with the LCD display) as visual aids to make it easier for the user to determine engine system conditions.



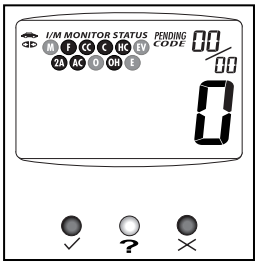
■ **Green LED** ✓ - Indicates that all engine systems are "OK" and running normally. All monitors on the vehicle are active and are performing their diagnostic testing, and no trouble codes are present. A zero will show on the Car Reader's LCD display for further confirmation.

■ **Yellow LED** ? - Indicates one of the following conditions:

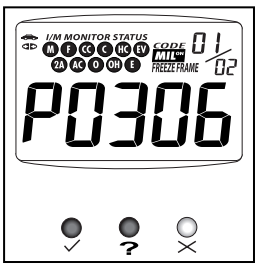
PENDING CODE PRESENT - If the yellow LED is lit, it may indicate the existence of a pending code. Check the Car Reader's LCD display for confirmation. A pending code is confirmed by the presence of a numeric code and the word PENDING on the Car Reader's LCD display. If no pending code is shown, the yellow LED indicates Monitor Status (see the following).



MONITOR STATUS - If the Car Reader's LCD display shows a zero (indicating there are no DTCs present in the vehicle's computer), but the yellow LED is lit, it indicates a "Monitor Has Not Run" status. This means that some of the Monitors on the vehicle have not yet finished their diagnostic self-testing. This condition is confirmed by one or more **blinking** Monitor icons on the LCD display. A **blinking** Monitor icon means the Monitor has not yet run and finished its diagnostic self-testing. All Monitor icons that are **solid** have completed their diagnostic self-testing.



■ **Red LED** ✕ - Indicates there is a problem with one or more of the vehicle's systems. The red LED is also used to show that DTC(s) are present (displayed on the Car Reader's LCD display). In this case, the Multifunction Indicator (Check Engine) lamp on the vehicle's instrument panel will light steady on.



*The Car Reader will automatically re-link to the vehicle's computer every 15 seconds to refresh the data being retrieved. When data is being refreshed, a single beep will sound, and "**rEAd**" will be shown on the LCD display for 5-6 seconds. The Car Reader will then beep twice and return to displaying codes. This action repeats as long as the Car Reader is in communication with the vehicle's computer.*

The Car Reader will display a code only if codes are present in the vehicle's computer memory. If no codes are present, a "0" will be displayed.

7. If more than one code is present, press and release the **SCROLL** ▽ button, as necessary, to display additional codes.

- Whenever the **SCROLL** function is used to view additional codes, the Car Reader's communication link with the vehicle's computer disconnects. To re-establish communication, press the **LINK** button again.

Refer to page 14 for Diagnostic Trouble Code definitions. Match the retrieved DTC(s) with those listed. Read the associated definition(s), and see the vehicle's service manual for further evaluation.

ERASING DIAGNOSTIC TROUBLE CODES (DTCs)

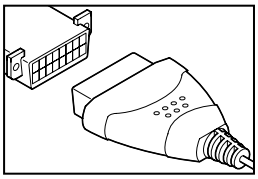
When the Car Reader's ERASE function is used to erase the DTCs from the vehicle's on-board computer, "Freeze Frame" data and manufacturer-specific enhanced data are also erased.

If you plan to take the vehicle to a Service Center for repair, **DO NOT** erase the codes from the vehicle's computer. If the codes are erased, valuable information that might help the technician troubleshoot the problem will also be erased.

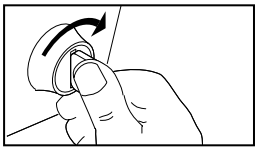
Erase DTCs from the computer's memory as follows:

When DTCs are erased from the vehicle's computer memory, the I/M Readiness Monitor Status program resets status of all the Monitors to a not run "flashing" condition. To set all of the Monitors to a DONE status, an OBD 2 Drive Cycle must be performed. Refer to your vehicle's service manual for information on how to perform an OBD 2 Drive Cycle for the vehicle under test.

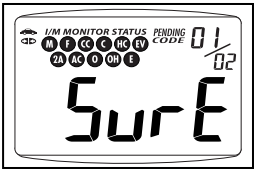
1. If not connected already, connect the Car Reader to the vehicle's DLC. (If the Car Reader is already connected and linked to the vehicle's computer, proceed directly to step 4. If not, continue to step 2.)



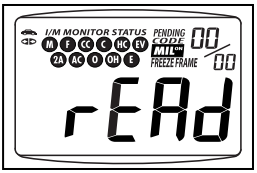
2. Turn the ignition on. **DO NOT** start the engine. The Car Reader will automatically link to the vehicle's computer.



3. Press and release the Car Reader's **ERASE** button. The LCD display will indicate "**SurE**" for your confirmation.



- If you change your mind and do not wish to erase the codes, press the **LINK** button to return to the code retrieval function.
- If you wish to continue, press the **ERASE** button again. When all retrievable information, including DTCs, has been cleared from the computer's memory, the Car Reader will re-link to the vehicle's computer, and the LCD display will show "**rEAd**."



Erasing DTCs does not fix the problem(s) that caused the code(s) to be set. If proper repairs to correct the problem that caused the code(s) to be set are not made, the code(s) will appear again (and the check engine light will illuminate) as soon as the vehicle is driven long enough for its Monitors to complete their testing.

DIAGNOSTIC TROUBLE CODE DEFINITIONS

Diagnostic Trouble Codes (DTCs) are meant to guide you to the proper service procedure in the vehicle's service manual. **DO NOT** replace parts based only on DTCs without first consulting the vehicle's service manual for proper testing procedures for that particular system, circuit or component.

DTCs are alphanumeric codes that are used to identify a problem that is present in any of the systems that are monitored by the on-board computer (PCM). Each trouble code has an assigned message that identifies the circuit, component or system area where the problem was found.

OBD 2 diagnostic trouble codes are made up of five characters:

- The 1st character is a **letter**. It identifies the "main system" where the fault occurred (Body, Chassis, Powertrain, or Network).
- The 2nd character is a **numeric digit**. It identifies the "type" of code (Generic or Manufacturer-Specific).



