

TOYOTA · POWERTRAIN

P1401

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1401 · Toyota

Sub-Throttle Position Sensor Range Performance Problem

P1401 is a Toyota-specific code indicating that the sub-throttle position sensor (a secondary throttle plate sensor used for traction control) is reporting a range or performance problem to the engine control module (ECM). The ECM has detected that the sensor's signal is out of expected limits during self-tests or does not correlate with other throttle inputs, often due to a faulty sensor, wiring issue, or carbon buildup.

SYSTEM

Powertrain

CODE TYPE

Toyota specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Intermittent or permanent reduction in engine power, especially during acceleration or when traction control activates.
- Rough idle or hesitation when the sub-throttle plate fails to respond correctly.
- Traction control or vehicle stability control (VSC) warning light may also turn on.
- In some cases, the engine may enter limp mode, limiting speed and RPM.

Common causes, most likely first

- 1 Faulty sub-throttle position sensor (TPS) or its internal circuitry.
- 2 Wiring damage or poor connection at the sub-throttle position sensor connector.
- 3 Carbon buildup or mechanical binding on the sub-throttle plate, causing incorrect sensor readings.
- 4 Failed sub-throttle actuator motor, preventing proper plate movement.
- 5 Corrosion or damage to the ECM connector or internal ECM fault (rare).
- 6 Intake air leaks or unmetered air affecting throttle performance.
- 7 Aftermarket or improperly installed throttle body components causing misalignment.



How to diagnose and fix it

- 1 Use an OBD-II scanner to retrieve the freeze frame data and verify the sub-throttle position sensor voltage readings.
- 2 Visually inspect the sub-throttle position sensor connector and wiring for corrosion, loose pins, or damage; repair as needed.
- 3 Clean the throttle body and sub-throttle plate with approved throttle body cleaner to remove carbon deposits.
- 4 Perform a resistance and voltage test on the sub-throttle position sensor according to Toyota service information; replace if out of specification.
- 5 Check the sub-throttle actuator motor operation and replace if binding or non-functional.
- 6 Reset the ECM and perform a throttle body calibration or relearn procedure as required for the specific Toyota model.
- 7 If all else fails, diagnose the ECM for internal faults, though this is rare and should be confirmed by a professional.

Common misdiagnosis traps for P1401

- Many technicians replace the sub-throttle position sensor without first cleaning the throttle body, but carbon buildup often causes the sensor to read out of range and mimics a failed sensor.
- The sub-throttle position sensor is often confused with the main throttle position sensor; they are separate components, and P1401 specifically refers to the sub-throttle circuit.
- A weak battery or charging system issue can cause erratic sensor readings and set P1401, so always check battery voltage and ground connections before condemning parts.
- On some Toyota models, the sub-throttle position sensor is integrated into the throttle body assembly, requiring replacement of the entire unit rather than just the sensor.
- Intermittent wiring faults at the sensor connector can be temperature-sensitive, so wiggle-test the harness while monitoring live data to catch the glitch.

Can I keep driving with P1401?

You can usually drive the vehicle with P1401, but expect reduced engine power and possible activation of the traction control warning. Avoid heavy acceleration or towing until the fault is repaired, and if the engine enters limp mode, have the vehicle serviced promptly.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Throttle body cleaner and shop rags
- Basic hand tools (screwdrivers, socket set)
- Toyota service information or repair manual for specifications



Reading P1401

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

Often seen with

P1403 EGR Flow Deviation · **P1400** EGR Valve Circuit Electrical Malfunction · **P1404** EGR Flow Adaptation Not Carried Out · **P1402** EGR Valve Circuit Short To B+ · **P1405** Turbo Pressure Sensor Circuit · **P1400** Sub-Throttle Position Sensor · **P1400** Fuel Tank Pressure Control Solenoid Low Input · **P1402** Fuel Level Pressure Sensor Circuit Fault · **P1400** EGRC Solenoid Valve · **P1402** EGR System · **P1400** Manifold Differential Pressure Sensor Circuit · **P1404** EGR Control · **P1400** DPFE Sensor Circuit Low Input · **P1405** DPFE Sensor Upstream Hose Off Or Plugged · **P1402** EGR Valve Position Sensor Circuit · **P1402** EGR Control Solenoid Circuit Signal High · **P1400** Exhaust Gas Recirculation Valve Position Control · **P1405** EGR Valve Control Circuit · **P1403** Exhaust Gas Recirculation System Valve 1 · **P1404** Exhaust Gas Recirculation System Valve 2 · **P1405** Differential Pressure Feedback Electronic Sensor Circuit Ups · **P1400** Differential Pressure Feedback Electronic Sensor Circuit Low · **P1404** IAT B Circuit Malfunction · **P1403** Differential Pressure Feedback Electronic Sensor Hoses Reversed · **P1402** EGR Metering Orifice Restricted · **P1404** Exhaust Gas Recirculation System Valve 2 · **P1403** Loss Of 5 Volts To EGR Sensor · **P1405** Exhaust Gas Recirculation System Valve 3 · **P1404** Heated Catalyst Current Too High During Heating Bank 2 · **P1405** Heated Catalyst Power Switch Overtemperature Condition Bank · **P1403** Carbon Canister Shut Off Valve Control Circuit Electrical · **P1402** Heated Catalyst Power Switch Overtemperature Condition Bank · **P1400** Heated Catalyst Battery Voltage or Current Too Low During He

See it working

Watch the animated explainer [How Variable Valve Timing Works: Cam Phaser and VVT Solenoid](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/toyota-p1401/>

