

GENERIC · NETWORK

U059F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U059F

Invalid Data Received From NOx Sensor B

U059F is a communication fault where the engine control module receives data from the nitrogen oxide (NOx) sensor B that it considers invalid or out of range for the current operating conditions. The computer has detected a message from the sensor that fails its internal plausibility checks, so it cannot trust the reading for emissions control.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Network	Generic (all makes)	Medium	Intermediate	Network communication

Symptoms you may notice

- Illumination of the check engine light or service engine soon light, often with no other noticeable symptoms
- Reduced engine power or limp mode in some vehicles as a protective strategy
- Poor fuel economy or increased diesel exhaust fluid (DEF) consumption if the fault affects emissions dosing
- Rough running or hesitation if the invalid data disrupts closed-loop control
- A stored pending or history code for the same sensor that may reappear after clearing
- No driver-perceptible change in performance in many cases, especially on diesel vehicles where the fault is emissions-only

Common causes, most likely first

- 1 Faulty NOx sensor B itself, including internal electronics or sensing element degradation
- 2 Damaged or corroded wiring and connectors between the NOx sensor and the control module
- 3 Exhaust leaks upstream of the sensor allowing outside air to skew readings
- 4 Contamination of the sensor tip from oil ash, coolant, or excessive soot
- 5 Software or calibration issues in the engine control module requiring a reflash
- 6 Low or incorrect DEF quality affecting the selective catalytic reduction (SCR) system and sensor feedback
- 7 A failing control module driver circuit for the NOx sensor communication line



How to diagnose and fix it

- 1 Perform a visual inspection of the NOx sensor B wiring, connector pins, and exhaust mounting for damage or leaks
- 2 Use a scan tool to read live NOx sensor data and compare it with expected values under key-on, engine-off and running conditions
- 3 Check for related diagnostic trouble codes (DTCs) in the anti-lock brake, transmission, and emissions systems that may share the communication bus
- 4 Test the sensor heater circuit and communication lines for resistance, shorts, and opens according to the manufacturer's service information
- 5 Verify DEF quality and level, and check for any SCR-related codes that could cause invalid sensor data
- 6 Replace the NOx sensor B only after confirming the wiring and control module are sound, then clear codes and verify repair
- 7 If the fault persists, check for a control module software update or reflash as recommended by the manufacturer

What the NOx sensor data really means

- A U059F code often sets because the sensor is reporting a plausible but slightly out-of-range value, so the sensor may still work mechanically while its electronics send corrupted messages.
- Many technicians replace the NOx sensor immediately, but a poor ground connection or a chafed wire near the exhaust can mimic a failed sensor and cause the same invalid data fault.
- Exhaust leaks before the sensor are a commonly missed cause because they introduce oxygen that makes the NOx reading implausible without triggering a separate leak code.
- On some vehicles, a weak battery or charging system issue can cause communication faults like U059F because the control modules do not receive stable voltage during startup.
- The code does not always mean the sensor is dead; it can be set by a temporary communication glitch that clears after a drive cycle, so always check for history and pending status first.

Can I keep driving with U059F?

You can usually continue driving with U059F because it is an emissions communication fault and rarely causes an immediate safety risk, but avoid long trips or heavy loads until it is diagnosed. If the vehicle enters limp mode or you notice reduced power, have it checked promptly to prevent further emissions system damage.

Tools that help

- OBD-II scan tool with live data and NOx sensor parameter support
- Digital multimeter for circuit testing
- Wiring diagram and service information for the specific vehicle
- Basic hand tools for sensor and connector access
- Exhaust leak detection smoke machine or soapy water spray bottle



Reading U059F

- U** Network: communication between the vehicle's control modules.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Network communication.
- 9F** The exact fault within that area.

Often seen with

P20EE NOx Catalyst Efficiency Below Threshold (Bank 1) · **P2200** NOx Sensor Circuit (Bank 1 Sensor 1) · **P2201** NOx Sensor Circuit Range/Performance (Bank 1 Sensor 1) · **P229E** NOx Sensor Circuit (Bank 1 Sensor 2) · **U0100** Lost Communication With ECM/PCM A

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/u059f/>