Generic DTCs *are codes that are used by all vehicle manufacturers. The standards for generic DTCs, as well as their definitions, are set by the Society of Automotive Engineers (SAE).*

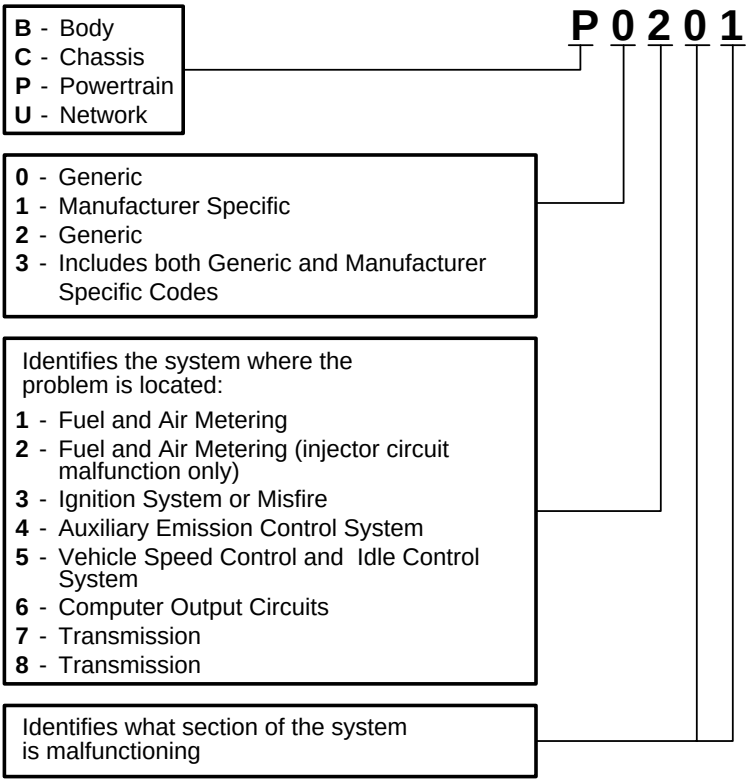
Manufacturer-Specific DTCs *are codes that are controlled by the vehicle manufacturer. The Federal Government does not require manufacturer-specific codes in order to comply with the new OBD 2 emissions standards. However, manufacturers are free to expand beyond the required codes to make their systems easier to diagnose.*

- The 3rd character is a **numeric digit**. It identifies the specific system or sub-system where the problem is located.
- The 4th and 5th characters are **numeric digits**. They identify the section of the system that is malfunctioning.

This section provides the most complete list of “Generic” DTC definitions available at the time of publication. OBD 2 is an evolving system; new codes and definitions are added as the system grows. **ALWAYS** check your vehicle's service manual for code definitions that are not listed here, or for “Manufacturer-Specific” DTC definitions.

OBD 2 DTC EXAMPLE

P0201 - Injector Circuit Malfunction, Cylinder 1



Code	Definition
P0010	"A" Camshaft Position - Actuator Circuit (Bank 1)
P0011	"A" Camshaft Position - Timing Over-Advanced or System Performance (Bank 1)
P0012	"A" Camshaft Position - Timing Over-Retarded (Bank 1)
P0013	"B" Camshaft Position - Actuator Circuit (Bank 1)
P0014	"B" Camshaft Position - Timing Over-Advanced or System Performance (Bank 1)
P0015	"B" Camshaft Position - Timing Over-Retarded (Bank 1)
P0020	"A" Camshaft Position - Actuator Circuit (Bank 2)
P0021	"A" Camshaft Position - Timing Over-Advanced or System Performance (Bank 2)
P0022	"A" Camshaft Position - Timing Over-Retarded (Bank 2)
P0023	"B" Camshaft Position - Actuator Circuit (Bank 2)
P0024	"B" Camshaft Position - Timing Over-Advanced or System Performance (Bank 2)
P0025	"B" Camshaft Position - Timing Over-Retarded (Bank 2)
P0030	HO2S Heater Control Circuit (Bank 1 Sensor 1)
P0031	HO2S Heater Control Circuit Low (Bank 1 Sensor 1)
P0032	HO2S Heater Control Circuit High (Bank 1 Sensor 1)
P0033	Turbo Charger Bypass Valve Control Circuit
P0034	Turbo Charger Bypass Valve Control Circuit Low
P0035	Turbo Charger Bypass Valve Control Circuit High
P0036	HO2S Heater Control Circuit (Bank 1 Sensor 2)
P0037	HO2S Heater Control Circuit Low (Bank 1 Sensor 2)
P0038	HO2S Heater Control Circuit High (Bank 1 Sensor 2)
P0042	HO2S Heater Control Circuit (Bank 1 Sensor 3)
P0043	HO2S Heater Control Circuit Low (Bank 1 Sensor 3)
P0044	HO2S Heater Control Circuit High (Bank 1 Sensor 3)
P0050	HO2S Heater Control Circuit (Bank 2 Sensor 1)
P0051	HO2S Heater Control Circuit Low (Bank 2 Sensor 1)
P0052	HO2S Heater Control Circuit High (Bank 2 Sensor 1)
P0056	HO2S Heater Control Circuit (Bank 2 Sensor 2)
P0057	HO2S Heater Control Circuit Low (Bank 2 Sensor 2)
P0058	HO2S Heater Control Circuit High (Bank 2 Sensor 2)
P0062	HO2S Heater Control Circuit (Bank 2 Sensor 3)
P0063	HO2S Heater Control Circuit Low (Bank 2 Sensor 3)
P0064	HO2S Heater Control Circuit High (Bank 2 Sensor 3)
P0065	Air Assisted Injector Control Range/Performance
P0066	Air Assisted Injector Control Circuit or Circuit Low
P0067	Air Assisted Injector Control Circuit High
P0070	Ambient Air Temperature Sensor Circuit
P0071	Ambient Air Temperature Sensor Range/Performance
P0072	Ambient Air Temperature Sensor Circuit Low Input
P0073	Ambient Air Temperature Sensor Circuit High Input
P0074	Ambient Air Temperature Sensor Circuit Intermittent
P0075	Intake Valve Control Solenoid Circuit (Bank 1)

