

GENERIC · POWERTRAIN

P2B32

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2B32

Fan 2 Stuck On

P2B32 means the powertrain control module (PCM) has detected that cooling fan number two is running when it should be off, based on feedback from the fan control circuit or a fan speed sensor. The PCM commands the fan off but continues to see voltage or current indicating the fan is still energized, so it flags the circuit as stuck on.

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

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the fan runs only intermittently when it should be off.
- Cooling fan number two runs continuously after the engine is shut off, draining the battery over time.
- Engine coolant temperature runs lower than normal because the fan is overcooling the radiator.
- Battery drains overnight or after several hours of sitting, leading to a no-start condition.
- Fan relay or control module may click repeatedly or stay energized, and the fan may run at full speed regardless of engine temperature.

Common causes, most likely first

- Fan relay number two welded closed or stuck in the energized position, keeping the fan powered at all times.
- Short to voltage in the fan control circuit between the PCM and the fan relay or fan motor.
- Faulty fan control module or solid-state fan controller that fails in the on state.
- PCM internal driver failure holding the fan control output grounded or energized.
- Aftermarket wiring or accessory installation that backfeeds the fan circuit.
- Corroded or damaged connector pins causing a unintended ground or voltage path in the fan circuit.



How to diagnose and fix it

- 1 Verify the complaint by watching fan number two with the key off and engine cold; confirm whether it runs when it should be stationary.
- 2 Check for stored and pending codes in all modules, then clear codes and see if P2B32 returns immediately with the fan commanded off.
- 3 Inspect the fan relay number two and swap it with an identical relay from a non-critical circuit to see if the stuck-on condition moves.
- 4 Disconnect the fan motor or control module connector and measure for voltage on the control circuit with the key off; any voltage indicates a short or stuck relay.
- 5 Backprobe the PCM fan control output with a scan tool commanding the fan off; confirm the PCM is not grounding or powering the circuit when it should not.
- 6 Repair any chafed wires, corroded pins, or aftermarket wiring that could backfeed the fan circuit, then retest fan operation through several key cycles.
- 7 Replace the failed relay, fan control module, or PCM only after circuit testing confirms the fault, then clear codes and verify the fan stays off when commanded.

Why the fan runs with the key off

- A stuck fan relay is the most common cause, but technicians often replace the fan motor first because the fan is what they see running.
- Some vehicles use a pulse-width-modulated fan controller that can fail in the full-on state, and the PCM may set P2B32 even though the fan motor itself is good.
- A short to voltage in the control wire can be caused by a pinched harness near the radiator support or fan shroud, which is easy to miss during a visual inspection.
- The PCM may set this code after a battery disconnect or low-voltage event, so always check for a weak battery or poor ground before condemning the module.
- Aftermarket remote starters or alarm systems that tap into fan wiring can backfeed the circuit and set P2B32 without any factory component failure.

Can I keep driving with P2B32?

You can usually drive the vehicle short distances, but the fan running continuously can drain the battery and cause a no-start, so avoid leaving it parked for long periods until repaired. Do not ignore a battery that keeps going dead, and have the circuit checked promptly to prevent overheating or electrical damage.



Tools that help

- Scan tool with bidirectional fan control capability
- Digital multimeter with backprobe pins
- Test light or fused jumper wire
- Relay puller and spare identical relay
- Wiring diagram for the fan control circuit

Reading P2B32

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

Often seen with

P0480 Cooling Fan 1 Control Circuit Malfunction · **P0481** Cooling Fan 2 Control Circuit Malfunction · **P0691** Fan 1 Control Circuit Low · **P2B31** Fan 2 Performance/Stuck Off · **P2B33** A Camshaft Profile Actuator B Control Circuit/Open Bank 1

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2b32/>

