

GENERIC · POWERTRAIN

# P047A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P047A

### Exhaust Pressure Sensor B Circuit

P047A indicates that the powertrain control module has detected an abnormal signal from the exhaust pressure sensor B circuit, which typically monitors the pressure differential across the diesel particulate filter. The computer compares the sensor voltage to expected values and flags the circuit when the signal falls outside a calibrated range or fails a rationality check.

|            |                     |          |                |                             |
|------------|---------------------|----------|----------------|-----------------------------|
| SYSTEM     | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                        |
| Powertrain | Generic (all makes) | Medium   | Intermediate   | Auxiliary emission controls |

### Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode due to the powertrain control module limiting torque to protect the exhaust system
- Frequent active regeneration cycles or a regeneration that will not complete
- Black smoke or excessive exhaust odor from incomplete regeneration
- Poor fuel economy as the engine runs richer to manage exhaust temperature
- A stored code with freeze-frame data showing the fault occurred during a specific driving condition

### Common causes, most likely first

- 1 Failed exhaust pressure sensor B, which is the most common cause on high-mileage vehicles
- 2 Damaged, corroded, or disconnected wiring or connector at the sensor or powertrain control module
- 3 Clogged or cracked pressure sensing tube or hose leading to the sensor
- 4 Exhaust leaks upstream of the sensor that skew the pressure reading
- 5 A restricted diesel particulate filter that causes pressure to exceed the sensor's expected range
- 6 Faulty powertrain control module software or a rare internal driver failure in the module



## How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data and any related codes to understand when the fault sets
- 2 Visually inspect the sensor, connector, and wiring for damage, corrosion, or loose pins
- 3 Check the pressure sensing tube and hose for blockage, cracks, or disconnection and clear or replace as needed
- 4 Use a scan tool to compare exhaust pressure sensor B readings with sensor A and with key-on engine-off values to spot irrational signals
- 5 Perform a smoke test or visual inspection for exhaust leaks upstream of the sensor
- 6 Measure sensor reference voltage and ground at the connector with a multimeter to rule out wiring faults
- 7 Replace the exhaust pressure sensor B only after electrical and mechanical checks pass, then clear codes and verify repair with a road test

## Before you replace the exhaust pressure sensor

- A clogged pressure sensing tube or hose is a frequent culprit that mimics a failed sensor, so always check the tube before condemning the sensor.
- Exhaust leaks upstream of the sensor can cause pressure readings to be lower than expected, setting the code even when the sensor is good.
- On some vehicles, a restricted diesel particulate filter will set this code along with regeneration-related codes, so check filter loading before replacing parts.
- The sensor circuit may share a reference voltage or ground with other sensors, so a fault in a shared wire can set multiple codes and mislead diagnosis.
- After replacing the sensor, some vehicles require a relearn or adaptation reset with a scan tool to prevent the code from returning.

## Can I keep driving with P047A?

You can usually drive the vehicle with this code, but avoid heavy loads and long trips until it is repaired because the engine may enter limp mode and regeneration may be inhibited, which can lead to a clogged filter.

## Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter
- Hand tools for connector and sensor removal
- Smoke machine for exhaust leak detection
- Pressure gauge or vacuum pump for testing the sensing tube



### Reading P047A

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- 7A** The exact fault within that area.

### Often seen with

- P047B** Exhaust Pressure Sensor B Circuit Range/Performance · **P047C** Exhaust Pressure Sensor B Circuit Low
- **P047D** Exhaust Pressure Sensor B Circuit High · **P2002** Particulate Trap Efficiency Below Threshold (Bank 1)
- **P2463** Diesel Particulate Filter Restriction - Soot Accumulation

### See it working

Watch the animated explainer [Car Won't Start? Step-by-Step No-Start Diagnosis](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p047a/>

