

GENERIC · NETWORK

U029D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U029D

Lost Communication With NOx Sensor A

U029D is a generic network communication code indicating that the engine control module (ECM) has lost the controller area network (CAN) signal from the NOx sensor module labeled 'A'. The ECM monitors a dedicated serial data line or CAN bus for messages from that sensor and sets this code when expected periodic messages stop arriving for a calibrated time.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Network	Generic (all makes)	Medium	Intermediate	Lost communication with a control module

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode if the ECM cannot verify NOx levels
- Increased diesel exhaust fluid (DEF) consumption as the system defaults to a protection strategy
- Rough running or hesitation if the ECM substitutes a default NOx value and alters injection timing
- A message on the dashboard indicating emissions system service required
- Possible failure to complete an emissions inspection because the monitor is not ready

Common causes, most likely first

- 1 Failed NOx sensor module 'A' or its internal electronics
- 2 Damaged, chafed, or corroded wiring between the NOx sensor and the ECM
- 3 Loose or contaminated electrical connector at the NOx sensor or ECM
- 4 Blown fuse or poor ground feeding the NOx sensor heater circuit
- 5 CAN bus communication fault affecting the sensor's data line
- 6 Software or calibration issue in the ECM requiring a reflash
- 7 Aftermarket or incorrect NOx sensor installed that does not communicate properly



How to diagnose and fix it

- 1 Connect a scan tool and verify U029D is current, then check for other communication codes that might point to a shared bus fault
- 2 Inspect the NOx sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed
- 3 Check the fuse and ground circuits that supply power to the NOx sensor module
- 4 Measure CAN bus voltage and resistance at the sensor connector to confirm the data line is intact
- 5 If wiring and power are good, substitute a known-good NOx sensor 'A' and clear the code to see if communication returns
- 6 Perform an ECM software update if the manufacturer has published a calibration for this communication fault
- 7 After repair, clear codes and complete a drive cycle to verify the monitor runs and the code does not reset

Why a good NOx sensor still sets U029D

- A common oversight is replacing the NOx sensor when the real fault is a chafed wire harness near the exhaust or transmission, so always perform a wiggle test on the harness before condemning the sensor. This code can be set by a weak battery or charging system because low voltage during cranking interrupts the sensor's boot-up handshake with the ECM, leaving a communication fault stored.
 - Some vehicles require a specific relearn or adaptation procedure after NOx sensor replacement; skipping it can cause U029D to return even with a new sensor.
 - A faulty aftertreatment control module or a second NOx sensor on the same bus can disrupt communication for sensor 'A', so check for other U-codes before assuming the sensor itself failed.
- U029D does not always mean the sensor is dead; it can be a temporary communication dropout caused by water intrusion into a connector that dries out and allows the code to clear on its own.

Can I keep driving with U029D?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy loads and long trips because the ECM may enter a reduced-power strategy and emissions compliance is compromised. If the engine enters limp mode, stop driving and arrange a tow.

Tools that help

- OBD-II scan tool with CAN bus capability
- Digital multimeter
- Wiring diagram for the NOx sensor circuit
- Terminal pick and electrical contact cleaner
- Test light or power probe



Reading U029D

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

Often seen with

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 · **U029E** Lost Communication With NOx Sensor B

See it working

Watch the animated explainer [How an Elevator Works: Traction Lift in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u029d/>

