

MAZDA · POWERTRAIN

P1189

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1189 · Mazda

Pump Speed Signal

P1189 on Mazda vehicles indicates that the powertrain control module (PCM) has detected an abnormal or missing signal from the pump speed sensor circuit, which is typically part of the electronically controlled power steering system or, on some models, the fuel pump control module. The PCM expects a pulsed voltage signal proportional to pump motor speed, and when the frequency or voltage falls outside the expected range for a calibrated time, it stores this code and may disable the variable assist feature.

SYSTEM

Powertrain

CODE TYPE

Mazda specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- The power steering warning light or check engine light illuminates on the dashboard.
- Steering effort may increase, especially at low speeds or during parking maneuvers.
- The variable assist function may default to a fixed heavy setting, making the steering feel stiff.
- In some cases, the driver may notice no symptoms besides the warning light.
- Intermittent loss of power steering assist while turning at low speeds.
- The fuel pump may run at a fixed speed, causing rough idle or reduced performance on models where the code relates to fuel pump speed.

Common causes, most likely first

- 1 Faulty pump speed sensor or pump motor assembly, which is common on aging Mazda electric power steering pumps.
- 2 Damaged or corroded wiring harness or connector at the pump speed sensor or power steering control module.
- 3 Failed power steering control module or PCM, though less common than sensor or wiring issues.
- 4 Blown fuse or poor ground connection for the power steering pump circuit.
- 5 Mechanical binding or wear in the steering rack or pump that causes the pump to draw excessive current and produce an erratic speed signal.
- 6 Contaminated power steering fluid or a restricted filter screen that affects pump operation and speed sensing on hydraulic systems.
- 7 Software calibration issue in the PCM that misinterprets the pump speed signal under certain conditions.



How to diagnose and fix it

- 1 Verify the code with a Mazda-specific scan tool and check for any related codes in the power steering control module.
- 2 Inspect the power steering fluid level and condition, and check for leaks or restricted flow on hydraulic systems.
- 3 Visually inspect the pump speed sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed.
- 4 Measure the pump speed sensor signal with an oscilloscope or multimeter while turning the steering wheel, comparing to manufacturer specifications.
- 5 Check the power steering pump motor for proper operation and current draw, and replace the pump assembly if the sensor is integral and faulty.
- 6 Test the power steering control module and PCM for proper power and ground, and reflash or replace if calibration issues are suspected.
- 7 Clear the code and perform a road test to confirm the repair, ensuring the variable assist function operates correctly.

Pump speed sensor faults often misdiagnosed

- Many technicians replace the entire power steering pump when the fault is simply a corroded connector or a chafed wire in the harness near the pump, so always perform a voltage drop test before condemning the pump.
- On Mazda models with electric power steering, the pump speed sensor is often integrated into the pump motor assembly, meaning a sensor failure requires replacing the whole unit, but aftermarket rebuilds can be unreliable.
- A weak battery or charging system can cause the pump speed signal to drop out intermittently, setting P1189 without any physical fault in the steering system.
- The code can be set by a mechanical issue such as a binding steering rack that causes the pump to labor, so diagnosing the hydraulic or mechanical system is as important as checking electronics.
- Some Mazda models use the pump speed signal for fuel pump control, so P1189 may be accompanied by drivability symptoms that mislead you toward the fuel system rather than the power steering system.

Can I keep driving with P1189?

You can usually continue driving with P1189, but be prepared for increased steering effort, especially at low speeds, and avoid aggressive maneuvers or parking in tight spaces until the fault is repaired. If the steering assist fails completely or the warning light flashes, pull over safely and have the vehicle towed to avoid loss of control.



Tools that help

- Mazda-specific OBD-II scan tool with live data capability
- Digital multimeter or oscilloscope for signal testing
- Basic hand tools for connector and component access
- Power steering fluid tester or hydrometer
- Wiring diagram and service information for the specific Mazda model

Reading P1189

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (Mazda): its meaning depends on the make.
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- 1** Fuel and air metering.
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- 89** The exact fault within that area.

Often seen with

P1188 Linear Oxygen Sensor Compensation Resistor Short To Ground · **P1188** O2 Sensor Heater Circuit Resistance · **P1188** Engine Oil Pressure Sensor Circuit High Voltage · **P1188** Calibration Memory Fault · **P1188** EOT Sensor Circuit High Voltage · **P1188** Fuel Control Bank 1 Sensor 1 · **P0550** Power Steering Pressure Sensor/Switch Circuit · **P0551** Power Steering Pressure Sensor/Switch Circuit Range/Performance · **U0131** Lost Communication With Power Steering Control Module

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1189/>

