

GENERIC · NETWORK

U3546

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3546

High Voltage System Interlock Circuit P Performance

U3546 is a generic network code indicating that the high-voltage interlock loop circuit has reported a performance fault, typically a voltage or continuity reading outside the expected range. The computer monitors the interlock loop for a specific voltage signature and sets this code when the signal does not match the stored performance profile, often due to a poor connection or damaged wiring rather than a failed high-voltage component.

SYSTEM

Network

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Network communication

Symptoms you may notice

- Illumination of the high-voltage system warning light or service vehicle soon message
- The vehicle may refuse to enter 'Ready' mode or start, leaving you with a no-crank condition
- Reduced power or a forced limp-home mode if the vehicle does drive
- Intermittent operation where the fault appears over bumps or in wet weather
- Often no symptoms besides the warning light if the interlock loop is only marginally out of specification

Common causes, most likely first

- 1 Corroded, loose, or backed-out terminals in any high-voltage interlock connector
- 2 Damaged or chafed interlock wiring harness, often near a service disconnect or inverter
- 3 Water intrusion into a high-voltage connector causing a partial short or high resistance
- 4 A faulty high-voltage component with an internal interlock switch that has drifted out of specification
- 5 Aftermarket or improper repair splicing that altered the interlock loop resistance
- 6 A failing high-voltage control module or battery energy control module not correctly reading the loop voltage



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data from every module, then clear codes and road-test to see if U3546 returns immediately or only under specific conditions
- 2 Inspect every high-voltage interlock connector for corrosion, moisture, pin tension, and proper seating, starting at the service disconnect and inverter
- 3 Measure the interlock loop voltage and resistance at the control module connector and compare to the manufacturer's specification
- 4 Perform a wiggle test on the interlock harness while monitoring live data to catch intermittent faults
- 5 Check for technical service bulletins or software updates for the high-voltage control module that address interlock performance thresholds
- 6 Repair or replace the damaged section of interlock wiring or the affected high-voltage component only after confirming the fault location
- 7 Clear codes and verify the repair by completing a full drive cycle and confirming the interlock voltage stays within range

Interlock faults that fool good technicians

- A marginal interlock loop voltage often sets U3546 without any drivability complaint, so the code can be a false alarm caused by a slightly loose connector rather than a serious high-voltage failure.
- Technicians sometimes replace an expensive high-voltage battery pack when the real fault is a corroded pin in a service disconnect plug that costs a few minutes to clean and reseal.
- The interlock loop is a low-voltage safety circuit, so a performance code does not automatically mean the high-voltage system itself has a dangerous short or insulation failure.
- Aftermarket alarm or remote-start installations that tap into the interlock circuit are a common hidden cause of U3546 on otherwise stock vehicles.
- A weak 12-volt battery or poor chassis ground can cause the high-voltage control module to misread the interlock voltage and set this code intermittently.

Can I keep driving with U3546?

Do not continue driving if the high-voltage warning is active and the vehicle will not enter Ready mode, because the interlock may have disabled the system for safety. If the car still drives normally with only a warning light, limit driving to a short distance to a qualified technician and avoid high-voltage service work yourself.



Tools that help

- OBD-II scan tool with live data and bidirectional control capability
- Digital multimeter with high-voltage safety rating
- Manufacturer service information for interlock circuit specifications
- Insulated hand tools and personal protective equipment rated for high-voltage work
- Terminal pick and contact cleaner for connector repair

Reading U3546

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.

46 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' · **U3545** High Voltage System Interlock Circuit P · **U3547** High Voltage System Interlock Circuit P Low

See it working

Watch the animated explainer [How a Knock Sensor Works: Spark Timing and Octane](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3546/>

