

GENERIC · POWERTRAIN

P2B27

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2B27

Hybrid/EV Electronics Coolant Temperature Sensor C Circuit High

P2B27 means the hybrid or electric vehicle's electronics coolant temperature sensor C is reporting a voltage above the normal range, so the computer sees an open circuit or a signal that is too high. The powertrain control module uses this sensor to monitor the coolant that cools the inverter, DC-DC converter, and other high-voltage electronics, and it sets this code when the signal wire reads near reference voltage instead of a valid temperature signal.

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 hybrid system warning message on the dash
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Reduced power or a limp-home mode if the computer derates the hybrid system to protect the electronics
- Possible overheating warning for the hybrid electronics, though this is less common with a high-signal fault
- In some vehicles, the engine may run continuously or the hybrid system may refuse to enter electric-only mode

Common causes, most likely first

- 1 A broken, chafed, or disconnected signal wire between sensor C and the control module
- 2 Corroded or loose terminals at the sensor connector or at the control module harness
- 3 An open circuit inside the coolant temperature sensor itself
- 4 A poor ground connection for the sensor circuit, causing a reference shift
- 5 A faulty control module driver circuit, though this is rare
- 6 Coolant contamination or a sensor installed with the wrong thread sealant that affects the ground path



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to see when the fault occurred
- 2 Inspect the sensor connector and harness for damage, corrosion, or loose pins, and repair as needed
- 3 Measure the sensor resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart
- 4 Back-probe the signal wire at the control module and check for an open circuit or excessive voltage drop
- 5 Check the sensor ground circuit for continuity and resistance to the control module ground
- 6 If the wiring and ground are good, replace the coolant temperature sensor C and clear the codes
- 7 After repair, clear codes and verify the sensor reading matches actual coolant temperature during a road test

What a high signal really tells you

- A high signal voltage almost always means an open circuit, not a hot condition, so do not replace the sensor before checking the wiring and grounds.
- The sensor C circuit often shares a ground or reference with other sensors, so a fault in a neighbouring circuit can set this code and mislead you.
- Intermittent codes that appear only on cold mornings or rough roads frequently trace to a chafed harness near a sharp bracket or a connector that is not fully latched.
- Some vehicles will set this code and still drive normally because the control module substitutes a default coolant temperature, hiding the fault from the driver.
- Clearing the code without repairing the root cause will usually result in the code returning after a few drive cycles, so always verify the live data after a repair.

Can I keep driving with P2B27?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy loads, long trips, or aggressive driving because the hybrid electronics may overheat without a valid temperature signal. If the dash shows a red hybrid system warning or reduced power, stop safely and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probe pins
- Manufacturer service information with wiring diagrams and resistance charts
- Socket set and trim removal tools for accessing the sensor and harness
- Contact cleaner and dielectric grease for connector repair



Reading P2B27

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

Often seen with

P0A93 Inverter A Cooling System Performance · **P0A94** DC/DC Converter A Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2B26** Hybrid/EV Electronics Coolant Temperature Sensor C Circuit L · **P2B28** Hybrid/EV Battery Pack Coolant Pump A 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/p2b27/>

