

SUZUKI · POWERTRAIN

P1451

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1451 · Suzuki

Barometric Pressure Sensor Performance

P1451 on Suzuki vehicles indicates that the engine control module (ECM) has detected an implausible or out-of-range signal from the barometric pressure (BARO) sensor, which is often integrated into the mass airflow (MAF) sensor or the manifold absolute pressure (MAP) sensor. The ECM compares the BARO reading with expected values from other sensors, such as the MAP and throttle position sensors, during key-on and steady-state driving to determine if the sensor's performance is acceptable.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Suzuki specific	Low	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) with no other noticeable symptoms.
- Rough idle or stumbling acceleration due to incorrect air density calculations.
- Reduced engine performance or power, especially at high altitudes.
- Poor fuel economy or rich/lean fuel mixture conditions.
- Occasional hesitation or surge during light throttle applications.
- In rare cases, the engine may enter limp mode or exhibit hard starting.

Common causes, most likely first

- 1 Contaminated or failed barometric pressure sensor (often part of the MAF sensor).
- 2 Wiring issues such as open circuits, short circuits, or high resistance in the BARO sensor signal or ground circuits.
- 3 Corroded or loose electrical connectors at the MAF or MAP sensor.
- 4 A faulty ECM, though this is less common and should be diagnosed last.
- 5 Air intake restrictions or leaks that affect pressure readings.
- 6 Extreme altitude changes without ECM recalibration, though the ECM should adapt automatically.
- 7 Aftermarket air intake systems that disrupt airflow and pressure sensor readings.



How to diagnose and fix it

- 1 Perform a visual inspection of the MAF/MAP sensor and its wiring for damage, corrosion, or loose connections.
- 2 Use a scan tool to read live data from the BARO sensor and compare it with actual altitude and MAP sensor readings at key-on and during driving.
- 3 Check the BARO sensor signal voltage with a multimeter and compare it to the manufacturer's specification.
- 4 Inspect the air intake system for leaks, blockages, or modifications that could affect pressure readings.
- 5 Clean the MAF sensor with a dedicated MAF cleaner if contamination is suspected, then clear the code and retest.
- 6 Replace the MAF sensor (if the BARO sensor is integrated) or the separate BARO sensor if testing confirms it is faulty.
- 7 Repair any wiring faults, clear the diagnostic trouble code (DTC), and verify the repair by completing a drive cycle.

What Suzuki Technicians Check First for P1451

- On many Suzuki models, the barometric pressure sensor is integrated into the mass airflow sensor, so a faulty MAF sensor can set P1451 even if the MAF's primary function seems fine.
- A dirty or contaminated MAF sensor element can cause skewed BARO readings without triggering a MAF-specific code, leading to misdiagnosis.
- The ECM may set P1451 if the BARO sensor reading does not match the expected value based on altitude and MAP sensor data during key-on, so checking live data at key-on is crucial.
- Wiring harness issues near the intake manifold or air box are common due to heat and vibration, and these can mimic a sensor failure.
- After replacing a sensor, the ECM may require a relearn procedure or several drive cycles before the code clears permanently.

Can I keep driving with P1451?

The vehicle is generally safe to drive with P1451 because the ECM substitutes a default barometric pressure value, but performance and fuel economy may suffer slightly. Avoid sustained high-altitude driving or heavy load conditions until the fault is repaired, and address the issue promptly to prevent potential long-term engine management problems.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- MAF sensor cleaner
- Basic hand tools (screwdrivers, socket set)
- Wiring diagram for the specific Suzuki model



Reading P1451

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Suzuki): its meaning depends on the make.
- 4** Auxiliary emission controls.
- 51** The exact fault within that area.

Often seen with

P0101 Mass/Volume Air Flow Circuit Range/Performance · **P0106** MAP/Barometric Pressure Circuit Range/Performance · **P0107** MAP/Barometric Pressure Circuit Low Input · **P0108** MAP/Barometric Pressure Circuit High Input · **P0171** System Too Lean (Bank 1)

See it working

Watch the animated explainer [How a Knock Sensor Works: Spark Timing and Octane](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/suzuki-p1451/>

