

GENERIC · POWERTRAIN

P01E8

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01E8

Engine Coolant Heater A Control Circuit/Open

P01E8 is a generic powertrain code indicating that the engine control module (ECM) has detected an open circuit in the control circuit for Engine Coolant Heater 'A'. This heater is typically a grid or element that warms the coolant to improve cold-start emissions and cabin heat; the ECM commands it on and monitors the circuit for expected voltage or current, and an open means the circuit is broken somewhere between the ECM and the heater element.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) with no other noticeable symptoms.
- The engine coolant heater may not activate, leading to longer warm-up times and reduced cabin heat in cold weather.
- Possible increase in cold-start emissions due to the heater not functioning.
- In some vehicles, a stored code may disable other functions that depend on the heater, such as remote start or heated windshield.
- Rarely, the driver may notice a slight electrical draw or battery drain if the circuit is shorted rather than open, but this is not typical for an open circuit.

Common causes, most likely first

- 1 Broken or disconnected wire in the coolant heater control circuit, often due to corrosion or physical damage.
- 2 Failed engine coolant heater element (open internal winding).
- 3 Faulty connector at the heater or at the ECM, with loose or corroded terminals.
- 4 Blown fuse or fusible link that supplies power to the heater circuit.
- 5 Defective coolant heater relay or control module, if used in the circuit.
- 6 Internal open circuit within the ECM driver for the heater control, though this is less common.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in other modules.
- 2 Inspect the coolant heater circuit wiring and connectors for obvious damage, corrosion, or disconnection.
- 3 Check the fuse and relay that supply power to the coolant heater circuit.
- 4 Measure resistance of the coolant heater element to confirm it is not open; compare to specification.
- 5 Perform a voltage drop test on the control circuit from the ECM to the heater to locate an open.
- 6 If the circuit is intact, test the ECM output signal with a lab scope or bidirectional scan tool to confirm the driver is functioning.
- 7 Repair or replace the faulty component (wiring, heater element, relay, or ECM) as needed, then clear the code and verify the repair.

Open Circuit Diagnostics for Coolant Heater

- A common oversight is assuming the heater element itself has failed when the actual problem is a corroded connector or chafed wire in the harness, especially in areas exposed to road splash.
The ECM may set this code only after a commanded test fails, so the heater might work intermittently; a wiggle test on the harness while monitoring live data can reveal an intermittent open.
- On some vehicles, the coolant heater is part of a positive temperature coefficient (PTC) heater that also provides cabin heat, so a failure may be misdiagnosed as a HVAC issue rather than an engine control circuit fault.
- The code does not always mean the heater is completely dead; it can set if the circuit resistance is out of range, so measuring resistance and comparing to specifications is crucial before replacing parts.
- Related systems such as the glow plug control module or auxiliary heater may share power or ground circuits, so a fault in one can trigger multiple codes including P01E8.

Can I keep driving with P01E8?

The vehicle is safe to drive with this code because the engine coolant heater is an emissions and comfort device, not a critical operational system. However, you may experience longer warm-up times and reduced cabin heat in cold weather, and the check engine light will remain on until repaired.

Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter with resistance and voltage measurement
- Lab scope for observing control signals
- Wiring diagram and service information for the specific vehicle
- Basic hand tools for connector and component access



Reading P01E8

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- E8** The exact fault within that area.

Often seen with

P01E9 Engine Coolant Heater A Control Circuit Low · **P01EA** Engine Coolant Heater A Control Circuit High · **P01EB** Engine Coolant Heater A Control Circuit Performance · **P2600** Coolant Pump Control Circuit/Open · **P2601** Coolant Pump Control Circuit Range/Performance

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01e8/>

