

GENERIC · POWERTRAIN

P2E63

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E63

Engine Coolant Bypass Valve E Control Circuit Low

P2E63 indicates that the powertrain control module (PCM) has detected an abnormally low voltage on the control circuit for the engine coolant bypass valve E. This valve directs coolant flow to regulate temperature, and a low circuit condition means the PCM cannot reliably command the valve to open or close.

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
- Prolonged engine warm-up times or inconsistent cabin heater performance
- Coolant temperature gauge reading lower or higher than normal
- Possible reduced fuel economy due to incorrect engine temperature
- In rare cases, the engine may enter a limp-home mode with reduced power

Common causes, most likely first

- 1 Damaged or corroded electrical connector at the bypass valve
- 2 Open or shorted wire in the control circuit between the PCM and the valve
- 3 Failed coolant bypass valve solenoid or actuator
- 4 Blown fuse or poor ground connection for the valve circuit
- 5 Faulty powertrain control module (PCM) driver circuit, though uncommon

How to diagnose and fix it

- 1 Inspect the bypass valve connector and wiring for corrosion, damage, or loose pins
- 2 Check the fuse and ground connections related to the valve circuit
- 3 Measure resistance of the valve solenoid and compare to manufacturer specifications
- 4 Test the control circuit for continuity and short-to-ground using a multimeter
- 5 If the circuit is intact, command the valve with a scan tool to verify operation
- 6 Replace the coolant bypass valve if it fails electrical or functional tests
- 7 Clear the code and verify the repair with a test drive and live data monitoring



Low circuit codes often misdiagnosed

- A low circuit code can be set by a poor ground connection rather than a failed valve, so always check grounds before replacing parts.
- Some vehicles use the bypass valve for rapid cabin heating, so a fault may cause heater performance issues before any drivability symptoms appear.
- The PCM may set this code intermittently if the connector is loose, so wiggle-test the harness while monitoring live data.
- Aftermarket accessories or improper electrical repairs near the engine can introduce resistance that triggers this code.
- Do not overlook the possibility of a faulty PCM driver, but only after all other circuit and component tests have passed.

Can I keep driving with P2E63?

You can generally continue driving with this code, but avoid sustained high-speed or heavy-load operation until it is repaired, as incorrect coolant flow may lead to overheating or poor heater performance.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe set
- Service manual or wiring diagram for the specific vehicle

Reading P2E63

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

Often seen with

P0128 Coolant Thermostat (Coolant Temperature Below Thermostat Reg · **P0597** Thermostat Heater Control Circuit/Open · **P2181** Cooling System Performance · **P2E62** Engine Coolant Bypass Valve E Control Circuit/Open · **P2E64** Engine Coolant Bypass Valve E Control Circuit High



See it working

Watch the animated explainer **Four-Stroke Engine Cutaway: Intake to Exhaust** on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e63/>

