

GENERIC · NETWORK

U0531

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U0531

Invalid Data Received From Rear Gate Module

U0531 is a network communication code indicating that a control module (typically the body control module or a gateway module) has received invalid or corrupted data from the rear gate module over the vehicle's communication bus. The computer detected a message from the rear gate module that failed its internal data integrity checks, such as a checksum error or out-of-range value, rather than a complete loss of communication.

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

Symptoms you may notice

- The liftgate or rear gate may fail to open or close using the power switch, key fob, or interior button.
- The rear gate may open or close erratically, stop midway, or reverse direction unexpectedly.
- A warning light or message on the dashboard indicating a rear gate or liftgate fault.
- The rear gate may not latch or lock properly, or the vehicle may not recognize that it is closed.
- Often no symptoms besides the warning light, especially if the invalid data is intermittent.
- Other body-related functions (interior lights, rear wiper, or power locks) may behave oddly if the rear gate module shares a bus with those systems.

Common causes, most likely first

- A failing rear gate module (also called liftgate control module) that is sending corrupted data.
- Damaged or chafed wiring in the flexible harness that runs from the body to the rear gate, often due to repeated opening and closing.
- Corroded or loose electrical connectors at the rear gate module or along the rear gate harness.
- Low battery voltage or a weak charging system causing the rear gate module to malfunction intermittently.
- Water intrusion into the rear gate module or its connectors, leading to internal short circuits or signal degradation.
- A software glitch or outdated firmware in the rear gate module or the module receiving its data.
- A faulty ground connection for the rear gate module, causing unstable operation and invalid data transmission.



How to diagnose and fix it

- 1 Inspect the rear gate wiring harness for visible damage, chafing, or corrosion, especially in the flexible section between the body and the gate.
- 2 Check the battery voltage and charging system; a weak battery can cause communication errors, so load-test the battery and verify the alternator output.
- 3 Disconnect and inspect the rear gate module connectors for corrosion, water intrusion, or loose pins; clean and reseat them as needed.
- 4 Use a scan tool to clear the code and see if it returns; if it does, perform a wiggle test on the rear gate harness while monitoring live data for the rear gate module.
- 5 Check for technical service bulletins (TSBs) or software updates for the rear gate module that may address known communication issues.
- 6 If wiring and power are good, substitute a known-good rear gate module or reflash the existing module with the latest software, then retest.
- 7 Verify that all ground connections for the rear gate module are clean and tight, and repair any faulty grounds.

Why the rear gate module sends bad data

- The code often sets intermittently due to a chafed wire in the rear gate harness that only shorts when the gate is opened or closed, so a static inspection may miss it.
- A weak battery or poor ground can cause the rear gate module to send invalid data without any other obvious electrical symptoms, so always check power and ground first.
- U0531 can be stored by a module other than the rear gate module itself; the receiving module (often the body control module) flags the invalid data, so the fault may lie in the communication bus or the receiving module's software.
- Water leaks into the rear gate or taillight area are a common hidden cause of rear gate module corruption, especially on vehicles with sunroofs or roof rails that drain near the rear.
- Replacing the rear gate module without checking for software updates or wiring faults often leads to a repeat failure, because the new module may learn the same corrupted data or the underlying wiring issue remains.

Can I keep driving with U0531?

You can usually continue driving if the only symptom is a warning light, but avoid using the power rear gate until the fault is repaired, as it may open unexpectedly or fail to latch securely. If the gate will not latch or the vehicle reports it as open, do not drive at speed or in wet conditions until it is fixed.



Tools that help

- OBD-II scan tool with live data and bidirectional control capabilities
- Digital multimeter for voltage, resistance, and continuity checks
- Wiring diagram for the rear gate module circuit
- Trim removal tools to access the rear gate harness and module
- Battery load tester and charging system tester

Reading U0531

- 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.
- 31** The exact fault within that area.

Often seen with

U0100 Lost Communication With ECM/PCM A · **U0140** Lost Communication With Instrument Panel Cluster · **U0155** Lost Communication With Body Control Module · **U0530** Invalid Data Received From Object Detection Maintenance Cont · **U0532** Invalid Data Received From Rain Sensing Module

See it working

Watch the animated explainer [How a MAF Sensor Works: Hot-Wire Airflow Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u0531/>

