



P03A3

Cylinder 2 Pressure Sensor Circuit Intermittent/Erratic

P03A3 means the powertrain control module (PCM) has detected an intermittent or erratic signal from the cylinder 2 pressure sensor circuit, which is used to monitor combustion pressure for that specific cylinder. The PCM expects a steady, predictable voltage or digital signal from the sensor, and when the signal drops out, spikes, or jumps erratically, the code is stored and the check engine light is commanded on.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Ignition system and misfire

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire-like shudder that comes and goes, especially when the engine is cold or under light load
- Hesitation or stumble during acceleration that feels inconsistent from one moment to the next
- Reduced fuel economy or a slight loss of power that the driver may attribute to other causes
- In rare cases, the engine may enter limp mode or exhibit hard starting when the signal is lost entirely

Common causes, most likely first

- 1 Faulty or failing cylinder 2 pressure sensor, often due to heat exposure or internal sensor degradation
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, particularly near hot exhaust components or sharp edges
- 3 Loose or contaminated electrical connector at the sensor or at the PCM, causing intermittent contact
- 4 Poor ground connection for the sensor circuit, leading to erratic voltage readings
- 5 PCM software issue or internal fault that misinterprets a valid signal as erratic
- 6 Mechanical issue such as a leaking injector seal or carbon buildup affecting the pressure reading at the sensor port



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 2 pressure sensor, its connector, and the wiring harness for damage, corrosion, or loose pins
- 2 Use a scan tool to monitor live cylinder pressure sensor data and compare it with known-good cylinders to confirm the erratic signal
- 3 Check the sensor's reference voltage and ground circuits with a multimeter to rule out wiring or ground faults before replacing parts
- 4 Inspect and clean the sensor mounting port for carbon or debris that could distort the pressure reading
- 5 Swap the cylinder 2 pressure sensor with a known-good sensor from another cylinder (if accessible) to see if the code follows the sensor
- 6 If the sensor is faulty, replace it with a quality OEM or equivalent part and clear the codes to verify the repair
- 7 If wiring and sensor are good, check for PCM software updates or, as a last resort, diagnose the PCM for internal faults

What most technicians overlook on P03A3

- A loose or corroded ground connection at the engine block can cause the cylinder pressure sensor signal to appear erratic even when the sensor itself is perfectly functional.
- Heat damage to the sensor's internal electronics is common on engines with turbochargers or tight engine bays, and the sensor may test fine when cold but fail intermittently when hot.
- The code can be set by a mechanical issue such as a leaking injector seal or carbon buildup at the sensor port, so replacing the sensor without checking the port often leads to a repeat failure.
- Intermittent codes like P03A3 are often caused by wiring chafing that only occurs under specific engine vibration or temperature conditions, making a wiggle test essential during diagnosis.
- Some vehicles use a cylinder pressure sensor that is integrated into the glow plug or spark plug, and a fault in that component can set this code without any separate sensor to replace.

Can I keep driving with P03A3?

You can generally continue driving with P03A3 because the fault is intermittent and the engine management system can often compensate, but avoid heavy acceleration or towing until the issue is diagnosed. If the check engine light starts flashing or the engine runs very poorly, stop driving and seek professional diagnosis to prevent potential damage.

Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter for checking voltage, resistance, and continuity
- Basic hand tools (socket set, screwdrivers, pliers) for sensor and connector access
- Wiring diagram or service information for the specific vehicle to identify circuit pinouts
- Contact cleaner and dielectric grease for connector maintenance



Reading P03A3

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
3	Ignition system and misfire.
A3	The exact fault within that area.

Often seen with

P0302 Cylinder 2 Misfire Detected · **P03A1** Cylinder 2 Pressure Sensor Circuit Low · **P03A2** Cylinder 2 Pressure Sensor Circuit High · **P03A4** Cylinder 2 Pressure Too Low · **P03B0** Cylinder 3 Pressure Variation Low

See it working

Watch the animated explainer [How an EGR Valve Works: Exhaust Gas Recirculation](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p03a3/>

