

GENERIC · NETWORK

U0021

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U0021

Low Speed CAN Communication Bus (+) Open

U0021 means the module that monitors the low-speed Controller Area Network (CAN) bus has detected an open circuit on the CAN positive (CAN+) wire, so it cannot see the differential signal it expects. The bus is the shared data link between control modules, and an open on the plus side stops communication on that segment even though the minus wire may still be intact.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Network	Generic (all makes)	Medium	Professional	Network wiring and bus faults

Symptoms you may notice

- Multiple warning lights on the dashboard, often including the anti-lock brake, airbag, and stability control lamps
- One or more control modules drop off the scan tool's module list or show as 'no communication'
- Intermittent or complete failure of features that share the low-speed bus, such as door locks, windows, or climate control
- The engine may still run and drive normally because the high-speed powertrain bus is separate
- Often no symptoms besides the warning light when the open is on a branch that only feeds a non-critical module
- Random, unrelated electrical gremlins that change with temperature or vibration

Common causes, most likely first

- 1 A broken or chafed CAN+ wire in a door jamb, hinge area, or harness flex point
- 2 Corroded or pushed-back terminal in a CAN bus connector, especially at a module or splice pack
- 3 A module on the low-speed bus that has lost its power or ground, which removes its internal termination and looks like an open
- 4 Water intrusion into a connector or module causing the CAN+ pin to corrode through
- 5 Aftermarket accessory wiring tapped into the bus or a poorly crimped repair that has failed
- 6 A failed splice inside the harness where several CAN+ branches join
- 7 A faulty module internally open on its CAN+ transceiver



How to diagnose and fix it

- 1 Scan all modules and record which modules communicate and which do not, because the pattern points to the segment with the open
- 2 Inspect the low-speed CAN+ circuit for continuity from the diagnostic connector to each module, looking for opens rather than shorts
- 3 Wiggle-test harnesses at door jambs, hinges, and known flex points while watching live bus data or a scope
- 4 Disconnect modules one at a time and recheck bus voltage and communication to see if a module is pulling the bus down or opening it
- 5 Check for water intrusion and corrosion at connectors on the affected segment, then clean or replace terminals
- 6 Repair the open wire with a proper crimped splice and heat-shrink, then verify continuity and communication
- 7 Clear the code and road-test through the conditions that originally set it to confirm the repair

Why a dead module looks like an open wire

- A module that has lost power or ground stops biasing the bus and can set U0021 even though the CAN+ wire itself is intact, so always check module power and ground before chasing the wire.
- The low-speed bus often runs at a different speed and on different pins than the high-speed powertrain bus, so a U0021 does not mean the engine computer is unreachable.
- A single open on CAN+ can take down every module on that segment, but the code may be stored only in the module that first noticed the loss of the differential signal.
- Aftermarket alarms, remote starters, and phone chargers tapped into the bus are a common cause of opens and intermittent U0021 codes that appear only after the accessory was installed.
- Resistance checks across CAN+ and CAN- can mislead on a live low-speed bus; a scope or a break-out box reading is more reliable for finding an open.

Can I keep driving with U0021?

The vehicle usually remains drivable because the powertrain bus is separate, but you should avoid relying on stability control, anti-lock brakes, or airbag systems that may be offline. Have the fault diagnosed promptly, and do not ignore it if multiple safety systems are disabled.

Tools that help

- OBD-II scan tool with full module communication and live data
- Digital multimeter with continuity and voltage functions
- Automotive oscilloscope for viewing CAN bus waveforms
- Break-out box or back-probe kit for connector testing
- Wiring diagram for the affected low-speed CAN segment
- Terminal removal and crimping tools for harness repair



Reading U0021

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

Often seen with

U0020 Low Speed CAN Communication Bus (Performance) · **U0022** Low Speed CAN Communication Bus (+) Low · **U0023** Low Speed CAN Communication Bus (+) High · **U0024** Low Speed CAN Communication Bus (-) Open · **U0140** Lost Communication With Instrument Panel Cluster

See it working

Watch the animated explainer [How a Car Thermostat Works: Wax Pellet and Cooling Fan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u0021/>

