

BMW · POWERTRAIN

P1285

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1285 · BMW

Switching Solenoid for Air Assisted Injection Valves Bank 1 Control Circuit Signal High

P1285 on BMW vehicles indicates that the engine control module (DME) has detected a high signal voltage on the control circuit for the bank 1 switching solenoid that operates the air-assisted injection valves. This solenoid controls a secondary air path that helps atomize fuel during cold starts, and a high signal means the circuit is likely open, shorted to voltage, or the solenoid winding has failed.

SYSTEM

Powertrain

CODE TYPE

BMW specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering (injector circuits)

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Rough idle or stumbling during the first few minutes after a cold start.
- Slightly elevated emissions during warm-up, which may be noticed during an emissions test.
- Intermittent hesitation when accelerating from a cold engine.
- In rare cases, a faint clicking or buzzing from the solenoid area may be heard with the engine off and ignition on.

Common causes, most likely first

- 1 Open or damaged wiring in the solenoid control circuit, such as a broken wire or corroded connector.
- 2 Failed switching solenoid with an open internal coil winding.
- 3 Short to voltage on the control wire, often from chafed insulation against a nearby power wire.
- 4 Poor ground connection at the solenoid mounting point or engine block.
- 5 Faulty engine control module (DME) driver circuit, though this is less common.
- 6 Contamination or mechanical binding inside the solenoid preventing proper armature movement.



How to diagnose and fix it

- 1 Clear the code and perform a road test to verify whether P1285 returns; note any freeze-frame data to understand the conditions.
- 2 Visually inspect the solenoid connector and wiring harness for corrosion, chafing, or loose pins, repairing as needed.
- 3 Measure the resistance of the switching solenoid with a multimeter and compare to BMW specifications; replace if out of range.
- 4 Back-probe the control circuit at the DME connector and check for a short to voltage with the ignition on and engine off.
- 5 Check the ground circuit for the solenoid using a voltage drop test while cranking or running.
- 6 If wiring and solenoid test good, substitute a known-good solenoid and recheck; if the code persists, diagnose the DME driver.
- 7 After repairs, clear adaptations and perform a cold-start drive cycle to confirm the fix.

What BMW Technicians Check Before Replacing Parts

- A high signal code often results from a simple open circuit rather than a failed solenoid, so always check continuity and connector pin tension before condemning the part.
- The air-assisted injection solenoid only activates during cold starts, so a fault may not trigger a drivability complaint once the engine is warm, leading owners to ignore it until an emissions test fails.
- Corrosion inside the solenoid connector is a frequent cause on older BMWs, especially in regions with road salt, and can mimic a failed solenoid.
- A short to voltage on the control wire can be caused by a chafed harness near the exhaust manifold or valve cover, which is easy to overlook during a visual inspection.
- Replacing the DME without first verifying the control circuit and solenoid is an expensive misdiagnosis trap; the DME driver rarely fails on its own.

Can I keep driving with P1285?

You can generally continue driving with P1285, but avoid prolonged cold-start idling and heavy acceleration until the engine is warm, as the fault may cause rough running and increased emissions. Have the circuit inspected soon to prevent potential catalytic converter damage from unburned fuel.

Tools that help

- OBD-II scan tool with BMW-specific software
- Digital multimeter
- Back-probe kit
- Wiring diagram for the specific BMW model
- Torx or hex socket set for solenoid removal



Reading P1285

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (BMW): its meaning depends on the make.
- 2** Fuel and air metering (injector circuits).
- 85** The exact fault within that area.

Often seen with

P1289 Turbocharge Bypass Valve Short To Ground · **P1286** Fuel Injection Air Control Valve Circuit Short To B+ · **P1287** Turbocharge Bypass Valve Open · **P1288** Turbocharge Bypass Valve Short To B+ · **P1286** Accelerator Pedal Position (APP) Sensor 3 Performance · **P1289** Manifold Tune Valve Solenoid Circuit Open Or Shorted · **P1287** Accelerator Pedal Position Sensor 3 Circuit Low Voltage · **P1288** Accelerator Pedal Position Sensor 3 Circuit High Voltage · **P1286** Fuel Pulse In Range But Lower Than Expected · **P1289** Cylinder Head Temperature Sensor Signal Greater Than Self-Test · **P1287** Fuel Pulse In Range But Higher Than Expected · **P1288** Cylinder Head Temperature Sensor Out of Self-Test Range · **P1286** Accelerator Pedal Position Sensor Supply Voltage Too High · **P1289** Manifold Tune Valve Solenoid Circuit Open Or Shorted · **P1288** Intake Manifold Short Runner Solenoid Circuit Open Or Shorted · **P1287** Fuel Injection Pump Controller Supply Voltage Low · **P1289** Switching Solenoid for Air Assisted Injection Valves Bank 2 · **P1288** Switching Solenoid for Air Assisted Injection Valves Bank 2 · **P0411** Secondary Air Injection System Incorrect Flow

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1285/>

