

CHRYSLER · POWERTRAIN

P1504

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1504 · Chrysler

Vehicle Speed Output Circuit

P1504 on Chrysler vehicles indicates that the Powertrain Control Module (PCM) has detected an implausible signal or an open/short circuit on the Vehicle Speed Output circuit, which typically feeds the speedometer, cruise control, and other modules. The PCM monitors the output signal it generates from the transmission output speed sensor and sets this code when the expected voltage or signal pattern is not present at the output terminal.

SYSTEM

Powertrain

CODE TYPE

Chrysler specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

**Vehicle speed,
idle control and
auxiliary inputs**

Symptoms you may notice

- The speedometer may read zero or fluctuate erratically while driving.
- The anti-lock brake (ABS) warning light and traction control light may illuminate because the ABS module loses the vehicle speed signal.
- Cruise control may become inoperative or disengage unexpectedly.
- The transmission may shift harshly or fail to shift out of first gear due to missing speed input.
- Often no symptoms besides the warning light, especially if the fault is intermittent or only affects a secondary module.
- The odometer may stop accumulating mileage or the trip computer may show incorrect data.

Common causes, most likely first

- 1 Damaged or corroded wiring in the Vehicle Speed Output circuit between the PCM and the speedometer cluster or other modules.
- 2 A faulty vehicle speed sensor (VSS) or output speed sensor on the transmission, even though the code refers to the output circuit, a bad sensor can corrupt the signal the PCM tries to output.
- 3 Poor connection or loose pins at the PCM connector or at the instrument cluster connector.
- 4 A failed instrument cluster speedometer head or internal cluster circuitry that shorts or opens the output circuit.
- 5 A short to ground or short to voltage on the output wire, often caused by chafing against sharp metal under the dash or hood.
- 6 A defective PCM driver circuit for the vehicle speed output, though this is less common than wiring issues.
- 7 Aftermarket electronic accessories (alarms, remote starters, GPS trackers) improperly tapped into the speed signal wire.



How to diagnose and fix it

- 1 Use a scan tool to read live data and verify whether the PCM is reporting a vehicle speed signal that matches actual wheel speed from the ABS module.
- 2 Inspect the wiring harness and connectors at the PCM, transmission speed sensor, and instrument cluster for corrosion, chafing, or loose pins; repair as needed.
- 3 Disconnect the PCM and the cluster, then use a digital multimeter (DMM) to check for continuity and shorts to ground or voltage on the Vehicle Speed Output wire.
- 4 Test the vehicle speed sensor (VSS) or output speed sensor with a DMM for proper resistance and AC voltage output while spinning the wheels or driving.
- 5 If wiring and sensor are good, substitute a known-good instrument cluster or use a lab scope to verify the output signal at the cluster connector.
- 6 Check for aftermarket accessories tapped into the speed signal circuit and remove or repair any improper connections.
- 7 As a last resort, test the PCM output driver with a lab scope or swap in a known-good PCM to confirm internal failure before replacement.

Speed Output Circuit Traps on Chrysler Vehicles

- A common misdiagnosis is replacing the PCM when the real fault is a chafed speed output wire behind the glovebox or near the transmission, so always perform a wiggle test on the harness while watching live data.
- The P1504 code can be set by a faulty instrument cluster even when the speedometer appears to work normally, because the cluster's internal circuit can load the output signal without completely failing.
- On many Chrysler models, the Vehicle Speed Output circuit also feeds the radio's speed-sensitive volume control and the navigation system, so an aftermarket radio installation can introduce this code.
- A weak or failing vehicle speed sensor can produce a signal that the PCM accepts for its own use but cannot cleanly output, setting P1504 without any driveability symptoms.
- Corrosion inside the PCM connector pins is a frequent cause on older Chrysler vehicles, especially those driven in humid or road-salt regions, and it may not be visible until the connector is disassembled.

Can I keep driving with P1504?

You can usually continue driving with P1504, but be aware that the speedometer, cruise control, and anti-lock braking may be compromised, so avoid relying on cruise control and allow extra braking distance. If the transmission shifts erratically or the speedometer fails completely, have the vehicle inspected promptly to prevent further damage.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter (DMM)
- Lab scope (oscilloscope)
- Wiring diagram for the specific Chrysler model
- Trim removal tools for accessing the instrument cluster
- Electrical contact cleaner and dielectric grease

Reading P1504

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (Chrysler): its meaning depends on the make.

5 Vehicle speed, idle control and auxiliary inputs.

04 The exact fault within that area.

Often seen with

P0500 Vehicle Speed Sensor Malfunction · **P0501** Vehicle Speed Sensor Range/Performance · **P0502** Vehicle Speed Sensor Low Input · **P0720** Output Speed Sensor Circuit Malfunction · **U0121** Lost Communication With Anti-Lock Brake System (ABS) Control

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/chrysler-p1504/>

