

GENERIC · POWERTRAIN

P0B39

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B39

Motor Electronics Coolant Pump B Control Circuit Low

P0B39 indicates that the powertrain control module (PCM) has detected a low-voltage condition on the control circuit for the motor electronics coolant pump 'B'. This pump is typically an electric auxiliary pump used to circulate coolant through the motor electronics (inverter, DC-DC converter, or battery pack) on hybrid and electric vehicles. The PCM monitors the control circuit and sets this code when the voltage on the control wire falls below the expected threshold, indicating a short to ground, an open circuit, or a faulty pump.

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 or service vehicle soon message
- Often no symptoms besides the warning light
- Possible reduced power or limp mode if the vehicle's protection strategy limits output
- Overheating of motor electronics components, which may trigger additional warnings
- In rare cases, the coolant pump may run continuously or not at all, affecting cabin heat or battery thermal management

Common causes, most likely first

- 1 Faulty motor electronics coolant pump B (internal short or open)
- 2 Damaged or corroded wiring harness or connector at the pump
- 3 Short to ground in the control circuit between the PCM and the pump
- 4 Open circuit in the control circuit due to a broken wire or poor connection
- 5 Failed PCM driver for the pump control circuit (less common)
- 6 Coolant contamination or debris causing pump seizure and excessive current draw



How to diagnose and fix it

- 1 Use a scan tool to verify the code and check for any related codes in other modules
- 2 Visually inspect the pump, connector, and wiring for damage, corrosion, or loose pins
- 3 Disconnect the pump and measure resistance across the pump motor terminals to check for an open or short
- 4 Check the control circuit for a short to ground or open circuit using a multimeter and wiring diagram
- 5 Test the control circuit with a known-good pump or a test light to verify PCM output
- 6 If the circuit is intact, replace the motor electronics coolant pump B and clear the code
- 7 After repair, clear codes and perform a road test to confirm the pump operates and the code does not return

Don't overlook the control circuit wiring

- A common mistake is replacing the coolant pump without checking the control circuit for a short to ground, which can damage the new pump or leave the code unresolved.
- The pump may only run under specific conditions such as high-load driving or battery cooling, so a static test may not reveal the fault; live data monitoring during a road test is often necessary.
- Corrosion inside the pump connector can cause a low-voltage signal even if the pump itself is good, so always inspect the pins and seals.
- This code can be set by a failing PCM driver, but that is rare; confirm the pump and wiring first before condemning the PCM.
- On some vehicles, a low coolant level or air pocket can cause the pump to draw excessive current and set this code, so check the cooling system condition as well.

Can I keep driving with P0B39?

It is generally safe to drive short distances to a repair shop, but avoid heavy acceleration, sustained high speeds, or towing, as the motor electronics may overheat if the pump is not functioning. If the vehicle enters limp mode or you see overheating warnings, stop and seek professional assistance.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools
- Test light or jumper wires



Reading P0B39

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

Often seen with

P0A93 Inverter A Cooling System Performance · **P0B38** Motor Electronics Coolant Pump B Control Circuit/Open · **P0B3A** Motor Electronics Coolant Pump B Control Circuit High · **P0B3B** Hybrid/EV Battery Voltage Sense A Circuit · **P0C73** Hybrid Battery Pack Cooling Pump 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/p0b39/>

