

GENERIC · POWERTRAIN

P0939

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0939

Hydraulic Oil Temperature Sensor Circuit Low

P0939 indicates that the powertrain control module (PCM) has detected a low voltage signal from the hydraulic oil temperature sensor circuit, which typically means the sensor is reporting an excessively high temperature or the circuit has a short to ground. The PCM sets this code when the signal voltage falls below the calibrated minimum for a set period, often indicating a wiring fault, a failed sensor, or low fluid level affecting the sensor's reading.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or service engine soon light, often with no other noticeable symptoms.
- Transmission may enter limp mode or fail to shift properly, especially when the fluid is cold or hot.
- Harsh or delayed shifting, particularly when the transmission is cold, due to incorrect temperature input.
- Erratic or inconsistent transmission behavior that may vary with temperature or driving conditions.
- In some cases, the transmission may refuse to engage certain gears or may slip under load.
- A noticeable decrease in fuel economy or performance if the PCM limits engine torque to protect the transmission.

Common causes, most likely first

- 1 Low hydraulic oil (transmission fluid) level, causing the sensor to read a higher temperature than actual.
- 2 Faulty hydraulic oil temperature sensor, often due to internal failure or contamination.
- 3 Damaged or corroded wiring in the sensor circuit, such as a short to ground or an open circuit.
- 4 Poor electrical connection at the sensor or PCM connector, including loose pins or water intrusion.
- 5 Failed PCM, though this is rare and should be considered only after all other possibilities are ruled out.
- 6 Restricted transmission cooler or cooling system issue causing actual overheating, which may set a low voltage signal if the sensor is a thermistor.
- 7 Use of incorrect transmission fluid or contaminated fluid affecting sensor operation.



How to diagnose and fix it

- 1 Check the transmission fluid level and condition; top off or replace fluid as needed following the manufacturer's procedure.
- 2 Inspect the hydraulic oil temperature sensor and its connector for damage, corrosion, or loose pins; clean or repair as necessary.
- 3 Perform a voltage drop test on the sensor circuit to check for excessive resistance or a short to ground.
- 4 Test the sensor's resistance or voltage output with a multimeter and compare to specifications; replace if out of range.
- 5 Check the wiring harness for chafing, pinched wires, or heat damage, especially near the transmission and exhaust components.
- 6 If the sensor and wiring are good, verify the PCM's reference voltage and ground circuits; repair any faults found.
- 7 Clear the code and perform a road test to confirm the repair, monitoring live data for the hydraulic oil temperature signal.

Overheating or Wiring: Which Is It?

- A low voltage signal from a negative temperature coefficient (NTC) sensor actually indicates a high temperature reading, so the code can be set by a genuinely overheating transmission rather than an electrical fault.
- Many technicians replace the sensor only to find the real problem is low fluid level or a restricted cooler, so always verify fluid condition and cooling system operation first.
- The hydraulic oil temperature sensor is sometimes integrated into the transmission valve body or wiring harness, making replacement more involved than a simple screw-in sensor.
- Intermittent codes can be caused by a chafed wire that only shorts to ground when the vehicle hits a bump or when the transmission moves under torque.
- A faulty sensor can cause the PCM to command incorrect line pressure, leading to transmission damage over time, so address the code promptly even if symptoms are mild.

Can I keep driving with P0939?

It is generally safe to drive with P0939 set, but avoid heavy towing or aggressive driving that could exacerbate transmission overheating. If the transmission exhibits harsh shifting or enters limp mode, seek service promptly to prevent further damage.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Transmission fluid level gauge or dipstick
- Wire repair kit (soldering iron, heat shrink, electrical tape)
- Vehicle service manual or online repair information

Reading P0939

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

Often seen with

P0711 Transmission Fluid Temperature Sensor 'A' Circuit Range/Perf · **P0712** Transmission Fluid Temperature Sensor 'A' Circuit Low · **P0713** Transmission Fluid Temperature Sensor 'A' Circuit High · **P0938** Hydraulic Oil Temperature Sensor Range/Performance · **P0940** Hydraulic Oil Temperature Sensor Circuit High

See it working

Watch the animated explainer [How a Wideband Air-Fuel Sensor Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0939/>