Code	Definition
P0076	Intake Valve Control Solenoid Circuit Low (Bank 1)
P0077	Intake Valve Control Solenoid Circuit High (Bank 1)
P0078	Exhaust Valve Control Solenoid Circuit (Bank 1)
P0079	Exhaust Valve Control Solenoid Circuit Low (Bank 1)
P0080	Exhaust Valve Control Solenoid Circuit High (Bank 1)
P0081	Intake Valve Control Solenoid Circuit (Bank 2)
P0082	Intake Valve Control Solenoid Circuit Low (Bank 2)
P0083	Intake Valve Control Solenoid Circuit High (Bank 2)
P0084	Exhaust Valve Control Solenoid Circuit (Bank 2)
P0085	Exhaust Valve Control Solenoid Circuit Low (Bank 2)
P0086	Exhaust Valve Control Solenoid Circuit High (Bank 2)
P0100	Mass or Volume Air Flow Circuit Malfunction
P0101	Mass or Volume Circuit Range Performance Problem
P0102	Mass or Volume Circuit Low Input
P0103	Mass or Volume Circuit High Input
P0104	Mass or Volume Circuit Intermittent
P0105	Manifold Absolute Pressure/Barometric Pressure Circuit Malfunction
P0106	Manifold Absolute Pressure/Barometric Pressure CircuitRange/Performance Probl
P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input
P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input
P0109	Manifold Absolute Pressure/Barometric Pressure Circuit Intermittent
P0110	Intake Air Temperature Circuit Malfunction
P0111	Intake Air Temperature Circuit Range/Performance Problem
P0112	Intake Air Temperature Circuit Low Input
P0113	Intake Air Temperature Circuit High Input
P0114	Intake Air Temperature Circuit Intermittent
P0115	Engine Coolant Temperature Circuit Malfunction
P0116	Engine Coolant Temperature Circuit Range/Performance Problem
P0117	Engine Coolant Temperature Circuit Low Input
P0118	Engine Coolant Temperature Circuit High Input
P0119	Engine Coolant Temperature Circuit Intermittent
P0120	Throttle/Pedal Position Sensor/Switch A Circuit Malfunction
P0121	Throttle/Pedal Position Sensor/Switch A Circuit Range/Performance Problem
P0122	Throttle/Pedal Position Sensor/Switch A Circuit Low Input
P0123	Throttle/Pedal Position Sensor/Switch A Circuit High Input
P0124	Throttle/Pedal Position Sensor/Switch A Circuit Intermittent
P0125	Insufficient Coolant Temperature for Closed Loop Fuel Cont
P0126	Insufficient Coolant Temperature for Stable Operation
P0127	Intake Air Temperature Too High
P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperat

Code	Definition
P0130	O2 Sensor Circuit Malfunction (Bank 1 Sensor 1)
P0131	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)
P0132	O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)
P0133	O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)
P0134	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 1)
P0135	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1)
P0136	O2 Sensor Circuit Malfunction (Bank 1 Sensor 2)
P0137	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2)
P0138	O2 Sensor Circuit High Voltage (Bank 1 Sensor 2)
P0139	O2 Sensor Circuit Slow Response (Bank 1 Sensor 2)
P0140	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2)
P0141	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)
P0142	O2 Sensor Circuit Malfunction (Bank 1 Sensor 3)
P0143	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 3)
P0144	O2 Sensor Circuit High Voltage (Bank 1 Sensor 3)
P0145	O2 Sensor Circuit Slow Response (Bank 1 Sensor 3)
P0146	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 3)
P0147	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 3)
P0148	Fuel Delivery Erro
P0149	Fuel Timing Err
P0150	O2 Sensor Circuit Malfunction (Bank 2 Sensor 1)
P0151	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1)
P0152	O2 Sensor Circuit High Voltage (Bank 2 Sensor 1)
P0153	O2 Sensor Circuit Slow Response (Bank 2 Sensor 1)
P0154	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 1)
P0155	O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 1)
P0156	O2 Sensor Circuit Malfunction (Bank 2 Sensor 2)
P0157	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 2)
P0158	O2 Sensor Circuit High Voltage (Bank 2 Sensor 2)
P0159	O2 Sensor Circuit Slow Response (Bank 2 Sensor 2)
P0160	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 2)
P0161	O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 2)
P0162	O2 Sensor Circuit Malfunction (Bank 2 Sensor 3)
P0163	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 3)
P0164	O2 Sensor Circuit High Voltage (Bank 2 Sensor 3)
P0165	O2 Sensor Circuit Slow Response (Bank 2 Sensor 3)
P0166	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 3)
P0167	O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 3)
P0168	Fuel Temperature Too High
P0169	Incorrect Fuel Composition
P0170	Fuel Trim Malfunction (Bank 1)
P0171	System too Lean (Bank 1)

Code	Definition
P0172	System too Rich (Bank 1)
P0173	Fuel Trim Malfunction (Bank 2)
P0174	System too Lean (Bank 2)
P0175	System too Rich (Bank 2)
P0176	Fuel Composition Sensor Circuit Malfunction
P0177	Fuel Composition Sensor Circuit Range/Performance
P0178	Fuel Composition Sensor Circuit Low Input
P0179	Fuel Composition Sensor Circuit High Input
P0180	Fuel Temperature Sensor A Circuit Malfunction
P0181	Fuel Temperature Sensor A Circuit Range/Performance
P0182	Fuel Temperature Sensor A Circuit Low Input
P0183	Fuel Temperature Sensor A Circuit High Input
P0184	Fuel Temperature Sensor A Circuit Intermittent
P0185	Fuel Temperature Sensor B Circuit Malfunction
P0186	Fuel Temperature Sensor B Circuit Range/Performance
P0187	Fuel Temperature Sensor B Circuit Low Input
P0188	Fuel Temperature Sensor B Circuit High Input
P0189	Fuel Temperature Sensor B Circuit Intermittent
P0190	Fuel Rail Pressure Sensor Circuit Malfunction
P0191	Fuel Rail Pressure Sensor Circuit Range/Performance
P0192	Fuel Rail Pressure Sensor Circuit Low Input
P0193	Fuel Rail Pressure Sensor Circuit High Input
P0194	Fuel Rail Pressure Sensor Circuit Intermittent
P0195	Engine Oil Temperature Sensor Malfunction
P0196	Engine Oil Temperature Sensor Range/Performance
P0197	Engine Oil Temperature Sensor Low
P0198	Engine Oil Temperature Sensor High
P0199	Engine Oil Temperature Sensor Intermittent
P0200	Injector Circuit Malfunction
P0201	Injector Circuit Malfunction - Cylinder 1
P0202	Injector Circuit Malfunction - Cylinder 2
P0203	Injector Circuit Malfunction - Cylinder 3
P0204	Injector Circuit Malfunction - Cylinder 4
P0205	Injector Circuit Malfunction - Cylinder 5
P0206	Injector Circuit Malfunction - Cylinder 6
P0207	Injector Circuit Malfunction - Cylinder 7
P0208	Injector Circuit Malfunction - Cylinder 8
P0209	Injector Circuit Malfunction - Cylinder 9
P0210	Injector Circuit Malfunction - Cylinder 10
P0211	Injector Circuit Malfunction - Cylinder 11
P0212	Injector Circuit Malfunction - Cylinder 12
P0213	Cold Start Injector 1 Malfunction

