

GENERIC · POWERTRAIN

P011D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P011D

Charge Air Cooler Temperature/Intake Air Temperature Correlation Bank 2

P011D indicates that the powertrain control module has detected an implausible relationship between the charge air cooler temperature sensor and the intake air temperature sensor on bank 2 of a twin-turbo or twin-intercooler system. The computer compares the two readings after the engine has run long enough for temperatures to stabilize, and it sets this code when the values diverge beyond the calibrated threshold, meaning one sensor is reporting a temperature the other cannot corroborate.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode under heavy acceleration
- Rough idle or hesitation after a cold start
- Decreased fuel economy over several tanks
- Intermittent misfire or stumble during boost
- Elevated intake air temperatures visible on a scan tool data stream

Common causes, most likely first

- 1 Faulty charge air cooler temperature sensor on bank 2
- 2 Faulty intake air temperature sensor on bank 2
- 3 Damaged or corroded wiring or connector at either sensor
- 4 Air leak or restriction in the charge air cooler circuit for bank 2
- 5 Stuck or restricted charge air cooler bypass valve
- 6 Failed charge air cooler with internal coolant or oil contamination
- 7 Software calibration issue in the powertrain control module



How to diagnose and fix it

- 1 Connect a scan tool and record both charge air cooler temperature and intake air temperature readings cold and after a road test to confirm the divergence
- 2 Inspect the bank 2 charge air cooler and intake air temperature sensor connectors and harnesses for corrosion, chafing, or loose pins
- 3 Check the charge air cooler circuit for boost leaks, blocked fins, or a stuck bypass valve that would skew temperature correlation
- 4 Compare sensor resistance or voltage against the manufacturer's specification at known temperatures to isolate the faulty sensor
- 5 Swap the bank 2 sensors with known-good units or with bank 1 where accessible to see whether the fault follows the sensor
- 6 Repair or replace the faulty sensor, harness, or charge air cooler as indicated by the tests
- 7 Clear the code and perform a road test with live data to verify the correlation returns to normal and the code does not reset

What the correlation code really tests

- This code is a rationality check, not a circuit fault, so a sensor can pass an ohmmeter test and still set P011D because its response rate or calibration drifts with temperature.
- A boost leak or a partially blocked charge air cooler will skew the temperature relationship between the two sensors and set this code even when both sensors are healthy.
- Technicians often replace the charge air cooler temperature sensor first, but swapping sensors between banks is the fastest way to prove which component is actually lying.
- On vehicles with active grille shutters or a failing cooling fan, elevated underhood temperatures can push the correlation out of range and trigger P011D without any sensor defect.
- P011D frequently appears alongside boost control or mass air flow codes, so always check for stored companion codes before condemning the temperature sensors.

Can I keep driving with P011D?

The vehicle remains drivable at moderate load, but avoid sustained heavy acceleration or towing until the fault is diagnosed because the computer may be limiting boost and the underlying cause can worsen. If the engine enters limp mode or misfires under load, stop driving and arrange service.

Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter with temperature probe
- Infrared thermometer
- Socket and wrench set for sensor removal
- Smoke machine or boost leak tester



Reading P011D

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- 1D** The exact fault within that area.

Often seen with

P007B Charge Air Cooler Temperature Sensor Circuit Range/Performan · **P007C** Charge Air Cooler Temperature Sensor Circuit Low Bank 1 · **P011B** Engine Coolant Temperature/Intake Air Temperature Correlatio · **P011C** Charge Air Cooler Temperature/Intake Air Temperature Correla · **P0299** Turbo/Supercharger Underboost

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/p011d/>

