

MAZDA · POWERTRAIN

P1628

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1628 · Mazda

Powertrain Control Module ECM TCS Any Line Communication Error

P1628 on Mazda vehicles indicates that the Powertrain Control Module (PCM) has detected a communication error on the line that connects it to the Traction Control System (TCS). The PCM expects a regular data signal from the TCS module, and when that signal is missing, intermittent, or corrupted, it stores this code and may disable traction control while turning on the warning light.

SYSTEM

Powertrain

CODE TYPE

Mazda specific

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Computer and output circuits

Symptoms you may notice

- Traction control system (TCS) warning light illuminated on the dashboard
- Traction control may be disabled, allowing wheel spin on slippery surfaces
- Check Engine Light (CEL) may also be on in some cases
- No noticeable change in engine performance or drivability
- Often no symptoms besides the warning light
- In rare cases, the vehicle may enter limp mode or show reduced power

Common causes, most likely first

- 1 Damaged or corroded wiring in the communication line between the PCM and TCS module
- 2 Poor electrical connection at the PCM or TCS module connectors
- 3 Faulty TCS module (internal failure affecting communication)
- 4 Faulty PCM (internal communication circuit failure)
- 5 Electrical interference from aftermarket accessories or poor grounding
- 6 Blown fuse or relay supplying power to the TCS module
- 7 Water intrusion or physical damage to the wiring harness



How to diagnose and fix it

- 1 Inspect the TCS warning light and verify the code with a scan tool that can read Mazda-specific codes
- 2 Check all fuses related to the TCS system and PCM, and replace any blown fuses
- 3 Visually inspect the wiring harness between the PCM and TCS module for damage, corrosion, or loose connectors
- 4 Disconnect and reconnect the PCM and TCS module connectors, applying dielectric grease to prevent corrosion
- 5 Perform a voltage drop test on the communication line to check for excessive resistance
- 6 If wiring is intact, test the TCS module by substituting a known-good unit or using a diagnostic oscilloscope to check signal integrity
- 7 If the TCS module is good, test the PCM communication circuit or replace the PCM as a last resort

Don't Replace Modules Before Checking These

- A weak or failing battery can cause communication errors because the TCS module may not receive stable voltage, so always load-test the battery first.
- Aftermarket electrical accessories, such as alarms or audio systems, tapped into the CAN bus or power circuits can introduce interference that mimics a faulty module.
- Corrosion inside the connector pins at the TCS module is a common cause on older Mazdas, especially in areas with road salt, and is often overlooked during visual inspection.
- The code can set intermittently due to a chafed wire that only shorts when the vehicle hits a bump, so a wiggle test of the harness while monitoring live data is essential.
- A faulty ABS wheel speed sensor can sometimes trigger communication errors in the TCS module, so check for ABS codes before condemning the module.

Can I keep driving with P1628?

You can generally continue driving with P1628 because the engine and brakes remain functional, but traction control may be disabled, reducing stability on slippery roads. Avoid aggressive acceleration or driving in low-traction conditions until the fault is repaired.

Tools that help

- Mazda-specific OBD-II scan tool
- Digital multimeter
- Oscilloscope (for signal analysis)
- Wire repair kit (soldering iron, heat shrink, crimpers)
- Dielectric grease
- Battery load tester



Reading P1628

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

Often seen with

P1634 Accelerator Pedal Position Sensor 2 Signal Too High · **P1631** Accelerator Pedal Position Sensor 1 Signal Too High · **P1633** Accelerator Pedal Position Sensor 2 Signal Too Low · **P1632** Accelerator Pedal Position Sensor 1 Power Supply Malfunction · **P1633** ECM · **P1631** Generator Output Voltage Signal No Output · **P1634** Generator Terminal B Circuit Open · **P1632** Battery Voltage Detection Circuit for Alternator Regulator · **P1633** Battery Overcharge Fault · **P1631** Alternator T Open Or No Power Output 1.8L · **P1634** Alternator B Open 1.8L · **P1633** Battery Overcharge · **P1632** Battery Voltage Detection Circuit for Alternator Regulator 1 · **P1633** Ignition Power Circuit Low Voltage · **P1634** Ignition 1 Power Circuit Low Voltage · **P1632** Anti-Theft Fuel Disable Signal Received · **P1631** Anti-Theft Password Incorrect / O2 Sensor Slow Response · **P1634** Data Output Link Circuit Failure · **P1633** Throttle Valve Adaptation Limp Home Position · **P1634** Throttle Valve Adaptation Spring Test Failed · **P1632** Throttle Valve Adaptation Condition Not Met · **U0121** Lost Communication With Anti-Lock Brake System (ABS) Control

See it working

Watch the animated explainer [Four-Stroke Engine Notebook: The Otto Cycle Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1628/>

