

GENERIC · NETWORK

U3521

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3521

High Voltage System Interlock Circuit F

U3521 indicates that the high-voltage interlock loop circuit for a specific high-voltage component, designated F, has been detected as having excessive voltage or an open circuit by the vehicle's control module. The interlock is a safety circuit that ensures high-voltage connectors are properly seated before power is enabled, and this code sets when the monitoring system sees a voltage outside the expected range on that loop.

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

Symptoms you may notice

- Illumination of the high-voltage system warning light or service vehicle soon message
- The vehicle may refuse to start or enter ready mode, especially in hybrid and electric models
- Loss of high-voltage power to the affected component, which may disable air conditioning or other functions
- Often no symptoms besides the warning light, with the vehicle operating normally
- In some cases, the vehicle may enter a reduced power or limp mode

Common causes, most likely first

- 1 A high-voltage interlock connector that is not fully seated or has loose terminals
- 2 Corrosion or water intrusion in the interlock circuit connector or wiring harness
- 3 A damaged interlock wire (open or short to voltage) in the high-voltage cable assembly
- 4 A faulty high-voltage component that contains the interlock switch, such as the battery pack, inverter, or motor
- 5 A malfunctioning control module that monitors the interlock circuit
- 6 Aftermarket accessories or improper previous repairs that disturbed the high-voltage wiring

How to diagnose and fix it

- 1 Inspect all high-voltage interlock connectors for proper seating and signs of corrosion or damage
- 2 Check the interlock circuit wiring for continuity and short circuits using a multimeter, following the manufacturer's service information
- 3 Verify the voltage present on the interlock circuit at the control module connector and compare to specification
- 4 Test the interlock switch inside the suspect high-voltage component if accessible, or substitute with a known-good component
- 5 Repair or replace any damaged wiring, terminals, or connectors in the interlock circuit
- 6 Clear the diagnostic trouble codes and perform a road test to confirm the repair
- 7 If the code persists, follow the manufacturer's diagnostic flow chart for the specific high-voltage component F

Interlock Circuit Checks Before Parts Replacement

- The interlock circuit is a low-voltage loop that runs through high-voltage connectors; a poor connection at any point can set this code even if the high-voltage system itself is functioning.
- Many technicians replace expensive high-voltage components when the actual fault is a simple unseated connector or chafed wire in the interlock loop.
- This code can be set by a low 12-volt battery or poor ground connection, causing the control module to misread the interlock voltage.
- After any high-voltage system repair, the interlock connectors must be fully latched; otherwise, the code will reappear immediately after clearing.
- The interlock circuit often daisy-chains through multiple components, so a fault in one connector can affect the entire loop and set codes for multiple interlocks.

Can I keep driving with U3521?

Do not continue driving with this code present, as the high-voltage system may be disabled or in a fail-safe mode, and driving could risk safety or further damage. Have the vehicle inspected by a qualified high-voltage technician before operating it.

Tools that help

- Digital multimeter with high-voltage safety rating
- Manufacturer-specific scan tool capable of reading hybrid/EV codes
- High-voltage safety gloves and insulated tools
- Wiring diagram and service information for the specific vehicle

Reading U3521

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.
21	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
 · **U3520** High Voltage System Interlock Circuit E High · **U3522** High Voltage System Interlock Circuit F Performance · **U3523** High Voltage System Interlock Circuit F Low



See it working

Watch the animated explainer [How an Elevator Works: Traction Lift in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3521/>

