

GENERIC · POWERTRAIN

P00DF

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P00DF

Charge Air Cooler Coolant Temperature Sensor A Circuit Range/Performance

P00DF indicates that the powertrain control module (PCM) has detected an out-of-range or performance fault in the circuit for the charge air cooler coolant temperature sensor A. The PCM compares the sensor signal against expected values under specific operating conditions and flags the code when the signal falls outside the valid range or does not change as expected.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode under heavy load or high ambient temperatures
- Poor fuel economy or increased turbo lag due to incorrect temperature compensation
- In rare cases, overheating or detonation if the fault causes incorrect cooling fan or fuel strategy
- Intermittent drivability issues such as hesitation or stumble during acceleration

Common causes, most likely first

- 1 Faulty charge air cooler coolant temperature sensor A
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Coolant level low or air pockets in the charge air cooler cooling system
- 5 Failed thermostat or coolant pump affecting charge air cooler coolant flow
- 6 PCM software issue or internal fault (less common)

How to diagnose and fix it

- 1 Verify coolant level and condition in the charge air cooler system; top off or bleed air as needed
- 2 Visually inspect sensor A and its connector for damage, corrosion, or loose pins
- 3 Measure sensor resistance and compare to manufacturer specifications across temperature ranges
- 4 Check continuity and voltage drop on the sensor signal and ground circuits to rule out wiring faults
- 5 Test the charge air cooler coolant pump and thermostat operation to ensure proper flow
- 6 If all else checks out, reprogram or replace the PCM as per manufacturer procedures



Common misdiagnosis traps for P00DF

- A low coolant level or trapped air in the charge air cooler circuit can mimic a sensor failure, so always bleed the system before condemning the sensor.
- The sensor may test fine at room temperature but fail when exposed to heat soak; perform a live data check during a road test to catch intermittent faults.
- Wiring harness chafing near hot components or sharp edges is a frequent hidden cause that visual inspection alone may miss.
- This code can be set by a failing charge air cooler coolant pump that reduces flow, causing the sensor to read out of range even though the sensor itself is good.
- After repairs, clear the code and perform a drive cycle that includes sustained load to verify the fix; simply idling may not set the monitor.

Can I keep driving with P00DF?

It is generally safe to drive with P00DF, but avoid heavy acceleration or towing until diagnosed, as the fault may reduce engine protection and lead to overheating or power loss under load. If the check engine light flashes or you notice overheating, stop driving and seek service immediately.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Coolant refractometer or hydrometer
- Basic hand tools and socket set

Reading P00DF

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
0	Fuel and air metering and auxiliary emission controls.
DF	The exact fault within that area.

Often seen with

P00E0 Charge Air Cooler Coolant Temperature Sensor A Circuit Low · **P00E1** Charge Air Cooler Coolant Temperature Sensor A Circuit High · **P00E2** Charge Air Cooler Coolant Temperature Sensor A Intermittent/ · **P00E3** Exhaust Heat Exchanger Exhaust Bypass Valve A Stuck Open · **P00E4** Exhaust Heat Exchanger Exhaust Bypass Valve A Stuck Closed



See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p00df/>

