

GENERIC · POWERTRAIN

P2016

OBD-II TROUBLE CODE

P2016

Intake Manifold Runner Position Sensor/Switch Circuit Low (Bank 1)

P2016 means the powertrain control module (PCM) has detected a low-voltage signal on the intake manifold runner position sensor circuit for bank 1. The sensor reports the physical position of the intake manifold runner flaps, and a low signal indicates the circuit is shorted to ground, the sensor has failed, or the reference voltage is missing.

SYSTEM Powertrain	CODE TYPE Generic (all makes)	SEVERITY Medium	FIX DIFFICULTY Intermediate	AREA Fuel and air metering and auxiliary emission controls
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Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or stumbling when the engine is cold
- Reduced engine power or poor acceleration at low RPM
- Hesitation or flat spots during light-throttle cruising
- In rare cases, a no-start condition if the runner flaps are stuck closed

Common causes, most likely first

- 1 Intake manifold runner position sensor internally shorted to ground
- 2 Damaged or chafed wiring harness between the sensor and the PCM
- 3 Corroded or loose electrical connector at the sensor
- 4 Failed intake manifold runner actuator or vacuum diaphragm causing the sensor to read out of range
- 5 PCM internal fault on the sensor signal circuit (least likely)

How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the code is active and not a history code
- 2 Visually inspect the sensor connector and wiring for corrosion, chafing, or loose pins
- 3 Measure reference voltage (typically 5V) and ground continuity at the sensor connector with the key on
- 4 Back-probe the signal wire and compare sensor voltage to the scan tool reading while manually moving the runner flaps
- 5 Test the runner actuator for proper vacuum or electrical operation and free movement of the flaps
- 6 Replace the intake manifold runner position sensor if voltage stays low with the connector disconnected
- 7 Clear codes and perform a road test to verify the repair and confirm the monitor runs to completion



What the low signal really tells you

- A low signal often means the sensor ground circuit is open rather than the sensor itself failing, so always check ground continuity before condemning the sensor.
- Carbon buildup on the runner flaps can physically stop them from moving, forcing the sensor to report a position the PCM interprets as a low circuit fault.
- Some vehicles use a shared 5V reference for multiple sensors, so a short in another sensor on the same circuit can set P2016 along with other codes.
- The code can be set intermittently by water intrusion into the connector after engine washing or heavy rain, leaving no hard fault when you test.
- Replacing the sensor without checking the actuator often leads to a repeat failure because the root cause is a stuck or binding runner flap.

Can I keep driving with P2016?

You can usually drive the vehicle with P2016, but avoid heavy acceleration and towing until the fault is repaired because the engine may enter a reduced-power mode. If the engine runs rough or stalls, stop driving and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probe pins
- Hand vacuum pump for testing the runner actuator
- Basic socket and wrench set
- Electrical contact cleaner and dielectric grease

Reading P2016

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

Often seen with

P0660 Intake Manifold Tuning Valve Control Circuit/Open (Bank 1) · **P2004** Intake Manifold Runner Control Stuck Open (Bank 1) · **P2008** Intake Manifold Runner Control Circuit/Open (Bank 1) · **P2015** Intake Manifold Runner Position Sensor/Switch Circuit Range/ · **P2017** Intake Manifold Runner Position Sensor/Switch Circuit High (



See it working

Watch the animated explainer [How a Wideband Air-Fuel Sensor Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2016/>

