

FORD · POWERTRAIN

P1663

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1663 · Ford

Fuel Demand Command Signal Circuit Malfunction

P1663 on Ford vehicles indicates that the powertrain control module (PCM) has detected an abnormal condition in the fuel demand command signal circuit, which is the electrical path the PCM uses to command fuel delivery. The PCM monitors this circuit for expected voltage or signal integrity and sets the code when the signal falls outside the programmed parameters, often due to a wiring fault, poor connection, or a failing component in the circuit.

SYSTEM

Powertrain

CODE TYPE

Ford specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) on the instrument cluster
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Rough idle or hesitation during acceleration if the fuel command signal is disrupted
- Reduced engine performance or limp mode in some cases
- Poor fuel economy or rich/lean running conditions depending on the failure mode
- Difficulty starting or stalling shortly after start-up in severe cases

Common causes, most likely first

- 1 Damaged, chafed, or corroded wiring in the fuel demand command signal circuit
- 2 Loose or corroded electrical connector at the PCM or fuel system component
- 3 Faulty fuel pressure sensor or fuel rail pressure sensor sending an erratic signal
- 4 Failed fuel pump control module or fuel pump driver module (FPDM) on models so equipped
- 5 Internal PCM fault affecting the signal output or input
- 6 Poor ground connection for the fuel system or PCM
- 7 Aftermarket electrical accessories improperly tapped into the circuit causing interference



How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes and freeze-frame data to confirm P1663 is the primary fault and not a secondary code
- 2 Visually inspect the fuel demand command signal circuit wiring and connectors for damage, corrosion, or loose pins, repairing as needed
- 3 Check the fuel pressure sensor and its connector for proper voltage and signal output using a multimeter or oscilloscope
- 4 Test the fuel pump control module (if equipped) for proper operation and communication with the PCM
- 5 Verify PCM grounds and power feeds are clean and tight, and perform a voltage drop test on the ground circuit
- 6 If all external components and wiring test good, substitute a known-good PCM or perform a reflash/update if applicable
- 7 Clear codes and perform a road test to verify the repair and ensure the code does not return

Common Misdiagnosis Traps for P1663

- A loose or corroded connector at the fuel pressure sensor is a frequent culprit that is often overlooked when technicians focus on the sensor itself.
- On some Ford models, the fuel pump control module is located in an area exposed to road debris and moisture, leading to intermittent signal faults that do not appear during static testing.
- P1663 can be set by a failing fuel pump that draws excessive current, which affects the command signal circuit indirectly, so always check fuel pump current draw.
- Aftermarket remote starters or alarm systems tapped into the fuel system wiring can introduce noise or voltage drops that trigger this code.
- A weak battery or charging system fault can cause low voltage conditions that mimic a signal circuit failure, so verify battery and charging system health first.

Can I keep driving with P1663?

It is generally safe to drive with P1663 if the vehicle runs normally, but avoid aggressive acceleration or heavy loads until the fault is repaired. If the engine hesitates, stalls, or enters limp mode, seek professional diagnosis promptly to prevent potential safety issues.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope (for signal analysis)
- Wiring diagram for the specific Ford model
- Electrical contact cleaner and dielectric grease
- Basic hand tools for connector and component access



Reading P1663

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Ford): its meaning depends on the make.
- 6** Computer and output circuits.
- 63** The exact fault within that area.

Often seen with

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 · **P0230** Fuel Pump Primary Circuit Malfunction

See it working

Watch the animated explainer [Car Relay Test Bench: Test 4-Pin and 5-Pin Relays](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1663/>

