

GENERIC · POWERTRAIN

P2E74

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E74

Hybrid/EV Battery Pack Coolant Temperature Sensor D Circuit

P2E74 indicates that the hybrid or electric vehicle battery pack coolant temperature sensor, specifically the 'D' circuit, is reporting a voltage or signal that falls outside the expected range. The battery energy control module monitors this sensor to ensure the pack is being cooled properly, and it sets this code when the signal is implausible, intermittent, or missing entirely.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or a dedicated hybrid system warning light.
- Often no symptoms besides the warning light, especially if the fault is intermittent.
- Reduced electric-only driving range or a forced transition to gasoline engine operation in a plug-in hybrid.
- A message on the dash indicating that battery cooling performance is limited or that the vehicle needs service.
- In rare cases, the vehicle may enter a reduced-power limp mode to protect the battery pack from overheating.
- Possible overheating of the battery pack during aggressive driving or fast charging, though this is less common with a sensor circuit fault alone.

Common causes, most likely first

- 1 A failed coolant temperature sensor or a sensor that has drifted out of calibration.
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, particularly at connectors near the battery pack.
- 3 A poor electrical connection at the sensor or at the battery energy control module harness.
- 4 An open or short circuit in the sensor signal or return circuit.
- 5 A faulty battery energy control module that is unable to correctly read the sensor signal.
- 6 Coolant contamination or air pockets in the battery cooling loop that cause the sensor to read an implausible temperature.
- 7 A low coolant level or a failing coolant pump that indirectly causes the sensor to report an out-of-range value.



How to diagnose and fix it

- 1 Verify the coolant level in the hybrid battery cooling system and inspect for leaks or air pockets before any electrical testing.
- 2 Perform a visual inspection of the sensor, its connector, and the wiring harness for damage, corrosion, or loose pins.
- 3 Use a scan tool to read the live data for the battery pack coolant temperature sensor and compare it with ambient and actual coolant temperatures.
- 4 Check the sensor's resistance or voltage output against the manufacturer's specification while monitoring the signal at the sensor and at the control module.
- 5 Test the sensor signal circuit for continuity, shorts to ground, and shorts to voltage, repairing any wiring faults found.
- 6 If the wiring and sensor test good, substitute a known-good sensor to see if the code clears and the live data becomes plausible.
- 7 Clear the codes and perform a road test, including a charging cycle if applicable, to confirm the repair and ensure the code does not return.

Coolant sensor faults that mimic other failures

- A common misdiagnosis is replacing the battery pack coolant temperature sensor when the real problem is a corroded connector pin that creates intermittent resistance in the signal circuit.
- This code can be set by a low coolant level or a failing coolant pump that causes the sensor to read a temperature outside the expected range, so always verify the cooling system before condemning the sensor.
- On some vehicles, the battery energy control module uses multiple temperature sensors, and a fault in one sensor's circuit can cause the module to set codes for other sensors as well, leading to unnecessary replacement of good parts.
- The 'D' circuit designation indicates that this is one of several possible sensor circuits, so consult the specific vehicle's wiring diagram to identify the correct sensor and avoid testing the wrong component.
- Intermittent faults often occur only when the vehicle is cold or after a long drive, so a wiggle test of the harness while monitoring live data can reveal a problem that a static resistance test misses.

Can I keep driving with P2E74?

You can generally continue driving with this code, but avoid aggressive driving, fast charging, and heavy electrical loads that stress the battery pack until the fault is repaired. If the vehicle enters a reduced-power mode or displays a high battery temperature warning, stop and have it serviced promptly to prevent damage.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Back probe pins or breakout leads
- Socket set and trim removal tools

Reading P2E74

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

Often seen with

P0A93 Inverter A Cooling System Performance · **P0A94** DC/DC Converter A Performance · **P2E73** Hybrid/EV Battery Pack B Cell Thickness Sensor Circuit Perfo · **P2E75** Hybrid/EV Battery Pack Coolant Temperature Sensor D Circuit · **P2E76** Hybrid/EV Battery Pack Coolant Temperature Sensor D Circuit

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/p2e74/>

