

GENERIC · POWERTRAIN

P040A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P040A

EGR Temperature Sensor A Circuit

P040A indicates that the powertrain control module has detected an abnormal signal from the exhaust gas recirculation temperature sensor on the 'A' circuit, which typically monitors the temperature of the recirculated exhaust gas on the cooler side of the EGR system. The computer compares the sensor's voltage or resistance reading against expected values and flags the code when the signal falls outside the valid range or fails a rationality check.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or stumbling when the engine is cold, especially if the EGR valve is stuck open
- Poor fuel economy or increased emissions due to incorrect EGR flow calculations
- Intermittent engine surging or hesitation during light acceleration
- Failed emissions test because the EGR monitor does not complete
- In rare cases, a no-start condition if the EGR valve remains open and dilutes the intake charge

Common causes, most likely first

- 1 Faulty EGR temperature sensor with an open or shorted internal element
- 2 Damaged or corroded wiring harness and connector pins at the sensor or PCM
- 3 Exhaust leaks or blockages in the EGR cooler or transfer tube affecting sensor readings
- 4 Carbon buildup on the sensor tip insulating it from exhaust gas flow
- 5 Failed EGR cooler with internal coolant leakage or restricted flow
- 6 PCM software calibration issue or internal driver fault on the sensor circuit



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data and any stored or pending codes to confirm the fault condition
- 2 Visually inspect the EGR temperature sensor, its connector, and the wiring harness for damage, corrosion, or loose pins
- 3 Measure the sensor's resistance or voltage with a multimeter and compare it to the manufacturer's specification across temperature ranges
- 4 Check for exhaust leaks or restrictions in the EGR cooler and transfer tube using a smoke machine or pressure test
- 5 Backprobe the sensor signal wire at the PCM and verify the voltage changes as the sensor is heated or cooled
- 6 Remove and inspect the sensor for carbon fouling; clean or replace it if resistance is out of specification
- 7 Clear the codes and perform a road test to verify the repair and confirm the EGR monitor completes

What the EGR temperature sensor really does

- A P040A can be set by a perfectly functional sensor if the EGR cooler is partially clogged, because the sensor sees a lower temperature than the PCM expects during active EGR flow.
- Many technicians replace the EGR temperature sensor only to find the connector pins are pushed back or corroded, so always perform a pin drag test before condemning the sensor.
- The code does not always mean the sensor is bad; a stuck-open EGR valve can cause the sensor to read a temperature that is out of range during deceleration or idle.
- On some vehicles, the EGR temperature sensor is integrated into the EGR cooler assembly, making replacement more expensive and often misdiagnosed as a separate sensor failure.
- A weak battery or charging system fault can cause intermittent sensor codes, so check system voltage and grounds before chasing the EGR circuit.

Can I keep driving with P040A?

You can generally continue driving with a P040A code, but avoid heavy acceleration and long idling because incorrect EGR flow can increase combustion temperatures and emissions. Have the fault diagnosed soon to prevent potential damage to the EGR cooler or catalytic converter.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Hand tools for sensor removal
- Smoke machine for exhaust leak testing



Reading P040A

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

Often seen with

P0400 Exhaust Gas Recirculation Flow Malfunction · **P0401** EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P0403** EGR Circuit Malfunction · **P040B** EGR Temperature Sensor A Circuit Range/Performance

See it working

Watch the animated explainer [How a Turbocharger Works, Step by Step](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p040a/>

