

GENERIC · NETWORK

U0684

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U0684

Lost Communication With Catalyst Temperature Bank 1 Sensor 1

U0684 is a network communication fault indicating that a control module on the vehicle's Controller Area Network (CAN) bus has lost contact with the catalyst temperature sensor for bank 1 sensor 1. The module that monitors this sensor, typically the engine control module (ECM) or a dedicated emissions control module, has stopped receiving valid temperature data over the communication bus, so it sets this code and may illuminate the warning light.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Network	Generic (all makes)	Medium	Professional	Network communication

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) or a message on the driver information display.
- Often no symptoms besides the warning light, because the fault is a communication loss rather than a direct sensor failure.
- Possible reduction in engine power or activation of a limp-home mode if the module cannot verify catalyst temperature for emissions control.
- Intermittent or erratic operation of other systems that share the same communication bus, such as the instrument cluster or climate control.
- A stored code that returns immediately after clearing if the communication path remains broken.
- Rough running or poor fuel economy only if the missing catalyst temperature data prevents proper closed-loop or regeneration strategy.

Common causes, most likely first

- 1 Damaged, corroded, or disconnected wiring in the CAN bus circuit between the module and the catalyst temperature sensor.
- 2 A failed catalyst temperature sensor that no longer responds or has an internal open circuit.
- 3 A faulty connector at the sensor or at the control module, including loose pins or water intrusion.
- 4 A control module that has lost its power or ground feed, causing it to drop off the network.
- 5 A shorted or open CAN bus line that disrupts communication for multiple modules on the same segment.
- 6 Software or configuration mismatch in a module that was recently replaced or reprogrammed.
- 7 A failing module on the same bus that is corrupting network traffic and preventing reliable communication.



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes, then verify that U0684 is current and not history.
- 2 Inspect the catalyst temperature sensor connector and the module connector for corrosion, loose pins, or pushed-back terminals.
- 3 Check the sensor's resistance or voltage output against the manufacturer's specification to confirm whether the sensor itself is faulty.
- 4 Perform a continuity and short-to-ground test on the CAN bus wiring between the sensor and the module, looking for opens or chafed insulation.
- 5 Verify that the control module has good power and ground at its connector, since a dropped module will set communication codes.
- 6 If wiring and sensor test good, substitute a known-good sensor or module only after confirming the bus is healthy, then clear codes and road test.
- 7 After any repair, clear all codes and drive the vehicle through a complete readiness cycle to confirm U0684 does not return.

What most technicians miss on U0684

- A catalyst temperature sensor that reads plausibly on a scan tool can still set U0684 if its message counter or checksum is corrupted, so live data alone does not prove the sensor is good.
- This code is often set by a low battery or a poor ground that causes the module to reboot intermittently, not by a failed sensor, so always load-test the battery and check grounds first.
- A single failed module on the CAN bus can prevent communication with the catalyst temperature sensor even though the sensor and its wiring are perfect, so scan all modules for communication codes before replacing parts.
- Replacing the catalyst temperature sensor without checking the bus termination resistors can leave the code unresolved, because incorrect termination causes reflected signals that corrupt messages.
- U0684 can appear after a windshield replacement or body repair if water enters a connector or a harness is pinched, so inspect for recent work before condemning electronic components.

Can I keep driving with U0684?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy loads, towing, or long highway trips because the engine may enter a reduced-power mode without valid catalyst temperature data. If the warning light flashes or the engine runs poorly, stop driving and have the vehicle towed.



Tools that help

- OBD-II scan tool with live data and bidirectional communication capability
- Digital multimeter with resistance, voltage, and continuity functions
- CAN bus breakout box or oscilloscope for signal integrity testing
- Wiring diagram and connector pinout for the specific vehicle
- Terminal pick and contact cleaner for connector inspection

Reading U0684

U	Network: communication between the vehicle's control modules.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
6	Network communication.
84	The exact fault within that area.

Often seen with

P0420 Catalyst System Efficiency Below Threshold (Bank 1) · **U0100** Lost Communication With ECM/PCM A · **U0140** Lost Communication With Instrument Panel Cluster · **U0685** Lost Communication With Catalyst Temperature Bank 1 Sensor 2 · **U0686** Lost Communication With Catalyst Temperature Bank 2 Sensor 1

See it working

Watch the animated explainer [How a Car Thermostat Works: Wax Pellet and Cooling Fan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u0684/>

