

GENERIC · NETWORK

# U0589

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## U0589

### Invalid Data Received From DC/AC Converter Control Module A

U0589 means the module that monitors a DC-to-AC (direct current to alternating current) converter control module, typically the hybrid or electric vehicle control module, has received data from that converter that it considers invalid or out of range. The computer is not reporting a converter failure itself; it is flagging that the serial data message from converter control module A is missing expected values, corrupted, or contradictory.

| SYSTEM  | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                  |
|---------|---------------------|----------|----------------|-----------------------|
| Network | Generic (all makes) | Medium   | Professional   | Network communication |

### Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message, often with no other noticeable change in vehicle behavior.
- The high-voltage DC-to-AC converter may stop supplying power to accessories, causing items such as the cabin outlet or power take-off to be inoperative.
- Reduced or disabled hybrid/EV mode with a corresponding warning in the instrument cluster.
- Intermittent charging or power flow warnings if the converter is part of the charging path.
- A no-start condition in some vehicles if the converter control module is part of the high-voltage interlock or enable strategy.
- Often no symptoms besides the warning light, especially when the fault is stored but not currently active.

### Common causes, most likely first

- 1 Corroded, loose, or damaged wiring and connectors in the controller area network (CAN) bus circuit between the converter control module and the module that sets the code.
- 2 A failing DC-to-AC converter control module that intermittently drops off the network or sends corrupted data frames.
- 3 Low or unstable 12-volt battery voltage or a poor ground connection causing the converter module to reset or transmit invalid data.
- 4 Software or calibration issues in either the converter control module or the receiving module, sometimes resolved by a reflash.
- 5 Aftermarket accessories or improper repairs that introduce electrical noise or splice into the CAN bus, disturbing converter communications.
- 6 A fault in the high-voltage interlock loop that causes the converter module to shut down and stop transmitting valid data.



## How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes in every module, then check for technical service bulletins (TSBs) or software updates related to U0589 for the specific vehicle.
- 2 Inspect the 12-volt battery state of charge and perform a voltage drop test on the battery cables and engine/chassis grounds; repair any poor connections.
- 3 Locate the DC-to-AC converter control module and inspect its electrical connectors for corrosion, pushed pins, or loose terminals; clean and reseat as needed.
- 4 Perform a CAN bus integrity test with an oscilloscope or break-out box to check for shorts, opens, or excessive resistance on the communication lines to the converter module.
- 5 If wiring and power supplies are good, substitute a known-good converter control module or perform a module swap with a compatible unit to see if the code follows the module.
- 6 After any repair, clear codes and perform a road test that includes activating the DC-to-AC converter function, then verify no codes return.

## What U0589 really points to

- U0589 is a communication code, not a converter performance code; technicians who replace the converter without checking the CAN bus often find the code returns because the real fault is a chafed wire or bad ground.
- A weak or failing 12-volt battery can cause the converter module to boot slowly or transmit invalid data frames, setting U0589 even though the high-voltage system is healthy.
- Some vehicles set U0589 when the high-voltage interlock loop is interrupted, because the converter module deliberately stops sending valid data as a safety measure; always check interlock circuits before condemning the module.
- Aftermarket inverters or accessories wired into the vehicle's power system can introduce electrical noise that corrupts CAN messages, leading to U0589 without any factory component being defective.
- The code can be stored historically after a low-voltage event such as a jump start or battery replacement; if it is the only code and the light resets, a full drive cycle may confirm it was a one-time event.

## Can I keep driving with U0589?

The vehicle is generally safe to drive if the only symptom is a warning light and the high-voltage system is functioning normally, but avoid using any DC-to-AC powered accessories until the fault is diagnosed. If the vehicle enters a reduced-power or no-start condition, stop driving and have it towed to avoid further electrical damage.



## Tools that help

- OBD-II scan tool with CAN bus capability and module-level code reading
- Digital multimeter with voltage drop and resistance functions
- Oscilloscope or CAN bus analyzer for signal integrity testing
- Break-out box and terminal test kit for connector pin checks
- Factory service information for wiring diagrams and module location

## Reading U0589

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

## Often seen with

**P0A94** DC/DC Converter A Performance · **U0100** Lost Communication With ECM/PCM A · **U0140** Lost Communication With Instrument Panel Cluster · **U0588** Invalid Data Received from Navigation Control Module

## See it working

Watch the animated explainer [Inline-Four Engine X-Ray: Firing Order 1-3-4-2](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u0589/>

