

GENERIC · POWERTRAIN

P086E

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P086E

Neutral Position Sensor A Circuit Intermittent/Erratic

P086E indicates that the transmission control module (TCM) has detected an intermittent or erratic signal from the neutral position sensor A circuit, which is responsible for confirming when the transmission is in neutral. The TCM sets this code when the sensor's voltage or resistance readings jump unpredictably rather than showing a steady state, often due to a loose connection, chafed wire, or failing sensor.

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

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed gear engagements, especially when shifting into drive or reverse
- The transmission may intermittently fail to recognize neutral, causing a no-crank condition or inability to start
- Unexpected downshifts or torque converter clutch engagement/disengagement while driving
- In some vehicles, the engine may stall when coming to a stop if the TCM misreads the neutral signal

Common causes, most likely first

- 1 Faulty neutral position sensor A (internal wear or contamination causing erratic resistance)
- 2 Damaged or chafed wiring harness between the sensor and the TCM, often near heat sources or moving components
- 3 Loose, corroded, or backed-out electrical connector pins at the sensor or TCM
- 4 Poor ground connection for the sensor or TCM, leading to voltage fluctuations
- 5 Transmission fluid contamination or low fluid level affecting sensor operation (in sensors immersed in fluid)
- 6 Internal TCM fault or software glitch misinterpreting a valid signal



How to diagnose and fix it

- 1 Perform a visual inspection of the neutral position sensor, its connector, and the wiring harness for obvious damage, corrosion, or loose pins
- 2 Check transmission fluid level and condition according to the manufacturer's procedure, as low or dirty fluid can affect sensor performance
- 3 Use a scan tool to monitor live data from the neutral position sensor while wiggling the harness and connectors to identify intermittent signal drops
- 4 Measure the sensor's resistance or voltage output with a multimeter and compare to factory specifications, replacing the sensor if out of range
- 5 Perform a voltage drop test on the sensor's ground and power circuits to rule out excessive resistance in the wiring
- 6 If the sensor and wiring test good, check for technical service bulletins (TSBs) or software updates for the TCM that address erratic neutral signals
- 7 As a last resort, substitute a known-good TCM or reprogram the existing module if all other components check out

Don't overlook the neutral sensor connector

- A common oversight is replacing the neutral position sensor without first checking the connector pins for fretting corrosion, which can cause intermittent signals that mimic a failed sensor.
- The code can be set by a momentary voltage spike from a failing alternator or a poor engine ground, so always check charging system stability before condemning the sensor.
- On some vehicles, the neutral position sensor is integrated into the transmission range sensor, and a faulty range sensor can set P086E along with range-related codes.
- Intermittent faults often leave no freeze-frame data, so a road test with a scan tool recording live data is more reliable than a static test.
- A misadjusted shift cable or worn shifter assembly can cause the sensor to sit between detents, producing an erratic signal that looks like an electrical fault.

Can I keep driving with P086E?

You can usually drive the vehicle short distances to a repair shop, but avoid aggressive acceleration or heavy towing because an erratic neutral signal can cause unexpected gear changes or a no-start condition. If the vehicle stalls or refuses to start, stop driving and seek professional diagnosis.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire piercing probes or back-probe kit
- Factory service information for sensor specifications
- Basic hand tools (socket set, screwdrivers, pliers)

Reading P086E

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
8	Transmission.
6E	The exact fault within that area.

Often seen with

P0705 Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0850** Park/Neutral Switch Input Circuit · **P0851** Park/Neutral Switch Input Circuit Low · **P0852** Park/Neutral Switch Input Circuit High

See it working

Watch the animated explainer [Car Relay Test Bench: Test 4-Pin and 5-Pin Relays](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p086e/>

