

GENERIC · POWERTRAIN

P00DE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P00DE

Charge Air Cooler Coolant Temperature Sensor A Circuit

P00DE indicates that the powertrain control module has detected an abnormal signal from the charge air cooler coolant temperature sensor on circuit A, which monitors the temperature of the coolant used to cool compressed intake air. The computer compares the sensor's voltage to expected values and flags the code when the signal falls outside the normal operating range or behaves erratically.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	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 during hard acceleration
- Poor fuel economy or increased turbo lag due to incorrect temperature readings
- Inconsistent cooling performance from the charge air cooler system
- In rare cases, engine overheating or detonation if the sensor fault causes incorrect cooling fan operation

Common causes, most likely first

- 1 Faulty charge air cooler coolant temperature sensor
- 2 Damaged or corroded wiring harness or connector at the sensor
- 3 Open or short circuit in the sensor signal circuit
- 4 Low coolant level or air pockets in the charge air cooler cooling system
- 5 Failed charge air cooler coolant pump or restricted coolant flow
- 6 Corrosion or contamination inside the sensor connector
- 7 Powertrain control module software or internal fault (less common)



How to diagnose and fix it

- 1 Verify coolant level and condition in the charge air cooler reservoir and top off if necessary
- 2 Inspect the sensor connector and wiring for damage, corrosion, or loose pins
- 3 Use a scan tool to read live sensor data and compare to ambient and engine temperature readings
- 4 Perform a resistance or voltage test on the sensor according to the manufacturer's specification
- 5 Check for continuity and shorts in the signal and ground circuits between the sensor and PCM
- 6 Replace the charge air cooler coolant temperature sensor if testing confirms it is out of specification
- 7 Clear the code and perform a road test to confirm the repair and ensure the code does not return

Sensor faults often mimic coolant issues

- A low coolant level or trapped air in the charge air cooler circuit can cause the sensor to read incorrectly and set P00DE even when the sensor itself is good.
- The charge air cooler coolant temperature sensor is sometimes confused with the intake air temperature sensor, but they serve different circuits and set different codes.
- Wiring harness chafing near the charge air cooler or turbocharger is a common hidden cause that visual inspection alone may miss without wiggling the harness while watching live data.
- Replacing the sensor without checking the coolant pump or flow can lead to a repeat code if the underlying issue is poor circulation.
- On some vehicles, a failing charge air cooler coolant pump may not set its own code and only manifests as a temperature sensor performance code like P00DE.

Can I keep driving with P00DE?

You can generally drive the vehicle with this code, but avoid heavy acceleration or sustained high-load conditions until the fault is repaired. If the engine enters limp mode or you notice overheating, stop driving and have the system inspected promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the charge air cooler coolant temperature sensor circuit
- Basic hand tools (socket set, screwdrivers, pliers)
- Coolant refractometer or hydrometer



Reading P00DE

- 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.
- DE** The exact fault within that area.

Often seen with

P00DF Charge Air Cooler Coolant Temperature Sensor A Circuit Range · **P00E0** Charge Air Cooler Coolant Temperature Sensor A Circuit Low · **P0116** Engine Coolant Temperature Circuit Range/Performance · **P2183** Engine Coolant Temperature Sensor 2 Circuit Range/Performance · **P2184** Engine Coolant Temperature Sensor 2 Circuit Low

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/p00de/>

