

GM · POWERTRAIN

P1860

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1860 · GM

TCC PWM Solenoid Circuit Electrical

P1860 on GM vehicles means the transmission control module (TCM) has detected an electrical fault in the circuit for the torque converter clutch (TCC) pulse-width-modulated (PWM) solenoid. The TCM monitors the solenoid's control circuit for expected voltage or current behavior and sets this code when the circuit is open, shorted, or out of range, preventing proper TCC apply and release.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Medium	Intermediate	Transmission

Symptoms you may notice

- The check engine light or transmission warning light is illuminated, often with no other noticeable symptoms.
- The torque converter clutch may fail to engage, causing higher engine rpm at highway speeds and reduced fuel economy.
- The TCC may stay engaged when it should release, causing the engine to shudder or stall when coming to a stop.
- Harsh or delayed transmission shifts may occur as the TCM alters shift strategy in response to the fault.
- The transmission may enter limp mode, holding a single gear or limiting shift range.
- A slight surge or vibration may be felt during light-throttle cruising if the TCC applies erratically.

Common causes, most likely first

- Damaged, chafed, or corroded wiring in the TCC PWM solenoid circuit, especially near the transmission connector or along the harness.
- A failed TCC PWM solenoid itself, due to an open or shorted internal coil.
- A poor electrical connection at the transmission pass-through connector or the TCM connector.
- Contamination or debris in the transmission fluid that interferes with solenoid operation or clogs the solenoid screen.
- A faulty TCM driver circuit, though this is less common than wiring or solenoid failure.
- Internal transmission mechanical wear that alters solenoid load and triggers the electrical fault indirectly.



How to diagnose and fix it

- 1 Inspect the transmission wiring harness and connectors for chafing, corrosion, or loose pins, especially at the pass-through connector.
- 2 Check the transmission fluid level and condition; contaminated fluid can cause solenoid malfunctions and should be addressed first.
- 3 Measure the resistance of the TCC PWM solenoid at the transmission connector and compare it to the manufacturer's specification.
- 4 Test the solenoid control circuit for continuity, shorts to ground, and shorts to voltage using a multimeter and wiring diagram.
- 5 If the circuit tests good, remove the transmission pan and replace the TCC PWM solenoid, then clear the code and verify repair.
- 6 If the solenoid and wiring are intact, diagnose the TCM and its connectors for driver circuit failure before replacement.

TCC PWM Solenoid Circuit Checks

- A common oversight is replacing the TCM when the actual fault is a chafed wire inside the transmission bellhousing area, so always perform a thorough circuit test before condemning the module.
- The TCC PWM solenoid shares a ground or power circuit with other solenoids on some GM transmissions, so a fault in a shared wire can set P1860 along with other solenoid codes.
- Debris in the transmission fluid can cause the solenoid to stick mechanically, which may not show as an electrical failure until the TCM detects abnormal current draw.
- Intermittent P1860 codes often appear after the transmission has warmed up, when resistance in a marginal connection increases, so testing should include a wiggle test of the harness.
- A faulty brake pedal position switch or cruise control circuit can affect TCC operation, but it will not set P1860 because this code is strictly electrical for the solenoid circuit.

Can I keep driving with P1860?

You can usually drive the vehicle with P1860 set, but the torque converter clutch may not function correctly, which can cause poor fuel economy, shuddering, or stalling when stopping. Avoid heavy towing or sustained highway driving until the fault is repaired, and address the code promptly to prevent transmission damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Transmission wiring diagram
- Socket and wrench set
- Transmission fluid drain pan



Reading P1860

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

Often seen with

P1861 Throttle Position Sensor Error Message From ECM · **P0740** Torque Converter Clutch Circuit Malfunction
 · **P0741** Torque Converter Clutch Circuit Performance or Stuck Off · **P0742** Torque Converter Clutch Circuit Stuck On · **P2769** Torque Converter Clutch Circuit Low

See it working

Watch the animated explainer [How Push-Button Start Works: Keyless Ignition](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1860/>

