

GENERIC · POWERTRAIN

P0705

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0705

Transmission Range Sensor Circuit Malfunction

P0705 means the transmission control module (TCM) or powertrain control module (PCM) has detected an implausible or missing signal from the transmission range sensor, also called the park/neutral position switch. The computer expects a specific combination of grounded or open circuits for each gear selector position, and it has seen a pattern that does not match any valid range.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- The check engine light or transmission warning light is illuminated on the dashboard.
- The engine may crank but not start because the computer cannot confirm the selector is in Park or Neutral.
- The reverse lights may fail to come on, or they may stay on in other gear positions.
- The transmission may shift harshly, stay in a single gear, or refuse to engage certain ranges.
- The gear position indicator on the instrument cluster may be blank, flashing, or show the wrong gear.
- Often no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- 1 A faulty transmission range sensor (park/neutral position switch) with worn internal contacts or a cracked housing.
- 2 A misadjusted sensor linkage or cable that prevents the switch from aligning with the selector detents.
- 3 Corroded, chafed, or broken wiring in the sensor circuit, particularly at the connector or where the harness flexes.
- 4 A poor ground connection at the sensor or at the transmission case, causing voltage drops that corrupt the signal.
- 5 A defective transmission control module or powertrain control module that misreads a valid sensor input.
- 6 Water or oil intrusion into the sensor connector, causing intermittent shorts or open circuits.
- 7 Aftermarket or incorrectly installed remote start or alarm wiring that taps into the range signal circuit.



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to see which range signal was implausible when the fault set.
- 2 Inspect the transmission range sensor connector and harness for corrosion, pushed pins, chafing, or oil contamination, and repair as needed.
- 3 Check the sensor adjustment by confirming the selector lever and the switch align in Park and Neutral, then adjust the linkage or cable per the service procedure.
- 4 Backprobe the sensor connector and verify the expected voltage or ground signals in each gear position with the key on and the engine off.
- 5 Test the sensor with a multimeter for continuity or resistance changes through the full selector sweep, and replace it if the readings are erratic or out of specification.
- 6 Check the sensor ground circuit for excessive voltage drop under load, and clean or repair the ground point if resistance is high.
- 7 Clear the codes and perform a road test through all gear ranges to confirm the fault does not return, and verify reverse lights and starter inhibit operation.

Before you replace the range sensor

- A misadjusted linkage or stretched selector cable is a very common cause that mimics a failed sensor, so always check adjustment before condemning the switch.
- The code can set intermittently from a single glitch, so a sensor that tests good when cold may still be failing when hot or vibrating; a wiggle test on the harness often reveals the fault.
- On many vehicles the range sensor signal is shared with the starter inhibit circuit and reverse lights, so a no-crank or no-reverse-light complaint can point to this code even when the transmission shifts fine.
- Aftermarket remote starters and alarm systems frequently splice into the range signal wire, and a poor splice can set P0705 without any fault in the factory sensor.
- A weak battery or charging system that causes low voltage during cranking can produce implausible range signals and set this code, so verify battery and ground integrity before replacing parts.

Can I keep driving with P0705?

You can usually drive the vehicle if it starts and moves, but avoid relying on Park or reverse lights until the fault is repaired, and do not continue driving if the transmission slips, stays in one gear, or refuses to engage a range. Have the fault diagnosed promptly because a failed range sensor can eventually prevent the engine from cranking or cause unsafe gear engagement.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with backprobe pins
- Service information for the specific vehicle's range sensor adjustment procedure
- Basic hand tools for connector and linkage access
- Jack and jack stands or ramps for under-vehicle access

Reading P0705

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
7	Transmission.
05	The exact fault within that area.

Often seen with

P0700 Transmission Control System Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0707** Transmission Range Sensor Circuit Low · **P0708** Transmission Range Sensor Circuit High · **P0850** Park/Neutral Switch Input Circuit

See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0705/>

