



P01EC

Engine Coolant Heater B Control Circuit/Open

P01EC indicates that the powertrain control module has detected an open circuit or control fault on the ground-side control wire for engine coolant heater B. The heater is a grid or element that warms coolant to speed cabin heat and engine warm-up, and the PCM expects a specific voltage on the control circuit when commanding the heater on or off.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- No cabin heat or delayed heater performance in cold weather
- Longer engine warm-up times and reduced fuel economy during cold starts
- Possible heater grid or relay not activating when commanded by the PCM
- In rare cases, a slight electrical draw or battery drain if the control circuit shorts

Common causes, most likely first

- 1 Open or broken control wire between the PCM and the coolant heater relay or heater control module
- 2 Failed coolant heater relay or solid-state control module
- 3 Corroded or loose connector terminals at the heater, relay, or PCM
- 4 Open heater element or internal heater grid failure
- 5 PCM driver circuit failure, though less common
- 6 Aftermarket accessories or poor previous repairs interrupting the control circuit

How to diagnose and fix it

- 1 Verify the code with a scan tool and check for related codes in other modules
- 2 Inspect the coolant heater control circuit wiring and connectors for damage or corrosion
- 3 Test the heater relay or control module for proper operation and continuity
- 4 Measure resistance of the heater element and compare to specifications
- 5 Check for voltage and ground signals at the heater control connector while commanding the heater on with a scan tool
- 6 Repair or replace faulty wiring, relay, control module, or heater element as needed
- 7 Clear codes and verify the repair with a test drive and heater activation



Coolant heater control circuit checks

- A common oversight is assuming the heater element itself is faulty when the open circuit is actually in the control wire or relay coil circuit.
- The PCM may set this code only after a commanded self-test, so the heater may work intermittently and still store the fault.
- Corrosion inside a connector can create an open circuit that tests fine with a meter until the harness is flexed or heated.
- Some vehicles use a solid-state heater control module instead of a relay, and a failed module can mimic an open control wire.
- This code does not always mean the heater is inoperative; it can set if the PCM detects an unexpected voltage on the control circuit during a key-on test.

Can I keep driving with P01EC?

The vehicle remains safe to drive because the coolant heater only affects cold-start warm-up and cabin heat, but you should avoid relying on the heater until the fault is repaired. Prolonged driving with the code may reduce defroster performance in freezing conditions, so address it before winter weather.

Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Wiring diagram for the coolant heater circuit
- Test light or jumper wires
- Socket and ratchet set

Reading P01EC

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.
EC	The exact fault within that area.

Often seen with

P01EA Engine Coolant Heater A Control Circuit High · **P01EB** Engine Coolant Heater A Control Circuit Performance · **P01ED** Engine Coolant Heater B Control Circuit Low · **P01EE** Engine Coolant Heater B Control Circuit High · **P2600** Coolant Pump Control Circuit/Open



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/p01ec/>

