

GENERIC · POWERTRAIN

P2E4B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E4B

Battery Charger Coupler Temperature Sensor C Circuit Range/Performance

P2E4B indicates that the powertrain control module has detected an out-of-range or performance fault in the temperature sensor circuit for the battery charger coupler, which is the connector assembly that links the charging system to the high-voltage battery. The computer compares the sensor signal against expected values and sets this code when the voltage or resistance falls outside the normal operating window for a calibrated time.

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 or service vehicle soon message
- Often no symptoms besides the warning light
- Charging system may default to a reduced rate or stop charging altogether
- Intermittent charging interruptions or failure to initiate a charge session
- Possible high-voltage battery cooling fan running excessively or not at all
- A warning message on the instrument cluster indicating a charging system fault

Common causes, most likely first

- 1 Faulty battery charger coupler temperature sensor
- 2 Damaged or corroded wiring harness at the coupler connector
- 3 Loose or contaminated electrical connector pins at the sensor
- 4 Open or short circuit in the sensor signal or ground circuit
- 5 Failed powertrain control module or battery charger control module
- 6 Extreme ambient temperatures causing the sensor to read outside its calibrated range
- 7 Aftermarket charging equipment or improper charging procedure affecting coupler temperature



How to diagnose and fix it

- 1 Inspect the battery charger coupler and its connector for physical damage, corrosion, or debris, and clean or repair as needed
- 2 Use a scan tool to read the live temperature sensor data and compare it to actual coupler temperature with an infrared thermometer
- 3 Check the sensor circuit wiring for continuity, shorts to ground, and shorts to voltage using a digital multimeter
- 4 Perform a resistance test on the temperature sensor and compare to the manufacturer's specification
- 5 Verify that the sensor connector is fully seated and that pins are not backed out or spread
- 6 If the sensor is faulty, replace the battery charger coupler temperature sensor or the coupler assembly as required
- 7 Clear the diagnostic trouble codes and perform a road test or charging cycle to confirm the repair

What the coupler sensor code really means

- A common mistake is replacing the high-voltage battery pack when the actual fault is a simple corroded connector at the charge coupler, which costs far less to fix.
- The code can be set by a weak 12-volt auxiliary battery causing low system voltage, so always check the 12-volt battery and charging system before condemning the high-voltage sensor.
- Some vehicles use the coupler temperature sensor to derate charging current, so a fault may cause slow charging rather than a complete failure, and drivers often miss the reduced rate.
- Aftermarket charging cables or adapters that do not communicate properly with the vehicle can cause the coupler to overheat and set this code, even if the sensor itself is good.
- The sensor circuit may share a ground with other sensors, so a bad ground can set multiple codes including P2E4B, leading to misdiagnosis of the sensor itself.

Can I keep driving with P2E4B?

You can generally continue driving the vehicle because this fault affects the charging system rather than the drivetrain, but avoid relying on high-voltage charging until the issue is repaired. If the vehicle fails to charge or shows a reduced range estimate, arrange for service promptly to prevent being stranded.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Wire terminal pick and electrical contact cleaner
- Vehicle-specific service information for circuit specifications



Reading P2E4B

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 4B** The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0AA6** Hybrid/EV Battery Voltage System Isolation Fault
· **P2E4A** Battery Charger Coupler Temperature Sensor C Circuit · **P2E4C** Battery Charger Coupler Temperature Sensor C Circuit Low · **P2E4D** Battery Charger Coupler Temperature Sensor C Circuit High

See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e4b/>

