

GM · POWERTRAIN

P1135

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1135 · GM

HO2S Lean Average Bank 1 Sensor 1

P1135 on a GM vehicle means the powertrain control module has detected a lean average condition from the upstream heated oxygen sensor (HO2S) on bank 1, sensor 1, which is the sensor ahead of the catalytic converter. The computer is not saying the sensor itself is bad; it is reporting that the sensor's average voltage stayed below the calibrated lean threshold for too long during closed-loop fuel control.

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

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms besides the warning light
- Slightly rough idle or intermittent misfire when the engine is cold or under light load
- Reduced fuel economy as the computer adds fuel trying to correct the lean average
- Hesitation or a flat spot during acceleration in some cases
- A faint fuel odor or sulfur smell from the exhaust if the mixture stays rich after correction
- Poorly running engine with surging if a vacuum leak is large enough

Common causes, most likely first

- 1 Vacuum leak at the intake manifold, throttle body gasket, or a cracked vacuum hose feeding unmetered air into bank 1
- 2 Contaminated or aged upstream HO2S that responds slowly and reports a false lean average
- 3 Exhaust leak ahead of the sensor, such as a cracked manifold or failed gasket, letting outside air reach the sensor
- 4 Low fuel pressure from a weak pump, restricted filter, or faulty pressure regulator causing a genuine lean condition
- 5 Dirty or failing mass airflow sensor under-reporting air, so the computer commands less fuel than needed
- 6 Leaking intake manifold gasket on the bank 1 side, common on older GM V6 and V8 engines
- 7 Wiring or connector fault at the HO2S, including chafed signal wire or corroded pins adding resistance



How to diagnose and fix it

- 1 Inspect all intake and vacuum hoses on bank 1 for cracks, loose clamps, and disconnected lines, and repair any leaks found
- 2 Check for exhaust leaks ahead of the upstream sensor by listening for ticking when cold and inspecting manifold gaskets and pipes
- 3 Measure fuel pressure with a gauge and compare to GM specification, then test for a restricted filter or weak pump if low
- 4 Clean the mass airflow sensor with approved cleaner and verify its reading with a scan tool against expected grams per second
- 5 Graph the bank 1 sensor 1 HO2S voltage on a scan tool to confirm it is switching and not stuck lean, then compare with bank 2 if equipped
- 6 Perform a propane or smoke test around the intake manifold and throttle body to pinpoint hidden vacuum leaks
- 7 Replace the upstream HO2S only after confirming the sensor is slow or contaminated and all other lean causes have been ruled out

Why a lean code is rarely the oxygen sensor

- A P1135 on a GM engine is most often a vacuum leak or low fuel pressure rather than a failed oxygen sensor, so replacing the sensor first usually does not fix the code.
- An exhaust leak ahead of the upstream sensor pulls outside air into the exhaust stream and makes the sensor report a false lean average, which mimics a vacuum leak perfectly.
- On GM V6 and V8 engines, a leaking intake manifold gasket on the bank 1 side is a common hidden cause that a simple visual inspection will miss.
- The code can set from a lazy sensor that still switches but responds too slowly, so a scan tool graph of the voltage over time is more useful than a simple pass or fail test.
- A dirty mass airflow sensor that under-reports airflow causes the computer to deliver less fuel, creating a real lean average that the oxygen sensor correctly reports.

Can I keep driving with P1135?

You can drive a short distance to a repair shop, but avoid heavy acceleration, towing, and long trips until the lean condition is diagnosed. Continuing to drive with a persistent lean average can overheat the catalytic converter and cause expensive damage.



Tools that help

- Scan tool with live data and graphing capability
- Fuel pressure gauge
- Vacuum gauge or smoke machine
- Propane enrichment tool for vacuum leak testing
- Digital multimeter
- Basic hand tools and socket set

Reading P1135

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

Often seen with

P1133 Oxygen Sensor Heating Circuit Bank 1 + 2 Sensor 1 Electrical · **P1133** Air/Fuel Sensor Circuit Response Bank 1 Sensor 1 · **P1133** Bank 1 Fuel Control Shifted Lean · **P1133** O2 Sensor Insufficient Switching (Bank 1 Sensor 1) · **P1133** Bank 1 Fuel Control Shifted Lean · **P1133** HO2S Insufficient Switching · **P1133** O2 Sensor Heater Control Circuit Bank 2 Sensor 1 · **P0131** O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1) · **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 a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1135/>

