



P0E20

Hybrid/EV Battery Pack Coolant Control Valve A Control Circuit Driver Current/Temperature Too High

P0E20 indicates that the hybrid or electric vehicle battery pack coolant control valve driver circuit has detected excessively high current or temperature, meaning the valve actuator is drawing too much power or the driver circuit is overheating. The computer monitors the current and temperature of the control circuit and sets this code when either exceeds safe limits, often due to a shorted valve, damaged wiring, or a failing control module.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message, often with no other symptoms.
- Reduced hybrid/EV performance or limited power output as the system protects the battery pack.
- The coolant control valve may fail to open or close, leading to poor battery thermal management.
- Possible overheating of the battery pack in extreme cases, triggering additional warnings.
- In some vehicles, the engine may start more frequently or the EV mode may be disabled.
- A noticeable lack of cabin heat or cooling if the valve also controls HVAC flow, though this is less common.

Common causes, most likely first

- 1 Faulty coolant control valve actuator with an internal short or seized mechanism causing high current draw.
- 2 Damaged or corroded wiring in the valve control circuit, such as a short to ground or power.
- 3 Connector pins that are loose, bent, or contaminated with coolant or debris, increasing resistance.
- 4 A failing driver circuit inside the hybrid/EV control module, often due to heat or component degradation.
- 5 Coolant intrusion into the valve connector or actuator, leading to electrical tracking and high current.
- 6 A stuck valve due to debris or corrosion, forcing the actuator to work harder and overheat.



How to diagnose and fix it

- 1 Use a scan tool to retrieve all codes and freeze-frame data, then visually inspect the valve, connector, and wiring for obvious damage or coolant leaks.
- 2 Disconnect the valve connector and measure resistance across the actuator terminals; compare to the manufacturer's specification to check for an open or shorted winding.
- 3 Check for power and ground at the valve connector with the key on, using a multimeter or test light, to verify the control circuit integrity.
- 4 Inspect the driver circuit in the control module for signs of overheating or burnt components if the valve and wiring test good.
- 5 Perform a bidirectional actuator test with a scan tool to command the valve open and closed while monitoring current and temperature parameters.
- 6 If the valve is faulty, replace it and clear the codes; if the driver circuit is faulty, repair or replace the control module as needed.
- 7 After repairs, verify proper operation by clearing codes and running the vehicle through a drive cycle that exercises the coolant control valve.

Common misdiagnosis of P0E20

- A stuck valve can cause high current without any electrical fault, so always check for mechanical binding before replacing the actuator.
- The driver circuit may be shared with other actuators, so a fault in a related system can set this code even if the coolant valve itself is fine.
- Coolant leaks into the connector are a frequent cause that is easily overlooked during visual inspection, especially on vehicles with plastic valve housings.
- High temperature in the driver circuit can be intermittent, so the code may not reappear immediately after clearing; always perform a thorough road test.
- Some vehicles use a pulse-width modulated signal to control the valve, and a failing driver may only show up under specific duty cycles, requiring a lab scope for accurate diagnosis.

Can I keep driving with P0E20?

It is generally safe to drive with this code if the vehicle is not overheating and performance is normal, but avoid long trips or heavy loads until diagnosed. If the battery pack temperature warning appears or the vehicle enters reduced power mode, stop driving and seek professional service immediately.



Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter with resistance and voltage measurement
- Test light or power probe for circuit testing
- Lab scope for analyzing pulse-width modulated signals
- Manufacturer-specific service information for circuit specifications and actuator tests

Reading P0E20

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A0F** Engine Failed to Start · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P0E21** Hybrid/EV Battery Pack Coolant Control Valve B Control Circu · **P0E22** Hybrid/EV Battery Pack Coolant Control Valve C Control Circu

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/p0e20/>

