

FORD · POWERTRAIN

P1902

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1902 · Ford

Kickdown Solenoid Relay Control Circuit

P1902 on Ford vehicles indicates that the powertrain control module (PCM) has detected an electrical fault in the kickdown solenoid relay control circuit, which is used to force a downshift for passing or heavy acceleration. The PCM monitors the relay's control wire for expected voltage changes when commanding the relay on or off, and it sets this code when the circuit stays open, shorted to ground, or shorted to power outside the expected range.

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

Symptoms you may notice

- The malfunction indicator lamp (MIL) illuminates, often with no other noticeable symptoms.
- The transmission may refuse to kick down when the accelerator is pressed past the detent, leaving the vehicle in a higher gear than expected.
- Downshifts during passing or climbing may feel delayed, harsh, or entirely absent.
- The PCM may disable the kickdown function entirely, causing sluggish acceleration from cruising speed.
- In some cases, the transmission may enter a limp-home mode with firm or erratic shift quality.

Common causes, most likely first

- 1 A failed kickdown solenoid relay, often due to burned contacts or a stuck coil.
- 2 Corroded, loose, or damaged wiring or connectors at the relay, solenoid, or PCM.
- 3 A short to ground or short to power in the relay control circuit between the PCM and the relay.
- 4 An open circuit in the relay control wire, frequently caused by chafing or rodent damage.
- 5 A faulty kickdown solenoid with an internal short or open winding that overloads the relay circuit.
- 6 A PCM driver failure, though this is less common and should be confirmed last.
- 7 Water intrusion or contamination in the relay box or transmission connector causing intermittent faults.



How to diagnose and fix it

- 1 Scan all modules for stored codes and freeze-frame data to confirm P1902 is the only kickdown-related fault.
- 2 Inspect the kickdown solenoid relay, its socket, and associated fuses for corrosion, loose terminals, or a blown fuse.
- 3 Test the relay by swapping it with an identical known-good relay and clearing the code to see if it returns.
- 4 Disconnect the relay and measure resistance and voltage on the control circuit to check for opens, shorts to ground, or shorts to power.
- 5 Check the kickdown solenoid resistance at the transmission connector and compare it to the Ford service specification.
- 6 Repair any damaged wiring, replace the relay or solenoid as needed, then clear codes and verify the kickdown function during a road test.
- 7 If all external circuits test good, perform a pinpoint test on the PCM driver circuit before condemning the PCM.

Kickdown relay faults that fool good technicians

- A relay that clicks does not guarantee good contact; burned or pitted internal contacts can pass a bench test but fail under load, so always load-test the circuit.
- The kickdown solenoid shares a ground path with other transmission solenoids on many Ford units, so a bad ground can set P1902 without any fault in the relay itself.
- Intermittent P1902 codes often trace to water intrusion in the underhood relay box or a chafed harness near the transmission mount, not to the relay or solenoid.
- Some Ford models use a kickdown function that is controlled directly by the PCM without a separate relay, so confirm the wiring diagram for the specific vehicle before ordering parts.
- A faulty brake pedal position switch or throttle position sensor can inhibit kickdown and set related codes, so check for companion codes before replacing the relay.

Can I keep driving with P1902?

The vehicle remains safe to drive because the kickdown function only affects passing power, but avoid heavy acceleration or towing until the fault is repaired. If the transmission enters limp-home mode or shifts erratically, have it diagnosed promptly to prevent further damage.

Tools that help

- OBD-II scan tool with manufacturer-specific software
- Digital multimeter
- Test light
- Relay puller or small screwdriver
- Ford service wiring diagram for the specific model



Reading P1902

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

Often seen with

P1901 Torque Converter Clutch Circuit Intermittent · **P1901** Torque Converter Clutch Circuit Intermittent · **P1901** Turbine Shaft Speed TSS Circuit Intermittent Malfunction · **P1903** Kickdown Solenoid Circuit Low Voltage · **P0700** Transmission Control System Malfunction · **P0740** Torque Converter Clutch Circuit Malfunction · **P0750** Shift Solenoid 'A'

See it working

Watch the animated explainer [Car Relay Test Bench: Test 4-Pin and 5-Pin Relays](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1902/>

