

GENERIC · POWERTRAIN

P2D59

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D59

Generator B Over Temperature

P2D59 indicates that the engine control module has detected an over-temperature condition for Generator B, which is the second generator or alternator in a multi-generator system. The computer sets this code when the generator's internal temperature sensor reports a value above the calibrated threshold, typically due to excessive electrical load or a cooling fault.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the battery or charging system warning light on the dashboard
- Reduced charging output or a completely dead battery if the generator shuts down to protect itself
- Electrical accessories such as lights or infotainment dimming or malfunctioning
- A burning smell or visible smoke from the generator area in severe cases
- Often no symptoms besides the warning light, especially if the generator is still producing some charge

Common causes, most likely first

- 1 A failing generator bearing or internal mechanical drag causing excessive heat
- 2 A shorted or faulty voltage regulator inside Generator B leading to overcharging and overheating
- 3 Restricted cooling airflow to the generator, such as a blocked duct or debris-packed fins
- 4 A damaged or corroded generator wiring harness causing high resistance and heat
- 5 An overloaded electrical system from aftermarket accessories drawing too much current
- 6 A faulty temperature sensor inside Generator B giving a false over-temperature reading

How to diagnose and fix it

- 1 Perform a visual inspection of Generator B for debris, damaged cooling fins, or a seized bearing
- 2 Use a scan tool to check live data for Generator B temperature and charging voltage to confirm the over-temperature condition
- 3 Test the generator's output with a carbon pile load tester to verify it meets specifications under load
- 4 Inspect and clean all generator electrical connections, including the battery terminals and ground straps
- 5 Check for aftermarket electrical accessories that may be overloading the charging system and disconnect them temporarily
- 6 If the temperature sensor is accessible, test its resistance against specifications and replace if faulty
- 7 Replace Generator B if internal faults such as a bad bearing or regulator are confirmed



Generator B overheating: beyond the obvious

- A common oversight is a slipping or glazed serpentine belt that drives Generator B, which reduces its speed and causes it to work harder and overheat without obvious noise.
- The code can be set by a faulty temperature sensor inside the generator even when the unit is not actually overheating, so always verify with live data before replacing the generator.
- High-resistance in the generator's output cable or ground circuit can cause the generator to overcharge and overheat, and this is often missed when only the generator itself is tested.
- On vehicles with two generators, the second unit often runs only under high electrical demand, so the over-temperature code may only appear during specific driving conditions such as towing or heavy accessory use.
- A weak or failing battery can cause the generator to run at maximum output continuously, leading to overheating and setting this code, so always load-test the battery as part of diagnosis.

Can I keep driving with P2D59?

You can drive a short distance to a repair shop if the charging system warning light is on and the battery is not draining, but avoid using unnecessary electrical accessories and do not embark on long trips. If the battery voltage drops or the engine begins to stall, pull over safely and arrange a tow to prevent being stranded.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Carbon pile load tester
- Infrared thermometer
- Basic hand tools (wrenches, sockets, screwdrivers)

Reading P2D59

P Powertrain: engine, transmission and emissions.

2 Generic (SAE) code: it means the same thing on every OBD-II vehicle.

D Hybrid propulsion.

59 The exact fault within that area.

Often seen with

P0562 System Voltage Low · **P0563** System Voltage High · **P0620** Generator Control Circuit Malfunction · **P2D58** Generator B Mechanical Performance · **P2D5A** Reductant Level Sensor A/B Correlation



See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2d59/>

