

GENERIC · POWERTRAIN

P2043

OBD-II TROUBLE CODE

P2043

Reductant Temperature Sensor Circuit Range/Performance

P2043 means the engine control module has detected that the reductant temperature sensor signal is outside its expected range or is not performing rationally compared to other temperature inputs. The computer is not seeing a simple open or short circuit, but rather a signal that is stuck, erratic, or implausible for the current operating conditions.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Reductant system warning message on the dashboard, sometimes limiting vehicle speed or preventing engine start
- Poor diesel exhaust fluid (DEF) consumption or dosing strategy that seems abnormal
- Rough running or reduced power if the system enters a protective limp mode
- In rare cases, a no-start condition after the vehicle sits overnight in cold weather

Common causes, most likely first

- 1 Faulty reductant temperature sensor itself, reading out of range or drifting
- 2 Damaged or corroded wiring harness or connector at the sensor
- 3 DEF tank heater malfunction causing the sensor to see unrealistic temperatures
- 4 Contaminated or crystallized DEF fluid affecting sensor response
- 5 Engine control module software calibration issue or internal fault
- 6 Poor ground connection shared with the reductant system



How to diagnose and fix it

- 1 Use a scan tool to read live data from the reductant temperature sensor and compare it to ambient and coolant temperature after a cold soak
- 2 Inspect the sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed
- 3 Check the DEF tank heater operation and verify the sensor responds correctly during a commanded heater test
- 4 Test the sensor resistance or voltage output against the manufacturer's specification and replace if out of range
- 5 Verify DEF fluid quality and concentration, and drain and refill if contaminated
- 6 Check for technical service bulletins or software updates for the engine control module
- 7 Clear codes and perform a relearn or drive cycle to confirm the repair

When the sensor is not the real culprit

- A weak or failing DEF tank heater often sets P2043 before any heater circuit code appears, because the sensor sees a temperature rise that does not match heater command.
- Crystallized DEF on the sensor tip can cause a range or performance fault without any visible leak or low-fluid warning.
- Some vehicles set P2043 after a battery replacement or low-voltage event because the module loses its learned temperature offset and needs a relearn.
- A stuck-open thermostat or a cooling system issue that affects the DEF tank temperature can mimic a sensor fault, so always compare sensor readings to ambient after an overnight soak.
- Replacing the sensor without checking the heater circuit or wiring is a common misdiagnosis that leads to a repeat code.

Can I keep driving with P2043?

You can usually drive with P2043 if the vehicle is not in limp mode, but avoid long trips and do not ignore a reductant system warning that limits speed or prevents restart. Have the system diagnosed soon, especially if the weather is cold or the DEF level is low.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Basic hand tools for connector and sensor access
- Manufacturer service information for sensor specifications



Reading P2043

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 43** The exact fault within that area.

Often seen with

P2042 Reductant Temperature Sensor Circuit · **P2044** Reductant Temperature Sensor Circuit Low Input · **P2045** Reductant Temperature Sensor Circuit High Input · **P20B9** Reductant Heater A Control Circuit/Open · **P20BA** Reductant Heater A Control Performance

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/p2043/>

