



U3545

High Voltage System Interlock Circuit P

U3545 indicates that the high-voltage system interlock circuit for the 'P' loop has reported a voltage above the expected range, which the vehicle's control module interprets as a potential safety breach. The interlock is a low-voltage loop that runs through high-voltage connectors and covers; when it opens or shorts, the module sets this code to prevent high-voltage exposure.

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, leaving you stranded
- Reduced power or a forced limp-home mode if the vehicle does drive
- High-voltage system may be automatically disabled, preventing EV or hybrid operation
- Often no symptoms besides the warning light if the fault is intermittent
- Possible audible alert or chime accompanying the warning

Common causes, most likely first

- 1 A high-voltage connector that is not fully seated or has a damaged interlock pin
- 2 Corrosion or water intrusion in a high-voltage connector or interlock circuit
- 3 A faulty high-voltage component cover or service disconnect plug not properly installed
- 4 Damaged wiring harness in the interlock circuit, often from chafing or rodent damage
- 5 Failed interlock switch inside a high-voltage battery pack, inverter, or motor
- 6 Internal fault in the control module that monitors the interlock circuit
- 7 Aftermarket or improper repair that bypassed or altered the interlock loop

How to diagnose and fix it

- 1 Inspect all high-voltage connectors for proper seating and visible damage, reseating any that are loose
- 2 Check the service disconnect plug and high-voltage component covers for correct installation
- 3 Perform a visual inspection of the interlock wiring for chafing, corrosion, or rodent damage
- 4 Use a scan tool to read live data for the interlock circuit voltage and compare to specifications
- 5 Measure resistance or continuity of the interlock loop at each connector to isolate the open or short
- 6 Test the interlock switch or sensor at the suspect component and replace if faulty
- 7 If the circuit checks out, diagnose or replace the control module that set the code



Interlock faults often hide in plain sight

- A common oversight is a high-voltage connector that looks latched but is not fully engaged, causing an intermittent interlock voltage spike.
- The code can be set by a low 12-volt battery or poor ground, so always verify the base electrical system before condemning high-voltage parts.
- After any high-voltage repair, the interlock loop must be fully restored; bypassing it to 'make it run' is dangerous and will reset the code.
- Some vehicles set U3545 when the service disconnect plug is removed with the key on, even though no actual fault exists.
- Interlock circuits are often daisy-chained through multiple components, so a fault in one connector can disable the entire high-voltage system.

Can I keep driving with U3545?

Do not drive the vehicle if the high-voltage warning is active, because the system may be disabled or unsafe; have it towed to a qualified technician. If the light is intermittent and the vehicle drives normally, avoid high-voltage operations and schedule service promptly.

Tools that help

- OBD-II scan tool with live data and high-voltage system capability
- Digital multimeter with high-voltage safety rating
- Insulation tester or megohmmeter
- High-voltage safety gloves and insulated tools
- Vehicle-specific service information for interlock circuit diagrams

Reading U3545

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.
45	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' · **U3544** High Voltage System Interlock Circuit O High · **U3546** High Voltage System Interlock Circuit P Performance



See it working

Watch the animated explainer [How a Refrigerator Works: The Cooling Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3545/>

