

GENERIC · POWERTRAIN

P0717

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0717

Input/Turbine Speed Sensor 'A' Circuit No Signal

P0717 means the transmission control module (TCM) is not receiving a usable signal from the input/turbine speed sensor 'A' circuit, which reports how fast the transmission input shaft is spinning. The computer has detected an open, short, or missing signal from that sensor, so it cannot accurately compare engine speed to transmission input speed for shift control.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- The check engine light or transmission warning light illuminates on the dashboard.
- Harsh or delayed shifts, or the transmission may default to a limp-home mode with limited gear selection.
- The speedometer may read incorrectly or fluctuate if the input speed signal is shared with the instrument cluster.
- Poor fuel economy and unusual engine RPM behavior during acceleration.
- Often no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- 1 Failed input/turbine speed sensor 'A' itself, due to heat, contamination, or internal winding failure.
- 2 Damaged, corroded, or disconnected wiring or connector at the sensor or TCM.
- 3 Metal debris or clutch material buildup on the sensor tip, blocking the magnetic pickup.
- 4 Internal transmission mechanical damage, such as a broken tone ring or input shaft problem.
- 5 Faulty TCM or a software issue misinterpreting a valid signal.
- 6 Low or contaminated transmission fluid affecting sensor operation.



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to see when the fault occurred.
- 2 Inspect the sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed.
- 3 Check transmission fluid level and condition; top off or replace fluid if contaminated.
- 4 Remove and inspect the input speed sensor for metal debris or damage; clean or replace if necessary.
- 5 Measure sensor resistance and check for an AC voltage signal while cranking or running, comparing to manufacturer specifications.
- 6 Perform a wiggle test on the harness while monitoring live data to catch intermittent opens.
- 7 If the signal is present at the sensor but missing at the TCM, diagnose the circuit back to the TCM and repair or replace the TCM if faulty.

What the input speed sensor really does

- A common mistake is replacing the sensor without checking the tone ring or reluctor wheel, which can be damaged or missing teeth and cause a no-signal condition even with a new sensor.
Debris on the sensor tip from clutch wear or a failing torque converter can mimic a failed sensor, so always clean and inspect the sensor before condemning it.
- Intermittent P0717 codes often trace to a chafed wire near the transmission case or a corroded connector that only acts up when hot or wet.
- Some vehicles use the input speed sensor for the speedometer, so a faulty sensor can cause dashboard speed errors that lead owners to suspect the wrong system.
A low battery or poor ground can cause the TCM to log a false P0717, so verify charging system and grounds before extensive transmission diagnosis.

Can I keep driving with P0717?

You can usually drive the vehicle to a repair shop, but avoid aggressive acceleration or heavy towing because the transmission may shift erratically or enter limp mode. If the transmission slips severely or refuses to engage gears, stop driving and have it towed to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope for waveform analysis
- Basic hand tools and socket set
- Transmission fluid level dipstick or scan tool for fluid temperature



Reading P0717

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

Often seen with

P0715 Input/Turbine Speed Sensor Circuit Malfunction · **P0716** Input/Turbine Speed Sensor 'A' Circuit Range/Performance · **P0720** Output Speed Sensor Circuit Malfunction · **P0721** Output Speed Sensor Range/Performance · **P0722** Output Speed Sensor Circuit No Signal

See it working

Watch the animated explainer [How a Coolant Temperature Sensor Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0717/>

