

GENERIC · POWERTRAIN

P2E23

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E23

Drive Motor A Phase Z Current Sensor Circuit

P2E23 indicates that the inverter or motor control module has detected an abnormal signal from the current sensor that monitors phase Z of the three-phase drive motor A circuit. The sensor's output is outside the expected voltage or current range, so the module cannot reliably measure phase current and sets this code to protect the hybrid or electric drive system.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or hybrid system warning light, often with no other noticeable symptoms
- Reduced power or a limp-home mode that limits vehicle speed and acceleration
- The vehicle may refuse to start or shift into gear if the fault is severe
- Intermittent hesitation or shuddering during acceleration under load
- A message on the dash indicating a fault in the hybrid or electric drive system
- Possible stalling or sudden loss of motive power while driving, though this is less common

Common causes, most likely first

- 1 Faulty phase Z current sensor or its internal circuitry
- 2 Damaged or corroded wiring or connector at the current sensor or motor control module
- 3 Open or short circuit in the sensor signal or reference voltage circuit
- 4 Failed motor control module or inverter assembly
- 5 Internal motor fault causing abnormal current draw that the sensor detects as out of range
- 6 Poor ground connection for the sensor or module
- 7 Aftermarket accessories or improper repairs that disturb the sensor wiring



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to understand when the fault occurs
- 2 Visually inspect the current sensor, its connector, and the wiring harness for damage, corrosion, or loose pins
- 3 Check the sensor's reference voltage and signal voltage with a multimeter according to the manufacturer's procedure
- 4 Perform a wiggle test on the harness while monitoring sensor data to catch intermittent faults
- 5 Compare live sensor data for all three phases to identify which phase is abnormal
- 6 If wiring and sensor check out, follow the manufacturer's diagnostic flow for the motor control module or inverter
- 7 Replace the faulty current sensor or motor control module as needed, then clear codes and verify the repair with a test drive

What the phase Z sensor code really tells you

- A phase Z current sensor fault often originates from a chafed wire in the harness near the motor or inverter, not from the sensor itself, so a thorough harness inspection is critical before replacing parts.
- The code can be set by a low 12-volt battery or poor ground connection that causes the sensor's reference voltage to sag, so always verify battery and ground integrity first.
- In some vehicles, this code appears after a collision repair or motor replacement where the phase cables were disturbed, and the sensor may simply need recalibration or a connector reseal.
- Do not assume the motor control module is failed; a faulty sensor or wiring can mimic module failure, and misdiagnosis leads to expensive unnecessary replacements.
- Intermittent codes may only set during high-load conditions or temperature extremes, so a road test with live data monitoring is often needed to reproduce the fault.

Can I keep driving with P2E23?

If the vehicle is in limp mode or the warning light is flashing, avoid driving and have it towed to a qualified technician. If the light is steady and the car drives normally, you may drive cautiously to a repair shop, but avoid heavy acceleration or long trips until diagnosed.

Tools that help

- OBD-II scan tool with live data and hybrid/EV capability
- Digital multimeter with min/max recording
- Oscilloscope for signal analysis
- Manufacturer service information for wiring diagrams and pinouts
- Insulation resistance tester (megohmmeter) for high-voltage circuit checks
- Basic hand tools for connector and harness inspection



Reading P2E23

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

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P2E20** Drive Motor A Phase Y Current Sensor Circuit Range/Performan · **P2E21** Drive Motor A Phase Y Current Sensor Circuit Low · **P2E22** Drive Motor A Phase Y Current Sensor Circuit High · **P2E24** Drive Motor A Phase Z Current Sensor Circuit Range/Performan

See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e23/>

