

GENERIC · POWERTRAIN

P0901

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0901

Clutch Actuator Circuit Range/Performance

P0901 indicates that the powertrain control module has detected an out-of-range or performance fault in the clutch actuator circuit, which controls clutch engagement on vehicles with automated manual or dual-clutch transmissions. The computer compares expected actuator position or current draw against actual feedback and sets this code when the signal falls outside the calibrated window.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning lamp
- Harsh or delayed gear engagement, especially from a stop
- Clutch slip or shudder during acceleration
- Inability to select gears or unexpected neutral engagement
- Often no symptoms besides the warning light, particularly in early fault stages

Common causes, most likely first

- 1 Faulty clutch actuator motor or solenoid
- 2 Worn or damaged clutch actuator wiring harness or connector
- 3 Corroded or loose electrical terminals at the actuator or control module
- 4 Failed clutch position sensor or feedback circuit
- 5 Mechanical binding or wear in the clutch release mechanism
- 6 Low or contaminated transmission fluid affecting actuator operation (where hydraulically assisted)
- 7 Internal fault in the transmission control module or powertrain control module



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to understand when the fault occurs
- 2 Inspect the clutch actuator wiring harness and connectors for chafing, corrosion, or loose pins, and repair as needed
- 3 Test the clutch actuator motor or solenoid for resistance and function according to the manufacturer's specifications
- 4 Check the clutch position sensor signal with a scan tool or oscilloscope while operating the clutch to verify feedback accuracy
- 5 Perform a clutch actuator calibration or adaptation procedure using a bidirectional scan tool if the actuator and wiring are intact
- 6 Inspect the clutch release mechanism for mechanical binding or excessive wear, and replace worn components
- 7 If all external checks pass, test or replace the transmission control module or powertrain control module as the last step

What the clutch actuator code hides

- A weak or failing battery can cause voltage drops that mimic a clutch actuator circuit fault, so always load-test the battery before condemning the actuator.
- On some vehicles, the clutch actuator shares a ground circuit with other transmission sensors, and a single corroded ground point can set P0901 along with unrelated codes.
- The code can be set by a simple actuator adaptation that was never completed after a clutch replacement, not by a failed part.
- Aftermarket clutch components with different friction characteristics can cause the actuator to exceed its expected range and trigger this code even when the actuator itself is healthy.
- A binding clutch release bearing or fork can overload the actuator and set P0901 without any electrical fault, so mechanical inspection is essential.

Can I keep driving with P0901?

You can usually drive the vehicle to a repair shop if the transmission still engages gears smoothly, but avoid aggressive acceleration, towing, or long trips until the fault is diagnosed. If the vehicle enters limp mode, refuses to select gears, or the clutch slips severely, stop driving and arrange a tow to prevent further damage.



Tools that help

- OBD-II scan tool with bidirectional control and transmission module access
- Digital multimeter for circuit and resistance testing
- Oscilloscope for analyzing actuator and sensor signals
- Factory service information for circuit diagrams and calibration procedures
- Basic hand tools for connector and component inspection

Reading P0901

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

Often seen with

P0900 Clutch Actuator Circuit/Open · **P0902** Clutch Actuator Circuit Low · **P0903** Clutch Actuator Circuit High · **P0904** Gate Select Position Circuit · **P0905** Gate Select Position Circuit Range/Performance

See it working

Watch the animated explainer [Manual Car Driving Simulator: Learn Clutch Control](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0901/>

