



P0E81

Battery Charger B Temperature Sensor Circuit Range/Performance

P0E81 indicates that the powertrain control module (PCM) has detected an out-of-range or performance fault in the temperature sensor circuit for battery charger B, which is typically the auxiliary charging unit for a high-voltage battery. The PCM compares the sensor signal against expected values and flags the code when the voltage or resistance stays outside the valid window for a calibrated time.

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, often with no other noticeable symptoms.
- Reduced or disabled charging from the auxiliary battery charger, leading to a slowly draining high-voltage battery.
- A warning message on the dash indicating a charging system fault or limited electric range.
- Inconsistent charging performance, such as the charger shutting off early or failing to start.
- Possible derating of the vehicle's electric drive system if the battery temperature cannot be properly monitored.

Common causes, most likely first

- 1 Faulty battery charger B temperature sensor, such as an open or shorted thermistor element.
- 2 Damaged or corroded wiring and connectors between the sensor and the PCM, including chafed harnesses or pushed pins.
- 3 High resistance or loose ground connection at the charger B housing or sensor return circuit.
- 4 Internal fault in the battery charger B assembly that affects the sensor signal, such as a cracked circuit board or failed solder joint.
- 5 PCM software calibration issue or internal driver fault causing incorrect sensor readings.
- 6 Extreme ambient temperatures or a recently replaced charger that requires a sensor learn or adaptation reset.



How to diagnose and fix it

- 1 Use a scan tool to read the live data for battery charger B temperature sensor and compare it with actual ambient and component temperatures to verify the fault.
- 2 Visually inspect the sensor, its connector, and the wiring harness for damage, corrosion, or loose pins, and repair any obvious issues.
- 3 Measure the sensor resistance with a multimeter and compare it to the manufacturer's specification for the current temperature.
- 4 Check the sensor reference voltage and ground circuit integrity by back-probing the connector with a multimeter while the ignition is on.
- 5 If the sensor is faulty, replace the temperature sensor or the charger assembly as required by the manufacturer's service procedure.
- 6 After repair, clear the diagnostic trouble codes and perform a road test or charging cycle to confirm the code does not return.
- 7 If the code persists, check for technical service bulletins or software updates for the PCM that address false temperature sensor codes.

What the charger temperature sensor really does

- The temperature sensor in battery charger B is often a negative temperature coefficient (NTC) thermistor, so resistance decreases as temperature rises; a faulty sensor can read plausible but incorrect values that still set the code.
- A common misdiagnosis is replacing the charger assembly when the real problem is a chafed wire in the harness near the charger, which can short to ground only when the vehicle is moving or vibrating.
- The PCM may set P0E81 if the sensor signal is stuck within a narrow range during a key cycle, even if the sensor is not completely open or shorted, so a simple resistance check at room temperature may not reveal the fault.
- Extreme cold or heat can cause a marginal sensor to drift out of range temporarily, setting the code without a permanent failure; always check for related codes and freeze-frame data before condemning parts.
- On some vehicles, the battery charger B temperature sensor shares a reference voltage or ground with other sensors, so a fault in a different sensor on the same circuit can cause P0E81 to set as a secondary code.

Can I keep driving with P0E81?

You can usually continue driving, but avoid relying on the auxiliary charger and monitor the high-voltage battery state of charge closely. If the vehicle enters a reduced power mode or shows a charging system warning, seek service promptly to prevent battery damage.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Back-probe kit or fine test leads
- Manufacturer service information for wiring diagrams and sensor specifications
- Socket and ratchet set for component access

Reading P0E81

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A0F** Engine Failed to Start · **P0E80** Battery Charger B Temperature Sensor Circuit · **P0E82** Battery Charger B Temperature Sensor Circuit Low · **P0E83** Battery Charger B Temperature Sensor Circuit High

See it working

Watch the animated explainer [How a Padlock Works: Pin Tumbler Lock in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0e81/>

