

GENERIC · NETWORK

U3523

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3523

High Voltage System Interlock Circuit F Low

U3523 is a manufacturer-specific network code indicating that the high-voltage system interlock circuit, specifically the 'F' loop, has been detected as low by the vehicle's control module. The interlock is a safety loop that confirms all high-voltage connectors and covers are properly seated; a low signal means the module sees a break or abnormal condition in that specific circuit branch.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Network	Generic (all makes)	High	Professional	Network communication

Symptoms you may notice

- High-voltage system warning light or service vehicle soon message on the dash
- Vehicle may refuse to start or enter 'Ready' mode, leaving you with a no-crank or no-start condition
- Reduced power or limp-home mode if the vehicle does start and drive
- Often no symptoms besides the warning light, especially if the fault is intermittent
- High-voltage contactors may open, preventing the traction battery from supplying power
- Possible inability to charge the high-voltage battery on plug-in models

Common causes, most likely first

- A high-voltage connector that is not fully latched or has a damaged interlock pin
- Corrosion or water intrusion in an interlock connector, particularly at the battery pack or inverter
- A broken or chafed interlock wire in the 'F' circuit branch
- A failed interlock switch inside a high-voltage component cover or service disconnect
- A faulty high-voltage control module or battery energy control module not reading the interlock loop correctly
- Aftermarket or improper service work that left an interlock bypassed or a connector partially seated



How to diagnose and fix it

- 1 Inspect all high-voltage connectors for full engagement and latch condition, starting with the most recently disturbed ones
- 2 Check the service disconnect plug and high-voltage battery pack connectors for proper seating and corrosion
- 3 Use a scan tool to read live interlock circuit data and confirm which branch (F) is reporting low
- 4 Perform a continuity and resistance test on the interlock 'F' circuit wiring, looking for opens or shorts to ground
- 5 Inspect interlock switch operation inside component covers and replace any faulty switch or connector terminal
- 6 If wiring and connectors are good, test the high-voltage control module's interlock input and replace the module only after confirming all external circuits are sound
- 7 Clear codes and verify the interlock circuit reads normal with the key on and after a test drive

Interlock faults that fool good technicians

- A partially latched high-voltage connector can set this code without any visible damage, so always push and listen for the click on every connector you touch.
- Water intrusion in a connector that looks dry from outside can corrode the interlock pin and cause an intermittent low signal that only appears in damp weather.
- The 'F' circuit designation often refers to a specific loop segment, so swapping parts from a different branch will not fix the fault and may introduce new codes.
- Some vehicles set U3523 after a low-voltage battery replacement if the high-voltage system was not properly re-initialized, so check for related communication codes before condemning hardware.
- A failed interlock switch inside a high-voltage component cover can mimic a wiring fault, and testing the switch requires understanding the cover's safety interlock design.

Can I keep driving with U3523?

Do not drive the vehicle if the high-voltage warning is active and the car will not enter Ready mode, because the interlock is a safety system that prevents exposure to live high voltage. If the car drives normally with only a warning light, limit driving to a short distance to a qualified technician and avoid touching any orange high-voltage cables or connectors.

Tools that help

- OBD-II scan tool with manufacturer-specific high-voltage system support
- Digital multimeter with CAT III rating for high-voltage safety
- Insulated hand tools and personal protective equipment rated for high voltage
- Service information for the specific vehicle's interlock circuit diagram
- Connector pick and terminal test kit



Reading U3523

- U** Network: communication between the vehicle's control modules.
- 3** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Network communication.
- 23** The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0AA6** Hybrid/EV Battery Voltage System Isolation Fault
 · **U0111** Lost Communication With Battery Energy Control Module 'A' · **U3522** High Voltage System Interlock Circuit F Performance · **U3524** High Voltage System Interlock Circuit F High

See it working

Watch the animated explainer [How a Turbocharger Works, Step by Step](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3523/>