Code	Definition
P0214	Cold Start Injector 2 Malfunction
P0215	Engine Shutoff Solenoid Malfunction
P0216	Injection Timing Control Circuit Malfunction
P0217	Engine Overtemp Condition
P0218	Transmission Over Temperature Condition
P0219	Engine Overspeed Condition
P0220	Throttle/Pedal Position Sensor/Switch B Circuit Malfunction
P0221	Throttle/Pedal Position Sensor/Switch B Circuit Range/Performance Problem
P0222	Throttle/Pedal Position Sensor/Switch B Circuit Low Input
P0223	Throttle/Pedal Position Sensor/Switch B Circuit High Input
P0224	Throttle/Pedal Position Sensor/Switch B Circuit Intermittent
P0225	Throttle/Pedal Position Sensor/Switch C Circuit Malfunction
P0226	Throttle/Pedal Position Sensor/Switch C Circuit Range/Performance Problem
P0227	Throttle/Pedal Position Sensor/Switch C Circuit Low Input
P0228	Throttle/Pedal Position Sensor/Switch C Circuit High Input
P0229	Throttle/Pedal Position Sensor/Switch C Circuit Intermittent
P0230	Fuel Pump Primary Circuit Malfunction
P0231	Fuel Pump Secondary Circuit Low
P0232	Fuel Pump Secondary Circuit High
P0233	Fuel Pump Secondary Circuit Intermittent
P0234	Engine Overboost Condition
P0235	Turbocharger Boost Sensor A Circuit Malfunction
P0236	Turbocharger Boost Sensor A Circuit Range/Performance
P0237	Turbocharger Boost Sensor A Circuit Low
P0238	Turbocharger Boost Sensor A Circuit High
P0239	Turbocharger Boost Sensor B Circuit Malfunction
P0240	Turbocharger Boost Sensor B Circuit Range/Performance
P0241	Turbocharger Boost Sensor B Circuit Low
P0242	Turbocharger Boost Sensor B Circuit High
P0243	Turbocharger Wastegate Solenoid A Malfunction
P0244	Turbocharger Wastegate Solenoid A Range/Performance
P0245	Turbocharger Wastegate Solenoid A Low
P0246	Turbocharger Wastegate Solenoid A High
P0247	Turbocharger Wastegate Solenoid B Malfunction
P0248	Turbocharger Wastegate Solenoid B Range/Performance
P0249	Turbocharger Wastegate Solenoid B Low
P0250	Turbocharger Wastegate Solenoid B High
P0251	Injection Pump A Rotor/Cam Malfunction
P0252	Injection Pump A Rotor/Cam Range/Performance
P0253	Injection Pump A Rotor/Cam Low
P0254	Injection Pump A Rotor/Cam High
P0255	Injection Pump A Rotor/Cam Intermitted

Code	Definition
P0256	Injection Pump B Rotor/Cam Malfunction
P0257	Injection Pump B Rotor/Cam Range/Performance
P0258	Injection Pump B Rotor/Cam Low
P0259	Injection Pump B Rotor/Cam High
P0260	Injection Pump B Rotor/Cam Intermitted
P0261	Cylinder 1 Injector Circuit Low
P0262	Cylinder 1 Injector Circuit High
P0263	Cylinder 1 Contribution/Balance Fault
P0264	Cylinder 2 Injector Circuit Low
P0265	Cylinder 2 Injector Circuit High
P0266	Cylinder 2 Contribution/Balance Fault
P0267	Cylinder 3 Injector Circuit Low
P0268	Cylinder 3 Injector Circuit High
P0269	Cylinder 3 Contribution/Balance Fault
P0270	Cylinder 4 Injector Circuit Low
P0271	Cylinder 4 Injector Circuit High
P0272	Cylinder 4 Contribution/Balance Fault
P0273	Cylinder 5 Injector Circuit Low
P0274	Cylinder 5 Injector Circuit High
P0275	Cylinder 5 Contribution/Balance Fault
P0276	Cylinder 6 Injector Circuit Low
P0277	Cylinder 6 Injector Circuit High
P0278	Cylinder 6 Contribution/Balance Fault
P0279	Cylinder 7 Injector Circuit Low
P0280	Cylinder 7 Injector Circuit High
P0281	Cylinder 7 Contribution/Balance Fault
P0282	Cylinder 8 Injector Circuit Low
P0283	Cylinder 8 Injector Circuit High
P0284	Cylinder 8 Contribution/Balance Fault
P0285	Cylinder 9 Injector Circuit Low
P0286	Cylinder 9 Injector Circuit High
P0287	Cylinder 9 Contribution/Balance Fault
P0288	Cylinder 10 Injector Circuit Low
P0289	Cylinder 10 Injector Circuit High
P0290	Cylinder 10 Contribution/Balance Fault
P0291	Cylinder 11 Injector Circuit Low
P0292	Cylinder 11 Injector Circuit High
P0293	Cylinder 11 Contribution/Balance Fault
P0294	Cylinder 12 Injector Circuit Low
P0295	Cylinder 12 Injector Circuit High
P0296	Cylinder 12 Contribution/Balance Fault
P0298	Engine Oil Over Temperature

