

GENERIC · POWERTRAIN

P20B8

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P20B8

Reductant Metering Unit Heater Control Circuit High

P20B8 means the engine control module has detected an abnormally high voltage on the control circuit for the reductant metering unit heater, which is the electric heating element that keeps diesel exhaust fluid (DEF) from freezing in the injector or metering block. The computer commands the heater on and expects the circuit to pull current and drop voltage in a predictable way, but instead it sees voltage staying near supply level, indicating an open circuit, a failed heater element, or a wiring fault.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- A pending or stored P20B8 code with possible reduced engine power or limp mode
- Diesel exhaust fluid (DEF) system warnings or a message that the vehicle will not restart after a countdown
- Longer than normal DEF heater warm-up times in cold weather, leading to poor DEF thawing
- In rare cases, a burning smell or visible damage at the heater connector if the circuit has been overheated

Common causes, most likely first

- 1 Failed reductant metering unit heater element, typically an open internal circuit in the heater
- 2 Open or high-resistance wiring between the engine control module and the heater connector
- 3 Corroded, loose, or water-intruded electrical connector at the reductant metering unit
- 4 Blown fuse or failed relay in the heater power supply circuit
- 5 Engine control module internal driver fault on the heater control circuit
- 6 Aftermarket or incorrect DEF heater replacement part with wrong resistance



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P20B8, then clear the code and verify whether it returns immediately or only after a cold-soak heater command.
- 2 Inspect the reductant metering unit connector and harness for corrosion, water intrusion, chafing, and loose pins, repairing any damaged terminals.
- 3 Check the heater circuit fuse and relay, testing the relay for proper operation and confirming supply voltage at the heater connector with the key on.
- 4 Measure the resistance of the heater element across its terminals and compare to the manufacturer's specification; an open or out-of-range reading confirms a failed heater.
- 5 Perform a voltage drop test on both the power and ground sides of the heater circuit while the heater is commanded on to find high-resistance wiring.
- 6 If wiring and heater resistance test good, back-probe the engine control module connector to check for a short to voltage or a faulty driver output.
- 7 Replace the failed reductant metering unit heater or repair the wiring as needed, clear codes, and run a heater activation test to confirm the repair.

What a high heater circuit code really means

- A high voltage reading on the heater control circuit usually means the circuit is open, so the computer sees no current flow and voltage stays near supply; this is the opposite of a short to ground, which would set a low voltage code.
- Many technicians replace the reductant metering unit immediately, but a corroded connector pin or a chafed wire in the harness is just as common and far cheaper to fix.
- The heater is only commanded on below a certain ambient temperature, so P20B8 may not reappear during a warm-weather test drive; always perform a cold-soak test or use a scan tool bidirectional heater activation.
- A weak or failing battery or charging system can cause the engine control module to log false high-voltage heater codes, so check system voltage stability before condemning the heater.
- After replacing the reductant metering unit, some vehicles require a learned heater resistance reset or a DEF system adaptation procedure with a scan tool to prevent the code from returning.

Can I keep driving with P20B8?

You can usually drive the vehicle short distances to a repair shop, but avoid long trips and cold weather operation because the DEF heater may not function, leading to frozen DEF and eventual limp mode or a no-restart countdown. If the check engine light is accompanied by a DEF system warning or a restart countdown, stop driving and seek service immediately.



Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with resistance and voltage drop capability
- Wiring diagram for the reductant metering unit heater circuit
- Basic hand tools for connector and component access
- Relay test tool or jumper wires for circuit testing

Reading P20B8

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- B8** The exact fault within that area.

Often seen with

P20B7 Reductant Metering Unit Heater Control Circuit Low · **P20B9** Reductant Heater A Control Circuit/Open · **P20BA** Reductant Heater A Control Performance · **P20BB** Reductant Heater A Control Circuit Low · **P20BC** Reductant Heater A Control Circuit High

See it working

Watch the animated explainer [How a Knock Sensor Works: Spark Timing and Octane](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20b8/>

