

GENERIC · NETWORK

U050B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U050B

Invalid Data Received From Moveable Roof Control Module B

U050B is a communication fault indicating that a control module on the vehicle's network received invalid or corrupted data from the moveable roof control module, which manages the operation of a sunroof, convertible top, or similar powered roof system. The computer did not lose contact with the module entirely; instead, the data frames arriving from the moveable roof module failed plausibility or checksum validation, so the receiving module flagged the information as unusable.

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

Symptoms you may notice

- The sunroof, convertible top, or panoramic roof may stop responding to the switch or move only partway through its travel.
- A warning light or message on the instrument cluster indicating a roof system fault or a general network communication error.
- The roof may reverse direction unexpectedly or stop mid-cycle as the control module rejects invalid position or status data.
- Other unrelated electrical features may act erratically if the corrupted data is shared on a common communication bus.
- Often no symptoms besides the warning light, because the roof may still operate normally using default or redundant logic.
- The roof control switch may feel unresponsive for several seconds after startup while modules re-establish valid communication.



Common causes, most likely first

- 1 A failing moveable roof control module that is producing corrupted or out-of-range data frames due to internal electronic faults.
- 2 Damaged or chafed wiring in the harness that runs through the roof hinge area or flexible conduit, causing intermittent signal degradation.
- 3 Corroded or loose electrical connectors at the moveable roof control module or at a network splice point, introducing resistance that distorts data.
- 4 Low battery voltage or a weak charging system that causes the roof module to boot improperly and transmit invalid data during voltage sags.
- 5 A software or calibration mismatch in the moveable roof control module after a battery replacement or module replacement without proper initialization.
- 6 Water intrusion into the roof module connector or housing, common on convertibles and panoramic roofs, leading to signal corruption.
- 7 A fault in another module on the same communication bus that is flooding the network and causing the roof module's data to be misinterpreted.

How to diagnose and fix it

- 1 Perform a full scan of all modules and record every stored and pending code, because U050B is often accompanied by other network codes that point to the root cause.
- 2 Check battery voltage and charging system output, and load-test the battery, since low voltage is a frequent trigger for invalid data codes on roof modules.
- 3 Inspect the moveable roof control module connectors and the harness sections that flex with roof movement for corrosion, chafing, or loose pins.
- 4 Clear the code and operate the roof through several full open and close cycles while watching live data for the roof module to see whether the invalid data returns under movement.
- 5 If the code returns, check for technical service bulletins or software updates for the moveable roof control module before condemning any hardware.
- 6 Substitute a known-good moveable roof control module only after wiring and power checks pass, then reinitialize or calibrate the roof system as required.
- 7 Repair any damaged harness sections with proper solder and heat-shrink splices, and apply dielectric grease to connectors in the roof area to prevent recurrence.



Why the roof module sends bad data

- A moveable roof control module can transmit invalid data even when the roof operates perfectly, because the fault lies in the data frame content rather than in the motor or mechanical assembly.
- Technicians often replace the roof module prematurely when the real culprit is a chafed wire in the flexible harness that runs through the hinge or folding roof mechanism.
- Low voltage during engine cranking is a commonly missed cause, as the roof module may transmit corrupted frames for a few seconds after startup and set U050B without any hard fault.
- Water intrusion into the roof module connector is easy to overlook on convertibles and panoramic roofs, and it can cause intermittent invalid data that only appears in wet weather.
- This code does not always mean the roof module is faulty; a different module dominating the communication bus can cause the roof module's data to be flagged as invalid by the receiving module.

Can I keep driving with U050B?

The vehicle is generally safe to drive because the moveable roof is a comfort and convenience system, but avoid operating the roof repeatedly until the fault is diagnosed, as a roof stuck partially open can compromise weather protection and security. If the roof fails to close fully, do not force it and seek service promptly.

Tools that help

- OBD-II scan tool with full module access and live data capability
- Digital multimeter for voltage, resistance, and continuity checks
- Battery load tester or conductance tester
- Wiring diagram and connector pinout for the moveable roof control module
- Trim removal tools for accessing roof module connectors and harness routing
- Dielectric grease and electrical contact cleaner

Reading U050B

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

Often seen with

U0100 Lost Communication With ECM/PCM A · **U0140** Lost Communication With Instrument Panel Cluster · **U0155** Lost Communication With Body Control Module · **U050A** Invalid Data Received From Seat Control Module B · **U050C** Invalid Data Received From Door Control Module H



See it working

Watch the animated explainer [How an Oxygen Sensor Works: Live 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u050b/>

