

GENERIC · POWERTRAIN

P2E02

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E02

Gear Lever Position Sensor A Circuit Low

P2E02 indicates that the powertrain control module (PCM) has detected a low voltage condition on the signal circuit of the gear lever position sensor A. This sensor, often part of the transmission range sensor or a dedicated lever position sensor, tells the PCM which gear the driver has selected, and a low signal can disrupt transmission operation and starting logic.

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

Symptoms you may notice

- Illumination of the check engine light or service transmission message
- Harsh or delayed transmission shifts, or the transmission may default to a limp mode
- Inability to start the engine because the PCM does not recognize Park or Neutral
- Incorrect or flashing gear position indicator on the instrument cluster
- Unexpected movement or failure to engage the selected gear when shifting
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty gear lever position sensor A, including internal wear or contamination
- 2 Damaged or corroded wiring harness or connector at the sensor or PCM
- 3 Poor electrical connection due to loose pins or water intrusion
- 4 Open circuit or high resistance in the sensor signal wire
- 5 Failed PCM driver or internal circuit issue (less common)
- 6 Mechanical misalignment of the gear lever mechanism affecting sensor reading

How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related transmission or starting codes
- 2 Inspect the sensor connector and wiring for corrosion, damage, or loose pins, and repair as needed
- 3 Measure the sensor signal voltage with a multimeter while moving the gear lever through its range, comparing to manufacturer specifications
- 4 Check the sensor ground and reference voltage circuits for continuity and correct values
- 5 If the sensor output is out of specification, replace the gear lever position sensor and clear the code
- 6 Perform a relearn or calibration procedure if required by the vehicle manufacturer
- 7 Test drive the vehicle to confirm the repair and ensure no codes return



Common misdiagnosis of gear lever sensor codes

- A low signal code often results from a simple loose or corroded connector, so always inspect the wiring before condemning the sensor.
- The gear lever position sensor may be integrated into the transmission range sensor, and replacing the entire assembly is sometimes necessary even if only one circuit fails.
- Intermittent faults can be caused by a worn ignition switch or a faulty neutral safety switch, which can mimic sensor signal issues.
- After replacement, some vehicles require a relearn procedure for the transmission control module to recognize the new sensor's range.
- This code does not always indicate a failed sensor; a short to ground in the signal wire can also set it, so circuit testing is essential.

Can I keep driving with P2E02?

If the vehicle drives and shifts normally, you can drive cautiously to a repair shop, but avoid relying on the gear indicator and be prepared for unexpected shifting. If the transmission is in limp mode or the engine will not start, do not drive and have the vehicle towed.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Wire repair kit
- Vehicle service manual or wiring diagrams
- Basic hand tools

Reading P2E02

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
02	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 · **P2E01** Gear Lever Position Sensor A Range/Performance · **P2E03** Gear Lever Position Sensor A Circuit High



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/p2e02/>

