

GM · POWERTRAIN

**P1890**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1890 · GM

## ECM Data Input Circuit

P1890 on GM vehicles indicates that the engine control module (ECM) has detected a fault in a data input circuit, meaning a signal from a sensor or another module is missing, out of range, or implausible. The ECM monitors this circuit continuously and sets the code when the expected voltage or serial data does not match what the circuit should deliver under current operating conditions.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

### Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Intermittent rough running or hesitation if the affected input is used for fuel or spark control
- Erratic transmission shifting when the data input is shared with the transmission control module
- Reduced fuel economy or poor driveability under specific load conditions
- Other warning lights or module communication codes appearing simultaneously
- No symptoms besides the warning light in many cases, especially if the fault is intermittent

### Common causes, most likely first

- 1 Damaged or chafed wiring in the data input circuit, often near connectors or where the harness bends
- 2 Corroded or loose electrical connector pins at the ECM or at the sensor/module supplying the signal
- 3 Failed sensor or sending module that produces an erratic or missing signal
- 4 Internal fault in the ECM input driver or processing circuit
- 5 Poor ground connection shared by the sensor and ECM, causing a voltage offset
- 6 Aftermarket electrical accessories tapped into the circuit and introducing noise or load
- 7 Water intrusion into a connector or module housing causing intermittent shorts



## How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes, freeze-frame data, and live data for the affected input to see whether the signal is present and within range.
- 2 Inspect the wiring harness and connectors for the data input circuit, looking for chafing, corrosion, pushed-out pins, or loose terminals.
- 3 Measure resistance and voltage drop on the ground circuit shared by the sensor and ECM to rule out a bad ground.
- 4 Back-probe the signal wire at the ECM and at the sensor to compare voltages and confirm whether the fault is in the wiring or in a component.
- 5 If the signal is missing at the sensor, test or swap the sensor with a known-good unit; if the signal is present at the sensor but missing at the ECM, repair the wiring.
- 6 Clear the code and perform a road test with the scan tool recording live data to verify the repair and ensure the code does not return.
- 7 If all external circuits and components test good, follow GM diagnostic procedures for internal ECM verification before replacing the ECM.

## What P1890 really points to on GM vehicles

- P1890 is often set by a dirty or loose connector at the ECM rather than a failed module, so a careful pin-fit and corrosion check solves many cases without parts.
- A weak battery or charging system can cause data input circuits to log faults because the ECM misreads signals when supply voltage drops during cranking.
- Aftermarket alarms, remote starters, or audio equipment tapped into the wrong wire can introduce noise that the ECM interprets as a data input fault.
- The code does not always mean the ECM is bad; in many cases the ECM is reporting a problem with a signal from another module on the serial data bus.
- Intermittent P1890 that appears only in wet weather often traces to water intrusion in a connector behind the dash or under the hood.

## Can I keep driving with P1890?

You can usually drive the vehicle with P1890 set, but avoid heavy acceleration or towing until the fault is diagnosed because the missing input may affect fuel delivery or transmission control. If the engine runs rough, shifts erratically, or stalls, park the vehicle and arrange diagnosis rather than continuing to drive.



## Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probe pins
- Wiring diagram for the specific GM model and engine
- Electrical contact cleaner and dielectric grease
- Test light or logic probe for serial data circuits

## Reading P1890

**P** Powertrain: engine, transmission and emissions.

**1** Manufacturer-specific code (GM): its meaning depends on the make.

**8** Transmission.

**90** The exact fault within that area.

## Often seen with

**P0600** Serial Communication Link Malfunction · **P0601** Internal Control Module Memory Checksum Error · **P0606** PCM Processor Fault · **P0700** Transmission Control System Malfunction · **U0100** Lost Communication With ECM/PCM A

## See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1890/>

