

GENERIC · POWERTRAIN

P08B0

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P08B0

Neutral Position Sensor B Circuit High

P08B0 means the powertrain control module (PCM) has detected an abnormally high voltage on the signal circuit for the neutral position sensor B, which is the second of two neutral position sensors used on some automatic transmissions. The PCM expects the sensor to pull the signal voltage into a normal range, but instead it sees a voltage that stays near the top of the reference range, indicating an open circuit, a short to voltage, or a faulty 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 service engine soon light, often with no other noticeable symptoms
- The transmission may refuse to start the engine in neutral, or the starter may not engage unless the shifter is in park
- Rough or delayed engagement when shifting from neutral to drive or reverse
- The transmission may default to a limp-home mode with harsh or delayed shifts
- In some vehicles, the reverse lights may not illuminate or the backup camera may not activate
- A message on the driver information display indicating a transmission or shift system fault

Common causes, most likely first

- 1 Open or damaged wire in the neutral position sensor B signal circuit, often due to chafing or a broken connector pin
- 2 Short to voltage on the signal circuit, such as a wire rubbing against a power wire or a faulty sensor internally shorting
- 3 Failed neutral position sensor B itself, where the internal electronics no longer produce the correct voltage
- 4 Corroded or loose electrical connector at the sensor or at the transmission harness
- 5 Faulty transmission range sensor assembly that houses both neutral position sensors, if applicable
- 6 Poor ground connection for the sensor or the PCM, causing a reference voltage offset
- 7 Rarely, a PCM internal fault that misreads the signal voltage



How to diagnose and fix it

- 1 Connect a scan tool and read live data for neutral position sensor B voltage while moving the shifter through all positions to see if the signal changes or stays high
- 2 Visually inspect the sensor connector and the wiring harness for damage, corrosion, or loose pins, and repair as needed
- 3 Disconnect the sensor and measure the signal circuit voltage with the key on; if it stays high with the sensor disconnected, the fault is in the wiring or PCM
- 4 Check the sensor ground circuit for excessive resistance and repair any bad ground
- 5 Test the sensor with a multimeter according to the manufacturer's procedure, and replace it if it does not switch or vary voltage correctly
- 6 If the wiring and sensor test good, check for a short to voltage on the signal circuit by isolating the circuit and measuring resistance to power
- 7 Clear the codes and perform a relearn or adaptation procedure if required, then test-drive to confirm the repair

Why a high voltage code is not always the sensor

- A high voltage on the signal circuit often indicates an open circuit rather than a failed sensor, so a disconnected plug or broken wire is a common cause that gets overlooked.
- Some transmissions use two neutral position sensors for redundancy, and a fault in sensor B may not disable the vehicle but can set a pending code that later becomes hard.
- The PCM may interpret a short to voltage from a nearby circuit, such as a backup light or reverse solenoid wire, as a neutral position sensor B fault.
- After replacing the sensor, the PCM may need a relearn procedure for the transmission range sensor; skipping this step can leave the code stored or cause harsh shifting.
- A weak battery or poor charging system can cause reference voltage fluctuations that mimic a sensor fault, so always check battery and ground integrity first.

Can I keep driving with P08B0?

You can usually drive the vehicle with this code, but avoid relying on neutral start or assuming the transmission will shift normally, and get it diagnosed soon because a faulty neutral signal can cause unexpected limp-home mode or starting problems.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire piercing probes or back-probe kit
- Electrical contact cleaner
- Vehicle service information for wiring diagrams and sensor specifications



Reading P08B0

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 8** Transmission.
- B0** 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 · **P08AF** Neutral Position Sensor B Circuit Low · **P08B1** Neutral Position Sensor B Circuit Intermittent/Erratic

See it working

Watch the animated explainer [How a Six-Speed Manual Gearbox Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p08b0/>

