

GENERIC · POWERTRAIN

P2C23

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C23

Exhaust Heat Exchanger Exhaust Bypass Valve A Position Sensor Performance

P2C23 is a generic powertrain code indicating that the powertrain control module (PCM) has detected an out-of-range or erratic signal from the exhaust bypass valve position sensor, which is part of the exhaust heat exchanger assembly. The PCM compares the sensor's reported valve position against the commanded position and sets this code when the correlation falls outside the expected range for a calibrated time period.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine performance or power, especially during demanding driving conditions
- Poor fuel economy due to incorrect exhaust flow management
- Inability to enter or maintain certain drive modes that rely on exhaust heat management
- In rare cases, a burning smell or visible exhaust leaks near the heat exchanger
- Intermittent operation of the exhaust bypass valve, causing fluctuating performance

Common causes, most likely first

- 1 Faulty exhaust bypass valve position sensor or its internal circuitry
- 2 Wiring damage such as chafed, corroded, or disconnected wires between the sensor and the PCM
- 3 Sticking or binding exhaust bypass valve mechanism due to carbon buildup or mechanical wear
- 4 Failed exhaust heat exchanger assembly, including a stuck valve actuator
- 5 Corroded or loose electrical connectors at the sensor or PCM
- 6 PCM software calibration issue or internal fault (less common)



How to diagnose and fix it

- 1 Perform a visual inspection of the exhaust bypass valve, sensor, and wiring for obvious damage or corrosion
- 2 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear codes and test-drive to see if P2C23 returns
- 3 Check the sensor's reference voltage and ground circuits with a multimeter to rule out wiring faults
- 4 Command the bypass valve open and closed with a bidirectional scan tool while monitoring the position sensor signal for smooth operation
- 5 Remove and inspect the bypass valve for carbon buildup or mechanical binding; clean or replace as necessary
- 6 Replace the exhaust bypass valve position sensor if the signal is erratic or out of specification
- 7 If all else fails, reprogram the PCM with the latest calibration or replace it after confirming all other components are good

Before replacing the heat exchanger assembly

- A sticking bypass valve is often the root cause, and cleaning the valve mechanism can resolve the code without replacing expensive parts.
- The position sensor is frequently misdiagnosed as the sole culprit when the actual problem is a binding valve that prevents the sensor from reading correctly.
- Wiring harness damage near the exhaust heat exchanger is common due to heat exposure, so always inspect the harness routing and insulation.
- This code can be set by a PCM calibration issue, so check for technical service bulletins (TSBs) before condemning hardware.
- After repairs, a relearn or adaptation reset may be required for the PCM to correctly interpret the new sensor signals.

Can I keep driving with P2C23?

You can generally continue driving with this code, but avoid aggressive acceleration or heavy loads until it is repaired, as the bypass valve may not function correctly and could affect emissions or performance. If you notice severe power loss or unusual noises, have the vehicle inspected promptly.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Basic hand tools (sockets, wrenches, screwdrivers)
- Vacuum pump or smoke machine for testing valve operation
- Service information for wiring diagrams and torque specifications



Reading P2C23

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

Often seen with

P2C24 Exhaust Heat Exchanger Exhaust Bypass Valve A Position Senso · **P2C25** Exhaust Heat Exchanger Exhaust Bypass Valve A Position Senso · **P2C26** Fuel Injector Group B Supply Sense Circuit · **P2C27** Fuel Injector Group B Supply Sense Circuit Low · **P2C28** Fuel Injector Group B Supply Sense 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/p2c23/>

