

BMW · POWERTRAIN

P1189

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1189 · BMW

Fuel Control Bank 2 Sensor 1

P1189 on BMW vehicles indicates that the engine control module has detected an out-of-range fuel trim condition specifically on bank 2, sensor 1, which is the upstream oxygen sensor before the catalytic converter. The computer compares the sensor's feedback against its expected fueling model and flags the code when the correction needed exceeds a calibrated threshold for a set period.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	BMW specific	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or uneven running, especially when the engine is cold
- Reduced fuel economy and a richer exhaust smell
- Hesitation or stumble during acceleration
- Black sooty exhaust tips or spark plugs on bank 2
- Intermittent misfire-like shudder that may not set a misfire code

Common causes, most likely first

- 1 Failed or contaminated upstream oxygen sensor on bank 2
- 2 Vacuum leak at the intake manifold, throttle body, or PCV system affecting bank 2
- 3 Leaking or sticking fuel injector on bank 2
- 4 Faulty mass air flow sensor providing skewed airflow readings
- 5 Exhaust leak before the bank 2 upstream oxygen sensor
- 6 Wiring or connector damage to the bank 2 sensor 1 circuit
- 7 Crankcase ventilation valve failure causing unmetered air on one bank



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P1189, then check for related fuel trim and oxygen sensor codes
- 2 Inspect the bank 2 upstream oxygen sensor wiring and connector for chafing, corrosion, or oil intrusion
- 3 Perform a smoke test on the intake system to find vacuum leaks that affect bank 2 specifically
- 4 Graph the bank 2 sensor 1 voltage and compare it with bank 1 to confirm sensor response and switching
- 5 Check fuel injector balance and look for leaking injectors on bank 2
- 6 Verify mass air flow sensor readings against expected values and inspect the intake boot for cracks
- 7 Replace the faulty component and clear adaptations, then road-test to confirm fuel trims return to normal

Bank 2 fuel trim traps on BMW engines

- A P1189 can be set by a vacuum leak that only affects bank 2, such as a cracked intake manifold gasket or a failed PCV diaphragm on that side, so a full smoke test is essential before condemning the oxygen sensor.
- BMW engines often store P1189 alongside mixture adaptation codes for bank 2, and replacing the upstream sensor without addressing a lean condition will cause the new sensor to read the same fault within a few drive cycles.
- The upstream oxygen sensor on bank 2 can be contaminated by coolant or oil from a failing head gasket or turbo seal, which mimics an electrical failure and leads to repeat sensor replacement.
- Fuel trim thresholds for P1189 are time-based and can be triggered by a lazy sensor that still switches but responds too slowly, so a simple voltage swing test may not reveal the fault.

After repairs, BMW adaptations must be cleared and a specific drive cycle completed, otherwise the code may remain stored even though the underlying fault is fixed.

Can I keep driving with P1189?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration and long trips because a persistent rich or lean condition on bank 2 can damage the catalytic converter and spark plugs over time.

Tools that help

- OBD-II scan tool with live data and graphing capability
- Smoke machine for intake leak testing
- Digital multimeter for circuit and sensor testing
- Fuel pressure gauge and injector balance tester
- Socket set and oxygen sensor wrench



Reading P1189

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

Often seen with

P1188 Linear Oxygen Sensor Compensation Resistor Short To Ground · **P1188** O2 Sensor Heater Circuit Resistance · **P1188** Engine Oil Pressure Sensor Circuit High Voltage · **P1188** Calibration Memory Fault · **P1188** EOT Sensor Circuit High Voltage · **P1188** Fuel Control Bank 1 Sensor 1 · **P0130** O2 Sensor Circuit Malfunction (Bank 1 Sensor 1) · **P0172** System Too Rich (Bank 1) · **P0175** System Too Rich (Bank 2) · **P0300** Random/Multiple Cylinder Misfire Detected

See it working

Watch the animated explainer [How an Oxygen Sensor Works: Live 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1189/>

