

GENERIC · POWERTRAIN

P2E52

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E52

Battery Charger Coupler Temperature Sensor D Circuit High

P2E52 indicates that the powertrain control module has detected an abnormally high voltage signal from the battery charger coupler temperature sensor D circuit, which monitors the temperature of the charging coupler on plug-in hybrid and electric vehicles. The sensor's internal thermistor resistance drops as temperature rises, so a high signal voltage tells the module that the coupler is either extremely cold or, more often, that the circuit is open or shorted to voltage.

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 or service vehicle soon message with no other noticeable change in driving behavior
- Charging session may fail to start or abort shortly after plugging in, especially in hot or cold ambient conditions
- Reduced or disabled DC fast charging capability on vehicles equipped with multiple charge ports
- A message on the instrument cluster warning that the charging coupler is too hot or that charging is unavailable
- Intermittent charging faults that appear only when the coupler is exposed to temperature extremes or after prolonged high-power charging
- Often no symptoms besides the warning light when the fault is a brief signal glitch stored during a single drive cycle

Common causes, most likely first

- 1 Open circuit in the sensor signal wire between the coupler temperature sensor and the control module, often from a broken wire at the coupler connector
- 2 Corroded, water-intruded, or loose electrical connector at the charge coupler temperature sensor
- 3 Failed coupler temperature sensor thermistor reading out of range and driving the signal voltage high
- 4 Short to voltage on the sensor signal circuit, which can occur if the harness rubs through against a live wire in the charge port area
- 5 Faulty battery charger coupler assembly where the sensor is integrated and cannot be serviced separately
- 6 Internal failure in the control module that reads the sensor signal, though this is less common than wiring faults
- 7 Damage to the charge port harness from impact, debris, or repeated cable flexing that opens the signal circuit



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, record freeze-frame data for P2E52, and clear codes to see if the fault returns immediately or only under specific charging conditions
- 2 Visually inspect the charge coupler, sensor connector, and harness routing for corrosion, water intrusion, chafing, or physical damage
- 3 Back-probe the sensor signal and ground circuits at the coupler connector and compare voltage readings with the sensor's expected range at the current ambient temperature
- 4 Measure resistance across the sensor thermistor and compare it to a temperature-resistance chart to confirm whether the sensor itself is skewed or open
- 5 Perform a voltage drop test on the signal circuit and check for a short to voltage by disconnecting both ends and measuring to battery positive
- 6 Repair or replace the damaged section of harness or the connector terminals, then verify the sensor signal returns to a normal range with the key on
- 7 If the sensor is integrated into the coupler assembly and tests out of specification, replace the coupler assembly and recalibrate or relearn the module as required

Why coupler sensor codes fool good technicians

- A high signal voltage on a negative temperature coefficient thermistor circuit usually means an open circuit rather than a genuinely cold coupler, so technicians who replace the sensor first often miss a broken wire at the coupler connector.
- Water intrusion into the charge coupler connector is a frequent root cause on vehicles that are charged outdoors in wet climates, and the corrosion can be hidden behind the connector seal until the terminals are physically removed and inspected.
- P2E52 can be set by a momentary signal glitch during a single charging session and may never return, so clearing the code and monitoring live sensor data through several complete charge cycles is a valid diagnostic step before condemning any part.
- The coupler temperature sensor is often part of a larger charge port assembly, and a fault in the sensor circuit can also disable DC fast charging as a protective strategy even though AC charging continues to work normally.
- A short to voltage on the sensor signal circuit can be caused by a rubbed harness near the charge port door hinge, an area that is easy to overlook when the vehicle is on a lift and the door is closed.

Can I keep driving with P2E52?

The vehicle remains safe to drive because the fault affects the charging system rather than the drivetrain, but charging performance may be limited or disabled. Avoid repeated high-power DC fast charging sessions until the circuit is repaired, and do not force a charging connector into a port that shows damage or corrosion.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage measurement functions
- Back-probe kit or pin probes for connector testing without damage
- Temperature-resistance chart or sensor specification for the coupler thermistor
- Wiring diagram for the charge coupler temperature sensor circuit
- Terminal removal tools and electrical contact cleaner for connector repair

Reading P2E52

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

Often seen with

P0AA6 Hybrid/EV Battery Voltage System Isolation Fault · **P2E50** Battery Charger Coupler Temperature Sensor D Circuit Range/P · **P2E51** Battery Charger Coupler Temperature Sensor D Circuit Low · **P2E53** Battery Charger Coupler Temperature D Too High · **P2E54** Exhaust Pressure Sensor C Circuit

See it working

Watch the animated explainer [How a Car Clutch Works: Diaphragm Clutch Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e52/>

