



P1502 · Ford

Invalid or Missing Vehicle Speed Message or Brake Data

P1502 on Ford vehicles means the powertrain control module (PCM) expected a valid vehicle speed signal or brake switch message over the controller area network (CAN) and did not receive it within the required time. The PCM sets this code when the anti-lock brake system (ABS) module or brake pedal position sensor fails to broadcast the speed or brake data the PCM needs for shift scheduling, torque converter lockup, and speed-sensitive functions.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Ford specific	Medium	Professional	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the fault is intermittent.
- Harsh or delayed automatic transmission shifts because the PCM lacks speed data for shift scheduling.
- Speedometer needle stuck at zero or behaving erratically on vehicles where the cluster receives speed over the network.
- Cruise control refusing to engage or dropping out unexpectedly.
- Anti-lock brake warning lamp or traction control lamp illuminated alongside the check engine light.
- Torque converter clutch failing to lock up, causing higher highway rpm and reduced fuel economy.

Common causes, most likely first

- 1 Failed or intermittent anti-lock brake system (ABS) wheel speed sensor at any corner, which stops the ABS module from broadcasting a valid vehicle speed message.
- 2 Damaged, corroded, or chafed wiring in the controller area network (CAN) bus between the ABS module and the powertrain control module (PCM).
- 3 Faulty brake pedal position switch or sensor, or its connector, preventing the brake data message from being sent.
- 4 ABS module internal fault or loss of power/ground to the ABS module, silencing the speed message entirely.
- 5 PCM software calibration issue or internal CAN transceiver fault on certain Ford models.
- 6 Blown fuse or poor ground connection shared by the ABS module and related network components.
- 7 Aftermarket accessories or poor previous repairs tapping into the CAN bus and corrupting the speed or brake message.



How to diagnose and fix it

- 1 Connect a scan tool and read all modules for codes, especially the ABS module, to see whether a wheel speed sensor or brake switch code is stored alongside P1502.
- 2 Verify live vehicle speed data in the ABS module and compare it with the PCM and instrument cluster to isolate which module is missing the message.
- 3 Inspect the brake pedal position switch and its connector for proper adjustment, corrosion, and continuity, then confirm brake on/off status on the scan tool.
- 4 Check all ABS wheel speed sensors for signal integrity with a scope or live data while rotating each wheel, and inspect tone rings for damage.
- 5 Perform a voltage drop and continuity test on the CAN bus wiring between the ABS module and PCM, looking for opens, shorts, or excessive resistance.
- 6 Check power and ground circuits at the ABS module, including fuses and ground points, and repair any corroded or loose connections.
- 7 If all wiring and sensors test good, reflash or update the PCM calibration per Ford service information, and replace the ABS module only after confirming it is not transmitting.

What Ford techs check before replacing modules

- A dirty or damaged rear axle tone ring on Ford trucks often kills the rear wheel speed signal and sets P1502 without ever setting a wheel speed sensor code, so inspect the rings before condemning the sensor.
- The brake pedal position switch on many Fords is a dual-contact design; one contact can fail and still let the brake lights work, so a visual brake light check does not prove the switch is good.
- P1502 can be set by a completely dead battery or low-voltage cranking event that drops the ABS module offline momentarily, so clear the code and verify it returns before starting diagnostics.
- Aftermarket stereos, remote starters, and alarm systems tapped into the CAN bus at the OBD-II connector are a common hidden cause of missing speed messages on older Ford vehicles.
- A failed ABS module on some Ford platforms still allows normal braking but stops all network speed broadcasting, so the vehicle drives fine while the PCM sets P1502 and the speedometer may still work from a different source.

Can I keep driving with P1502?

You can usually drive the vehicle to a repair shop, but expect harsh transmission shifts and no cruise control, and avoid towing or heavy loads until the fault is repaired. If the anti-lock brake warning lamp is also on, drive cautiously in wet or slippery conditions because ABS and traction control may be disabled.



Tools that help

- Ford-compatible scan tool with live data and module-level code reading
- Digital multimeter with voltage drop and continuity functions
- Oscilloscope for CAN bus and wheel speed sensor signal analysis
- Wiring diagram and connector pinout for the specific Ford model
- Jack and stands for wheel speed sensor and tone ring inspection

Reading P1502

P Powertrain: engine, transmission and emissions.

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

5 Vehicle speed, idle control and auxiliary inputs.

02 The exact fault within that area.

Often seen with

C0035 Left Front Wheel Speed Sensor Circuit Range/Performance · **C0050** Right Rear Wheel Speed Sensor Circuit Malfunction · **P0500** Vehicle Speed Sensor Malfunction · **P0501** Vehicle Speed Sensor Range/Performance · **U0121** Lost Communication With Anti-Lock Brake System (ABS) Control

See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1502/>

