



P0A21

Motor Torque Sensor Circuit Intermittent

P0A21 indicates that the hybrid or electric vehicle controller has detected an intermittent fault in the motor torque sensor circuit, meaning the signal from the sensor that measures electric motor output torque is dropping out or glitching. The computer sets this code when the sensor signal is momentarily lost or erratic, but not continuously failed, so the fault may not be present at the time of diagnosis.

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 service vehicle soon light
- Intermittent loss of power or hesitation during acceleration
- The vehicle may enter a reduced power or limp mode
- Rough running or shuddering under load
- Often no symptoms besides the warning light, especially if the fault is very brief

Common causes, most likely first

- 1 Loose, corroded, or damaged electrical connector at the motor torque sensor
- 2 Chafed or broken wiring in the motor torque sensor circuit
- 3 Failing motor torque sensor
- 4 Faulty hybrid vehicle control module or inverter assembly
- 5 Electromagnetic interference from aftermarket accessories or degraded shielding
- 6 Poor ground connection for the sensor or controller

How to diagnose and fix it

- 1 Perform a visual inspection of the motor torque sensor and its wiring harness for obvious damage, corrosion, or loose connections
- 2 Check for technical service bulletins (TSBs) related to the code and vehicle model
- 3 Use a scan tool to monitor live data from the motor torque sensor while wiggling connectors and harnesses to reproduce the intermittent fault
- 4 Measure resistance and continuity of the sensor circuit from the sensor to the controller, looking for opens or shorts
- 5 If the sensor is accessible, test its output signal with an oscilloscope to verify a clean waveform
- 6 Replace the motor torque sensor if faulty, following the manufacturer's procedure
- 7 If the sensor and wiring are good, diagnose or replace the hybrid control module or inverter as required



Intermittent faults demand patience and live data

- An intermittent code like P0A21 often leaves no stored freeze-frame data, so you must rely on live sensor readings and wiggle tests to catch the fault in the act.
- A common oversight is replacing the motor torque sensor without first checking the connector pins for slight push-back or corrosion that only breaks contact under vibration.
- The code can be set by a momentary voltage spike or drop from a failing 12-volt battery or charging system, so always verify battery and charging system health before condemning hybrid components.
- Aftermarket electrical accessories or poor grounding can introduce noise into the sensor circuit, causing false intermittent signals that mimic a failing sensor.
- On some vehicles, the motor torque sensor is integrated into the motor assembly and not serviceable separately, requiring replacement of the entire motor unit.

Can I keep driving with P0A21?

You can generally continue driving to a repair shop, but avoid heavy acceleration or high-speed driving because a sudden loss of torque signal could cause the vehicle to enter limp mode without warning. If the warning light flashes or the vehicle repeatedly loses power, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter
- Oscilloscope
- Electrical connector test kit
- Vehicle-specific service information

Reading P0A21

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

Often seen with

P0A20 Motor Torque Sensor Circuit High · **P0A22** Generator Torque Sensor Circuit · **P0A23** Generator Torque Sensor Circuit Range/Performance · **P0A24** Generator Torque Sensor Circuit Low · **P0A25** Generator Torque Sensor Circuit High



See it working

Watch the animated explainer [EV Powertrain Trainer: How an Electric Car Drives](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0a21/>

