

GENERIC · NETWORK

U3513

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3513

High Voltage System Interlock Circuit B Low

U3513 indicates that the high-voltage system interlock circuit B is reporting a low voltage condition, which the vehicle's control module interprets as a break in the safety loop that protects technicians and occupants from exposed high-voltage components. The computer detects this when the interlock circuit's voltage falls below the expected threshold, typically because the loop is open or a connector is not fully seated.

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 message displayed on the dashboard
- Vehicle may refuse to start or enter 'Ready' mode, especially in electric and hybrid models
- Reduced power or limited operation mode, often called 'turtle mode'
- Often no symptoms besides the warning light if the interlock circuit is only intermittently low
- Inability to charge the high-voltage battery on plug-in vehicles
- Audible alert or chime accompanying the high-voltage warning

Common causes, most likely first

- A high-voltage interlock connector that is not fully latched or has backed out slightly
- Damaged or corroded terminals within the interlock circuit B, often at the battery pack or inverter
- Broken or chafed interlock wire in the harness, frequently near a service disconnect or underbody routing
- Failed high-voltage component that houses the interlock switch, such as the battery pack disconnect or inverter cover
- Water intrusion into a high-voltage connector causing a short or high resistance
- Aftermarket or improper repair that bypassed or damaged the interlock loop
- Control module internal fault misreading the interlock voltage



How to diagnose and fix it

- 1 Inspect all high-voltage interlock connectors for proper seating and latch engagement, starting at the service disconnect plug
- 2 Check the interlock circuit B wiring for continuity and resistance using a multimeter, following the manufacturer's service information
- 3 Verify battery pack voltage and inspect for any signs of coolant or water intrusion at high-voltage connectors
- 4 Perform a voltage drop test on the interlock loop to locate excessive resistance
- 5 Replace any damaged or corroded interlock connector or terminal as needed
- 6 If the circuit is intact, test the high-voltage component that contains the interlock switch and replace if faulty
- 7 Clear the code and perform a road test to confirm the repair, ensuring the interlock circuit reads within specification

Interlock Circuit B Low-Voltage Traps

- A common mistake is replacing the high-voltage battery pack when the actual fault is a simple unseated interlock connector at the service disconnect plug.
- The interlock circuit is a safety loop, so a low voltage reading can be caused by a perfectly functional system that has a slightly loose connector, not a failed component.
- Some vehicles set U3513 after a low-voltage event or battery replacement if the interlock loop is not reinitialized properly, leading to unnecessary parts replacement.
- Interlock circuit B often shares routing with other low-voltage circuits, so chafing from a nearby harness can cause intermittent codes that appear only on rough roads.
- Always follow the manufacturer's high-voltage disconnect procedure before probing interlock circuits; the loop is designed to cut power, but capacitors can remain charged.

Can I keep driving with U3513?

Do not continue driving with an active U3513 code, as the high-voltage system may be disabled or in a reduced-power mode, and the safety interlock is compromised. Have the vehicle inspected by a qualified high-voltage technician before further use.

Tools that help

- Digital multimeter with high-voltage rating
- Manufacturer-specific scan tool capable of reading hybrid/EV codes
- Insulated hand tools and personal protective equipment (PPE) for high-voltage work
- Service information with wiring diagrams and interlock circuit specifications
- Terminal pick and connector release tools



Reading U3513

- 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.
- 13** 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' · **U3512** High Voltage System Interlock Circuit B Performance · **U3514** High Voltage System Interlock Circuit B High

See it working

Watch the animated explainer [How Variable Valve Timing Works: Cam Phaser and VVT Solenoid](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3513/>

