

FORD · POWERTRAIN

P1891

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1891 · Ford

Transmission Transfer Case Contact Plate Ground Return Open Circuit

P1891 on Ford vehicles indicates that the transmission control module (TCM) has detected an open circuit in the ground return path for the transfer case contact plate, which is the sensor plate inside the transfer case that reports the shift position. The TCM monitors the voltage on the ground return circuit and sets this code when the signal does not match expected values, typically because the ground path is broken or has excessive resistance.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Ford specific	Medium	Intermediate	Transmission

Symptoms you may notice

- The four-wheel-drive (4WD) or transfer case warning light illuminates on the dashboard.
- The transfer case may fail to engage or disengage 4WD, leaving the vehicle stuck in two-wheel drive or four-wheel drive.
- The driver may notice abnormal noises or clunking from the transfer case during shifts.
- In some cases, the transmission may enter limp mode or default to a single gear range.
- Often no symptoms besides the warning light, especially if the contact plate ground return is only intermittently open.

Common causes, most likely first

- Corroded, damaged, or disconnected ground wire between the transfer case contact plate and the chassis or TCM.
- Failed contact plate inside the transfer case, where the ground return trace is worn or broken.
- Loose or corroded electrical connector at the transfer case or TCM.
- Chafed or broken wire harness along the underbody or near the transfer case.
- Water intrusion into the transfer case connector causing corrosion and an open circuit.
- Faulty TCM ground circuit internal to the module (less common).



How to diagnose and fix it

- 1 Inspect the transfer case contact plate connector for corrosion, water intrusion, or loose pins, and clean or repair as needed.
- 2 Check the ground wire from the contact plate to the chassis for continuity and secure attachment; repair any open or high-resistance connection.
- 3 Perform a voltage drop test on the ground return circuit while wiggling the harness to detect intermittent opens.
- 4 If the wiring and connectors are good, remove the contact plate and inspect for wear, cracks, or a broken ground trace; replace the plate if faulty.
- 5 Clear the code and test the transfer case operation in all modes to confirm the repair.
- 6 If the code persists after wiring and plate repairs, check the TCM ground and power feeds, and consider TCM replacement only after all other causes are ruled out.

Don't overlook the ground return path

- A common mistake is to replace the transfer case contact plate immediately, but the ground return wire or connector corrosion is often the real culprit and costs far less to fix.
- The contact plate ground return is a low-current signal circuit, so even a small amount of corrosion or a loose pin can set P1891 without affecting the heavier motor circuits.
- On some Ford models, the ground return for the contact plate shares a splice with other sensors; a fault in that splice can set P1891 along with other codes, so check for additional codes before condemning the plate.
- Intermittent P1891 codes that appear only after driving in wet or muddy conditions often point to water intrusion at the transfer case connector, which may not be obvious during a dry inspection.
- Always verify the ground return circuit with a load test (such as a test light) rather than just a multimeter continuity check, because a single strand of wire can show continuity but fail under load.

Can I keep driving with P1891?

You can usually drive the vehicle with P1891 set, but the transfer case may not engage or disengage correctly, so avoid relying on four-wheel drive and avoid off-road or slippery conditions until the fault is repaired. If the transmission enters limp mode or you notice unusual noises, have the vehicle inspected promptly.

Tools that help

- OBD-II scan tool with Ford-specific software
- Digital multimeter
- Test light
- Wire terminal pick and electrical contact cleaner
- Service information for transfer case connector pinout and ground locations



Reading P1891

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Ford): its meaning depends on the make.
- 8** Transmission.
- 91** The exact fault within that area.

Often seen with

P1892 Throttle Position Sensor PWM Signal High · **P1893** Engine Torque Signal Low Voltage · **P1894** Engine Torque Signal High Voltage · **P1867** Transmission Transfer Case Contact Plate General Circuit Fai · **P1876** Transmission Transfer Case 2-Wheel Drive Solenoid Circuit Fa

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/ford-p1891/>

