

GENERIC · POWERTRAIN

P06F2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P06F2

Reductant Control Module Internal Temperature Sensor Circuit Low

P06F2 means the reductant control module has detected a low-voltage condition on the internal temperature sensor circuit, which monitors the module's own operating temperature. The module compares the sensor signal to expected limits and sets this code when the voltage stays below the calibrated threshold for a set time.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) on the dashboard
- Often no symptoms besides the warning light, especially in mild weather
- Reductant system may enter a limited-operation or derate strategy in some vehicles
- Possible reduction in diesel exhaust fluid (DEF) dosing, leading to increased emissions
- In rare cases, the module may shut down completely, preventing DEF injection
- No noticeable change in engine performance during normal driving

Common causes, most likely first

- 1 Faulty internal temperature sensor inside the reductant control module
- 2 Damaged or corroded wiring harness between the sensor and the module connector
- 3 Loose, bent, or backed-out pins at the module connector
- 4 Water intrusion or contamination inside the module housing
- 5 Internal circuit board fault in the reductant control module
- 6 Extreme cold ambient temperatures causing the sensor to read below its normal range
- 7 Poor ground connection for the reductant control module



How to diagnose and fix it

- 1 Use a scan tool to verify P06F2 is current and check for related reductant system codes
- 2 Inspect the reductant control module connector and wiring for corrosion, damage, or loose pins
- 3 Measure resistance and voltage on the internal temperature sensor circuit according to the service manual
- 4 Check the module ground circuit for excessive resistance and repair as needed
- 5 If the sensor circuit tests within specification, replace the reductant control module
- 6 Clear the code and perform a reductant system relearn or adaptation procedure if required
- 7 Road-test the vehicle to confirm the code does not return and the DEF system operates normally

Why the module temperature sensor fails

- The internal temperature sensor is not a serviceable part on most reductant control modules, so a confirmed sensor fault usually means module replacement.
- A low-voltage code can be set by a poor ground connection rather than a failed sensor, so always check grounds before condemning the module.
- Extreme cold weather can cause the sensor to read below its normal range and set this code temporarily; clear it and recheck after the vehicle warms up.
- Water intrusion into the module housing is a common cause that technicians miss because the connector looks dry from the outside.
- This code does not always mean the module is defective; a chafed wire in the harness can produce the same low-voltage signal.

Can I keep driving with P06F2?

You can usually drive the vehicle with this code, but the reductant system may enter a derate strategy that limits speed or power if the fault persists. Avoid long trips and have the fault diagnosed soon to prevent more severe reductant system codes.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Service manual with wiring diagrams
- Terminal pick and electrical contact cleaner
- Basic hand tools for connector access



Reading P06F2

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

Often seen with

P06F1 Reductant Control Module Internal Temperature Sensor Range/P · **P06F3** Reductant Control Module Internal Temperature Sensor Circuit · **P20B9** Reductant Heater A Control Circuit/Open · **P20BA** Reductant Heater A Control Performance · **P20BB** Reductant Heater A Control Circuit Low

See it working

Watch the animated explainer [How Crank and Cam Position Sensors Work](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p06f2/>

