

GENERIC · POWERTRAIN

P0DFE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0DFE

Battery Charger Coolant Control Valve Control Circuit Low

P0DFE indicates that the powertrain control module (PCM) has detected a low-voltage condition on the control circuit for the battery charger coolant control valve. This valve regulates coolant flow to the battery charger assembly, and the low circuit signal suggests a short to ground, an open circuit, or excessive resistance in the wiring or valve solenoid.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp).
- Often no symptoms besides the warning light, especially if the valve fails in a default position.
- Reduced charging performance or slower charging times if the valve remains closed and the charger overheats.
- Possible derating of charging power to protect the battery charger from overheating.
- In rare cases, a noticeable coolant smell or minor coolant leak if the valve sticks.
- No noticeable drivability issues because the fault affects the charging system, not the engine.

Common causes, most likely first

- 1 Damaged or chafed wiring in the control circuit, causing a short to ground.
- 2 Corroded or loose electrical connector at the coolant control valve.
- 3 Failed coolant control valve solenoid with an internal short to ground.
- 4 Open circuit in the control wire between the PCM and the valve.
- 5 High resistance in the ground circuit for the valve.
- 6 PCM driver circuit fault, though this is less common.
- 7 Coolant contamination or debris causing the valve to seize and draw excessive current, which may set a low circuit code in some strategies.



How to diagnose and fix it

- 1 Inspect the coolant control valve connector and wiring for corrosion, damage, or loose pins; clean or repair as needed.
- 2 Measure resistance across the valve solenoid and compare to the manufacturer's specification to check for an internal short.
- 3 Disconnect the PCM connector and check for continuity to ground on the control wire; repair any short to ground.
- 4 Check for continuity and resistance on the control wire between the PCM and the valve; repair any open or high-resistance condition.
- 5 Verify the ground circuit for the valve has low resistance to the battery negative terminal; clean or repair grounds as necessary.
- 6 If wiring and valve resistance are within spec, test the PCM driver circuit with a bidirectional scan tool or oscilloscope; replace the PCM only if confirmed faulty.
- 7 Clear the diagnostic trouble codes and perform a road test to verify the repair and ensure the code does not return.

Diagnosing P0DFE Without Throwing Parts

- A low circuit code often results from a short to ground in the wiring harness, so always perform a visual inspection and wiggle test before condemning the valve.
- The coolant control valve may be part of a larger assembly that includes the battery charger, and replacing the entire unit is rarely necessary if only the solenoid is faulty.
- Some vehicles use a pulse-width modulated (PWM) signal to control the valve; a low circuit code can be set if the PWM signal is shorted to ground, which may not be obvious with a simple resistance check.
- A failed valve can cause the battery charger to overheat and derate charging power, but the driver may not notice until charging times increase significantly.
- Always check for technical service bulletins (TSBs) for the specific vehicle, as some manufacturers have known issues with harness routing or connector seals that cause this code.

Can I keep driving with P0DFE?

You can generally continue driving, but avoid prolonged high-power charging sessions and monitor for overheating smells or reduced charging performance. Have the fault diagnosed soon to prevent potential damage to the battery charger.



Tools that help

- Digital multimeter
- Scan tool with bidirectional control capability
- Wiring diagram for the specific vehicle
- Back probe kit
- Oscilloscope (optional for PWM signal analysis)

Reading P0DFE

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0C00** Drive Motor A Current Low · **P0DFD** Battery Charger Coolant Control Valve Control Circuit/Open · **P0DFF** Battery Charger Coolant Control Valve Control Circuit High · **P0E00** Generator Phase U Current Sensor Circuit

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/p0dfe/>

