

FORD · POWERTRAIN

P1789

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1789 · Ford

Pressure Control Solenoid B Short Circuit

P1789 on a Ford vehicle means the transmission control module (TCM) has detected a short circuit in the electrical circuit for pressure control solenoid B, which is one of the solenoids that regulates hydraulic pressure inside the automatic transmission. The computer monitors the solenoid's command wire for abnormal current flow and sets this code when the circuit is grounded or shorted to power, preventing reliable pressure control.

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

Symptoms you may notice

- Illuminated check engine light or transmission warning light, often with no other symptoms
- Harsh or delayed shifts, especially when the transmission is cold
- Transmission may default to a limp-home mode with only one or two gears available
- Slipping or flaring during gear changes under load
- Erratic line pressure causing shudder or clunking when engaging drive or reverse
- In some cases, the vehicle may refuse to shift out of park or may stall when placed in gear

Common causes, most likely first

- 1 Damaged or chafed wiring harness between the TCM and the transmission solenoid pack, often near the bellhousing or exhaust heat
- 2 Failed pressure control solenoid B itself, with an internal short in its coil winding
- 3 Corroded or loose pins in the transmission connector or TCM connector
- 4 Transmission fluid contamination or debris blocking the solenoid valve, causing excessive current draw
- 5 Internal transmission mechanical wear that overloads the solenoid and damages its coil
- 6 A faulty TCM driver circuit that falsely reports a short



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to confirm the fault is present and not intermittent
- 2 Inspect the transmission wiring harness and connectors for chafing, corrosion, or loose pins, especially near heat sources and the bellhousing
- 3 Measure resistance of pressure control solenoid B at the transmission connector and compare to Ford specifications for the specific transmission model
- 4 Check for short to ground and short to power on the solenoid command wire using a multimeter with the TCM disconnected
- 5 If wiring and connectors are good, remove the transmission pan and inspect the solenoid pack for debris, damaged seals, or a failed solenoid
- 6 Replace the faulty solenoid or solenoid pack as required, using Ford-approved parts and fresh transmission fluid
- 7 Clear codes and perform a transmission adaptive learning reset or relearn procedure with a capable scan tool, then road test to verify the repair

What Ford technicians check before replacing solenoids

- A chafed harness near the exhaust or bellhousing is a more common cause of P1789 on high-mileage Ford vehicles than a failed solenoid, so always inspect the wiring before condemning the solenoid pack.
- Contaminated transmission fluid from a failing cooler or neglected service can cause solenoid B to draw excessive current and set this code, so fluid condition is a critical clue.
- P1789 can be set intermittently by a loose connector pin that only loses contact during certain driving conditions, so a wiggle test of the harness while monitoring solenoid current is a valuable step.
- Replacing the solenoid without clearing the TCM adaptive memory can leave the transmission shifting poorly and lead to a false comeback, so a relearn procedure is mandatory after repair.
- This code does not always mean the transmission is mechanically damaged; many cases are resolved with wiring repair or solenoid replacement alone, so avoid assuming a full rebuild is needed.

Can I keep driving with P1789?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration, towing, or long trips because the transmission may enter limp mode or shift unpredictably. If the vehicle is already in limp mode or slipping severely, stop driving and arrange a tow to prevent further transmission damage.



Tools that help

- OBD-II scan tool with Ford-specific transmission diagnostics and bidirectional control
- Digital multimeter with resistance and current measurement
- Transmission fluid pressure gauge set
- Wire terminal pick and connector release tools
- Factory service information for the specific Ford transmission model

Reading P1789

P Powertrain: engine, transmission and emissions.

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

7 Transmission.

89 The exact fault within that area.

Often seen with

P1788 Reversing Light Circuit Short To B+ · **P1790** Transmission Range Display Circuit Open · **P1788** Pressure Control Solenoid B Circuit Open · **P1790** TP Mechanical Circuit · **P1788** Pressure Control Solenoid B Circuit Open · **P1790** TP Mechanical Circuit · **P1790** Ignition Supply Malfunction · **P1788** Automatic Transmission System Malfunction · **P1790** TCM A/T TP Sensor Circuit Fault · **P1790** Transmission Control Module Checksum · **P1788** Pressure Control Solenoid B Open Circuit · **P0740** Torque Converter Clutch Circuit Malfunction · **P0750** Shift Solenoid 'A' · **P0755** Shift Solenoid 'B'

See it working

Watch the animated explainer [How a CVT Works: Belt and Pulley Transmission](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1789/>

