



U05AC

Invalid Data Received From Vehicle Thermal Management Control Module

U05AC is a communication fault indicating that one or more control modules received invalid or missing data from the vehicle thermal management control module over the controller area network (CAN) bus. The computer detected that the thermal management module's data messages were either absent, out of range, or failed a checksum, so other modules cannot trust its temperature and actuator status information.

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) with no other obvious drivability complaint.
- Heating, ventilation, and air conditioning (HVAC) system may blow only warm or only cold air, or fail to change temperature on command.
- Engine coolant temperature gauge may read incorrectly or fluctuate, and the cooling fan may run constantly or not at all.
- Reduced engine performance or limp-home mode if the powertrain control module (PCM) cannot confirm thermal management status.
- Battery charging or 12-volt accessory issues on vehicles with active thermal management for the high-voltage battery.
- Often no symptoms besides the warning light, especially if the fault is intermittent and the module reconnects.

Common causes, most likely first

- 1 Damaged, corroded, or loose wiring or connector pins on the CAN bus circuit between the thermal management module and the modules that consume its data.
- 2 Failed or intermittently failing vehicle thermal management control module, often due to internal circuit board faults or water intrusion.
- 3 Low or unstable battery voltage causing the thermal management module to drop offline or transmit corrupted data frames.
- 4 Software or calibration mismatch in the thermal management module or a receiving module after a repair or battery replacement.
- 5 Open or shorted CAN bus data lines (CAN high or CAN low) that affect only the thermal management module's segment of the network.
- 6 A separate module on the same CAN segment flooding the bus with errors, which prevents valid thermal management messages from being received.



How to diagnose and fix it

- 1 Verify battery state of charge and charging system output, then clear the code and test-drive to see if U05AC returns under normal operating conditions.
- 2 Inspect the thermal management module connectors and the CAN bus wiring for corrosion, chafing, loose pins, or water intrusion, repairing any damaged terminals.
- 3 Use a scan tool to check for other communication codes on the same CAN segment and to confirm whether the thermal management module is online and reporting live data.
- 4 Perform a voltage drop and resistance test on the CAN high and CAN low circuits between the thermal management module and the gateway or receiving module.
- 5 Check for technical service bulletins (TSBs) or software updates for the thermal management module and reflash or reprogram it if an update applies.
- 6 Substitute a known-good thermal management module only after wiring and power/ground tests pass, then relearn or configure the module as required.
- 7 Clear all codes after the repair and complete a full drive cycle to confirm U05AC does not reset and that HVAC and cooling functions operate correctly.

Why thermal management data goes invalid

- A weak or failing 12-volt battery is a common cause of U05AC because the thermal management module may boot slowly or transmit corrupted frames during low-voltage cranking events.
- The code can set intermittently from a single lost CAN message, so a module that tests fine on the bench may still be the culprit if its connector pins lose tension when hot.
- Technicians often replace the thermal management module too quickly when the real fault is a chafed CAN wire near a heat shield or a corroded ground that only affects that module's reference voltage.
- On electric and hybrid vehicles, the thermal management module also controls battery cooling, so ignoring U05AC can lead to reduced fast-charging power or battery temperature warnings.
- A gateway module that is failing can pass invalid data to multiple modules and set U05AC along with unrelated communication codes, so always check the gateway's own health first.

Can I keep driving with U05AC?

You can usually drive with U05AC if the only symptom is the warning light, but avoid long trips or heavy loads until the fault is diagnosed because loss of thermal management can cause overheating or battery cooling problems. If the engine temperature gauge behaves erratically or the vehicle enters limp mode, stop driving and have it inspected promptly.



Tools that help

- OBD-II scan tool with live data and CAN bus monitoring capability
- Digital multimeter with voltage drop and resistance functions
- Wiring diagram and connector pinout for the vehicle's CAN network
- CAN bus breakout box or oscilloscope for signal integrity testing
- Battery load tester and charging system analyzer
- Module programming tool or J2534 pass-through device for software updates

Reading U05AC

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.

AC The exact fault within that area.

Often seen with

U0100 Lost Communication With ECM/PCM A · **U0140** Lost Communication With Instrument Panel Cluster · **U0164** Lost Communication With HVAC Control Module · **U0422** Invalid Data Received From Body Control Module · **U05A3** Invalid Data Received From Reductant Quality Module

See it working

Watch the animated explainer [How a Car Clutch Works: Diaphragm Clutch Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u05ac/>

