

GENERIC · POWERTRAIN

P2D23

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D23

Turbocharger Interstage Pressure Sensor A Circuit Low

P2D23 means the powertrain control module (PCM) has detected a low-voltage signal on the circuit for the turbocharger interstage pressure sensor, which monitors pressure between the turbocharger's compressor stages on a two-stage turbo system. The PCM expects a voltage within a calibrated range, and a sustained low reading indicates a short to ground, an open circuit, or a sensor that cannot report correctly.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode triggered by the PCM to protect the turbocharger
- Poor throttle response and sluggish acceleration, especially at low engine speeds
- Rough running or hesitation under load if the PCM substitutes a default pressure value
- Increased fuel consumption as the PCM adjusts fueling based on faulty pressure data
- In rare cases, a noticeable whistling or whooshing noise if a related hose is disconnected

Common causes, most likely first

- 1 A short to ground in the interstage pressure sensor signal wire
- 2 An open circuit in the sensor signal or reference voltage wire
- 3 A failed interstage pressure sensor that cannot output the correct voltage
- 4 Corroded, loose, or damaged electrical connectors at the sensor or PCM
- 5 A faulty PCM driver for the sensor circuit, though this is uncommon
- 6 Water intrusion or physical damage to the sensor or its wiring harness
- 7 A missing or poor ground connection for the sensor circuit



How to diagnose and fix it

- 1 Connect a scan tool and verify P2D23 is current, then check for any related codes and freeze-frame data
- 2 Inspect the interstage pressure sensor and its wiring for obvious damage, corrosion, or loose connections
- 3 Measure the sensor reference voltage and ground at the connector with a multimeter, comparing to manufacturer specifications
- 4 Backprobe the signal wire and check for a short to ground or an open circuit while wiggling the harness
- 5 If the circuit tests good, remove the sensor and check for a blocked or cracked pressure port, then replace the sensor if faulty
- 6 Clear the code and perform a road test to confirm the repair, monitoring live pressure data for normal readings
- 7 If the code persists after sensor replacement, check the PCM connector and wiring for intermittent faults before condemning the PCM

What a low interstage pressure code really means

- A low voltage code does not automatically mean the sensor is bad; a shorted signal wire or a poor ground can produce the same reading and is often overlooked.
- On two-stage turbo systems, the interstage pressure sensor is easily confused with the intake manifold pressure sensor, so verify the location using a wiring diagram before testing.
- A disconnected or cracked interstage pressure hose can cause a low signal without any electrical fault, so always inspect the mechanical connection.
- The PCM may set this code only after a specific driving cycle, so a simple key-on check may not reveal the fault; a road test with live data is essential.
- After replacing the sensor, some vehicles require a relearn or adaptation procedure, and skipping it can leave the code stored even though the repair is correct.

Can I keep driving with P2D23?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration and towing because the PCM may limit boost and the engine can enter limp mode. Prolonged driving with a faulty interstage pressure sensor can lead to poor fuel economy and increased turbocharger stress.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Backprobe pins or breakout box
- Hand tools for connector and sensor removal



Reading P2D23

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 23** The exact fault within that area.

Often seen with

P0235 Turbocharger Boost Sensor A Circuit Malfunction · **P0236** Turbocharger Boost Sensor A Circuit Range/Performance · **P0299** Turbo/Supercharger Underboost · **P2D22** Turbocharger Interstage Pressure Sensor A Circuit Range/Perf · **P2D24** Turbocharger Interstage Pressure Sensor A Circuit High

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/p2d23/>

