

GENERIC · NETWORK

U0643

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U0643

Lost Communication With Turbocharger/Supercharger A Temperature Sensor

U0643 is a generic network communication code indicating that a control module on the vehicle's controller area network (CAN) bus has lost contact with the turbocharger or supercharger A temperature sensor. The module that monitors this sensor, often the engine control module (ECM) or a dedicated turbo control module, has stopped receiving valid temperature data over the communication bus, so it cannot reliably protect the forced-induction system from overheating.

SYSTEM

Network

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Network communication

Symptoms you may notice

- The check engine light or service vehicle soon message illuminates, often with no other noticeable symptoms.
- Reduced engine power or limp mode as the ECM limits boost to protect the turbocharger or supercharger.
- Poor acceleration and sluggish throttle response because the ECM cannot accurately manage boost pressure.
- Intermittent warning lights that appear and disappear, especially after the vehicle sits or during damp weather.
- A stored code in multiple modules indicating a communication fault on the CAN bus.
- In rare cases, the engine cooling fan may run continuously because the ECM defaults to a safe strategy.

Common causes, most likely first

- 1 Damaged, corroded, or disconnected wiring or connector at the turbocharger or supercharger A temperature sensor.
- 2 A failed temperature sensor that no longer responds or reports plausible data.
- 3 A short or open in the sensor signal circuit between the sensor and its control module.
- 4 Water intrusion or heat damage in the sensor connector or harness near the turbocharger or supercharger.
- 5 A faulty control module that is not communicating properly on the CAN bus.
- 6 A poor ground connection shared by the sensor circuit and the control module.
- 7 Aftermarket accessories or poor previous repairs that disturb the CAN bus wiring.



How to diagnose and fix it

- 1 Inspect the turbocharger or supercharger A temperature sensor connector and wiring for corrosion, chafing, or loose pins.
- 2 Check the sensor's resistance or voltage output against the manufacturer's specification using a multimeter.
- 3 Verify battery voltage and ground integrity at the control module that reports the communication loss.
- 4 Perform a wiggle test on the sensor harness while watching live data to catch intermittent faults.
- 5 Use a scan tool to clear the code and confirm whether it returns immediately or only after a drive cycle.
- 6 If the sensor and wiring test good, check for software updates or known communication issues for the control module.
- 7 Replace the temperature sensor only after electrical tests confirm it is faulty, then clear codes and verify communication.

Why U0643 is often a wiring fault

- The code is set by a communication loss, not necessarily a failed sensor, so replacing the sensor first often does not fix the problem.
- Heat and vibration near the turbocharger or supercharger commonly damage the sensor harness, causing intermittent opens that only appear when the engine is hot.
- A weak battery or poor ground can cause multiple modules to drop off the CAN bus and set U0643 along with other U-codes.
- Some vehicles use a shared temperature sensor signal for both turbocharger and supercharger monitoring, so a fault in one circuit can affect the other.
- Aftermarket piggyback tuners or alarm installations that tap into CAN wiring are a frequent hidden cause of communication codes like this one.

Can I keep driving with U0643?

You can usually drive the vehicle to a repair shop, but avoid heavy throttle and towing because the ECM may not protect the turbocharger or supercharger from overheating. If the engine enters limp mode or you notice smoke or unusual noises, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data and CAN bus capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Contact cleaner and dielectric grease
- Back probe pins or breakout box



Reading U0643

- 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.
- 43** The exact fault within that area.

Often seen with

P00B0 Turbocharger/Supercharger Boost Control B Module Performance · **P00B1** Radiator Coolant Temperature Sensor Circuit · **U0100** Lost Communication With ECM/PCM A · **U0642** Lost Communication With EVAP System Pressure Sensor/Switch C · **U0644** Lost Communication With Wastegate Position Sensor A

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u0643/>

