

GENERIC · POWERTRAIN

P0EA9

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0EA9

Auxiliary Cooling System Performance

P0EA9 indicates that the powertrain control module (PCM) has detected a performance issue with the auxiliary cooling system, which is a secondary cooling circuit used for components such as the transmission, hybrid battery, or turbocharger. The PCM monitors this system through temperature sensors and pump feedback, and it sets the code when the observed cooling behavior falls outside the expected range for the given operating conditions.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced performance or power derate if the auxiliary system protects a component like the transmission
- Overheating warning for the auxiliary circuit, sometimes accompanied by a message in the driver information center
- Auxiliary coolant pump may be heard running continuously or not at all after shutdown
- Poor fuel economy or abnormal transmission shifting if the auxiliary cooler is not functioning
- In hybrid vehicles, reduced electric-only operation or battery cooling warnings

Common causes, most likely first

- 1 Low auxiliary coolant level due to a leak or lack of maintenance
- 2 Faulty auxiliary coolant pump, such as a seized impeller or electrical failure
- 3 Restricted auxiliary radiator or cooler from debris, mud, or internal blockage
- 4 Failed auxiliary coolant temperature sensor giving inaccurate readings
- 5 Wiring or connector issues in the auxiliary pump circuit, including corrosion or chafed wires
- 6 Stuck thermostat or control valve in the auxiliary cooling loop
- 7 Air trapped in the auxiliary cooling system after service or a leak



How to diagnose and fix it

- 1 Check the auxiliary coolant reservoir level and inspect for obvious leaks; top up if low and pressure test the system
- 2 Use a scan tool to command the auxiliary pump on and verify operation, listening for pump noise and checking for voltage and ground at the pump connector
- 3 Compare auxiliary coolant temperature sensor readings with actual temperatures using an infrared thermometer to validate sensor accuracy
- 4 Inspect the auxiliary radiator and cooler for external restrictions and clean with low-pressure water or compressed air
- 5 Perform a coolant flow test to ensure the pump is moving fluid and there are no blockages in the circuit
- 6 Check for technical service bulletins (TSBs) or software updates for the PCM that may address false setting of this code
- 7 If all else checks out, replace the auxiliary coolant pump or control valve as applicable and bleed the system thoroughly

Auxiliary cooling faults often misdiagnosed

- A common mistake is replacing the auxiliary pump when the real problem is a restricted or clogged auxiliary radiator that reduces flow and triggers the performance code.
- Air pockets in the auxiliary cooling system after a repair can cause the pump to cavitate and set P0EA9 even when all components are functioning correctly.
- On some vehicles, the auxiliary cooling system shares coolant with the main engine cooling circuit, so a low engine coolant level can cause this code to set.
- The PCM may set P0EA9 based on a calculated model rather than a direct sensor failure, so a weak pump that still runs can trigger the code without completely failing.
- A faulty auxiliary coolant temperature sensor can skew readings and cause the PCM to command the pump incorrectly, leading to a performance code without any actual cooling problem.

Can I keep driving with P0EA9?

It is generally safe to drive with P0EA9 set as long as the engine temperature gauge remains normal and no overheating warnings appear, but avoid heavy loads or towing until the fault is repaired. If the auxiliary system protects the transmission or hybrid battery, prolonged driving may lead to reduced performance or component damage.



Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Infrared thermometer
- Coolant pressure tester
- Digital multimeter
- Basic hand tools and hose clamp pliers

Reading P0EA9

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
A9	The exact fault within that area.

Often seen with

P0217 Engine Over-Temperature Condition · **P0218** Transmission Over-Temperature Condition · **P0A0D** High Voltage System Interlock Circuit A High · **P0EA8** DC/DC Converter B Performance · **P0EAA** A/C Compressor Motor Voltage Sensor B Circuit

See it working

Watch the animated explainer [How Hydraulic Brakes Work: Pedal to Caliper](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0ea9/>

