

BMW · POWERTRAIN

**P1288**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

**P1288 · BMW**

## Switching Solenoid for Air Assisted Injection Valves Bank 2 Control Circuit Signal Low

P1288 on a BMW indicates that the engine control module (DME) has detected a low signal voltage on the control circuit for the bank 2 air-assisted injection valve switching solenoid. This solenoid is responsible for enabling secondary air injection into the exhaust ports of the bank 2 cylinders during cold starts to reduce emissions, and a low signal means the DME cannot properly command the solenoid, often due to a short to ground or an open circuit.

SYSTEM

**Powertrain**

CODE TYPE

**BMW specific**

SEVERITY

**Low**

FIX DIFFICULTY

**Intermediate**

AREA

**Fuel and air metering (injector circuits)**

### Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) on the dashboard.
- Often no symptoms besides the warning light, especially if the secondary air system is not critical for normal driving.
- Rough idle or stumbling during cold starts due to improper air injection affecting exhaust gas recirculation and oxygen sensor readings.
- Slightly increased emissions during cold start periods, which may be noticeable during inspection tests.
- In rare cases, a noticeable delay in cold-start catalyst light-off, leading to a brief sulfur or fuel smell from the exhaust.
- Possible intermittent misfire codes if the low signal causes erratic solenoid operation, though this is less common.

### Common causes, most likely first

- 1 Damaged or corroded wiring harness at the bank 2 air injection solenoid connector, causing a short to ground or an open circuit.
- 2 Failed bank 2 air-assisted injection valve switching solenoid, where the internal coil has shorted or open-circuited.
- 3 Loose or corroded ground connection for the solenoid circuit, leading to a low signal reference.
- 4 Faulty engine control module (DME) driver circuit for the solenoid, though this is rare and usually a last resort diagnosis.
- 5 Contamination or blockage in the secondary air injection passages causing the solenoid to overheat and fail, though this typically sets a different code.
- 6 Aftermarket or improperly installed electrical accessories tapping into the circuit and causing a voltage drop.



## How to diagnose and fix it

- 1 Perform a visual inspection of the bank 2 air injection solenoid connector and wiring for damage, corrosion, or loose pins, and repair as needed.
- 2 Check the solenoid's resistance with a multimeter and compare to BMW specifications; replace the solenoid if resistance is out of range or infinite.
- 3 Test the control circuit for a short to ground by disconnecting the DME and solenoid and measuring resistance from the solenoid control wire to ground; repair any short.
- 4 Verify power and ground at the solenoid connector with the key on, engine off, using a multimeter or test light; trace and repair any open circuits.
- 5 Use a scan tool to command the solenoid on and off and listen for an audible click; if no click, replace the solenoid or repair the circuit as indicated.
- 6 Check for technical service bulletins (TSBs) or software updates for the DME that may address false P1288 setting, and reflash if applicable.
- 7 Clear the code and perform a drive cycle to verify the repair; if the code returns, re-evaluate the circuit and consider DME internal fault diagnosis.

## Common misdiagnosis traps for P1288

- A low signal code is often caused by a short to ground in the wiring harness where it rubs against the engine block or exhaust manifold, not by a failed solenoid, so always inspect the harness routing first.
- The bank 2 air injection solenoid is frequently misdiagnosed as a bank 1 issue because the connectors look similar; confirm you are working on the correct bank before replacing parts.
- A weak or failing battery can cause transient low signal codes on BMW secondary air systems, so load-test the battery and check charging voltage before condemning the solenoid.
- Aftermarket air injection solenoids often have different resistance values and can set P1288 repeatedly; use OEM or equivalent quality parts to avoid comebacks.
- The DME may set P1288 if the secondary air pump is failing and not building enough pressure, causing the solenoid to draw excessive current and drop the signal voltage, so check pump operation as well.

## Can I keep driving with P1288?

You can generally continue driving with P1288 because the secondary air injection system only operates during cold starts and does not affect engine performance or safety once the engine is warm. However, avoid long periods of idling from cold and have the fault repaired soon to ensure emissions compliance and prevent potential catalytic converter damage over time.



## Tools that help

- OBD-II scan tool with BMW-specific software
- Digital multimeter
- Test light
- Wire repair kit with crimping tools
- Socket set and trim removal tools

## Reading P1288

**P** Powertrain: engine, transmission and emissions.

**1** Manufacturer-specific code (BMW): its meaning depends on the make.

**2** Fuel and air metering (injector circuits).

**88** The exact fault within that area.

## Often seen with

**P1287** Turbocharge Bypass Valve Open · **P1289** Turbocharge Bypass Valve Short To Ground · **P1287** Accelerator Pedal Position Sensor 3 Circuit Low Voltage · **P1289** Manifold Tune Valve Solenoid Circuit Open Or Shorted · **P1287** Fuel Pulse In Range But Higher Than Expected · **P1289** Cylinder Head Temperature Sensor Signal Greater Than Self-Te · **P1287** Fuel Injection Pump Controller Supply Voltage Low · **P1289** Manifold Tune Valve Solenoid Circuit Open Or Shorted · **P1287** Switching Solenoid for Air Assisted Injection Valves Bank 2 · **P1289** Switching Solenoid for Air Assisted Injection Valves Bank 2 · **P0411** Secondary Air Injection System Incorrect Flow · **P0412** Secondary Air Injection System Switching Valve 'A' Circuit · **P0413** Secondary Air Injection System Switching Valve 'A' Circuit O

## 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-p1288/>

