

GENERIC · POWERTRAIN

P07E8

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P07E8

Transmission Range Control A Circuit/Open

P07E8 indicates that the transmission control module (TCM) has detected an open circuit or loss of continuity in the 'A' range control circuit, which is used to determine the transmission's operating range or gear selection. The TCM monitors voltage or current on this circuit and sets the code when the signal falls outside the expected range, often due to a wiring fault, a failed sensor, or a faulty range switch.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed shifting, or the transmission may default to a limp-home mode
- Inability to select certain gears or ranges, such as no reverse or no overdrive
- The gear indicator on the dashboard may flash or show incorrect range
- The vehicle may start in the wrong gear or refuse to start if the range signal is used for starter enablement

Common causes, most likely first

- 1 Damaged, corroded, or disconnected wiring or connector at the transmission range sensor or switch
- 2 Faulty transmission range sensor (also called neutral safety switch or gear position sensor)
- 3 Open circuit inside the transmission harness or a broken wire between the TCM and the range sensor
- 4 Poor electrical connection at the TCM connector, including bent pins or corrosion
- 5 Internal failure of the TCM (less common)
- 6 Mechanical misalignment of the range sensor or selector mechanism



How to diagnose and fix it

- 1 Inspect the transmission range sensor connector and wiring for signs of damage, corrosion, or loose pins; clean and secure as needed
- 2 Check the sensor's electrical connector for proper voltage and ground signals using a multimeter, following the manufacturer's specification
- 3 Test the range sensor's continuity or resistance across its pins while moving the selector through all ranges; replace if readings are out of spec
- 4 Perform a wiggle test on the wiring harness while monitoring live data to identify intermittent opens
- 5 Check for technical service bulletins (TSBs) or software updates for the TCM that may address false setting of this code
- 6 If wiring and sensor are good, test the TCM's internal circuit or replace the TCM as a last resort

Don't overlook the range sensor connector

- A common oversight is assuming the range sensor itself is faulty when the real problem is a corroded connector or chafed wire in the harness near the transmission, especially on vehicles exposed to road salt.
- The code can be set intermittently by a loose selector cable or linkage that prevents the sensor from aligning properly with the selected range, mimicking an electrical open.
- Some vehicles use the range signal for starter inhibition, so an open circuit can cause a no-crank condition that is misdiagnosed as a starter or battery problem.
- After replacing the range sensor, a relearn or calibration procedure may be required for the TCM to recognize the new sensor's positions correctly.
- This code is often stored alongside other transmission range codes (such as P0705 or P0706) when multiple circuits in the same sensor fail, so always check for related codes before replacing parts.

Can I keep driving with P07E8?

If the vehicle drives normally, you can drive it to a repair shop, but avoid aggressive acceleration or towing. If the transmission is in limp mode or shifts erratically, limit driving to a short distance at low speed to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe set or back-probe kit
- Vehicle-specific service information for wiring diagrams and sensor specifications
- Basic hand tools for connector and sensor removal



Reading P07E8

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 7** Transmission.
- E8** 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 · **P07E9** Transmission Range Control A Circuit Performance

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/p07e8/>

