

GENERIC · POWERTRAIN

P05F5

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P05F5

Exhaust Aftertreatment Power Relay Control Circuit High

P05F5 indicates that the powertrain control module (PCM) has detected a high voltage condition on the control circuit for the exhaust aftertreatment power relay. This relay supplies power to the exhaust aftertreatment system, which includes components such as the diesel particulate filter (DPF) regeneration heater or the selective catalytic reduction (SCR) heater, and a high voltage on the control circuit means the PCM's command to energize the relay is not being followed as expected, often due to a short to voltage or a faulty relay.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) on the dashboard.
- Often no symptoms besides the warning light, especially if the aftertreatment system can still operate under certain conditions.
- Possible reduction in engine power or limp mode if the aftertreatment system cannot function properly.
- Increased regeneration frequency or failure to complete regeneration, leading to soot accumulation.
- Potential for the vehicle to fail an emissions inspection due to the stored code.
- In some cases, a no-start condition if the relay also supplies power to other critical circuits.

Common causes, most likely first

- 1 Short to voltage on the control circuit between the PCM and the relay coil, often due to chafed wiring or a pinched harness.
- 2 Faulty exhaust aftertreatment power relay, such as a stuck closed contact or a shorted coil.
- 3 Corroded or damaged relay socket terminals causing intermittent or high resistance connections.
- 4 PCM internal fault, though this is less common and should be diagnosed last.
- 5 Water intrusion into the relay box or connector, leading to corrosion and short circuits.
- 6 Aftermarket accessories or improper wiring repairs that backfeed voltage into the control circuit.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in other modules to confirm the fault is isolated to the aftertreatment power relay control circuit.
- 2 Inspect the relay and its socket for corrosion, loose terminals, or signs of overheating, and replace the relay if it is suspect.
- 3 Disconnect the relay and measure voltage on the control circuit at the relay connector with the key on and engine off; a high voltage (near battery voltage) when the relay is not commanded indicates a short to voltage.
- 4 If a short to voltage is found, trace the control wire from the relay to the PCM, checking for chafed insulation, pinched wires, or contact with other voltage sources.
- 5 Check for water intrusion in the relay box or underhood fuse block and repair any damaged seals or drains.
- 6 If the control circuit is intact and the relay is good, test the PCM's control output with a bidirectional scan tool or oscilloscope to rule out a faulty driver.
- 7 Clear the code and perform a road test to verify the repair, ensuring the aftertreatment system completes a regeneration cycle if applicable.

Relay control circuit high voltage pitfalls

- A common mistake is to replace the aftertreatment power relay without checking the control circuit for a short to voltage, which can damage the new relay or leave the code unresolved.
- The code can be set by a faulty PCM driver that is stuck high, but this is rare and should only be considered after all wiring and relay tests pass.
- Water intrusion into the underhood fuse box is a frequent cause on vehicles that operate in wet or salty environments, leading to corrosion that bridges terminals.
- Aftermarket electrical accessories tapped into the relay circuit can backfeed voltage and set this code, so always check for non-factory wiring.
- The aftertreatment power relay may also supply power to other components, so a failure can cause additional codes or symptoms beyond the exhaust system.

Can I keep driving with P05F5?

You can generally drive the vehicle with this code, but avoid long trips or heavy loads until it is repaired, as the aftertreatment system may not function correctly and could lead to more serious emissions system damage. If the vehicle enters limp mode or you notice reduced power, seek service promptly.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Test light
- Wiring diagram for the specific vehicle
- Basic hand tools for relay and panel removal



Reading P05F5

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- F5** The exact fault within that area.

Often seen with

P05F4 Exhaust Aftertreatment Power Relay Control Circuit Low · **P05F6** Exhaust Aftertreatment Power Relay Control Circuit Stuck On · **P20B9** Reductant Heater A Control Circuit/Open · **P20BA** Reductant Heater A Control Performance · **P249C** Excessive Time To Enter Closed Loop Reductant Injection Cont

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/p05f5/>

