



P0AAB

Hybrid/EV Battery Voltage Isolation Sensor Circuit Intermittent/Erratic

P0AAB indicates that the hybrid or electric vehicle battery pack's voltage isolation monitoring circuit is reporting an intermittent or erratic signal, meaning the computer cannot reliably measure the electrical isolation between the high-voltage battery and the vehicle chassis. The computer detects this when the isolation sensor's output voltage or current readings jump, drop out, or behave inconsistently over a short period, rather than showing a steady value.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or master warning light on the dashboard
- Often no symptoms besides the warning light, with the vehicle driving normally
- Intermittent loss of high-voltage power or a sudden transition to limp-home mode
- Reduced electric-only range or the engine running more often than usual
- A message on the driver information display indicating a hybrid system fault or service required
- In rare cases, a noticeable drop in fuel economy or sluggish acceleration

Common causes, most likely first

- 1 A faulty or contaminated voltage isolation sensor (also called an isolation fault sensor or HV leakage sensor) mounted within the battery pack
- 2 Damaged, chafed, or corroded wiring and connectors in the isolation sensor circuit, often due to vibration or moisture intrusion
- 3 Poor electrical ground connection for the isolation monitoring circuit or the battery pack housing
- 4 Internal battery pack contamination, such as moisture or debris, creating an intermittent conductive path that confuses the sensor
- 5 A failing hybrid/EV battery control module or battery energy control module that processes the isolation sensor signal
- 6 Loose or improperly seated high-voltage service disconnect plug or interlock switch causing intermittent circuit interruption
- 7 Aftermarket accessories or improper previous repairs that have disturbed the high-voltage wiring harness or sensor mounting



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear the code and test-drive to see if P0AAB returns under specific conditions such as bumps or temperature changes
- 2 Visually inspect the isolation sensor, its connector, and the related wiring harness for signs of damage, corrosion, moisture, or loose pins, especially around the battery pack
- 3 Check and clean the ground connections for the isolation monitoring circuit and the battery pack housing, verifying low resistance to chassis ground
- 4 Perform a voltage drop test on the isolation sensor circuit wiring while wiggling the harness to catch intermittent faults
- 5 Follow the manufacturer's service procedure to test the isolation sensor's output signal with a multimeter or oscilloscope, comparing it to specifications
- 6 If the sensor signal is erratic but wiring and grounds are good, replace the voltage isolation sensor according to the service manual
- 7 If the fault persists after sensor replacement, diagnose the battery control module and the high-voltage battery pack for internal isolation issues, which may require a professional high-voltage technician

Intermittent isolation faults often hide in plain sight

- A common oversight is assuming the code means the high-voltage battery is failing, when in fact the isolation sensor circuit itself is often the culprit and the battery may be perfectly healthy.
- Intermittent faults frequently appear only under specific conditions such as driving over rough roads, during temperature swings, or after exposure to moisture, so a simple static test may not reveal the problem.
- The isolation sensor is sometimes integrated into the battery pack and not sold separately, but on many models it is a replaceable component that can be serviced without replacing the entire pack.
- A weak or corroded ground for the isolation monitoring circuit can produce erratic readings that mimic a failed sensor, so always verify ground integrity before condemning parts.
- Aftermarket alarm systems, dash cameras, or improper audio installations that tap into hybrid wiring can introduce noise or intermittent connections that set this code, so check for recent modifications.

Can I keep driving with P0AAB?

You can generally continue driving if the vehicle runs normally and only the warning light is on, but avoid pushing the hybrid system hard or ignoring repeated warnings. If the vehicle enters limp mode or shows a high-voltage isolation fault message, stop driving and have it inspected promptly because intermittent isolation faults can escalate to a no-start or safety shutdown.



Tools that help

- OBD-II scan tool with hybrid/EV capability and live data graphing
- Digital multimeter with CAT III rating for high-voltage safety
- Oscilloscope for capturing intermittent sensor signals
- Insulation resistance tester (megohmmeter) rated for high-voltage systems
- Manufacturer service information for isolation sensor testing and high-voltage safety procedures
- Basic hand tools and terminal pick set for connector inspection

Reading P0AAB

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
A	Hybrid propulsion.
AB	The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A1F** Battery Energy Control Module A Performance · **P0AA6** Hybrid/EV Battery Voltage System Isolation Fault · **P0AA7** Hybrid/EV Battery Voltage Isolation Sensor Circuit · **P0AFA** Hybrid/EV Battery System Voltage Low

See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0aab/>

