



P1120 · Ford

Throttle Position Sensor Out of Range

P1120 on Ford vehicles means the powertrain control module (PCM) has detected that the throttle position sensor (TPS) signal is outside the expected voltage range for the current operating conditions. The PCM compares the TPS voltage to its calibrated minimum and maximum limits and sets this code when the signal falls below or rises above those thresholds.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Hesitation or stumble when accelerating from a stop
- Erratic or surging engine speed during light throttle application
- Reduced engine power or limp mode in some cases
- Poor fuel economy or increased emissions
- Automatic transmission may shift harshly or late due to incorrect throttle input

Common causes, most likely first

- 1 Faulty throttle position sensor (TPS) or worn sensor tracks
- 2 Damaged or corroded TPS wiring harness or connector
- 3 Poor electrical connection at the TPS or PCM
- 4 Contaminated or sticking throttle body causing the TPS to read out of range
- 5 PCM calibration issue or internal fault (less common)
- 6 Aftermarket or incorrectly installed TPS not matching Ford specifications

How to diagnose and fix it

- 1 Use a scan tool to read TPS voltage and confirm it moves smoothly through the full range with no dropouts or spikes
- 2 Visually inspect the TPS connector and wiring for corrosion, chafing, or loose pins, and repair as needed
- 3 Clean the throttle body and check for mechanical binding that could force the TPS out of range
- 4 Perform a wiggle test on the TPS harness while monitoring live data to catch intermittent faults
- 5 Replace the TPS with a Ford-approved part and clear the code, then verify the signal returns to normal
- 6 Check for any Ford technical service bulletins (TSBs) or PCM recalibration updates related to P1120
- 7 If the TPS and wiring test good, diagnose the PCM and its connectors for faults before replacement



What Ford TPS Diagnostics Often Miss

- A TPS can test fine with a multimeter at rest but still set P1120 due to intermittent dropouts only visible on a lab scope or live data graph.
- Throttle body carbon buildup can cause the TPS to read out of range without any sensor fault, so cleaning the throttle body is a smart first step before replacing parts.
- On some Ford models, a failing accelerator pedal position sensor can mimic TPS out-of-range symptoms, so compare both signals when diagnosing.
- P1120 can be set by a poor ground connection at the PCM or engine block, which corrupts the TPS reference voltage and is easily overlooked.
- After replacing a TPS, a throttle position relearn or idle relearn procedure may be required on certain Ford vehicles to prevent the code from returning.

Can I keep driving with P1120?

You can usually drive the vehicle with P1120, but expect possible hesitation, reduced power, or harsh shifting. Avoid aggressive acceleration and have the fault diagnosed soon to prevent drivability issues or further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Lab scope (optional for intermittent signal testing)
- Basic hand tools (screwdrivers, socket set)
- Throttle body cleaner and shop rags

Reading P1120

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

Often seen with

P0121 Throttle Position Sensor A Circuit Range/Performance · **P0122** Throttle Position Sensor A Circuit Low Input · **P0123** Throttle Position Sensor A Circuit High Input · **P2106** Throttle Actuator Control System - Forced Limited Power · **P2135** Throttle/Pedal Position Sensor A/B Voltage Correlation



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/ford-p1120/>

