

GENERIC · POWERTRAIN

P010A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P010A

Mass or Volume Air Flow Sensor B Circuit

P010A indicates that the powertrain control module has detected a fault specifically in the circuit for Mass Air Flow Sensor B, which is the second air flow sensing element on vehicles that use a dual-sensor or split-intake design. The computer monitors the electrical signal from this sensor and sets the code when the voltage or frequency falls outside the expected range for the current engine operating conditions, pointing to an electrical or sensor fault rather than a general performance issue.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or a limp-home mode when the PCM substitutes a default airflow value
- Rough idle, hesitation, or stumbling during acceleration
- Poor fuel economy or black smoke from the tailpipe if the engine runs rich
- Intermittent misfire or surging at steady cruise speeds
- A stored freeze-frame showing the fault occurred during a specific airflow or throttle condition

Common causes, most likely first

- 1 Failed Mass Air Flow Sensor B sensing element or internal electronics
- 2 Damaged, corroded, or loose electrical connector at the sensor
- 3 Open or shorted wire in the sensor B signal or ground circuit
- 4 Contaminated sensing element from oiled air filter over-oiling or debris
- 5 Intake air leak downstream of the sensor that skews the airflow reading
- 6 Faulty powertrain control module driver circuit (rare but possible)



How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes plus freeze-frame data to confirm P010A is active and not history
- 2 Inspect the Mass Air Flow Sensor B connector and harness for corrosion, chafing, or loose pins, and repair as needed
- 3 Check the sensor B signal voltage and ground reference with a multimeter against the manufacturer's specification
- 4 Clean the sensing element with dedicated mass air flow cleaner and recheck live data to see if the fault returns
- 5 Perform a smoke test of the intake tract to rule out unmetered air leaks that can mimic a sensor B fault
- 6 Replace Mass Air Flow Sensor B only after electrical and intake checks pass, then clear codes and verify the repair with a road test
- 7 If the fault persists with a known-good sensor and wiring, test the PCM driver circuit or consult a diagnostic specialist

What most technicians miss on P010A

- Many vehicles use a single mass air flow housing with two sensing elements, and P010A refers only to the second element, so replacing the whole assembly without testing the B circuit first is a common and expensive misstep.
- A dirty or over-oiled aftermarket air filter can contaminate the B element and set this code even when the sensor is electrically healthy, so cleaning and re-evaluating is often the cheapest first move.
- Intake leaks between the air filter box and the sensor, or between the sensor and throttle body, can create airflow discrepancies that the PCM interprets as a sensor B circuit fault.
- P010A can be set by a low battery or charging system issue that causes a momentary voltage drop at the sensor, so check battery and ground integrity before condemning the sensor.
- On some designs the B sensor is a hot-film or hot-wire element that fails intermittently when hot, meaning the code may only appear after a long drive and not during a cold-start test.

Can I keep driving with P010A?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration, towing, or long highway trips because the PCM may be running on a default airflow value that affects fuel mixture and emissions. If the engine enters limp mode or runs poorly, stop driving and arrange a diagnostic scan.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probing pins
- Mass air flow sensor cleaner spray
- Smoke machine for intake leak testing
- Basic hand tools and Torx or hex bit set for sensor removal

Reading P010A

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
1	Fuel and air metering.
0A	The exact fault within that area.

Often seen with

P0100 Mass/Volume Air Flow Circuit Malfunction · **P0101** Mass/Volume Air Flow Circuit Range/Performance · **P0102** Mass/Volume Air Flow Circuit Low Input · **P0103** Mass/Volume Air Flow Circuit High Input · **P010B** Mass or Volume Air Flow Sensor B Circuit Range/Performance

See it working

Watch the animated explainer [How a Refrigerator Works: The Cooling Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p010a/>