Code	Definition
P0300	Random/Multiple Cylinder Misfire Detected
P0301	Cylinder 1 Misfire Detected
P0302	Cylinder 2 Misfire Detected
P0303	Cylinder 3 Misfire Detected
P0304	Cylinder 4 Misfire Detected
P0305	Cylinder 5 Misfire Detected
P0306	Cylinder 6 Misfire Detected
P0307	Cylinder 7 Misfire Detected
P0308	Cylinder 8 Misfire Detected
P0309	Cylinder 9 Misfire Detected
P0310	Cylinder 10 Misfire Detected
P0311	Cylinder 11 Misfire Detected
P0312	Cylinder 12 Misfire Detected
P0313	Misfire Detected with Low Fuel
P0314	Single Cylinder Misfire (Cylinder not specified)
P0320	Ignition/Distributor Engine Speed Input Circuit Malfunction
P0321	Ignition/Distributor Engine Speed Input Circuit Range/Performance
P0322	Ignition/Distributor Engine Speed Input Circuit No Signal
P0323	Ignition/Distributor Engine Speed Input Circuit Intermittent
P0324	Knock Control System Error
P0325	Knock Sensor 1 Circuit Malfunction (Bank 1 or Single Sensor)
P0326	Knock Sensor 1 Circuit Range/Performance (Bank 1 or Single Sensor)
P0327	Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)
P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)
P0329	Knock Sensor 1 Circuit Intermittent (Bank 1 or Single Sensor)
P0330	Knock Sensor 2 Circuit Malfunction (Bank 2)
P0331	Knock Sensor 2 Circuit Range/Performance (Bank 2)
P0332	Knock Sensor 2 Circuit Low Input (Bank 2)
P0333	Knock Sensor 2 Circuit High Input (Bank 2)
P0334	Knock Sensor 2 Circuit Intermittent (Bank 2)
P0335	Crankshaft Position Sensor A Circuit Malfunction
P0336	Crankshaft Position Sensor A Circuit Range/Performance
P0337	Crankshaft Position Sensor A Circuit Low Input
P0338	Crankshaft Position Sensor A Circuit High Input
P0339	Crankshaft Position Sensor A Circuit Intermittent
P0340	Camshaft Position Sensor Circuit Malfunction
P0341	Camshaft Position Sensor Circuit Range/Performance
P0342	Camshaft Position Sensor Circuit Low Input
P0343	Camshaft Position Sensor Circuit High Input
P0344	Camshaft Position Sensor Circuit Intermittent
P0345	Camshaft Position Sensor "A" Circuit (Bank 2)
P0346	Camshaft Position Sensor "A" Circuit Range/Performance (Bank 2)

Code	Definition
P0347	Camshaft Position Sensor "A" Circuit Low Input (Bank 2)
P0348	Camshaft Position Sensor "A" Circuit High Input (Bank 2)
P0349	Camshaft Position Sensor "A" Circuit Intermittent (Bank 2)
P0350	Ignition Coil Primary/Secondary Circuit Malfunction
P0351	Ignition Coil A Primary/Secondary Circuit Malfunction
P0352	Ignition Coil B Primary/Secondary Circuit Malfunction
P0353	Ignition Coil C Primary/Secondary Circuit Malfunction
P0354	Ignition Coil D Primary/Secondary Circuit Malfunction
P0355	Ignition Coil E Primary/Secondary Circuit Malfunction
P0356	Ignition Coil F Primary/Secondary Circuit Malfunction
P0357	Ignition Coil G Primary/Secondary Circuit Malfunction
P0358	Ignition Coil H Primary/Secondary Circuit Malfunction
P0359	Ignition Coil I Primary/Secondary Circuit Malfunction
P0360	Ignition Coil J Primary/Secondary Circuit Malfunction
P0361	Ignition Coil K Primary/Secondary Circuit Malfunction
P0362	Ignition Coil L Primary/Secondary Circuit Malfunction
P0365	Camshaft Position Sensor "B" Circuit (Bank 1)
P0366	Camshaft Position Sensor "B" Circuit Range/Performance (Bank 1)
P0367	Camshaft Position Sensor "B" Circuit Low Input (Bank 1)
P0368	Camshaft Position Sensor "B" Circuit High Input (Bank 1)
P0369	Camshaft Position Sensor "B" Circuit Intermittent (Bank 1)
P0370	Timing Reference High Resolution Signal A Malfunction
P0371	Timing Reference High Resolution Signal A Too Many Pulses
P0372	Timing Reference High Resolution Signal A Too Few Pulses
P0373	Timing Reference High Resolution Signal A Intermittent/Erratic Pulses
P0374	Timing Reference High Resolution Signal A No Pulses
P0375	Timing Reference High Resolution Signal B Malfunction
P0376	Timing Reference High Resolution Signal B Too Many Pulses
P0377	Timing Reference High Resolution Signal B Too Few Pulses
P0378	Timing Reference High Resolution Signal B Intermittent/Erratic Pulses
P0379	Timing Reference High Resolution Signal B No Pulses
P0380	Glow Plug/Heater Circuit Malfunction
P0381	Glow Plug/Heater Indicator Circuit Malfunction
P0382	Glow Plug/Heater Circuit "B" Malfunction
P0385	Crankshaft Position Sensor B Circuit Malfunction
P0386	Crankshaft Position Sensor B Circuit Range/Performance
P0387	Crankshaft Position Sensor B Circuit Low Input
P0388	Crankshaft Position Sensor B Circuit High Input
P0389	Crankshaft Position Sensor B Circuit Intermittent
P0390	Camshaft Position Sensor "B" Circuit (Bank 2)
P0391	Camshaft Position Sensor "B" Circuit Range/Performance (Bank 2)
P0392	Camshaft Position Sensor "B" Circuit Low Input (Bank 2)

