

GENERIC · POWERTRAIN

P07ED

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P07ED

Transmission Range Multi-Function Select Circuit Stuck

P07ED indicates that the transmission control module (TCM) has detected a stuck condition in the multi-function select circuit, which is the electrical path that reports the position of the transmission range selector to the computer. The TCM monitors voltage or resistance on this circuit and sets the code when the signal remains fixed at a value that does not change as the selector is moved through its positions.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Transmission

Symptoms you may notice

- The gear position indicator on the instrument cluster may flash, stay blank, or show the wrong range.
- The transmission may stay in a single gear or default to limp mode, limiting vehicle speed.
- The engine may not crank or may crank only in certain selector positions because the starter enable signal is affected.
- The reverse lights may fail to illuminate or may stay on continuously.
- The transmission may hesitate or refuse to engage drive or reverse after moving the selector.
- Often no symptoms besides the warning light, especially if the stuck signal still falls within an acceptable range for the current gear.

Common causes, most likely first

- A faulty transmission range sensor or multi-function switch that has worn contacts or internal contamination.
- Damaged, chafed, or corroded wiring in the multi-function select circuit, often near the transmission or under the vehicle.
- A poor electrical connection at the sensor connector or at the TCM, including loose pins or water intrusion.
- A misadjusted or loose selector cable or linkage that prevents the sensor from reaching the correct position.
- An internal fault in the TCM that misreads the circuit voltage or resistance.
- Aftermarket or improperly installed remote start or alarm wiring that taps into the range circuit.
- A stuck or binding manual valve inside the transmission that prevents the selector from moving fully.



How to diagnose and fix it

- 1 Verify the battery voltage and check for any other stored codes in the TCM and body control module (BCM) that could affect the range signal.
- 2 Inspect the transmission range sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed.
- 3 Check the selector cable or linkage adjustment and confirm the sensor moves through all positions smoothly.
- 4 Backprobe the multi-function select circuit at the sensor and at the TCM to compare voltage or resistance readings through the full range of motion.
- 5 Replace the transmission range sensor or multi-function switch if the signal is erratic or stuck when the linkage is moved by hand.
- 6 If the circuit and sensor test good, check for TCM software updates or perform a relearn procedure as required by the manufacturer.
- 7 As a last step, substitute a known-good TCM or perform a continuity and load test on the entire circuit to rule out an internal TCM fault.

Range Sensor Circuit Traps You Should Not Miss

- A stuck multi-function select circuit often sets no drivability symptoms because the TCM may still accept the fixed signal as a valid gear position, so the warning light is the only clue.
- Corrosion inside the sensor connector is a frequent cause that looks like a failed sensor, so always inspect the pins before replacing parts.
- Aftermarket remote start or alarm systems that tap into the range circuit can backfeed voltage and create a stuck signal that disappears when the add-on is disconnected.
- A misadjusted selector cable can hold the sensor just off a detent, producing a stuck code without any electrical fault at all.
- The code does not always mean the sensor is bad; a binding manual valve or internal transmission fault can prevent the selector from reaching the expected position.

Can I keep driving with P07ED?

You can usually drive the vehicle to a repair shop, but avoid relying on the transmission to shift normally and do not tow heavy loads. If the vehicle will not crank, will not engage a gear, or stays in limp mode, stop driving and arrange a diagnostic scan.

Tools that help

- OBD-II scan tool with transmission control module capability
- Digital multimeter
- Backprobe pins or breakout box
- Service information for the specific vehicle's range sensor circuit
- Basic hand tools for connector and linkage inspection



Reading P07ED

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

Often seen with

P0705 Transmission Range Sensor Circuit 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/p07ed/>

