

GM · POWERTRAIN

P1894

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1894 · GM

Engine Torque Signal High Voltage

P1894 on a GM vehicle indicates that the transmission control module (TCM) has detected an abnormally high voltage on the engine torque signal circuit, which is a pulse-width modulated (PWM) input from the engine control module (ECM). The TCM uses this signal to coordinate shift timing and line pressure, so a high-voltage condition tells the TCM that the torque request data is outside its expected range.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed transmission shifts, particularly during acceleration or deceleration
- The transmission may enter limp mode, holding a single gear and limiting vehicle speed
- Poor fuel economy or altered shift feel that the driver may attribute to other issues
- In some cases, the vehicle may start and drive normally until the code is triggered after a specific driving condition

Common causes, most likely first

- 1 Damaged or chafed wiring in the engine torque signal circuit, often near the transmission bellhousing or exhaust components
- 2 Corroded or loose electrical connectors at the TCM or ECM, allowing voltage to spike
- 3 A failed TCM that is misreading the torque signal voltage
- 4 An ECM that is outputting an incorrect or erratic torque signal due to internal fault
- 5 Electrical interference from aftermarket accessories or poor grounds affecting the signal circuit
- 6 A short to voltage on the signal wire, possibly from contact with a power wire in the harness



How to diagnose and fix it

- 1 Inspect the engine torque signal wiring and connectors for damage, corrosion, or loose pins, repairing as needed
- 2 Check for aftermarket electrical accessories that may be introducing interference and disconnect them temporarily
- 3 Perform a voltage drop test on the signal circuit and compare readings to factory specifications
- 4 Use a scan tool to monitor the engine torque signal PID and verify if the voltage is consistently high or intermittent
- 5 If the signal circuit is intact, test the ECM output with an oscilloscope to confirm the PWM signal is correct
- 6 Substitute a known-good TCM or ECM only after all wiring and signal tests have passed, to avoid unnecessary replacement
- 7 Clear the code and perform a relearn or adaptation drive cycle to confirm the repair

Don't Replace the TCM Before Checking This

- A common oversight is assuming the TCM is at fault when the real problem is a chafed signal wire near the exhaust manifold that only shorts when the engine is hot.
- The engine torque signal is a PWM waveform, and a high average voltage can be caused by a failed pull-up resistor inside the ECM rather than a wiring short.
- Aftermarket remote starters or alarm systems spliced into the data bus can corrupt the torque signal and set P1894 without any hard wiring fault.
- A weak or corroded ground connection at the transmission case can cause the TCM to reference the signal voltage incorrectly, mimicking a high-voltage condition.
- This code can be set by a low battery or charging system issue that causes the ECM to output an erratic signal during cranking, so always check battery voltage first.

Can I keep driving with P1894?

You can usually drive the vehicle with this code, but avoid aggressive acceleration and towing until it is diagnosed, because the transmission may shift harshly or enter limp mode without warning. If the transmission is already in limp mode, limit driving to a short distance to a repair shop.

Tools that help

- Scan tool with live data and bidirectional control capabilities
- Digital multimeter with voltage and duty cycle measurement
- Oscilloscope for viewing the PWM waveform
- Factory service information for wiring diagrams and voltage specifications
- Wire terminal removal tools and electrical contact cleaner



Reading P1894

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 8** Transmission.
- 94** The exact fault within that area.

Often seen with

P1895 TCM To ECM Torque Reduction Circuit Malfunction · **P1895** TCM To ECM Torque Reduction Circuit Malfunction · **P1895** TCM To ECM Torque Reduction Circuit · **P0700** Transmission Control System Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output Speed Sensor Circuit Malfunction · **U0100** Lost Communication With ECM/PCM A

See it working

Watch the animated explainer [Readiness Monitors and the OBD-II Drive Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1894/>

