

GENERIC · POWERTRAIN

P2E64

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E64

Engine Coolant Bypass Valve E Control Circuit High

P2E64 indicates that the powertrain control module (PCM) has detected an abnormally high voltage on the control circuit for the engine coolant bypass valve 'E'. This valve routes coolant away from the heater core or radiator during warm-up to speed engine heating, and a high-voltage condition usually means the circuit is open, shorted to power, or the valve's internal coil has failed.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Prolonged engine warm-up time or heater performance that feels weak
- Coolant temperature gauge that rises more slowly than usual or fluctuates
- In some vehicles, a stored code may be the only sign until a scan tool is connected
- Rarely, the engine may enter a reduced-power or fail-safe mode if the fault affects other coolant control functions

Common causes, most likely first

- 1 Open or broken wire in the bypass valve control circuit
- 2 Short to voltage on the control circuit, often from chafed insulation
- 3 Failed coolant bypass valve solenoid or actuator coil
- 4 Corroded or loose electrical connector at the valve
- 5 Faulty powertrain control module driver for that circuit (less common)
- 6 Coolant contamination or mechanical binding inside the valve causing abnormal current draw

How to diagnose and fix it

- 1 Use a scan tool to confirm P2E64 is active and check for related coolant or valve codes
- 2 Inspect the bypass valve connector and harness for corrosion, looseness, or chafed wires
- 3 Measure resistance across the valve solenoid and compare to the manufacturer's specification
- 4 Back-probe the control circuit with a multimeter to check for an open or short to voltage
- 5 Test the control circuit with a fused jumper or test light to verify the PCM driver operation
- 6 Replace the coolant bypass valve if electrical tests point to an internal coil failure
- 7 Clear codes and perform a road test to confirm the repair and ensure the monitor runs to completion



What a high-voltage valve code really means

- A high-voltage code on a control circuit often indicates an open circuit rather than a short, so a broken wire or unplugged connector is a common find.
- Technicians sometimes replace the bypass valve only to discover the real fault is a corroded terminal inside the connector, so always inspect the pins closely.
- The PCM may set this code intermittently if the circuit opens only when the engine is cold or vibrating, so wiggle-testing the harness is essential.
- On some vehicles, the coolant bypass valve shares a ground or power feed with other actuators, and a fault in that shared circuit can trigger P2E64 along with other codes.
- A failed bypass valve can cause the engine to warm up slowly, but many drivers never notice because the gauge still reaches normal range eventually.

Can I keep driving with P2E64?

You can usually continue driving with P2E64 because the engine remains protected, but avoid ignoring it if you notice overheating or poor heater performance. Have the circuit inspected soon to prevent a more serious coolant control failure.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Test light or fused jumper wire
- Wire terminal pick and electrical contact cleaner
- Vehicle-specific service information for circuit specifications

Reading P2E64

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

Often seen with

P0128 Coolant Thermostat (Coolant Temperature Below Thermostat Reg · **P0597** Thermostat Heater Control Circuit/Open · **P0598** Thermostat Heater Control Circuit Low · **P2E63** Engine Coolant Bypass Valve E Control Circuit Low · **P2E65** Engine Coolant Bypass Valve E Stuck/Open



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/p2e64/>

