

GENERIC · POWERTRAIN

P0E73

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0E73

Coolant Bypass Valve A Control Circuit/Open

P0E73 indicates that the powertrain control module (PCM) has detected an open circuit or excessive resistance in the control circuit for the coolant bypass valve, which is used to manage coolant flow for faster engine warm-up and improved efficiency. The PCM commands the valve to move and monitors the circuit for expected electrical feedback, but the signal is missing or out of range, so it sets this code and may default to a fail-safe cooling strategy.

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
- Longer than normal engine warm-up times, especially in cold weather
- Reduced fuel economy due to the engine running richer for extended periods
- Inconsistent cabin heater performance, with lukewarm air until the engine fully warms
- Possible overheating if the valve fails in a position that restricts coolant flow
- In some vehicles, a message on the driver information center indicating a cooling system fault

Common causes, most likely first

- 1 Broken, chafed, or disconnected wire in the coolant bypass valve control circuit
- 2 Corroded or loose electrical connector at the valve or PCM
- 3 Failed coolant bypass valve solenoid or actuator (open internal coil)
- 4 Faulty PCM driver for the control circuit (rare but possible)
- 5 Coolant intrusion into the valve connector or actuator, causing corrosion and an open circuit
- 6 Aftermarket or incorrect valve installed that does not match the PCM's expected resistance



How to diagnose and fix it

- 1 Inspect the coolant bypass valve connector and wiring for damage, corrosion, or looseness, and repair as needed
- 2 Measure the resistance of the valve solenoid with a multimeter and compare to the manufacturer's specification to check for an open coil
- 3 Check for continuity and short-to-ground or short-to-power on the control circuit between the valve and PCM, repairing any wiring faults
- 4 Test the valve actuator with a bidirectional scan tool to command it open and closed while observing circuit feedback or listening for movement
- 5 If the valve fails to respond and wiring is good, replace the coolant bypass valve
- 6 Clear the diagnostic trouble codes and perform a road test to verify the repair and ensure the code does not return
- 7 If the code persists after all other checks, diagnose the PCM control circuit driver or consult a dealer for reprogramming or replacement

Don't Overlook the Coolant Bypass Valve Circuit

- A common oversight is assuming the valve itself is defective when the real problem is a corroded connector pin or a wire rubbed through by engine vibration, so always perform a thorough visual and electrical inspection first.
- This code can be set by a valve that is mechanically stuck but electrically intact, so a resistance check alone may not reveal the fault; command the valve with a scan tool to confirm movement.
- On some vehicles, the coolant bypass valve is part of a larger thermostat housing assembly, and replacing just the solenoid may not be possible, leading to higher repair costs than expected.
- A failing coolant temperature sensor can cause the PCM to command the bypass valve incorrectly, but that would typically set a different code; however, always check live data to ensure the PCM is not misinterpreting conditions.
- After replacing the valve, some vehicles require a coolant bleed procedure and a relearn of the valve's end stops using a scan tool, otherwise the code may return immediately.

Can I keep driving with P0E73?

You can generally drive the vehicle with this code, but avoid extended idling and monitor the temperature gauge closely, as a stuck valve can cause overheating or poor heater performance. If the engine temperature rises above normal or you see steam, stop and have the vehicle towed to prevent engine damage.



Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Wire repair kit (splices, heat shrink, electrical tape)
- Socket and ratchet set
- Coolant drain pan and funnel

Reading P0E73

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
73	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 · **P0E74** Coolant Bypass Valve A Control Circuit Low · **P2183** Engine Coolant Temperature Sensor 2 Circuit Range/Performanc

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/p0e73/>

