

GENERIC · POWERTRAIN

P2BB6

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2BB6

Engine Coolant Temperature Sensor 6 Circuit

P2BB6 indicates that the powertrain control module has detected a fault in the circuit for engine coolant temperature sensor 6, which is one of several coolant temperature sensors used on some vehicles for precise thermal management. The computer monitors the sensor's signal voltage and flags this code when the voltage falls outside the expected range or behaves erratically, preventing accurate coolant temperature readings.

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, often with no other noticeable symptoms
- Inaccurate or fluctuating temperature gauge readings on the dashboard
- Poor fuel economy or rough running when the engine is cold
- Fan running constantly or not engaging when needed
- Hard starting or stalling when the engine is cold
- Reduced engine performance or power derating in some applications

Common causes, most likely first

- 1 Faulty engine coolant temperature sensor 6
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Coolant leak or low coolant level affecting sensor reading
- 5 Failed thermostat causing abnormal temperature behavior
- 6 Corrosion or contamination on the sensor tip
- 7 Powertrain control module internal fault (rare)



How to diagnose and fix it

- 1 Verify coolant level and condition, and top up or replace coolant if necessary
- 2 Inspect the sensor connector and wiring for damage, corrosion, or loose pins
- 3 Measure the sensor resistance with a multimeter and compare to specifications
- 4 Check the signal voltage at the sensor connector with the key on and engine off
- 5 Test the sensor circuit for opens or shorts using a wiring diagram and multimeter
- 6 Replace the engine coolant temperature sensor 6 if faulty
- 7 Clear the diagnostic trouble codes and verify the repair with a test drive

Hidden Causes of P2BB6 You Might Miss

- A stuck-open thermostat can cause the coolant temperature to stay too low, triggering this code even when the sensor itself is functioning correctly.
- Air pockets in the cooling system after a coolant service can cause erratic sensor readings and set this code intermittently.
- The sensor may be misdiagnosed when the actual problem is a chafed wire harness near hot engine components, so always inspect the entire circuit.
- On some vehicles, sensor 6 is used for cylinder head temperature monitoring, and its failure may not affect the dashboard gauge, leading drivers to ignore the code.
- A faulty ground connection for the sensor circuit can produce voltage readings that mimic a failed sensor, so check grounds before replacing parts.

Can I keep driving with P2BB6?

You can generally continue driving with this code, but avoid prolonged idling or heavy loads until it is repaired, as inaccurate temperature data can affect fuel economy and emissions. If the engine overheats or runs poorly, stop driving and seek service immediately.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Wiring diagram for the vehicle
- Socket set and ratchet
- Coolant refractometer or hydrometer



Reading P2BB6

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- B6** 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/p2bb6/>

