

GM · POWERTRAIN

P1780

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1780 · GM

## Park/Neutral Position Switch Circuit

P1780 on a GM vehicle means the powertrain control module (PCM) has detected an unexpected voltage on the park/neutral position switch circuit, so it cannot reliably confirm whether the transmission is in Park or Neutral. The PCM uses this switch input for safe engine starting, idle strategy, and shift scheduling, and it sets the code when the signal does not match the gear range it expects.

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

### Symptoms you may notice

- The engine may crank but not start because the PCM does not see Park or Neutral
- The engine may start in any gear, or the starter may engage unexpectedly
- The gear indicator on the instrument cluster may be blank, flashing, or show the wrong range
- Harsh or erratic shifting because the PCM loses its park/neutral reference for idle and line pressure
- The reverse lamps may stay on, fail to come on, or work intermittently
- Often no symptoms besides the warning light, especially if the fault is intermittent

### Common causes, most likely first

- Faulty or misadjusted park/neutral position switch on the transmission
- Corroded, chafed, or broken wiring in the switch circuit, particularly at the transmission connector
- Loose or damaged ground connection for the switch or PCM
- Water or fluid intrusion into the switch connector causing intermittent shorts
- A failed PCM driver or internal fault on the switch input circuit
- Aftermarket remote start or alarm wiring tapped into the park/neutral circuit
- Mechanical wear in the transmission range selector linkage preventing the switch from reaching the correct detent



## How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P1780 is current and not a history code from a past repair
- 2 Inspect the park/neutral switch connector and harness at the transmission for corrosion, fluid intrusion, and chafed wires
- 3 Check switch adjustment against the transmission range selector detents and verify the linkage moves fully into each position
- 4 Backprobe the switch connector and compare voltage in Park, Neutral, and Drive against the service information expected values
- 5 Check the switch ground circuit for excessive resistance and repair any loose or corroded ground points
- 6 If the circuit tests good, replace the park/neutral position switch and clear the code to verify the repair
- 7 If the switch and wiring are confirmed good, test the PCM input circuit and replace the PCM only after ruling out all external faults

## Why the park/neutral switch fools good technicians

- A misadjusted switch can pass a static voltage test in Park yet still set P1780 when the selector is moved through the range, so always test through every detent.
- Aftermarket remote start systems frequently splice into the park/neutral wire and create intermittent shorts that mimic a failed switch.
- The PCM may set P1780 from a plausibility check against vehicle speed and engine load rather than a simple open circuit, so a switch that reads correctly at rest can still be faulty.
- Transmission fluid leaking through the switch connector is a common hidden cause on older GM automatics and will destroy a replacement switch if the leak is not fixed.
- A weak or corroded ground shared with other transmission sensors can pull the switch signal out of range without any visible damage to the switch itself.

## Can I keep driving with P1780?

You can usually drive the vehicle to a repair shop, but avoid parking on an incline where the vehicle could roll if the park/neutral signal is wrong, and do not rely on the starter safety feature until the fault is repaired.

## Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter
- Backprobe pins or breakout harness
- Service information with park/neutral switch voltage charts
- Basic hand tools for connector and switch access



## Reading P1780

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

## Often seen with

**P1781** Engine Torque Reduction Open Short To Ground · **P1781** Transmission 4x4 Low Switch Out Of Range Fault · **P1781** Upshift Delay Switchover Valve ATCC Y35 · **P1781** Transmission 4x4 Low Switch Out Of Range Fault · **P1781** 4x4 Low Switch is Out of Self-Test Range · **P0700** Transmission Control System Malfunction · **P0705** Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0850** Park/Neutral Switch Input Circuit

## See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1780/>

