

GENERIC · BODY

B0040

OBD-II TROUBLE CODE

B0040

Outside Temperature Sensor Circuit

B0040 indicates that the body control module or climate control module has detected an open, shorted, or out-of-range signal from the outside ambient temperature sensor circuit. The module uses this sensor to display outside temperature and to manage automatic climate control functions, so a fault here affects comfort features rather than engine operation.

SYSTEM Body	CODE TYPE Generic (all makes)	SEVERITY Low	FIX DIFFICULTY Intermediate	AREA Airbags, seats, doors, lights and comfort systems
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Symptoms you may notice

- Outside temperature display shows dashes, a fixed default value, or an obviously incorrect reading
- Automatic climate control behaves erratically, such as blowing full hot or full cold regardless of setting
- Often no symptoms besides the warning light, especially if the vehicle does not have an outside temperature display
- Air conditioning may be inhibited or may not engage in cold weather when the module misreads ambient temperature
- Remote start or battery management features that rely on ambient temperature may act unpredictably

Common causes, most likely first

- Failed outside temperature sensor, typically a thermistor that drifts or opens internally
- Damaged or corroded sensor connector, often from road debris, moisture, or vibration
- Broken, chafed, or shorted wiring between the sensor and the control module, frequently near the front bumper or grille
- Loose or corroded ground connection shared by the sensor circuit
- Internal fault in the body control module or climate control module that processes the sensor signal
- Aftermarket bumper, grille, or accessory installation that pinched or disconnected the sensor wiring



How to diagnose and fix it

- 1 Inspect the outside temperature sensor and its connector for physical damage, corrosion, or loose pins, and clean or reseat as needed
- 2 Check the sensor wiring harness for chafing, breaks, or shorts, especially around the front bumper and grille area
- 3 Measure the sensor resistance with a multimeter and compare it to the expected value for the ambient temperature, replacing the sensor if it is out of range
- 4 Backprobe the sensor signal and ground wires at the module connector to verify the circuit integrity and rule out a wiring fault
- 5 Verify that the module is receiving correct reference voltage and ground on the sensor circuit
- 6 Clear the code and perform a road test or climate control self-test to confirm the repair, replacing the module only if all circuit checks pass and the fault persists

Why the outside temp sensor code misleads

- A common misdiagnosis is replacing the climate control module when the real fault is a chafed wire behind the front bumper that only shorts intermittently over bumps.
- The outside temperature sensor is often shared with the automatic climate control and remote start systems, so a fault can disable those features even when the engine runs perfectly.
- Some vehicles use a default temperature value when the sensor fails, which can make the display look normal at first glance and hide the underlying circuit problem.
- Aftermarket front-end accessories such as grille guards or bumper covers frequently pinch or disconnect the sensor harness, setting this code without any electrical component failure.
- A poor ground shared with other body sensors can set B0040 alongside unrelated body codes, so always check grounds before condemning the sensor or module.

Can I keep driving with B0040?

This fault does not affect engine safety or drivability, so you can continue driving, but automatic climate control and outside temperature display may be inaccurate. Avoid relying on automatic temperature settings until the circuit is repaired.

Tools that help

- OBD-II scan tool capable of reading body codes
- Digital multimeter
- Wiring diagram for the outside temperature sensor circuit
- Trim removal tools for accessing bumper or grille-mounted sensor
- Contact cleaner and dielectric grease



Reading B0040

- B** Body: airbags, seats, doors, lights and comfort systems.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Airbags, seats, doors, lights and comfort systems.
- 40** The exact fault within that area.

Often seen with

B0039 Second Row Right Frontal Stage 1 Deployment Control · **B0041** Third Row Left Frontal Stage 1 Deployment Control · **B0042** Side Deployment Loop Open (Generic) · **B0043** Third Row Left Frontal Stage 3 Deployment Control

See it working

Watch the animated explainer [How Hydraulic Brakes Work: Pedal to Caliper](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/b0040/>

