



P1121 · Ford

Throttle Position Sensor Inconsistent with Mass Air Flow Sensor

P1121 on Ford vehicles means the powertrain control module (PCM) has compared the throttle position sensor (TPS) signal against the mass air flow (MAF) sensor reading and found they do not agree under the same operating conditions. The PCM expects a predictable relationship between how far the throttle is open and how much air is entering the engine, and this code sets when that relationship falls outside the calibrated window.

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

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the inconsistency is brief or only occurs under specific throttle transitions.
- A hesitation or stumble when accelerating from a stop or during light throttle cruise.
- Rough or fluctuating idle quality that may come and go.
- Reduced engine power or a limp-home strategy if the PCM cannot trust the throttle input.
- Occasional surge or uneven power delivery during steady-speed driving.
- Poor fuel economy or a rich/lean exhaust smell if the mismatch persists.

Common causes, most likely first

- 1 Contaminated or failing mass air flow (MAF) sensor element causing under- or over-reporting of airflow.
- 2 Worn or dirty throttle position sensor (TPS) track creating intermittent or non-linear voltage.
- 3 Vacuum leaks or unmetered air entering downstream of the MAF sensor, skewing the air/fuel relationship.
- 4 Dirty throttle body or carbon buildup restricting airflow at small throttle openings.
- 5 Wiring issues such as chafed harness, corroded connectors, or poor grounds on the TPS or MAF circuits.
- 6 Aging or failing engine air filter or intake restrictions altering actual airflow versus throttle position.
- 7 Rarely, a PCM calibration issue or failing PCM driver circuit for the TPS or MAF reference voltage.



How to diagnose and fix it

- 1 Inspect the air intake system for leaks, loose clamps, and a dirty or incorrectly installed air filter.
- 2 Clean the MAF sensor with a dedicated MAF cleaner and verify its output with a scan tool live data stream.
- 3 Clean the throttle body and perform a throttle position relearn or idle relearn if required for the Ford model.
- 4 Backprobe the TPS signal and ground circuits to check for smooth voltage sweep and no dropouts through the full throttle range.
- 5 Check MAF and TPS connector pins for corrosion, spread terminals, and harness chafing near the intake and throttle body.
- 6 Compare scan tool live data for TPS percentage and MAF grams per second during a snap-throttle test to confirm the mismatch.
- 7 Replace the faulty sensor only after electrical and airflow checks confirm it is the source, then clear the code and verify with a road test.

What Ford technicians check before replacing sensors

- A dirty MAF sensor is the most common cause of P1121 on Ford engines, and cleaning it often resolves the code without any parts replacement.
- A vacuum leak downstream of the MAF sensor can mimic a failing TPS because the PCM sees more air than the throttle position predicts, so always smoke-test the intake before condemning either sensor.
- The TPS signal can look fine on a static voltmeter test but break down only under vibration or heat, so a live-data sweep during a road test is more reliable than a parked check.
- P1121 can set from a lazy upstream oxygen sensor or exhaust restriction that skews fuel trim and indirectly makes the MAF and TPS relationship appear inconsistent.
- After any throttle body cleaning or sensor replacement on a Ford, a throttle position relearn or idle relearn procedure is often required to prevent the code from returning.

Can I keep driving with P1121?

You can usually drive the vehicle to a shop, but avoid hard acceleration and heavy load until the fault is diagnosed because the PCM may be limiting power or delivering an incorrect air/fuel mixture. If the engine runs rough, stalls, or enters limp mode, stop driving and arrange a tow.

Tools that help

- OBD-II scan tool with live data and Ford-specific PID support
- Digital multimeter with backprobe pins
- MAF sensor cleaner spray
- Throttle body cleaner and soft brush
- Smoke machine for intake leak testing
- Basic hand tools and Torx or hex bit set for intake and throttle body fasteners



Reading P1121

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

Often seen with

P0101 Mass/Volume Air Flow Circuit Range/Performance · **P0102** Mass/Volume Air Flow Circuit Low Input · **P0103** Mass/Volume Air Flow Circuit High Input · **P0121** Throttle Position Sensor A Circuit Range/Performance · **P0122** Throttle Position Sensor A Circuit Low Input · **P0171** System Too Lean (Bank 1)

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/ford-p1121/>

