

GENERIC · POWERTRAIN

P2E4A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E4A

Battery Charger Coupler Temperature Sensor C Circuit

P2E4A indicates that the powertrain control module has detected an abnormal condition in the electrical circuit for the battery charger coupler temperature sensor C, which is used to monitor the temperature of the charging connector on plug-in hybrid and electric vehicles. The computer compares the sensor signal against expected values and sets this code when the voltage or resistance falls outside the valid range, often due to an open, short, or sensor failure.

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, especially if the fault is intermittent
- Charging system may default to a reduced power mode or stop charging altogether
- Inability to initiate or complete a charging session on some vehicles
- A noticeable delay or failure when connecting the charge coupler
- Possible display of a charging system fault message on the dashboard

Common causes, most likely first

- 1 Faulty battery charger coupler temperature sensor C
- 2 Damaged or corroded wiring harness or connector at the charge coupler
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Water intrusion or contamination in the charge coupler assembly
- 5 Loose or improperly seated charge coupler connector
- 6 Failed powertrain control module or battery charger control module (less common)



How to diagnose and fix it

- 1 Inspect the charge coupler and sensor connector for corrosion, water intrusion, or physical damage
- 2 Check the sensor resistance or voltage against the manufacturer's specification
- 3 Perform a wiggle test on the harness and connectors while monitoring sensor data
- 4 Measure continuity and resistance of the signal and ground circuits from the sensor to the control module
- 5 Repair or replace any damaged wiring, terminals, or connectors
- 6 Replace the battery charger coupler temperature sensor if it fails the electrical test
- 7 Clear the diagnostic trouble codes and verify the repair with a test drive and charging cycle

What Most Techs Miss on Coupler Sensor Codes

- A common oversight is replacing the sensor without checking the charge coupler for water intrusion, which can repeatedly damage new sensors.
- The code can be set by a poor connection at the charge coupler even when the sensor itself tests good, so always perform a voltage drop test under load.
- Some vehicles use the coupler temperature sensor to derate charging current, so a fault may cause slow charging rather than a complete failure, leading owners to ignore the warning.
- Intermittent faults often occur only when the coupler is wiggled or exposed to temperature extremes, so a static test may not reveal the problem.
- The sensor circuit may share a ground with other sensors, and a fault in that shared ground can set multiple codes, so check for companion codes before condemning the sensor.

Can I keep driving with P2E4A?

You can generally drive the vehicle, but charging may be limited or disabled, so avoid relying on charging until the fault is repaired. Do not ignore the warning light, as continued operation with a faulty coupler sensor may prevent charging entirely or cause the vehicle to enter a reduced power mode.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Terminal pick and electrical contact cleaner
- Heat gun or hair dryer for moisture testing (optional)



Reading P2E4A

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

Often seen with

P0D4E Battery Charger Hybrid/EV Battery Output Voltage Sensor Circ · **P2E48** Hybrid/EV Electronics Coolant Pump B Overspeed · **P2E49** Hybrid/EV Electronics Coolant Pump B Stuck/Stalled · **P2E4B** Battery Charger Coupler Temperature Sensor C Circuit Range/P · **P2E4C** Battery Charger Coupler Temperature Sensor C Circuit Low

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e4a/>

