

GENERIC · POWERTRAIN

P040E

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P040E

EGR Temperature Sensor A Circuit Intermittent/Erratic

P040E means the engine computer has detected an intermittent or erratic signal from the exhaust gas recirculation (EGR) temperature sensor on circuit A, which is typically the sensor mounted in the EGR passage or cooler. The computer expects a steady, plausible temperature reading and instead sees the voltage jump, drop out, or fail to change smoothly, so it flags the circuit as unreliable rather than completely open or shorted.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms besides the warning light
- Rough idle or slight hesitation when the EGR valve opens, especially when the engine is cold
- Intermittent surging or stumbling during light-throttle cruising
- A pending or stored P040E that reappears after clearing, sometimes only under certain temperature or vibration conditions
- Slightly elevated emissions or a failed emissions inspection without a noticeable driveability complaint
- Occasional poor fuel economy if the erratic reading causes the computer to misjudge EGR flow

Common causes, most likely first

- 1 Faulty EGR temperature sensor with an internally intermittent element or worn connector pins
- 2 Damaged or chafed wiring in the sensor circuit, often where it routes near hot exhaust components or sharp brackets
- 3 Corroded, loose, or water-intruded electrical connector at the sensor or at the engine computer
- 4 Carbon buildup or soot contamination on the sensor tip causing erratic resistance changes
- 5 Poor ground connection shared by the sensor circuit, leading to a floating reference voltage
- 6 Intermittent open or short inside the engine wiring harness, sometimes triggered by engine vibration or temperature swings
- 7 Rarely, a failing engine computer driver circuit for the sensor input



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P040E, then clear the code and test-drive to confirm it returns under the same conditions
- 2 Visually inspect the EGR temperature sensor, its connector, and the wiring harness for chafing, corrosion, or heat damage
- 3 Back-probe the sensor signal and ground wires and wiggle the harness while watching live temperature data for dropouts or spikes
- 4 Measure sensor resistance or voltage at known temperatures and compare with the manufacturer's specification to rule out a drifting sensor
- 5 Check circuit continuity and resistance from the sensor connector to the engine computer, including ground integrity, to isolate a harness fault
- 6 Remove and inspect the sensor for heavy carbon or soot contamination, clean or replace it as needed, and verify the EGR passage is not restricted
- 7 After repair, clear codes and run a complete drive cycle to confirm the temperature signal remains steady and P040E does not reset

Why an intermittent EGR temperature code fools people

- A sensor that tests perfectly on a cold engine can still be the culprit, because the intermittent fault often appears only after heat soak or vibration, so a static bench test proves very little.
- Technicians who replace the sensor without wiggling the harness under load frequently see P040E return, since a chafed signal wire can mimic a failing sensor perfectly.
- This code does not always mean the EGR valve itself is bad; a restricted or carbon-packed EGR passage can cause erratic temperature changes that the computer interprets as a sensor circuit fault.
- A weak or shared ground on the sensor circuit can produce an erratic reading that looks like a sensor failure, so ground voltage drop testing belongs in the diagnostic plan before any parts are fitted.
- P040E can be stored alongside EGR flow codes even when the temperature sensor is fine, because the computer uses that temperature signal to calculate EGR flow and will set related codes when the signal is unreliable.

Can I keep driving with P040E?

The vehicle is generally safe to drive with P040E because it is an electrical signal fault rather than a mechanical failure, but avoid long-term neglect since erratic EGR temperature data can affect emissions and fuel economy. If the check engine light begins flashing or the engine runs roughly, stop driving and diagnose the fault promptly.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probe pins
- Wiring diagram and manufacturer sensor resistance specifications
- Heat gun and infrared thermometer for temperature-versus-resistance testing
- Basic hand tools for sensor removal and connector access

Reading P040E

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
0E	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 · **P040D** EGR Temperature Sensor A Circuit High

See it working

Watch the animated explainer [Car Relay Test Bench: Test 4-Pin and 5-Pin Relays](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p040e/>

