

GENERIC · POWERTRAIN

P229C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P229C

Fuel Pressure Regulator B Exceeded Learning Limits - Too Low

P229C means the engine computer has been adjusting the fuel pressure regulator on circuit B to keep pressure within its learned range, but the correction has hit the limit because actual pressure is too low. The computer can no longer compensate for a fuel system that is not building enough pressure, so it flags the regulator's learning limit as exceeded.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering (injector circuits)

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Extended cranking before the engine starts or a hard start when cold
- Rough idle, misfire, or stumbling during acceleration
- Reduced engine power or a limp-home mode under load
- Poor fuel economy or a rich-running smell from the exhaust
- Intermittent stalling at low speed or when coming to a stop

Common causes, most likely first

- 1 Weak or failing low-pressure fuel pump or in-tank lift pump
- 2 Restricted fuel filter or clogged fuel line strainer
- 3 Leaking or stuck-open fuel pressure regulator on circuit B
- 4 Faulty fuel pressure sensor sending an inaccurate low reading
- 5 Wiring damage, corrosion, or poor connector contact at the regulator or sensor
- 6 Mechanical wear inside the high-pressure fuel pump causing low output
- 7 Air intrusion or a leak on the suction side of the fuel system



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P229C plus any related fuel pressure codes
- 2 Inspect the fuel pressure regulator connector and wiring for corrosion, chafing, or loose pins
- 3 Measure actual fuel pressure with a mechanical gauge and compare it to the commanded value
- 4 Check fuel filter restriction and verify fuel delivery volume at the rail
- 5 Test the fuel pressure sensor signal against a known-good reference or substitute a known-good sensor
- 6 Command the regulator through its full range with a scan tool and watch for a pressure response
- 7 Replace the confirmed faulty component, clear codes, and verify the learned pressure value returns within limits

What the learning limit really tells you

- A P229C does not automatically mean the regulator itself has failed; a weak lift pump or clogged filter often forces the regulator to its learning limit first.
- Technicians who replace the regulator without checking actual fuel pressure frequently see the code return because the real restriction was upstream.
- The learned pressure value stored in the computer can be misleading after a battery disconnect, so allow a full drive cycle before condemning parts.
- A failing fuel pressure sensor can report low pressure that does not exist, causing the computer to max out the regulator and set this code.
- On some vehicles, a restricted fuel filter is the only cause, and the regulator and pump are perfectly healthy.

Can I keep driving with P229C?

You can usually drive the vehicle to a shop, but avoid heavy acceleration, towing, or long trips because low fuel pressure can cause misfires and stall. If the engine is stumbling badly or stalling repeatedly, stop driving and arrange a tow.

Tools that help

- OBD-II scan tool with live fuel pressure data
- Fuel pressure test gauge kit
- Digital multimeter
- Hand tools for fuel line and connector access
- Safety glasses and fuel-resistant gloves



Reading P229C

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 2** Fuel and air metering (injector circuits).
- 9C** The exact fault within that area.

Often seen with

P0087 Fuel Rail/System Pressure - Too Low · **P0088** Fuel Rail/System Pressure - Too High · **P0191** Fuel Rail Pressure Sensor Circuit Range/Performance · **P229D** Fuel Pressure Regulator B Exceeded Learning Limits - Too Hig · **P229E** NOx Sensor Circuit (Bank 1 Sensor 2)

See it working

Watch the animated explainer [How a Turbocharger Works, Step by Step](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p229c/>

