

GM · POWERTRAIN

P1667

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1667 · GM

Reverse Inhibit Solenoid Control Circuit

P1667 on GM vehicles indicates that the powertrain control module (PCM) has detected an abnormal condition in the reverse inhibit solenoid control circuit, which prevents the transmission from engaging reverse under certain conditions. The PCM monitors the circuit for expected voltage or current and sets the code when the signal falls outside the programmed range.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Medium	Intermediate	Computer and output circuits

Symptoms you may notice

- The check engine light or service engine soon light illuminates on the instrument cluster.
- The transmission may fail to engage reverse gear, or reverse engagement may be delayed or harsh.
- The reverse inhibit function may be disabled, allowing reverse to be selected when it should be prevented.
- Some drivers notice no symptoms besides the warning light, especially if the fault is intermittent.
- In rare cases, the vehicle may enter limp mode or exhibit erratic shifting if the PCM deems the fault critical.

Common causes, most likely first

- Faulty reverse inhibit solenoid, such as a burned coil or mechanical failure inside the solenoid.
- Damaged or corroded wiring harness or connector at the solenoid or PCM, including chafed wires or pushed terminals.
- Open or short circuit in the control circuit, such as a broken wire or a short to ground or power.
- Failed PCM driver for the reverse inhibit solenoid circuit, though this is less common.
- Poor ground connection for the solenoid or PCM, causing voltage drops that mimic a circuit fault.
- Aftermarket accessories or improper wiring repairs that interfere with the circuit.



How to diagnose and fix it

- 1 Connect a scan tool and verify P1667 is current or history, then check for related transmission codes and freeze-frame data.
- 2 Inspect the reverse inhibit solenoid connector and wiring for corrosion, damage, or loose terminals, and repair as needed.
- 3 Measure resistance of the reverse inhibit solenoid with a multimeter and compare to the manufacturer's specification; replace if out of range.
- 4 Check for continuity and shorts in the control circuit between the PCM and solenoid, including a load test on the ground circuit.
- 5 If the circuit and solenoid test good, substitute a known-good solenoid or use a test light to verify PCM control; replace PCM only if confirmed faulty.
- 6 Clear codes and perform a road test to confirm the repair, ensuring reverse inhibit operates correctly and no codes return.

Reverse Inhibit Solenoid Circuit Quirks

- A common oversight is assuming the solenoid itself is always at fault, but chafed wiring near the transmission mount or heat-damaged harness sections often cause this code.
- The reverse inhibit solenoid is sometimes part of the transmission range sensor or internal mode switch, so a faulty switch can set P1667 without any solenoid problem.
- Intermittent P1667 codes that appear only in cold weather or after rain often point to a connector with poor pin tension or water intrusion rather than a failed component.
- A weak battery or charging system issue can cause the PCM to misread solenoid circuit voltage, setting P1667 as a side effect; always check system voltage first.
- Do not replace the PCM based solely on this code; the driver circuit rarely fails, and misdiagnosis leads to unnecessary expense.

Can I keep driving with P1667?

You can usually drive the vehicle, but avoid relying on reverse gear until the fault is repaired, as the reverse inhibit function may not work and could cause unsafe engagement. If the transmission exhibits harsh shifting or fails to engage reverse at all, limit driving and seek professional diagnosis promptly.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with resistance and voltage measurement
- Test light or logic probe
- Wire repair kit with crimpers and heat shrink
- Vehicle-specific service information for circuit diagrams and resistance specifications



Reading P1667

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 6** Computer and output circuits.
- 67** The exact fault within that area.

Often seen with

P1668 PCM IDM Communications Error · **P0705** Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0850** Park/Neutral Switch Input Circuit · **P0911** Gate Select Actuator Circuit Range/Performance

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/gm-p1667/>

