

BMW · POWERTRAIN

P1158

OBD-II TROUBLE CODE

P1158 · BMW

Fuel Trim Adaptation Additive Bank 1 Low

P1158 on BMW vehicles means the engine computer has detected that the additive fuel trim adaptation for Bank 1 has hit its low limit, indicating the engine is running too lean at idle and the computer cannot add enough fuel to compensate. The additive portion of fuel trim corrects mixture errors at idle and low load, so this code points to a vacuum leak or unmetered air entering the engine rather than a problem with the main fuel supply.

SYSTEM

Powertrain

CODE TYPE

BMW specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough or unstable idle that may smooth out as engine speed increases
- Occasional hesitation or stumble when accelerating from a stop
- Slightly higher fuel consumption than normal
- In severe cases, a lean misfire code or reduced engine power

Common causes, most likely first

- 1 Intake vacuum leak from a cracked or disconnected vacuum hose
- 2 Leaking intake manifold gasket or throttle body gasket
- 3 Faulty crankcase ventilation (PCV) valve or breather hose allowing unmetered air
- 4 Dirty or failing mass air flow (MAF) sensor under-reporting airflow
- 5 Weak or failing fuel pump or clogged fuel filter reducing fuel delivery at idle
- 6 Leaking fuel injector seals or a partially clogged injector on Bank 1
- 7 Intake air leak after the MAF sensor, such as a cracked intake boot



How to diagnose and fix it

- 1 Connect a scan tool and record live fuel trim data at idle and at 2500 rpm to confirm the additive trim is maxed out lean on Bank 1
- 2 Perform a visual inspection of all intake hoses, vacuum lines, and the intake boot for cracks, splits, or loose connections
- 3 Use a smoke machine to pressurize the intake system and locate any vacuum leaks that are not visible
- 4 Clean the mass air flow sensor with dedicated MAF cleaner and recheck fuel trim readings
- 5 Check fuel pressure and volume at idle against BMW specifications to rule out a weak pump or restricted filter
- 6 Inspect and test the crankcase ventilation valve and hoses for leaks or blockage
- 7 If no leak is found, perform an injector balance test and inspect injector seals on Bank 1

Why additive trim points to unmetered air

- Additive fuel trim only affects idle and low-load operation, so a P1158 almost always indicates a vacuum leak rather than a failing fuel pump or clogged filter, which would show up in multiplicative trim instead.
A smoke test is far more reliable than spraying carb cleaner around hoses, and BMW intake boots and PCV hoses are common hidden leak points that are easy to overlook during a visual inspection.
 - A dirty MAF sensor on BMW engines can under-report airflow and cause a lean additive trim without setting a MAF-specific code, so cleaning it is a cheap first step before replacing expensive parts.
 - This code is bank-specific, so if only Bank 1 is affected, focus on intake runners, injectors, and gaskets on that side rather than shared components like the air filter housing.
- After repairing the leak, clear the adaptation values with a BMW-capable scan tool and drive the car through a complete idle and cruise cycle so the additive trim can relearn properly.

Can I keep driving with P1158?

You can drive the car short distances to a repair shop, but avoid prolonged idling and heavy acceleration because a lean condition can cause misfires and overheating. If the check engine light starts flashing or the engine runs very rough, stop driving and have it towed.

Tools that help

- BMW-compatible scan tool with live fuel trim and adaptation reset capability
- Smoke machine for intake leak detection
- MAF sensor cleaner
- Fuel pressure gauge
- Basic hand tools and Torx socket set



Reading P1158

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

Often seen with

P1159 HO2S Cross Counts Bank 2 Sensor 2 · **P1159** HO2S Cross Counts Bank 2 Sensor 2 · **P1159** Fuel Trim Adaptation Additive Bank 1 High · **P0171** System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected

See it working

Watch the animated explainer [How an EGR Valve Works: Exhaust Gas Recirculation](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1158/>

