

GENERIC · POWERTRAIN

P0047

OBD-II TROUBLE CODE

P0047

Turbo/Super Charger Boost Control Solenoid Circuit Low

P0047 indicates that the powertrain control module (PCM) has detected an abnormally low voltage on the turbocharger or supercharger boost control solenoid circuit, which typically points to a short to ground or an open circuit. The PCM commands a duty cycle to the solenoid to regulate boost pressure, and when the feedback voltage falls below the expected threshold, it sets this code and may disable boost control to protect the engine.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or a limp-home mode as the PCM limits boost
- Poor acceleration and sluggish throttle response
- Decreased fuel economy due to altered boost control strategy
- Possible rough idle or hesitation if the solenoid is stuck open
- In some cases, an overboost condition may occur if the solenoid fails to regulate pressure

Common causes, most likely first

- 1 Damaged or disconnected electrical connector at the boost control solenoid
- 2 Corroded, broken, or shorted wiring in the solenoid circuit
- 3 Failed boost control solenoid (internal short to ground)
- 4 Faulty powertrain control module (PCM) driver circuit
- 5 Blown fuse or poor ground connection for the solenoid circuit
- 6 Boost pressure sensor malfunction providing incorrect feedback



How to diagnose and fix it

- 1 Inspect the boost control solenoid connector and wiring for damage, corrosion, or loose pins
- 2 Check the solenoid circuit for continuity and shorts to ground using a digital multimeter
- 3 Test the solenoid resistance and compare to manufacturer specifications
- 4 Verify power and ground signals at the solenoid with the key on and engine running
- 5 Check for applicable technical service bulletins (TSBs) or software updates for the PCM
- 6 Replace the boost control solenoid if electrical tests indicate failure
- 7 Repair or replace damaged wiring and clear the code, then perform a road test to verify boost control

Don't overlook the wiring harness

- A common oversight is replacing the boost control solenoid without first checking the wiring harness for chafing or corrosion, which can mimic a failed solenoid.
- The code can be set by a faulty boost pressure sensor that reports incorrect pressure, causing the PCM to command a low duty cycle and detect a low voltage condition.
- On some vehicles, a dirty or clogged boost control solenoid filter can cause low voltage codes, so cleaning or replacing the filter may resolve the issue.
- Intermittent connections at the solenoid connector often cause this code to set only under certain driving conditions, such as vibration or temperature changes.
- Always verify that the PCM software is up to date, as manufacturers may release calibrations that alter boost control strategy and prevent false codes.

Can I keep driving with P0047?

You can usually drive the vehicle with this code, but expect reduced performance and possible limp mode; avoid heavy acceleration and towing until the fault is repaired to prevent potential engine damage from uncontrolled boost.

Tools that help

- OBD-II scanner
- Digital multimeter
- Wire repair kit
- Socket and ratchet set
- Manufacturer service information



Reading P0047

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 47** The exact fault within that area.

Often seen with

P0045 Turbo/Super Charger Boost Control Solenoid Circuit/Open · **P0046** Turbo/Super Charger Boost Control Solenoid Circuit Range/Per · **P0048** Turbo/Super Charger Boost Control Solenoid Circuit High · **P0234** Engine Overboost Condition · **P0235** Turbocharger Boost Sensor A Circuit Malfunction

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0047/>

