

GENERIC · POWERTRAIN

P08AE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P08AE

Neutral Position Sensor B Circuit Range/Performance

P08AE means the powertrain control module (PCM) has detected that the neutral position sensor B circuit is reporting a range or performance problem, such as an implausible voltage swing or a signal that does not match expected values for the current gear state. The PCM compares the sensor B signal against other gear-range inputs and sets this code when the correlation falls outside the calibrated window.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough or delayed engagement when shifting between drive, reverse, and neutral
- Unexpected neutral or limp-home mode engagement while driving
- Failure to start because the PCM does not recognize the neutral or park position
- Harsh or erratic transmission shifts as the PCM loses a reliable neutral reference
- A stored code with no drivability complaint in some vehicles

Common causes, most likely first

- 1 Faulty neutral position sensor B or its internal circuitry
- 2 Damaged, chafed, or corroded wiring in the sensor B circuit
- 3 Loose or contaminated electrical connector at the sensor or PCM
- 4 Mechanical misalignment or wear in the shift linkage or sensor mounting
- 5 PCM software calibration issue or internal PCM fault
- 6 Contamination or debris interfering with the sensor's magnetic or mechanical target



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes, then verify the neutral position sensor B voltage or data parameter while moving the shifter through all ranges
- 2 Inspect the sensor B connector and harness for corrosion, loose pins, or chafed insulation, and repair as needed
- 3 Check the sensor mounting and shift linkage alignment against the service information, adjusting or replacing worn components
- 4 Back-probe the sensor B signal circuit at the PCM and compare it with the sensor output to rule out a wiring fault
- 5 Perform a resistance and voltage test on the sensor B according to the manufacturer's procedure, replacing the sensor if it is out of specification
- 6 Clear the codes and perform a relearn or calibration procedure if required, then road-test to confirm the code does not return
- 7 If the code persists after all circuit and sensor checks, diagnose the PCM for internal faults or software updates

Neutral sensor B faults that fool technicians

- A neutral position sensor B code often appears after transmission work or a shifter adjustment, when the sensor is not properly indexed to the neutral position.
- Some vehicles use the neutral position sensor B signal for idle control and cruise control logic, so a fault can cause subtle drivability issues before any hard code sets.
- A weak or failing battery can cause erratic sensor signals and set this code, so always verify charging system health before replacing parts.
- The PCM may substitute a default neutral value when sensor B fails, masking the symptom and leading some technicians to overlook the circuit entirely.
- Aftermarket shifters or modified linkage can put the sensor out of its calibrated range and trigger P08AE even though the sensor itself is good.

Can I keep driving with P08AE?

The vehicle is usually safe to drive to a repair shop, but avoid aggressive acceleration or heavy towing because the PCM may misjudge the neutral position and cause harsh engagement or a sudden limp-home mode. If the transmission slips or refuses to engage a gear, stop driving and have it towed.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Back-probe kit or breakout box
- Service information for sensor voltage and resistance specifications
- Basic hand tools for connector and linkage inspection

Reading P08AE

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
8	Transmission.
AE	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 · **P08AD** Neutral Position Sensor B Circuit/Open · **P08AF** Neutral Position Sensor B Circuit Low

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/p08ae/>

