

GENERIC · NETWORK

U3511

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3511

High Voltage System Interlock Circuit B

U3511 indicates that the high-voltage interlock loop circuit B has reported a voltage above the expected range, which the battery energy control module interprets as a break or fault in the safety interlock path. The interlock is a low-current loop that runs through high-voltage connectors and covers, and the module monitors its voltage to confirm that all high-voltage connections are secure before allowing the contactors to close.

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

Symptoms you may notice

- Illuminated high-voltage system warning light or service vehicle soon message
- Vehicle may refuse to start or enter 'ready' mode, leaving you with a no-start condition
- Reduced power or limp-home mode if the vehicle does drive
- High-voltage system may be disabled entirely, preventing charging on plug-in models
- Often no symptoms besides the warning light if the fault is intermittent
- Audible click or no click from the battery contactors when attempting to start

Common causes, most likely first

- 1 Loose, corroded, or unseated high-voltage connector on the interlock circuit B path
- 2 Damaged interlock wire (open or shorted to voltage) between the battery pack and a high-voltage component
- 3 Failed high-voltage interlock switch inside a connector or service disconnect plug
- 4 Water intrusion or contamination in a high-voltage connector causing abnormal voltage on the interlock loop
- 5 Faulty battery energy control module (BECM) or interlock monitoring circuit
- 6 Aftermarket or improper repair that bypassed or altered the interlock circuit
- 7 Pinched or chafed interlock harness near a high-voltage cable routing point



How to diagnose and fix it

- 1 Scan all modules for related codes and record freeze-frame data to understand when the fault sets
- 2 Inspect every high-voltage connector on circuit B for proper seating, corrosion, and water intrusion
- 3 Check the service disconnect plug and interlock switch for continuity and correct engagement
- 4 Measure interlock loop voltage and resistance at the BECM connector and compare to manufacturer specifications
- 5 Perform a wiggle test on the interlock harness while monitoring live data to catch intermittent faults
- 6 Repair or replace damaged interlock wiring, terminals, or connectors using high-voltage-rated components
- 7 If the circuit tests good, follow the diagnostic flow for BECM internal fault before replacing the module

Interlock faults that fool good technicians

- A perfectly good high-voltage connector can still set U3511 if the small interlock pin inside it is bent or pushed back, so visual inspection of the main terminals is not enough.
- The interlock loop often carries a low-voltage signal, so a short to voltage from a nearby 12-volt circuit can mimic an open circuit and send you chasing the wrong harness.
- After any high-voltage repair, the interlock circuit must be fully seated and latched; a connector that clicks but is not fully engaged can set this code intermittently.
- Some vehicles set U3511 when the 12-volt battery is weak because the BECM misreads the interlock voltage during low-voltage conditions, so always verify battery health first.
- This code does not always mean the high-voltage battery is faulty; the fault is usually in the low-voltage interlock path, not the pack itself.

Can I keep driving with U3511?

Do not continue driving with U3511 active because the high-voltage system may be disabled or in a reduced-power state, and an interlock fault can prevent the contactors from closing safely. Have the vehicle inspected by a qualified high-voltage technician before attempting further use.

Tools that help

- OBD-II scan tool with manufacturer-specific high-voltage system support
- Digital multimeter with high-voltage safety rating
- High-voltage insulated gloves and safety equipment
- Wiring diagram and connector pinout for the interlock circuit
- Breakout box or back-probe kit for BECM connector testing



Reading U3511

- 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.
- 11** 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' · **U3510** Control Module Missing Calibration · **U3512** High Voltage System Interlock Circuit B Performance

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/u3511/>

