

MAZDA · POWERTRAIN

P1748

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1748 · Mazda

Pressure Control Solenoid A

P1748 on Mazda vehicles indicates that the transmission control module (TCM) has detected an electrical fault in the pressure control solenoid A circuit, which regulates hydraulic pressure inside the automatic transmission. The TCM monitors the solenoid's current draw and response, and when the signal falls outside the expected range, it stores this code and typically illuminates the warning light.

SYSTEM

Powertrain

CODE TYPE

Mazda specific

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- Harsh or delayed gear shifts, especially when engaging drive or reverse
- Transmission slipping or flaring between gears
- The vehicle entering limp mode with reduced power and limited gear selection
- A noticeable thump or jerk when shifting from park to drive
- Often no symptoms besides the warning light, especially in early stages

Common causes, most likely first

- 1 Faulty pressure control solenoid A itself, such as a burned coil or stuck valve
- 2 Damaged or corroded wiring harness or connector at the transmission solenoid pack
- 3 Transmission fluid contaminated with debris or degraded, causing solenoid blockage
- 4 Internal transmission valve body wear or sticking valves affecting solenoid operation
- 5 Failed transmission control module (TCM) or poor ground connection
- 6 Low transmission fluid level due to a leak

How to diagnose and fix it

- 1 Check transmission fluid level and condition; top up or replace if contaminated
- 2 Inspect the solenoid wiring harness and connector for damage, corrosion, or loose pins
- 3 Measure the resistance of pressure control solenoid A and compare to Mazda specifications
- 4 Perform a voltage drop test on the solenoid circuit to rule out wiring resistance
- 5 If resistance is out of spec, replace the solenoid and clear the code
- 6 If the solenoid tests good, inspect the valve body for sticking valves or debris
- 7 After repair, clear codes and perform a relearn or adaptation drive cycle as required



Don't replace the solenoid before checking these

- A dirty or degraded transmission fluid is a frequent culprit that mimics a failed solenoid, so a fluid service often resolves the issue without parts replacement.
- The wiring harness connector at the transmission is exposed to heat and vibration, and a loose pin or chafed wire can set P1748 even when the solenoid is healthy.
- On some Mazda models, a weak battery or charging system can cause the TCM to log false solenoid codes, so verify battery voltage and grounds first.
- P1748 can be stored intermittently due to a sticking valve body, which may not show up during a simple resistance test.
- Replacing the solenoid without clearing the TCM adaptive memory can cause the new part to learn incorrectly and set the code again.

Can I keep driving with P1748?

You can usually drive the vehicle to a repair shop, but avoid aggressive acceleration or heavy towing because the transmission may shift harshly or slip. If the vehicle enters limp mode or shifting becomes erratic, stop driving and have it towed to prevent further transmission damage.

Tools that help

- OBD-II scan tool with Mazda-specific software
- Digital multimeter for resistance and voltage tests
- Transmission fluid level dipstick or scan tool for fluid temperature
- Socket set and trim removal tools for accessing the solenoid pack
- Factory service information for resistance specifications and torque values

Reading P1748

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



Often seen with

P1746 Transmission Control Unit Relay Malfunction · **P1747** Transmission Control Unit Relay Open Short To Ground · **P1749** Transmission Control Unit Incorrect Coding · **P1746** Electronic Pressure Control Solenoid Circuit Open · **P1747** Electronic Pressure Control Solenoid Circuit · **P1749** Electronic Pressure Control Solenoid Circuit Low · **P1746** Pressure Regulator 2 · **P1747** Pressure Regulator 3 · **P1746** Electronic Pressure Control Solenoid A Open Circuit · **P1747** Electronic Pressure Control Solenoid A Short Circuit · **P1749** Electronic Pressure Control Solenoid Failed Low · **P1746** Transmission Control Module Output Stage · **P1747** CAN Bus Monitoring · **P1749** Secondary Pressure Solenoid Communication Error · **P0700** Transmission Control System Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction

See it working

Watch the animated explainer [How Variable Valve Timing Works: Cam Phaser and VVT Solenoid](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1748/>

