

GENERIC · NETWORK

U3542

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3542

High Voltage System Interlock Circuit O Performance

U3542 indicates that the high-voltage interlock loop, a safety circuit that confirms all high-voltage connectors are properly seated, has detected an out-of-range performance condition on its monitoring circuit. The computer expects a specific voltage or signal pattern through the loop and has determined that the signal is not behaving as designed, which can prevent the high-voltage system from energizing.

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

Symptoms you may notice

- Hybrid or electric vehicle may fail to start or enter 'Ready' mode
- High-voltage system warning light or message on the dashboard
- Vehicle may run only on the gasoline engine (in hybrids) with reduced power
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Charging system may be disabled on plug-in vehicles
- Possible service disconnect or contactor open condition preventing high-voltage activation

Common causes, most likely first

- Poor connection or corrosion at a high-voltage interlock connector
- Damaged interlock loop wiring (open, short, or chafed harness)
- Faulty high-voltage component with an internal interlock switch (e.g., battery pack, inverter, charger)
- Water intrusion or contamination in a high-voltage connector
- Failed interlock monitoring circuit inside the battery energy control module or vehicle control module
- Aftermarket or improper repair that bypassed or altered the interlock circuit



How to diagnose and fix it

- 1 Inspect all high-voltage connectors for proper seating, corrosion, and water intrusion; reseal any suspect connectors
- 2 Check the interlock loop wiring for continuity, shorts to ground, and shorts to voltage using a multimeter
- 3 Verify the interlock signal at the battery energy control module and compare to manufacturer specifications
- 4 Perform a voltage drop test on the interlock circuit under load to identify high-resistance connections
- 5 Substitute a known-good high-voltage component or use a jumper to isolate the faulty section of the loop (following safety procedures)
- 6 Repair or replace damaged wiring, connectors, or the faulty high-voltage component as indicated by test results
- 7 Clear codes and perform a road test to confirm the repair and ensure the interlock circuit operates correctly

Interlock faults that fool good technicians

- A loose or partially seated high-voltage connector can set U3542 without any visible damage, so always push and latch every connector firmly before condemning a component.
- The interlock loop often passes through multiple high-voltage components in series, meaning one faulty switch inside a single component can disable the entire system and mimic a wiring fault.
- Aftermarket alarm or remote-start installations sometimes tap into interlock wiring, creating intermittent opens that only appear under vibration or temperature changes.
- U3542 can be stored by a low auxiliary battery causing voltage spikes or drops that disrupt the interlock monitoring circuit, so check battery health before deep diagnosis.
- Some vehicles require a specific relearn or initialization procedure after interlock repairs; skipping it can leave the code active even when the circuit is fixed.

Can I keep driving with U3542?

Do not continue driving if the high-voltage system warning is active, because the vehicle may lose power or fail to restart. Have the vehicle inspected by a qualified high-voltage technician before further use.

Tools that help

- Digital multimeter with high-voltage rated probes
- Manufacturer-specific scan tool capable of reading hybrid/EV data
- High-voltage safety gloves and insulated tools
- Wiring diagram and service information for the specific vehicle
- Breakout box or jumper wires for interlock circuit testing



Reading U3542

- 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.
- 42** 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' · **U3541** High Voltage System Interlock Circuit O · **U3543** High Voltage System Interlock Circuit O Low

See it working

Watch the animated explainer [How a Catalytic Converter Works: 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3542/>

