

GENERIC · POWERTRAIN

P0A28

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0A28

Battery Power Off Circuit Low

P0A28 indicates that the hybrid or electric vehicle's battery power-off circuit has a low voltage condition, meaning the control module has detected a signal or supply voltage below the expected threshold on the circuit that commands the high-voltage battery to disconnect. This circuit is part of the safety system that isolates the high-voltage battery during service or a collision, so the fault can prevent the vehicle from entering or exiting certain power modes.

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
- The vehicle may refuse to start or enter 'Ready' mode, leaving you with a no-start condition
- The high-voltage battery contactors may not close, resulting in no power delivery to the drivetrain
- In some cases, the vehicle may drive normally with only the warning light on, as the fault may be stored without an immediate effect on operation
- Intermittent loss of power or sudden shutdown while driving if the circuit fault is active
- Other hybrid-related warning messages displayed in the driver information center

Common causes, most likely first

- 1 A faulty battery power-off circuit relay or contactor that has failed open or has high resistance
- 2 Corroded, loose, or damaged wiring and connectors in the power-off circuit, especially at the battery junction block
- 3 A failed or failing hybrid vehicle control module or battery energy control module that cannot properly monitor or command the circuit
- 4 A short to ground or open circuit in the power-off signal wire, often due to chafing or rodent damage
- 5 Low auxiliary battery voltage or poor grounds that cause the control module to misread the circuit voltage
- 6 A malfunctioning service disconnect switch or interlock that is not fully engaged or has internal resistance



How to diagnose and fix it

- 1 Verify the auxiliary battery state of charge and condition, as low voltage can cause false circuit codes; recharge or replace as needed
- 2 Inspect all connectors and wiring associated with the battery power-off circuit for corrosion, looseness, or damage, and repair as required
- 3 Check the service disconnect switch for proper engagement and continuity, and replace if faulty
- 4 Test the power-off circuit relay or contactor for proper operation and resistance, and replace if out of specification
- 5 Measure voltage and resistance on the power-off signal circuit at the control module to confirm the low voltage condition and isolate whether the fault is in the wiring or the module
- 6 If the circuit and components test good, follow the manufacturer's diagnostic flow for the hybrid control module, which may require reprogramming or replacement
- 7 Clear the code and perform a road test to verify the repair, ensuring the hybrid system operates correctly and the code does not return

Before you replace the hybrid control module

- A weak auxiliary battery is a common culprit for this code because the hybrid control module may not receive stable voltage to properly monitor the power-off circuit, leading to a false low-voltage report.
- The service disconnect switch is often overlooked; if it is not fully latched or has internal corrosion, it can create enough resistance to set P0A28 without any obvious drivability issue.
- Rodent damage to the wiring harness near the battery pack is a frequent cause that technicians miss when they focus only on electronic components.
- This code does not always mean the high-voltage battery itself is faulty; the power-off circuit is a low-voltage control circuit, so misdiagnosing it as a battery pack failure can lead to unnecessary and expensive repairs.
- In some vehicles, P0A28 may be stored alongside codes for the battery energy control module or hybrid control module, so always check for related codes before condemning a single component.

Can I keep driving with P0A28?

If the vehicle still starts and drives normally with only the warning light on, you can drive it to a repair shop, but avoid long trips or aggressive driving. If the vehicle fails to start or shows other hybrid system warnings, do not attempt to drive it and have it towed to avoid being stranded or causing further damage.

Tools that help

- OBD-II scan tool with hybrid system capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Insulation resistance tester (megohmmeter)
- Basic hand tools for connector and component access



Reading P0A28

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A0F** Engine Failed to Start · **P0A1F** Battery Energy Control Module A Performance · **P0A27** Battery Power Off Circuit · **P0A29** Battery Power Off Circuit High

See it working

Watch the animated explainer [How Misfire Detection Works: Crankshaft Speed](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0a28/>

