

GENERIC · POWERTRAIN

P0EF2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0EF2

Drive Motor C Temperature Sensor Circuit

P0EF2 indicates that the powertrain control module has detected an abnormal condition in the temperature sensor circuit for drive motor C, which is the third traction motor in a multi-motor hybrid or electric vehicle. The computer monitors the sensor's signal voltage and sets this code when the reading falls outside the expected range or behaves erratically, preventing accurate thermal protection of the motor.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message, often with no other noticeable symptoms
- Reduced power output or a limp-home mode if the control module derates the motor to prevent overheating
- Inconsistent or absent temperature readings on a scan tool data stream for drive motor C
- Possible overheating of drive motor C during sustained high-load driving if the sensor underreports temperature
- In rare cases, a burning smell or smoke from an overheated motor if the fault causes a failure to activate cooling

Common causes, most likely first

- 1 Faulty temperature sensor element inside drive motor C, such as an open or shorted thermistor
- 2 Damaged or corroded wiring harness between the sensor and the control module, including chafed wires or broken pins
- 3 Loose or contaminated electrical connector at the sensor or control module
- 4 Internal failure in the control module's sensor input circuit, though this is less common
- 5 Coolant or oil intrusion into the sensor connector causing signal interference
- 6 Aftermarket or incorrect sensor replacement that does not match the original resistance curve



How to diagnose and fix it

- 1 Connect a scan tool and record the live data for drive motor C temperature to confirm the signal is stuck, erratic, or out of range
- 2 Visually inspect the sensor connector and harness for corrosion, chafing, or loose pins, and repair as needed
- 3 Measure the sensor's resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart
- 4 Check the sensor's reference voltage and ground circuits at the control module connector to rule out wiring faults
- 5 If the sensor is faulty, replace it according to the service procedure, which may require motor disassembly on some designs
- 6 Clear the diagnostic trouble codes and perform a road test to verify the repair and ensure the temperature reading updates correctly
- 7 If the code persists after sensor and wiring checks, diagnose the control module's internal input circuit or reprogram it per manufacturer updates

What the code does not always mean

- A P0EF2 code is frequently set by a simple loose connector or chafed wire rather than a failed sensor, so always inspect the harness before condemning the motor.
- Some vehicles use a shared temperature sensor signal for multiple motors, and a fault in one sensor can cause false readings for others, leading to misdiagnosis.
- The code can be triggered by a low 12-volt battery or charging system issue that causes the control module to misinterpret sensor voltages, so check the battery first.
- After replacing a sensor, the control module may require a relearn or calibration procedure, and skipping this step can cause the code to return immediately.
- Drive motor C is often the rear motor in all-wheel-drive electric vehicles, and its sensor may be exposed to road splash, making connector corrosion a common hidden cause.

Can I keep driving with P0EF2?

You can usually continue driving with this code because the vehicle will likely enter a reduced-power mode to protect the motor, but avoid sustained high-speed or heavy-load driving until the fault is repaired. If the motor temperature gauge shows overheating or you notice a burning smell, stop driving and seek service immediately.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Manufacturer service information for temperature-resistance charts
- Wire terminal removal and crimping tools
- Insulation resistance tester (megohmmeter)

Reading P0EF2

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
F2	The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0C00** Drive Motor A Current Low · **P0EF1** Battery Charger Coupler Unlock Disabled · **P0EF3** Drive Motor C Temperature Sensor Circuit Range/Performance · **P0EF4** Drive Motor C Temperature Sensor Circuit Low

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/p0ef2/>

