

GENERIC · POWERTRAIN

P0E7B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0E7B

Auxiliary Cooling Coolant Temperature Sensor A Circuit

P0E7B indicates that the powertrain control module has detected an abnormal signal from the auxiliary cooling coolant temperature sensor A circuit, which monitors the temperature of the coolant loop dedicated to auxiliary components such as the hybrid battery or power electronics. The computer compares the sensor voltage against expected values and sets this code when the signal falls outside the valid range or behaves erratically.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message
- Often no symptoms besides the warning light
- Reduced cooling performance for auxiliary systems, potentially leading to power derating in hybrid or electric vehicles
- Inconsistent temperature readings on the dashboard or scan tool data
- Possible activation of the cooling fan at full speed as a failsafe
- In rare cases, a warning message indicating auxiliary system overheating

Common causes, most likely first

- 1 Faulty auxiliary cooling coolant temperature sensor
- 2 Damaged or corroded wiring harness or connector at the sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Coolant level low or air pockets causing inaccurate temperature readings
- 5 Failed thermostat or coolant pump in the auxiliary cooling loop
- 6 Corrosion or contamination inside the sensor connector
- 7 Powertrain control module software issue or internal fault (least likely)



How to diagnose and fix it

- 1 Verify coolant level and condition in the auxiliary cooling system; top off or bleed air as needed
- 2 Inspect the sensor and its connector for physical damage, corrosion, or loose pins
- 3 Use a scan tool to read live data from the auxiliary coolant temperature sensor and compare with actual temperature
- 4 Perform a resistance test on the sensor and compare to manufacturer specifications
- 5 Check continuity and voltage drop on the signal and ground circuits between the sensor and PCM
- 6 Replace the sensor if it fails electrical or accuracy tests
- 7 Repair or replace damaged wiring or connectors, then clear codes and verify the repair with a test drive

Auxiliary coolant sensor pitfalls to avoid

- A common mistake is replacing the sensor without checking the coolant level and bleeding the system; trapped air can cause erratic readings that mimic a sensor failure.
- The auxiliary cooling loop often serves hybrid battery packs or power electronics, so a faulty sensor can trigger protective power reduction even if the engine runs normally.
- Corrosion at the sensor connector is a frequent cause on vehicles exposed to road salt or moisture, and it can be easily overlooked during a visual inspection.
- This code does not always mean the sensor itself is bad; wiring harness chafing or a poor ground can produce the same out-of-range signal.
- Some vehicles use the same sensor signal for multiple control modules, so a fault can cause unrelated systems to log codes or behave strangely.

Can I keep driving with P0E7B?

You can usually drive the vehicle with this code, but avoid heavy loads or long trips until it is diagnosed, because the auxiliary cooling system may not regulate temperature properly. If the vehicle enters a reduced power mode or shows an overheating warning, stop safely and seek professional service.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe set
- Socket and ratchet set
- Coolant refractometer or hydrometer
- Service information for sensor specifications and wiring diagrams



Reading P0E7B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 7B** The exact fault within that area.

Often seen with

P0E7A Coolant Bypass Valve B Performance · **P0E7C** Auxiliary Cooling Coolant Temperature Sensor A Circuit Range · **P0E7D** Auxiliary Cooling Coolant Temperature Sensor A Circuit Low · **P0E7E** Auxiliary Cooling Coolant Temperature Sensor A Circuit High · **P0E7F** Auxiliary Cooling Coolant Temperature Sensor A Circuit Inter

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/p0e7b/>

