

GENERIC · NETWORK

U3031

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3031

Ignition Output Off

U3031 is a generic network communication code indicating that a control module received a message reporting the ignition output is off when it expected the ignition circuit to be active. The computer detected a mismatch between the commanded ignition state and the actual feedback from the ignition output circuit, typically via a serial data bus message.

SYSTEM Network	CODE TYPE Generic (all makes)	SEVERITY Medium	FIX DIFFICULTY Intermediate	AREA Network wiring and bus faults
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Symptoms you may notice

- Often no symptoms besides the warning light, especially if the fault is intermittent
- Intermittent no-start or crank-no-start condition
- Stalling or sudden engine shutdown while driving
- Accessories or modules failing to power up with the ignition on
- Multiple warning lights illuminated on the dashboard
- Remote start or push-button start functions inoperative

Common causes, most likely first

- 1 Weak or failing vehicle battery causing voltage drops during cranking
- 2 Poor connection at the ignition switch or push-button start module
- 3 Corroded or loose ground connections for the body control module or ignition relay
- 4 Faulty ignition relay or blown fuse in the ignition output circuit
- 5 Damaged wiring in the ignition output circuit, such as chafing or rodent damage
- 6 Internal fault in the module that monitors or controls the ignition output
- 7 Software glitch in a control module requiring reflash or reprogramming

How to diagnose and fix it

- 1 Perform a battery load test and check charging system voltage to rule out low voltage as the root cause
- 2 Inspect and clean all ground connections related to the body control module and ignition system
- 3 Check the ignition switch or push-button start for proper continuity and signal output
- 4 Test the ignition relay and verify power at the ignition output fuse using a test light or multimeter
- 5 Inspect wiring harnesses for damage, especially near the steering column and underhood fuse box
- 6 Use a scan tool to monitor live data for ignition status parameters and check for related communication codes
- 7 If all external circuits test good, reprogram or replace the module that sets the code according to manufacturer procedures



Ignition Output Off Code Traps

- A weak battery is the most common root cause of U3031, yet many technicians replace modules before load-testing the battery.
- The code can be set by a module that simply receives a message from another module reporting ignition off, so the fault may not be in the module that stores the code.
- Intermittent ignition switch contacts often test fine when cold but fail when hot, so a wiggle test while monitoring live data is essential.
- Aftermarket accessories tapped into the ignition circuit can backfeed voltage and confuse the monitoring module, setting U3031 without any hard failure.
- Some vehicles require a relearn or initialization procedure after battery replacement, and skipping it can leave a stored U3031 that will not clear.

Can I keep driving with U3031?

If the engine starts and runs normally, you can drive cautiously to a repair shop, but avoid turning the engine off in an unsafe location because a no-start may occur. If the engine stalls or will not start, do not drive and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Test light
- Battery load tester
- Wiring diagram for the ignition circuit
- Socket set and trim removal tools

Reading U3031

U	Network: communication between the vehicle's control modules.
3	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
0	Network wiring and bus faults.
31	The exact fault within that area.

Often seen with

U0100 Lost Communication With ECM/PCM A · **U0140** Lost Communication With Instrument Panel Cluster · **U3000** Control Module · **U3001** Control Module Improper Shutdown Performance · **U3003** Battery Voltage



See it working

Watch the animated explainer **Four-Stroke Engine Cutaway: Intake to Exhaust** on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3031/>

