

GM · POWERTRAIN

P1850

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1850 · GM

## Brake Band Apply Solenoid Circuit

P1850 on GM vehicles indicates that the powertrain control module (PCM) has detected an electrical fault in the brake band apply solenoid circuit, which is part of the automatic transmission's hydraulic control system. The PCM monitors the solenoid's current draw and expected response; when the circuit is open, shorted, or the solenoid fails to actuate, it sets this code and may command limited transmission operation.

| 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
- Harsh or delayed shifting, especially when applying the brake band for engine braking or specific gear changes
- Transmission may default to a limp mode with reduced performance
- Slipping or flaring during gear engagements that rely on the brake band
- Often no symptoms besides the warning light, especially if the fault is intermittent

### Common causes, most likely first

- 1 Faulty brake band apply solenoid (open or shorted coil)
- 2 Damaged or corroded wiring harness or connector at the solenoid
- 3 Transmission fluid contamination or low fluid level causing solenoid malfunction
- 4 Failed transmission control module (TCM) or PCM driver circuit
- 5 Internal transmission mechanical issue preventing proper solenoid operation
- 6 Poor ground connection for the solenoid circuit

### How to diagnose and fix it

- 1 Check transmission fluid level and condition; top off or replace if contaminated
- 2 Inspect the solenoid wiring harness and connector for damage, corrosion, or loose pins
- 3 Measure resistance of the brake band apply solenoid and compare to specification
- 4 Test the solenoid circuit for voltage and ground signals from the PCM/TCM
- 5 Replace the brake band apply solenoid if electrical tests fail
- 6 Repair or replace damaged wiring or connectors as needed
- 7 Clear the code and perform a relearn or adaptation procedure if required



## Don't overlook the wiring harness

- A common misdiagnosis is replacing the solenoid when the real problem is a chafed wire in the harness near the transmission case.
- Intermittent P1850 codes often appear only when the transmission is cold or under specific load conditions, so a wiggle test of the harness can reveal the fault.
- Fluid contamination from neglected maintenance can cause solenoid sticking and set this code without any electrical failure.
- Some GM models require a transmission adaptive relearn after solenoid replacement to restore proper shift quality and prevent repeat codes.

## Can I keep driving with P1850?

You can usually drive the vehicle with P1850, but avoid aggressive acceleration or towing until the fault is repaired, as the transmission may enter limp mode and shifting could be erratic. If the transmission slips severely or fails to engage gears, stop driving and seek professional service.

## Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Transmission fluid level dipstick or scan tool for fluid temperature
- Wire terminal removal tools
- Factory service information for circuit specifications

## Reading P1850

|           |                                                                   |
|-----------|-------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                   |
| <b>1</b>  | Manufacturer-specific code (GM): its meaning depends on the make. |
| <b>8</b>  | Transmission.                                                     |
| <b>50</b> | The exact fault within that area.                                 |

## Often seen with

**P1851** CAN Bus Missing Message From Brake Control · **P1852** CAN Bus Unplausible Message From Engine Control · **P1851** Brake Band Apply Solenoid Performance · **P1852** Brake Band Apply Solenoid Low Voltage · **P0700** Transmission Control System Malfunction · **P0740** Torque Converter Clutch Circuit 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-p1850/>