Code	Definition
P0393	Camshaft Position Sensor "B" Circuit High Input (Bank 2)
P0394	Camshaft Position Sensor "B" Circuit Intermittent (Bank 2)
P0400	Exhaust Gas Recirculation Flow Malfunction
P0401	Exhaust Gas Recirculation Flow Insufficient Detected
P0402	Exhaust Gas Recirculation Flow Excessive Detected
P0403	Exhaust Gas Recirculation Circuit Malfunction
P0404	Exhaust Gas Recirculation Circuit Range/Performance
P0405	Exhaust Gas Recirculation Sensor A Circuit Low
P0406	Exhaust Gas Recirculation Sensor A Circuit High
P0407	Exhaust Gas Recirculation Sensor B Circuit Low
P0408	Exhaust Gas Recirculation Sensor B Circuit High
P0409	Exhaust Gas Recirculation Sensor "A" Circuit
P0410	Secondary Air Injection System Malfunction
P0411	Secondary Air Injection System Incorrect Flow Detected
P0412	Secondary Air Injection System Switching Valve A Circuit Malfunction
P0413	Secondary Air Injection System Switching Valve A Circuit Open
P0414	Secondary Air Injection System Switching Valve A Circuit Shorted
P0415	Secondary Air Injection System Switching Valve B Circuit Malfunction
P0416	Secondary Air Injection System Switching Valve B Circuit Open
P0417	Secondary Air Injection System Switching Valve B Circuit Shorted
P0418	Secondary Air Injection System Relay "A" Circuit Malfunction
P0419	Secondary Air Injection System Relay "B" Circuit Malfunction
P0420	Catalyst System Efficiency Below Threshold (Bank 1)
P0421	Warm Up Catalyst Efficiency Below Threshold (Bank 1)
P0422	Main Catalyst Efficiency Below Threshold (Bank 1)
P0423	Heated Catalyst Efficiency Below Threshold (Bank 1)
P0424	Heated Catalyst Temperature Below Threshold (Bank 1)
P0425	Catalyst Temperature Sensor (Bank 1)
P0426	Catalyst Temperature Sensor Range/Performance (Bank 1)
P0427	Catalyst Temperature Sensor Low Input (Bank 1)
P0428	Catalyst Temperature Sensor High Input (Bank 1)
P0429	Catalyst Heater Control Circuit (Bank 1)
P0430	Catalyst System Efficiency Below Threshold (Bank 2)
P0431	Warm Up Catalyst Efficiency Below Threshold (Bank 2)
P0432	Main Catalyst Efficiency Below Threshold (Bank 2)
P0433	Heated Catalyst Efficiency Below Threshold (Bank 2)
P0434	Heated Catalyst Temperature Below Threshold (Bank 2)
P0435	Catalyst Temperature Sensor (Bank 2)
P0436	Catalyst Temperature Sensor Range/Performance (Bank 2)
P0437	Catalyst Temperature Sensor Low Input (Bank 2)
P0438	Catalyst Temperature Sensor High Input (Bank 2)
P0439	Catalyst Heater Control Circuit (Bank 2)

Code	Definition
P0440	Evaporative Emission Control System Malfunction
P0441	Evaporative Emission Control System Incorrect Purge Flow
P0442	Evaporative Emission Control System Leak Detected (small leak)
P0443	Evaporative Emission Control System Purge Control Valve Circuit Malfunction
P0444	Evaporative Emission Control System Purge Control Valve Circuit Open
P0445	Evaporative Emission Control System Purge Control Valve Circuit Shorted
P0446	Evaporative Emission Control System Vent Control Circuit Malfunction
P0447	Evaporative Emission Control System Vent Control Open
P0448	Evaporative Emission Control System Vent Control Circuit Shorted
P0449	Evaporative Emission Control System Vent Valve/Solenoid Circuit Malfunction
P0450	Evaporative Emission Control System Pressure Sensor Malfunction
P0451	Evaporative Emission Control System Pressure Sensor Range/Performance
P0452	Evaporative Emission Control System Pressure Sensor Low Input
P0453	Evaporative Emission Control System Pressure Sensor High Input
P0454	Evaporative Emission Control System Pressure Sensor Intermittent
P0455	Evaporative Emission Control System Leak Detected (gross leak)
P0456	Evaporative Emission Control System Leak Detected (very small leak)
P0457	Evaporative Emission Control System Leak Detected (fuel cap loose/off)
P0460	Fuel Level Sensor Circuit Malfunction
P0461	Fuel Level Sensor Circuit Range/Performance
P0462	Fuel Level Sensor Circuit Low Input
P0463	Fuel Level Sensor Circuit High Input
P0464	Fuel Level Sensor Circuit Intermittent
P0465	Purge Flow Sensor Circuit Malfunction
P0466	Purge Flow Sensor Circuit Range/Performance
P0467	Purge Flow Sensor Circuit Low Input
P0468	Purge Flow Sensor Circuit High Input
P0469	Purge Flow Sensor Circuit Intermittent
P0470	Exhaust Pressure Sensor Malfunction
P0471	Exhaust Pressure Sensor Range/Performance
P0472	Exhaust Pressure Sensor Low
P0473	Exhaust Pressure Sensor High
P0474	Exhaust Pressure Sensor Intermittent
P0475	Exhaust Pressure Control Valve Malfunction
P0476	Exhaust Pressure Control Valve Range/Performance
P0477	Exhaust Pressure Control Valve Low
P0478	Exhaust Pressure Control Valve High
P0479	Exhaust Pressure Control Valve Intermittent
P0480	Cooling Fan 1 Control Circuit Malfunction
P0481	Cooling Fan 2 Control Circuit Malfunction
P0482	Cooling Fan 3 Control Circuit Malfunction
P0483	Cooling Fan Rationality Check Malfunction

Code	Definition
P0484	Cooling Fan Circuit Over Current
P0485	Cooling Fan Power/Ground Circuit Malfunction
P0486	Exhaust Gas Recirculation Sensor "B" Circuit
P0487	Exhaust Gas Recirculation Throttle Position Control Circuit
P0488	Exhaust Gas Recirculation Throttle Position Control Range/Performance
P0491	Secondary Air Injection System (Bank 1)
P0492	Secondary Air Injection System (Bank 2)
P0500	Vehicle Speed Sensor Malfunction
P0501	Vehicle Speed Sensor Range/Performance
P0502	Vehicle Speed Sensor Circuit Low Input
P0503	Vehicle Speed Sensor Intermittent/Erratic/High
P0505	Idle Control System Malfunction
P0506	Idle Control System RPM Lower Than Expected
P0507	Idle Control System RPM Higher Than Expected
P0508	Idle Control System Circuit Low
P0509	Idle Control System Circuit High
P0510	Closed Throttle Position Switch Malfunction
P0512	Starter Request Circuit
P0513	Incorrect Immobilizer Key ("Immobilizer" pending SAE J1930 approval)
P0515	Battery Temperature Sensor Circuit
P0516	Battery Temperature Sensor Circuit Low
P0517	Battery Temperature Sensor Circuit High
P0520	Engine Oil Pressure/Switch Circuit Malfunction
P0521	Engine Oil Pressure/Switch Range/Performance
P0522	Engine Oil Pressure/Switch Low Voltage
P0523	Engine Oil Pressure/Switch High Voltage
P0524	Engine Oil Pressure Too Low
P0530	A/C Refrigerant Pressure Sensor Circuit Malfunction
P0531	A/C Refrigerant Pressure Sensor Circuit Range/Performance
P0532	A/C Refrigerant Pressure Sensor Circuit Low Input
P0533	A/C Refrigerant Pressure Sensor Circuit High Input
P0534	Air Conditioner Refrigerant Charge Loss
P0540	Intake Air Heater Circuit
P0541	Intake Air Heater Circuit Low
P0542	Intake Air Heater Circuit High
P0544	Exhaust Gas Temperature Sensor Circuit (Bank 1)
P0545	Exhaust Gas Temperature Sensor Circuit Low (Bank 1)
P0546	Exhaust Gas Temperature Sensor Circuit High (Bank 1)
P0547	Exhaust Gas Temperature Sensor Circuit (Bank 2)
P0548	Exhaust Gas Temperature Sensor Circuit Low (Bank 2)
P0549	Exhaust Gas Temperature Sensor Circuit High (Bank 2)
P0550	Power Steering Pressure Sensor Circuit Malfunction

