

TOYOTA · POWERTRAIN

P1700

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1700 · Toyota

Vehicle Speed Sensor 2 Circuit Fault

P1700 on Toyota vehicles means the powertrain control module (PCM) has detected an electrical fault in the circuit for Vehicle Speed Sensor 2, which is the output speed sensor mounted on the automatic transaxle. The PCM compares this signal with the input speed sensor and other speed data, and it sets the code when the expected pulses are missing, erratic, or implausible.

SYSTEM

Powertrain

CODE TYPE

Toyota specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- The check engine light or automatic transmission warning light is illuminated on the dashboard.
- The speedometer may read zero or fluctuate erratically while the vehicle is moving.
- The transmission may shift harshly, flare between gears, or stay in a single gear due to loss of output speed data.
- The cruise control may stop working or disengage unexpectedly.
- Often no symptoms besides the warning light, especially if the fault is intermittent.
- A stored code may be accompanied by a pending code or a freeze-frame showing the fault occurred at a specific vehicle speed.

Common causes, most likely first

- 1 A failed Vehicle Speed Sensor 2 (output speed sensor) on the transaxle.
- 2 Damaged, corroded, or disconnected wiring or connector pins at the sensor or PCM.
- 3 An open or short circuit in the signal or ground wire between the sensor and the PCM.
- 4 Metal debris or a damaged reluctor wheel inside the transaxle interfering with the sensor signal.
- 5 A faulty PCM driver circuit, though this is less common than sensor or wiring faults.
- 6 A poor ground connection shared with other sensors or the transaxle case.
- 7 Aftermarket electrical accessories or a recent repair that disturbed the sensor harness.



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm when and at what speed the fault occurred.
- 2 Visually inspect the Vehicle Speed Sensor 2 connector and harness for corrosion, chafing, or loose pins.
- 3 Measure the sensor resistance and compare it with the Toyota specification for the transaxle fitted.
- 4 Check for AC voltage pulses from the sensor while spinning the wheels by hand or on a lift.
- 5 Continuity-test the signal and ground wires from the sensor connector to the PCM, looking for opens or shorts.
- 6 Inspect the sensor tip and reluctor wheel for metal shavings or damage, cleaning or replacing as needed.
- 7 If all wiring and the sensor test good, substitute a known-good sensor or perform a PCM pinout test before condemning the PCM.

What Toyota techs check before replacing the sensor

- A loose or corroded connector at the transaxle is far more common than a failed sensor, so always wiggle-test the harness while watching live speed data.
- On some Toyota models, Vehicle Speed Sensor 2 is shared with the speedometer and cruise control, so a single bad sensor can cause multiple unrelated complaints.
- Metal debris from a worn differential or bearing can collect on the sensor tip and cause an intermittent signal that mimics a failing sensor.
- The code can set from a momentary glitch during a hard shift or wheelspin, so clear it and test-drive before authorizing parts replacement.
- Aftermarket sensors often have different resistance values and can set the code again, so use a Toyota-quality replacement when a sensor is truly needed.

Can I keep driving with P1700?

You can usually drive the vehicle to a repair shop, but avoid sustained highway speeds and heavy acceleration because the transmission may shift unpredictably or enter limp mode. If the speedometer has failed completely or the transmission is stuck in one gear, limit driving to a short distance at low speed.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with min/max recording
- Oscilloscope for viewing the speed sensor waveform
- Jack and jack stands or a vehicle lift
- Toyota service information for pinout and resistance specifications
- Basic hand tools for connector and sensor removal



Reading P1700

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

Often seen with

P1701 Cruise Control Set Signal Circuit Malfunction AT · **P1701** Fuel Trim · **P1701** Transmission Range Sensor Reverse Engagement Error · **P1701** MIL Request Circuit - Transmission · **P1701** Reverse Engagement Error · **P0500** Vehicle Speed Sensor Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output Speed Sensor Circuit Malfunction · **P0725** Engine Speed Input Circuit Malfunction

See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/toyota-p1700/>

