

GENERIC · POWERTRAIN

P0A04

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0A04

Motor Electronics Coolant Temperature Sensor Circuit Intermittent

P0A04 indicates that the motor electronics coolant temperature sensor circuit is reporting an intermittent signal to the hybrid or electric vehicle control module. The computer detects this when the sensor voltage momentarily drops out or spikes outside the expected range, often due to a loose connection or failing sensor, rather than a steady out-of-range reading.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or hybrid system warning light, often with no other noticeable symptoms.
- Intermittent reduction in hybrid system power or forced engine-only operation during acceleration.
- Occasional rough running or stalling when the coolant temperature reading suddenly becomes erratic.
- Poor fuel economy or increased emissions due to incorrect temperature compensation.
- A stored freeze-frame showing the fault occurred under specific load or temperature conditions.

Common causes, most likely first

- 1 A faulty coolant temperature sensor that internally opens or shorts intermittently when hot or cold.
- 2 Corroded, loose, or damaged electrical connector pins at the sensor or control module.
- 3 Chafed or broken wires in the sensor circuit that make contact only under vibration or temperature swings.
- 4 Coolant contamination or low coolant level causing the sensor to read air pockets instead of liquid.
- 5 A failing control module that misinterprets a valid sensor signal due to internal circuit faults.
- 6 Aftermarket or incorrect sensor installed previously that does not match the required resistance curve.



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, its connector, and the wiring harness for obvious damage, corrosion, or loose pins.
- 2 Check coolant level and condition; top off or flush if contaminated, as air pockets can cause intermittent readings.
- 3 Use a scan tool to monitor live coolant temperature data while wiggling the sensor connector and harness to reproduce the intermittent signal.
- 4 Measure the sensor resistance with a multimeter at cold and hot temperatures and compare to the manufacturer's specification chart.
- 5 Backprobe the sensor signal and ground wires at the control module to check for voltage drops or intermittent opens under load.
- 6 If the sensor is out of specification or the wiring is faulty, replace the sensor or repair the harness with proper soldered connections and heat shrink.
- 7 Clear the diagnostic trouble codes and perform a road test with the scan tool recording to confirm the intermittent signal is resolved.

Intermittent faults hide in connectors and harnesses

- A common mistake is replacing the coolant temperature sensor immediately, when the real culprit is often a corroded terminal or a wire that only breaks contact when the engine bay is hot.
- The code can set from a momentary glitch that lasts less than a second, so a sensor that tests perfectly fine when cold may still be failing intermittently when hot.
- Low coolant or trapped air from a recent cooling system service can cause the sensor to read air instead of liquid, mimicking an electrical fault.
- On some hybrid vehicles, this sensor shares a ground circuit with other sensors, so a fault in that shared ground can set P0A04 along with other codes.
- A failing water pump or thermostat that causes rapid temperature swings can stress the sensor and trigger intermittent codes without the sensor itself being defective.

Can I keep driving with P0A04?

You can usually continue driving short distances if the only symptom is the warning light, but avoid heavy acceleration or long trips until the fault is repaired. If the vehicle enters limp mode or overheats, stop safely and have it towed to prevent damage to the hybrid system.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with backprobe pins
- Wiring diagram for the specific vehicle
- Coolant refractometer or test strips
- Soldering iron and heat shrink tubing for harness repairs

Reading P0A04

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

Often seen with

P0117 Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P0A03** Motor Electronics Coolant Temperature Sensor Circuit High · **P0A05** Motor Electronics Coolant Pump Control Circuit/Open · **P0A06** Motor Electronics Coolant Pump Control Circuit Low

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0a04/>

