



P1159 · BMW

Fuel Trim Adaptation Additive Bank 1 High

P1159 on BMW vehicles means the engine computer has detected that the additive fuel trim adaptation for Bank 1 has exceeded its positive limit, indicating a persistent lean condition that the system can no longer compensate for. Additive trim corrects mixture deviations at idle and low load, so a high value points to unmetered air entering the engine or a fuel delivery shortfall at idle.

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 or unstable idle, sometimes with a slight stumble when coming to a stop
- Occasional lean misfire at idle that may feel like a light shake
- Slightly higher fuel consumption as the computer adds extra fuel to compensate
- In some cases, a delayed or harsh downshift feel at low speed due to idle instability

Common causes, most likely first

- 1 Vacuum leak from a cracked or disconnected intake boot, vacuum hose, or intake manifold gasket
- 2 Failed or leaking crankcase ventilation valve (CCV) or its associated hoses
- 3 Dirty or contaminated mass air flow (MAF) sensor reporting less air than actually enters
- 4 Leaking intake manifold gasket or deteriorated throttle body gasket
- 5 Weak or failing fuel pump delivering insufficient volume at idle
- 6 Clogged or restricted fuel filter or fuel injector screens
- 7 Faulty pre-catalyst oxygen sensor giving a false lean reading



How to diagnose and fix it

- 1 Connect a scan tool and read live fuel trim data to confirm additive trim is high on Bank 1 and check for stored freeze-frame data
- 2 Perform a visual inspection of all intake and vacuum hoses for cracks, loose clamps, or disconnected lines
- 3 Use a smoke machine to pressurize the intake system and locate any vacuum leaks precisely
- 4 Clean the mass air flow sensor with a dedicated MAF cleaner and verify its readings against expected values
- 5 Test fuel pressure and volume at idle, comparing against BMW specifications for the engine
- 6 Check the crankcase ventilation valve and hoses for leaks or blockage, replacing if faulty
- 7 If no leaks are found, inspect the pre-catalyst oxygen sensor signal for erratic or biased readings and replace if necessary

Additive trim points to idle air leaks

- Additive fuel trim is learned only at idle, so a high additive value almost always means unmetered air is entering the engine at idle rather than a general fuel delivery problem.
A leaking crankcase ventilation valve on BMW engines is a very common cause of P1159 that many technicians overlook because the valve is hidden under the intake manifold.
- A dirty mass air flow sensor can under-report airflow and cause the computer to add fuel, setting this code even when no actual vacuum leak exists.
- Do not replace the oxygen sensor first; a false lean reading from a worn sensor is possible but far less likely than an intake leak on BMW vehicles.
After repairing the leak, the additive trim must be cleared and relearned through a drive cycle before the code will stay off.

Can I keep driving with P1159?

You can drive the car short distances to a repair shop, but avoid prolonged idling and heavy load until the lean condition is fixed. Continuing to drive with a persistent lean mixture can overheat the catalytic converter and cause costly damage.

Tools that help

- OBD-II scan tool with live data capability
- Smoke machine for intake leak detection
- MAF sensor cleaner
- Fuel pressure gauge
- Basic hand tools for hose and clamp inspection



Reading P1159

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

Often seen with

P1158 Manifold Absolute Pressure Sensor Circuit Range Performance · **P1160** Manifold Temperature Sensor Circuit Short To Ground · **P1158** Lack Of HO2S22 Switches Sensor Indicates Rich · **P1158** HO2S Bank 2 Sensor 2 Rich Or High Voltage · **P1158** Lack of Downstream Heated Oxygen Sensor Switch Sensor Indica · **P1158** HO2S Bank 2 Sensor 2 Rich Or High Voltage · **P1158** Fuel Trim Adaptation Additive Bank 1 Low · **P1160** Fuel Trim Adaptation Additive Bank 2 Low · **P0171** System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2) · **P0300** Random/Multiple Cylinder Misfire Detected

See it working

Watch the animated explainer [How Drive-by-Wire Works: Electronic Throttle Body](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1159/>

