

GM · POWERTRAIN

P1852

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1852 · GM

## Brake Band Apply Solenoid Low Voltage

P1852 on GM vehicles means the transmission control module (TCM) has detected a low-voltage condition on the electrical circuit that operates the brake band apply solenoid inside the automatic transmission. The TCM commands the solenoid to apply the band for a specific gear range, but the feedback voltage on the control circuit is below the expected threshold, indicating an open circuit, a short to ground, or a faulty solenoid.

| SYSTEM     | CODE TYPE   | SEVERITY | FIX DIFFICULTY | AREA         |
|------------|-------------|----------|----------------|--------------|
| Powertrain | GM specific | Medium   | Professional   | Transmission |

### Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms at first
- Harsh or delayed shifts, particularly when the transmission attempts to apply the affected brake band
- The transmission may default to a limp-home mode, limiting vehicle speed and gear selection
- Slipping or flaring during gear changes that require the brake band to be applied
- In some cases, the vehicle may not engage certain forward gears or may hesitate before moving
- A stored trouble code P1852 in the TCM with no drivability complaints if the fault is intermittent

### Common causes, most likely first

- 1 Damaged or corroded wiring harness connector at the transmission solenoid pack, often due to heat and fluid exposure
- 2 Open circuit in the power or ground wire between the TCM and the brake band apply solenoid
- 3 Short to ground on the solenoid control circuit, which pulls the voltage low
- 4 Faulty brake band apply solenoid itself, with an internal short or open winding
- 5 Poor electrical connection at the TCM connector, including bent pins or terminal fretting
- 6 Internal transmission harness damage from chafing or fluid contamination
- 7 Low transmission fluid level or degraded fluid causing solenoid performance issues, though less common for a low-voltage code



## How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related transmission codes before clearing anything
- 2 Inspect the transmission fluid level and condition, and top off or service as needed if the fluid is low or burnt
- 3 Visually inspect the wiring harness and connectors at the transmission and TCM for corrosion, chafing, or loose pins
- 4 Measure resistance of the brake band apply solenoid at the transmission connector and compare to the manufacturer's specification
- 5 Check for voltage drops on the power and ground circuits to the solenoid while wiggling the harness to catch intermittent faults
- 6 If the circuit tests good, remove the transmission pan and replace the brake band apply solenoid, then clear codes and test-drive
- 7 After repair, perform a transmission adaptive relearn or reset procedure as required by the GM service information

## What GM technicians check before replacing the solenoid

- A low-voltage code on a solenoid circuit is often caused by a poor ground connection at the transmission case or a corroded connector pin rather than the solenoid itself, so always perform a voltage drop test under load.
- The brake band apply solenoid is only used in specific gear ranges, so a fault may not produce noticeable symptoms during a short test drive; you need to command the solenoid on with a scan tool and monitor circuit voltage.
- On many GM transmissions, the internal wiring harness is a separate serviceable part that chafes against the valve body, causing intermittent shorts that set P1852 only on rough roads or after the transmission warms up.
- A weak battery or charging system can cause the TCM to log false low-voltage solenoid codes, so check system voltage and grounds before condemning the transmission wiring.
- Do not overlook the TCM itself; while rare, a faulty driver inside the TCM can command the solenoid incorrectly and set a low-voltage code without any wiring or solenoid fault.

## Can I keep driving with P1852?

You can usually drive the vehicle to a repair shop if the transmission is not in limp-home mode and shifts reasonably, but avoid heavy acceleration or towing until the fault is repaired. If the transmission slips severely or refuses to engage gears, stop driving and have it towed to prevent internal damage.

## Tools that help

- Scan tool with bidirectional control and transmission data capabilities
- Digital multimeter with voltage drop and resistance measurement
- Transmission fluid level gauge and fluid pump
- Wire terminal pick and connector release tools
- GM service information for wiring diagrams and solenoid specifications



## Reading P1852

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

## Often seen with

**P1850** CAN Bus Missing Message From Engine Control · **P1851** CAN Bus Missing Message From Brake Control · **P1853** CAN Bus Unplausible Message From Brake Control · **P1850** Brake Band Apply Solenoid Circuit · **P1851** Brake Band Apply Solenoid Performance · **P1853** Brake Band Apply Solenoid High Voltage · **P1850** Transmission Transfer Case Contact Plate B Circuit Failure · **P0700** Transmission Control System Malfunction · **P0750** Shift Solenoid 'A'

## See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1852/>

