

GENERIC · POWERTRAIN

P2BB5

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2BB5

Engine Coolant Temperature Sensor 5 Circuit Intermittent/Erratic

P2BB5 indicates that the powertrain control module (PCM) has detected an intermittent or erratic signal from the engine coolant temperature (ECT) sensor 5 circuit. The PCM expects a steady voltage that changes smoothly with coolant temperature, but the signal is dropping out or jumping erratically, so the computer cannot trust the reading.

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

Symptoms you may notice

- Check engine light illuminated, often with no other noticeable symptoms
- Temperature gauge fluctuating or reading abnormally high or low
- Poor fuel economy or rough running during warm-up
- Inconsistent heater performance or cooling fan operation
- Hard starting or stalling when the engine is cold
- In rare cases, the engine may enter limp mode or overheat

Common causes, most likely first

- 1 Faulty engine coolant temperature sensor 5
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Open or short in the sensor signal circuit
- 4 Poor ground connection for the sensor circuit
- 5 Failing PCM driver or internal fault (less common)
- 6 Coolant contamination or low coolant level affecting sensor readings

How to diagnose and fix it

- 1 Inspect the sensor connector and wiring for damage, corrosion, or loose pins
- 2 Check coolant level and condition; top off or flush if contaminated
- 3 Measure sensor resistance with a multimeter and compare to temperature specifications
- 4 Backprobe the signal circuit at the PCM to check for intermittent voltage drops while wiggling wires
- 5 Check ground continuity from the sensor to the engine block and battery negative
- 6 Replace the ECT sensor if resistance is out of spec or erratic when heated
- 7 Clear codes and perform a road test to verify the repair



Intermittent ECT faults often hide in wiring

- A sensor that tests fine when cold can still be faulty when hot, so always test resistance across a full temperature range.
- Corrosion inside the connector pins is a frequent cause of intermittent ECT codes, even when the sensor itself is good.
- The PCM may use a default coolant temperature strategy when the signal is erratic, masking driveability symptoms and making the fault harder to reproduce.
- Aftermarket sensors with incorrect resistance curves can set this code even when new, so compare against OEM specifications.
- Wiring harness chafing near the engine mount or exhaust is a common hidden cause of intermittent signal loss.

Can I keep driving with P2BB5?

You can usually drive the vehicle short distances, but avoid long trips or heavy loads until the fault is repaired. An erratic coolant temperature signal can cause the engine to run poorly, overheat, or fail emissions tests, so schedule diagnosis soon.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Temperature probe or infrared thermometer
- Wiring diagram for the ECT circuit
- Basic hand tools for sensor removal

Reading P2BB5

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
B5	The exact fault within that area.

Often seen with

P0115 Engine Coolant Temperature Circuit Malfunction · **P0116** Engine Coolant Temperature Circuit Range/Performance · **P0117** Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P0119** Engine Coolant Temperature Circuit Intermittent



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/p2bb5/>

