

MAZDA · POWERTRAIN

P1752

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1752 · Mazda

Transmission Shift Solenoid A Circuit Shorted

P1752 on a Mazda means the transmission control module (TCM) has detected an abnormally low resistance or a direct short to ground on the electrical circuit that operates shift solenoid A. The TCM commands the solenoid to move hydraulic pressure inside the transaxle, and when the current draw exceeds the expected range, it flags the circuit as shorted and may default to a fail-safe shift strategy.

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

Symptoms you may notice

- The check engine light or automatic transaxle warning light illuminates steadily on the dashboard.
- Often no symptoms besides the warning light, especially if the short is intermittent and the solenoid still moves.
- Harsh or delayed shifts, or the transmission sticking in a single gear as the TCM enters limp-home mode.
- The transmission may refuse to downshift or upshift at normal road speeds, holding a gear too long.
- A noticeable clunk or jolt when selecting drive or reverse if solenoid A controls line pressure during engagement.
- In some cases the engine may stall or flare during deceleration if the converter clutch strategy is affected.

Common causes, most likely first

- 1 A chafed or pinched solenoid A feed wire shorting to ground against the transaxle case or a bracket.
- 2 Transmission fluid contaminating the internal solenoid harness connector, causing a conductive path between pins.
- 3 A failed shift solenoid A with an internally shorted coil winding.
- 4 Corroded or pushed-back pins at the TCM connector or the internal transaxle pass-through connector.
- 5 A shorted solenoid A control wire inside the transaxle harness where it flexes near the valve body.
- 6 Less commonly, a faulty TCM driver circuit that falsely reports a short when the solenoid is good.



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P1752, then clear the code and test-drive to confirm it returns under the same conditions.
- 2 Inspect the external transaxle harness and connectors for chafing, corrosion, or fluid intrusion before removing any covers.
- 3 Measure resistance of solenoid A at the TCM connector or pass-through connector and compare to the Mazda service specification for that transaxle.
- 4 Check for continuity to ground on the solenoid A control wire with the TCM disconnected; any continuity indicates a short that must be traced.
- 5 If the external circuit tests good, remove the transaxle pan and inspect the internal harness and solenoid A connector for fluid contamination or damaged insulation.
- 6 Replace the faulty solenoid or repair the shorted wire, then clear codes and verify shift quality through a full warm-up drive cycle.
- 7 If the circuit and solenoid test good but the code persists, perform a TCM pin-out and driver test or substitute a known-good TCM before condemning the unit.

What a shorted solenoid code really means

- A P1752 is set by current draw, not by a simple continuity check, so a solenoid that ohms out correctly can still trigger the code if the TCM driver sees excessive current at operating temperature.
- Fluid wicking into the internal solenoid connector is a common Mazda-specific cause that mimics a failed solenoid and is missed when only the external harness is inspected.
- The TCM often commands a default gear when this code sets, so a transmission that feels fine after a key cycle may still be running a fail-safe strategy that hides the real fault.
- A shorted solenoid A circuit can be caused by a pinched harness at the transaxle mount or a rubbed wire near the battery tray, so always inspect the full routing rather than just the solenoid itself.
- Do not replace the TCM first; Mazda TCM drivers are robust, and the majority of P1752 cases trace back to the solenoid, its internal harness, or connector contamination.

Can I keep driving with P1752?

You can usually drive the vehicle to a repair shop if the transmission still engages and moves, but avoid heavy acceleration, towing, or long highway trips because the fail-safe strategy can leave you in a single gear. If the transmission slips, flares, or refuses to engage a gear, stop driving and have it towed to prevent internal damage.



Tools that help

- OBD-II scan tool with Mazda-specific transmission data and freeze-frame capability
- Digital multimeter with resistance and continuity functions
- Mazda service information for transaxle solenoid resistance specifications and TCM pin-out
- Transaxle pan gasket and fluid for internal inspection
- Back probe kit and wiring diagram for the solenoid A control circuit

Reading P1752

- 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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- 7** Transmission.
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- 52** The exact fault within that area.

Often seen with

P1751 Power Supply Voltage High · **P1753** TCM A/T Lockup Solenoid Valve "A" Fault · **P1751** A/T Control Relay · **P1751** Transmission Shift Solenoid A Mechanical Fault · **P1753** TCM A/T ECT Sensor Circuit Fault · **P1751** Shift Solenoid A Performance · **P1751** Secondary Pressure Solenoid Open Circuit · **P0740** Torque Converter Clutch Circuit Malfunction · **P0750** Shift Solenoid 'A' · **P0755** Shift Solenoid 'B'

See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1752/>

