

GM · POWERTRAIN

P1305

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1305 · GM

Ignition Coil 2 Primary Feedback Circuit

P1305 on a GM vehicle means the powertrain control module (PCM) has detected a fault in the primary feedback circuit for ignition coil number 2, which is the low-voltage signal the PCM uses to command and monitor that coil's firing. The PCM compares the expected coil primary current or voltage signature against what it actually sees and sets the code when the feedback does not match, indicating an open, short, or erratic circuit rather than a confirmed misfire.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Ignition system
and misfire

Symptoms you may notice

- Illuminated check engine light, often with no other symptoms besides the warning light
- A noticeable engine misfire or rough idle, especially when the engine is cold or under light load
- Slight hesitation or stumble during acceleration if coil 2 is not firing consistently
- Reduced fuel economy and a faint raw-fuel smell from the exhaust if the misfire is ongoing
- In some cases the PCM disables the coil driver and the engine runs on the remaining coils with a flashing check engine light

Common causes, most likely first

- 1 Damaged or chafed wiring in the coil 2 primary feedback circuit, often near the coil connector or along the valve cover
- 2 Corroded, loose, or pushed-back terminals in the ignition coil 2 electrical connector
- 3 Failed ignition coil 2 with an open or shorted primary winding that corrupts the feedback signal
- 4 Faulty ignition control module (ICM) on engines that route coil feedback through it rather than directly to the PCM
- 5 PCM driver or feedback circuit fault, which is rare but occurs after water intrusion or a shorted coil
- 6 Poor engine ground or harness ground near the coil mounting point causing erratic feedback voltage



How to diagnose and fix it

- 1 Inspect the ignition coil 2 connector and harness for corrosion, chafing, or pushed-back pins, and repair terminals as needed
- 2 Swap ignition coil 2 with a known-good coil from another cylinder and clear the code to see whether the fault follows the coil or stays with cylinder 2
- 3 Measure primary resistance of coil 2 and compare it to the manufacturer's specification and to a known-good coil
- 4 Back-probe the feedback circuit at the PCM and at the coil connector with a multimeter or oscilloscope to check for an open, short to ground, or short to voltage
- 5 Check the ignition control module and its connectors on engines that use one, since a failing module can distort the feedback signal
- 6 Verify engine and harness grounds are clean and tight, especially the ground near the coil mounting area
- 7 If all wiring and coils test good, diagnose the PCM driver circuit before condemning the PCM, as replacement requires programming

What the coil 2 feedback circuit really tells you

- P1305 is a circuit feedback code, not a misfire code, so a coil that fires but sends a distorted feedback signal can set it without any driveability complaint.
- Technicians often replace coil 2 immediately, but a chafed feedback wire near the coil connector is a more common cause on higher-mileage GM engines.
- On some GM engines the ignition control module processes the coil feedback before the PCM sees it, so a failing module can set P1305 even when the coil and wiring test perfect.
- A shorted coil 2 primary can damage the PCM driver if the code is ignored, turning a cheap coil replacement into an expensive module repair.
- P1305 can appear alongside misfire codes for cylinder 2, but the absence of a misfire code does not rule out a coil feedback fault.

Can I keep driving with P1305?

You can usually drive a short distance to a repair shop if the engine runs smoothly, but avoid heavy acceleration and long trips because an ongoing misfire can overheat the catalytic converter. If the check engine light is flashing or the engine runs rough, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with GM-specific code reading capability
- Digital multimeter
- Oscilloscope for viewing the primary feedback waveform
- Wire terminal pick and crimping tool
- Factory service information for coil circuit pinouts and resistance specifications



Reading P1305

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 3** Ignition system and misfire.
- 05** The exact fault within that area.

Often seen with

P1300 Misfire Detected Fuel Level Too Low · **P1300** Igniter Circuit Malfunction No 1 · **P1301** Fire Due To Increased Exhaust Temperature · **P1303** Cylinder 3 Misfire · **P1300** Random Misfire · **P1301** Cylinder 1 Misfire · **P1302** Cylinder 2 Misfire · **P1300** Ignition Timing Adjustment Circuit · **P1303** Cylinder 3 Misfire · **P1300** Random Misfire · **P1301** Cylinder 1 Misfire · **P1302** Cylinder 2 Misfire · **P1300** Ignition Coil 1 Primary Feedback Circuit · **P1301** Boost Calibration High · **P1303** EGR Calibration Fault · **P1302** Boost Calibration Low · **P1300** Boost Calibration Fault · **P1300** Ignitor Circuit · **P0302** Cylinder 2 Misfire Detected

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1305/>

