

GM · POWERTRAIN

P1654

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1654 · GM

## Service Throttle Soon Lamp Control Circuit

P1654 on a GM vehicle means the powertrain control module (PCM) has detected a fault in the control circuit for the Service Throttle Soon lamp, which is the dashboard warning that tells the driver the electronic throttle system needs attention. The PCM monitors the lamp circuit for expected voltage behavior when it commands the lamp on or off, and it sets this code when the circuit does not respond as expected, indicating an open, short, or excessive resistance in the lamp wiring or driver inside the PCM.

| SYSTEM     | CODE TYPE   | SEVERITY | FIX DIFFICULTY | AREA                         |
|------------|-------------|----------|----------------|------------------------------|
| Powertrain | GM specific | Low      | Intermediate   | Computer and output circuits |

### Symptoms you may notice

- The Service Throttle Soon lamp may fail to illuminate when the ignition is first turned on, so the bulb check is skipped.
- The lamp may stay illuminated continuously even when no throttle fault is present.
- Often no symptoms besides the warning light, because the lamp circuit itself does not affect engine operation.
- In some cases the lamp may flicker or turn on intermittently while driving over bumps.
- If the PCM also stores throttle actuator codes, the engine may enter reduced power mode, but that is not caused by P1654 alone.

### Common causes, most likely first

- Failed Service Throttle Soon lamp bulb or light-emitting diode (LED) assembly in the instrument cluster.
- Open or high-resistance wiring between the PCM and the instrument cluster lamp circuit.
- Short to ground or short to voltage on the lamp control wire, often from chafed insulation near the throttle body or under the dash.
- Corroded or loose terminals at the PCM connector or the instrument cluster connector.
- Internal driver failure inside the PCM for the lamp control circuit, which is uncommon but possible.
- Aftermarket alarm or remote start wiring tapped into the dash harness causing interference on the lamp circuit.



## How to diagnose and fix it

- 1 Verify the Service Throttle Soon lamp illuminates during the bulb check when the ignition is turned on; if it does not, remove the cluster and test the bulb or LED directly.
- 2 Inspect the lamp circuit wiring for chafing, corrosion, and loose connectors between the PCM and the instrument cluster, focusing on areas near the throttle body and under the dash.
- 3 Use a digital multimeter to check for continuity and shorts on the lamp control wire with the PCM and cluster disconnected, comparing readings to the factory wiring diagram.
- 4 Back-probe the PCM connector and command the lamp on and off with a scan tool to confirm the PCM driver is functioning and the circuit responds.
- 5 If the circuit tests good but the lamp still does not work, substitute a known-good instrument cluster or PCM only after ruling out all wiring faults.
- 6 Clear the code and perform a road test with several ignition cycles to confirm the repair, since the PCM may need to see the lamp circuit cycle correctly before the code clears permanently.

## What the Service Throttle Soon Lamp Really Means

- P1654 is a lamp circuit code, not a throttle body or pedal sensor code, so replacing the throttle body will not fix it and is a common misdiagnosis.
- A burned-out bulb in the instrument cluster is the most frequent cause on older GM vehicles, and many drivers never notice the lamp is out until a scan tool reveals the code.
- Aftermarket accessories wired into the dash, such as alarm LEDs or remote start modules, can back-feed the lamp circuit and set P1654 without any factory component being faulty.
- The PCM may set P1654 intermittently if the lamp circuit has a high-resistance connection that only acts up with temperature changes or vibration, so a wiggle test of the harness is essential.
- Do not confuse this code with P0654 or P2135, which relate to the throttle actuator or pedal sensors and can cause actual drivability problems; P1654 alone does not reduce engine power.

## Can I keep driving with P1654?

P1654 is safe to drive with because it only affects the warning lamp circuit and does not change how the engine runs. Avoid ignoring it indefinitely, since a non-functioning Service Throttle Soon lamp could hide a real throttle fault later, but there is no need to stop driving immediately.

## Tools that help

- Scan tool with bidirectional control capability
- Digital multimeter
- Factory wiring diagram for the specific GM vehicle
- Trim removal tools for instrument cluster access
- Test light



## Reading P1654

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 6** Computer and output circuits.
- 54** The exact fault within that area.

## Often seen with

**P1516** Intake Manifold Changeover Valve Circuit Open · **P1516** Idle Air Control Solenoid Signal 4 Circuit Low Input · **P1516** Gear Change Neutral Drive Fault · **P1516** Gear Change Neutral Drive Fault · **P1516** Throttle Actuator Control (TAC) Module Throttle Actuator Pos · **P1516** Intake Manifold Runner Control Input Error · **P1516** Throttle Actuator Control (TAC) Module Throttle Actuator Pos · **P0121** Throttle Position Sensor A Circuit Range/Performance · **P0221** Throttle Position Sensor B Circuit Range/Performance · **P0654** Engine RPM Output Circuit · **P2135** Throttle/Pedal Position Sensor A/B Voltage Correlation

## See it working

Watch the animated explainer [Disc Brake Trainer: How Car Brakes Stop a Wheel](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1654/>