Code	Definition
P0551	Power Steering Pressure Sensor Circuit Range/Performance
P0552	Power Steering Pressure Sensor Circuit Low Input
P0553	Power Steering Pressure Sensor Circuit High Input
P0554	Power Steering Pressure Sensor Circuit Intermittent
P0560	System Voltage Malfunction
P0561	System Voltage Unstable
P0562	System Voltage Low
P0563	System Voltage High
P0564	Cruise Control Multi-Function Input Signal
P0565	Cruise Control On Signal Malfunction
P0566	Cruise Control Off Signal Malfunction
P0567	Cruise Control Resume Signal Malfunction
P0568	Cruise Control Set Signal Malfunction
P0569	Cruise Control Coast Signal Malfunction
P0570	Cruise Control Accel Signal Malfunction
P0571	Cruise Control/Brake Switch A Circuit Malfunction
P0572	Cruise Control/Brake Switch A Circuit Low
P0573	Cruise Control/Brake Switch A Circuit High
P0574	Cruise Control System - Vehicle Speed Too High
P0575	Cruise Control Input Circuit
P0576	Cruise Control Input Circuit Low
P0577	Cruise Control Input Circuit High
P0578-P0580	Reserved for Cruise Control Codes
P0600	Serial Communication Link Malfunction
P0601	Internal Control Module Memory Check Sum Error
P0602	Control Module Programming Error
P0603	Internal Control Module Keep Alive Memory (KAM) Error
P0604	Internal Control Module Random Access Memory (RAM) Error
P0605	Internal Control Module Read Only Memory (ROM) Error
P0606	PCM Processor Fault
P0607	Control Module Performance
P0608	Control Module VSS Output "A" Malfunction
P0609	Control Module VSS Output "B" Malfunction
P0610	Control Module Vehicle Options Error
P0615	Starter Relay Circuit
P0616	Starter Relay Circuit Low
P0617	Starter Relay Circuit High
P0618	Alternative Fuel Control Module KAM Error
P0619	Alternative Fuel Control Module RAM/ROM Error
P0620	Generator Control Circuit Malfunction
P0621	Generator Lamp "L" Control Circuit Malfunction

Code	Definition
P0622	Generator Field "F" Control Circuit Malfunction
P0623	Generator Lamp Control Circuit
P0624	Fuel Cap Lamp Control Circuit
P0630	VIN Not Programmed or Mismatch - ECM/PCM
P0631	VIN Not Programmed or Mismatch - TCM
P0635	Power Steering Control Circuit
P0636	Power Steering Control Circuit Low
P0637	Power Steering Control Circuit High
P0638	Throttle Actuator Control Range/Performance (Bank 1)
P0639	Throttle Actuator Control Range/Performance (Bank 2)
P0640	Intake Air Heater Control Circuit
P0645	A/C Clutch Relay Control Circuit
P0646	A/C Clutch Relay Control Circuit Low
P0647	A/C Clutch Relay Control Circuit High
P0648	Immobilizer Lamp Control Circuit ("Immobilizer" pending SAE J1930 approval)
P0649	Speed Control Lamp Control Circuit
P0650	Malfunction Indicator Lamp (MIL) Control Circuit Malfunction
P0654	Engine RPM Output Circuit Malfunction
P0655	Engine Hot Lamp Output Control Circuit Malfunction
P0656	Fuel Level Output Circuit Malfunction
P0660	Intake Manifold Tuning Valve Control Circuit (Bank 1)
P0661	Intake Manifold Tuning Valve Control Circuit Low (Bank 1)
P0662	Intake Manifold Tuning Valve Control Circuit High (Bank 1)
P0663	Intake Manifold Tuning Valve Control Circuit (Bank 2)
P0664	Intake Manifold Tuning Valve Control Circuit Low (Bank 2)
P0665	Intake Manifold Tuning Valve Control Circuit High (Bank 2)
P0700	Transmission Control System Malfunction
P0701	Transmission Control System Range/Performance
P0702	Transmission Control System Electrical
P0703	Torque Converter/Brake Switch B Circuit Malfunction
P0704	Clutch Switch Input Circuit Malfunction
P0705	Transmission Range Sensor Circuit Malfunction (PRNDL Input)
P0706	Transmission Range Sensor Circuit Range/Performance
P0707	Transmission Range Sensor Circuit Low Input
P0708	Transmission Range Sensor Circuit High Input
P0709	Transmission Range Sensor Circuit Intermittent
P0710	Transmission Fluid Temperature Sensor Circuit Malfunction
P0711	Transmission Fluid Temperature Sensor Circuit Range/Performance
P0712	Transmission Fluid Temperature Sensor Circuit Low Input
P0713	Transmission Fluid Temperature Sensor Circuit High Input
P0714	Transmission Fluid Temperature Sensor Circuit Intermittent
P0715	Input/Turbine Speed Sensor Circuit Malfunction

