

MAZDA · POWERTRAIN

P1788

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1788 · Mazda

Pressure Control Solenoid B Circuit Open

P1788 on a Mazda means the transmission control module (TCM) has detected an open circuit in the pressure control solenoid B circuit, which is a hydraulic control valve inside the automatic transmission. The TCM commands a current to the solenoid and monitors the return voltage; when the circuit stays open, the solenoid cannot regulate line pressure, so the TCM sets this code and typically commands a fail-safe mode.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Mazda specific	Medium	Professional	Transmission

Symptoms you may notice

- The check engine light or automatic transmission warning light illuminates steadily.
- Harsh or delayed shifts, especially when engaging drive or reverse from a stop.
- The transmission may stick in a single gear or enter limp-home mode with reduced power.
- Slipping during acceleration or a flare between gear changes as line pressure is not controlled.
- Often no symptoms besides the warning light if the fault is intermittent or only affects a non-critical pressure range.

Common causes, most likely first

- Broken, chafed, or corroded wiring in the solenoid B circuit between the TCM and the transmission connector.
- A failed pressure control solenoid B coil (open winding) inside the valve body.
- A poor connection or pushed-back pin at the transmission case connector or TCM harness.
- Contaminated transmission fluid or a sticking valve body spool that prevents the solenoid from drawing normal current.
- A faulty TCM driver circuit that no longer supplies the commanded current.
- Internal transmission harness damage from heat, fluid intrusion, or previous repair work.



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P1788, then clear the code and test-drive to confirm it returns.
- 2 Inspect the transmission case connector and TCM harness for corrosion, fluid wicking, or pushed pins, and repair as needed.
- 3 Measure the resistance of pressure control solenoid B at the transmission connector and compare it to the Mazda specification for your model.
- 4 Check continuity and voltage drop on both solenoid B wires from the TCM to the transmission connector to isolate an open circuit.
- 5 If the circuit tests good, remove the valve body and bench-test the solenoid B coil and inspect the valve body for debris or sticking valves.
- 6 Replace the faulty solenoid or valve body assembly, refill with the specified Mazda transmission fluid, and clear the code.
- 7 Perform a relearn or adaptive shift reset with a capable scan tool and verify correct line pressure operation on a road test.

What the open circuit really means

- An open circuit code does not always mean the solenoid is dead; a single corroded pin at the transmission connector can set P1788 while the solenoid itself tests perfectly.
- Mazda TCMs often set P1788 only after the circuit is open for a set number of drive cycles, so an intermittent wiring fault may not reappear during a short test drive.
- Fluid contamination from a failing cooler or neglected service can cause the solenoid to stick and draw abnormal current, mimicking an electrical open circuit.
- Do not replace the TCM before checking the solenoid circuit resistance and continuity, because a shorted or open solenoid can damage a new TCM if the fault is not corrected first.
- On some Mazda models, the pressure control solenoid B shares a ground path with other solenoids, so a single bad ground can set multiple solenoid codes along with P1788.

Can I keep driving with P1788?

You can drive the vehicle to a repair shop if the transmission still shifts and the warning light is steady, but avoid heavy acceleration, towing, or long trips. If the transmission enters limp-home mode or slips badly, stop driving and have it towed to prevent internal damage.



Tools that help

- OBD-II scan tool with Mazda-specific transmission data and bidirectional controls
- Digital multimeter with resistance and continuity functions
- Transmission fluid pressure gauge set
- Factory service information for wiring diagrams and solenoid resistance specifications
- Basic hand tools and a fluid drain pan

Reading P1788

P Powertrain: engine, transmission and emissions.

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

7 Transmission.

88 The exact fault within that area.

Often seen with

P1787 Reversing Light Circuit Short To Ground · **P1789** Idle Speed Intervention Circuit Error Message From Engine Co · **P1789** Pressure Control Solenoid B Circuit Shorted · **P1789** Pressure Control Solenoid B Circuit Shorted · **P1789** Ignition Supply Malfunction · **P1787** 2-1 Downshift Error · **P1789** Pressure Control Solenoid B Short Circuit · **P0700** Transmission Control System Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0741** Torque Converter Clutch Circuit Performance or Stuck Off

See it working

Watch the animated explainer [Car Won't Start? Step-by-Step No-Start Diagnosis](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1788/>

