

GENERIC · POWERTRAIN

**P0EF4**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P0EF4

# Drive Motor C Temperature Sensor Circuit Low

P0EF4 means the computer has detected an abnormally low voltage signal from the temperature sensor that monitors the drive motor identified as 'C' in a hybrid or electric vehicle. The sensor circuit is reporting a temperature that is lower than physically possible or the signal is below the expected range, which can affect motor protection strategies and power limiting.

SYSTEM

**Powertrain**

CODE TYPE

**Generic (all makes)**

SEVERITY

**Medium**

FIX DIFFICULTY

**Professional**

AREA

**Hybrid propulsion**

## Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message
- Reduced power or limp mode as the controller limits motor output to protect components
- Often no symptoms besides the warning light if the fault is intermittent or only affects the sensor signal
- Possible overheating of the drive motor if the sensor is under-reporting actual temperature
- In some cases, the vehicle may refuse to start or shift into gear due to safety interlocks
- Erratic temperature gauge readings if the vehicle displays motor temperature

## Common causes, most likely first

- 1 Faulty drive motor C temperature sensor (internal short or open circuit)
- 2 Damaged or corroded wiring harness between the sensor and the control module
- 3 Loose or contaminated connector pins at the sensor or controller
- 4 Signal circuit shorted to ground or to a voltage source
- 5 Failed control module driver circuit for the sensor
- 6 Moisture intrusion into the sensor or connector causing low resistance
- 7 Aftermarket or incorrect sensor installed previously



## How to diagnose and fix it

- 1 Scan all modules and record freeze frame data to confirm the code and operating conditions
- 2 Visually inspect the sensor connector and wiring for damage, corrosion, or loose pins
- 3 Measure sensor resistance and compare to the manufacturer's temperature-resistance chart
- 4 Check the signal voltage at the sensor and at the control module to isolate a wiring fault
- 5 Perform a wiggle test on the harness while monitoring sensor voltage to find intermittent opens
- 6 If wiring is good, replace the temperature sensor and clear the code
- 7 If the code persists after sensor replacement, diagnose the control module and its internal driver circuit

## Why a low signal is not always the sensor

- A short to ground in the signal wire will mimic a failed sensor, so always check the harness before condemning the sensor.
- The sensor is often integrated into the motor and not sold separately, which can turn a simple fix into a major repair.
- Temperature sensor circuits on hybrid and electric motors are safety-critical; the controller may default to a fixed high temperature and limit power even if the actual motor is cool.
- Corrosion inside a connector can create a low-resistance path that pulls the signal voltage down without any visible damage.
- Some vehicles require a relearn or adaptation reset after sensor replacement to clear the code permanently.

## Can I keep driving with P0EF4?

You can usually drive the vehicle to a workshop, but expect reduced power and possible limp mode. Avoid heavy acceleration or long uphill grades until the fault is repaired, because the controller may not be able to protect the motor from overheating.

## Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Back probe pins or breakout box
- Manufacturer service information with wiring diagrams
- Temperature sensor resistance chart



## Reading P0EF4

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- F4** The exact fault within that area.

## Often seen with

**P0A3F** Drive Motor A Position Sensor Circuit · **P0A45** Drive Motor B Position Sensor Circuit · **P0EF3** Drive Motor C Temperature Sensor Circuit Range/Performance · **P0EF5** Drive Motor C Temperature Sensor Circuit High · **P0EF6** Drive Motor C Temperature Sensor Circuit Intermittent/Erratic

## 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/p0ef4/>