Code	Definition
P0716	Input/Turbine Speed Sensor Circuit Range/Performance
P0717	Input/Turbine Speed Sensor Circuit No Signal
P0718	Input/Turbine Speed Sensor Circuit Intermittent
P0719	Torque Converter/Brake Switch B Circuit Low
P0720	Output Speed Sensor Circuit Malfunction
P0721	Output Speed Sensor Circuit Range/Performance
P0722	Output Speed Sensor Circuit No Signal
P0723	Output Speed Sensor Circuit Intermittent
P0724	Torque Converter/Brake Switch B Circuit High
P0725	Engine Speed Input Circuit Malfunction
P0726	Engine Speed Input Circuit Range/Performance
P0727	Engine Speed Input Circuit No Signal
P0728	Engine Speed Input Circuit Intermittent
P0730	Incorrect Gear Ratio
P0731	Gear 1 Incorrect Ratio
P0732	Gear 2 Incorrect Ratio
P0733	Gear 3 Incorrect Ratio
P0734	Gear 4 Incorrect Ratio
P0735	Gear 5 Incorrect Ratio
P0736	Reverse Incorrect Ratio
P0737	TCM Engine Speed Output Circuit
P0738	TCM Engine Speed Output Circuit Low
P0739	TCM Engine Speed Output Circuit High
P0740	Torque Converter Clutch Circuit Malfunction
P0741	Torque Converter Clutch Circuit Performance or Stuck Off
P0742	Torque Converter Clutch Circuit Stuck On
P0743	Torque Converter Clutch Circuit Electrical
P0744	Torque Converter Clutch Circuit Intermittent
P0745	Pressure Control Solenoid Malfunction
P0746	Pressure Control Solenoid Performance or Stuck Off
P0747	Pressure Control Solenoid Stuck On
P0748	Pressure Control Solenoid Electrical
P0749	Pressure Control Solenoid Intermittent
P0750	Shift Solenoid A Malfunction
P0751	Shift Solenoid A Performance or Stuck Off
P0752	Shift Solenoid A Stuck On
P0753	Shift Solenoid A Electrical
P0754	Shift Solenoid A Intermittent
P0755	Shift Solenoid B Malfunction
P0756	Shift Solenoid B Performance or Stuck Off
P0757	Shift Solenoid B Stuck On
P0758	Shift Solenoid B Electrical

Code	Definition
P0759	Shift Solenoid B Intermittent
P0760	Shift Solenoid C Malfunction
P0761	Shift Solenoid C Performance or Stuck Off
P0762	Shift Solenoid C Stuck On
P0763	Shift Solenoid C Electrical
P0764	Shift Solenoid C Intermittent
P0765	Shift Solenoid D Malfunction
P0766	Shift Solenoid D Performance or Stuck Off
P0767	Shift Solenoid D Stuck On
P0768	Shift Solenoid D Electrical
P0769	Shift Solenoid D Intermittent
P0770	Shift Solenoid E Malfunction
P0771	Shift Solenoid E Performance or Stuck Off
P0772	Shift Solenoid E Stuck On
P0773	Shift Solenoid E Electrical
P0774	Shift Solenoid E Intermittent
P0775	Pressure Control Solenoid "B"
P0776	Pressure Control Solenoid "B" Performance or Stuck Off
P0777	Pressure Control Solenoid "B" Stuck On
P0778	Pressure Control Solenoid "B" Electrical
P0779	Pressure Control Solenoid "B" Intermittent
P0780	Shift Malfunction
P0781	1-2 Shift Malfunction
P0782	2-3 Shift Malfunction
P0783	3-4 Shift Malfunction
P0784	4-5 Shift Malfunction
P0785	Shift/Timing Solenoid Malfunction
P0786	Shift/Timing Solenoid Range/Performance
P0787	Shift/Timing Solenoid Low
P0788	Shift/Timing Solenoid High
P0789	Shift/Timing Solenoid Intermittent
P0790	Normal/Performance Switch Circuit Malfunction
P0791	Intermediate Shaft Speed Sensor Circuit
P0792	Intermediate Shaft Speed Sensor Circuit Range/Performance
P0793	Intermediate Shaft Speed Sensor Circuit No Signal
P0794	Intermediate Shaft Speed Sensor Circuit Intermittent
P0795	Pressure Control Solenoid "C"
P0796	Pressure Control Solenoid "C" Performance or Stuck Off
P0797	Pressure Control Solenoid "C" Stuck On
P0798	Pressure Control Solenoid "C" Electrical
P0799	Pressure Control Solenoid "C" Intermittent
P0801	Reverse Inhibit Control Circuit Malfunction

Code	Definition
P0803	1-4 Upshift (Skip Shift) Solenoid Control Circuit Malfunction
P0804	1-4 Upshift (Skip Shift) Lamp Control Circuit Malfunction
P0805	Clutch Position Sensor Circuit
P0806	Clutch Position Sensor Circuit Range/Performance
P0807	Clutch Position Sensor Circuit Low
P0808	Clutch Position Sensor Circuit High
P0809	Clutch Position Sensor Circuit Intermittent
P0810	Clutch Position Control Error
P0811	Excessive Clutch Slippage
P0812	Reverse Input Circuit
P0813	Reverse Output Circuit
P0814	Transmission Range Display Circuit
P0815	Upshift Switch Circuit
P0816	Downshift Switch Circuit
P0817	Starter Disable Circuit
P0818	Driveline Disconnect Switch Input Circuit
P0820	Gear Lever X-Y Position Sensor Circuit
P0821	Gear Lever X Position Circuit
P0822	Gear Lever Y Position Circuit
P0823	Gear Lever X Position Circuit Intermittent
P0824	Gear Lever Y Position Circuit Intermittent
P0825	Gear Lever Push-Pull Switch (Shift Anticipate)
P0830	Clutch Pedal Switch "A" Circuit
P0831	Clutch Pedal Switch "A" Circuit Low
P0832	Clutch Pedal Switch "A" Circuit High
P0833	Clutch Pedal Switch "B" Circuit
P0834	Clutch Pedal Switch "B" Circuit Low
P0835	Clutch Pedal Switch "B" Circuit High
P0836	Four Wheel Drive (4WD) Switch Circuit
P0837	Four Wheel Drive (4WD) Switch Circuit Range/Performance
P0838	Four Wheel Drive (4WD) Switch Circuit Low
P0839	Four Wheel Drive (4WD) Switch Circuit High
P0840	Transmission Fluid Pressure Sensor/Switch "A" Circuit
P0841	Transmission Fluid Pressure Sensor/Switch "A" Circuit Range/Performance
P0842	Transmission Fluid Pressure Sensor/Switch "A" Circuit Low
P0843	Transmission Fluid Pressure Sensor/Switch "A" Circuit High
P0844	Transmission Fluid Pressure Sensor/Switch "A" Circuit Intermittent
P0845	Transmission Fluid Pressure Sensor/Switch "B" Circuit
P0846	Transmission Fluid Pressure Sensor/Switch "B" Circuit Range/Performance
P0847	Transmission Fluid Pressure Sensor/Switch "B" Circuit Low
P0848	Transmission Fluid Pressure Sensor/Switch "B" Circuit High
P0849	Transmission Fluid Pressure Sensor/Switch "B" Circuit Intermittent