

GENERIC · POWERTRAIN

P20EB

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P20EB

Reductant Reservoir Heater "A" Control Circuit

P20EB indicates that the powertrain control module has detected an electrical fault in the control circuit for the reductant reservoir heater, which is the heating element used to keep diesel exhaust fluid from freezing in cold weather. The computer monitors the circuit for expected voltage or current and sets this code when the signal falls outside the manufacturer's specified range, pointing to an open, short, or excessive resistance in the heater control circuit.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- A pending code may be stored without turning on the warning light if the fault is intermittent
- In cold climates, the diesel exhaust fluid may freeze, leading to a no-start or reduced power condition if the heater fails to thaw the tank
- Possible derate or limp mode if the vehicle's strategy limits engine power to protect the aftertreatment system
- A message on the driver information center indicating diesel exhaust fluid system service required
- Rough running or poor fuel economy in rare cases where the frozen fluid affects dosing

Common causes, most likely first

- 1 Open or damaged wiring in the reductant reservoir heater control circuit, such as a broken wire or corroded connector
- 2 Failed reductant reservoir heater element, causing an open or short circuit
- 3 Faulty heater control module or relay that supplies power to the heater
- 4 Blown fuse or fusible link protecting the heater circuit
- 5 Poor ground connection for the heater circuit, leading to high resistance
- 6 Corrosion or water intrusion at the heater connector, common in areas with road salt or high humidity
- 7 Internal fault in the powertrain control module driver for the heater circuit, though this is less common



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in the reductant system to confirm the fault is isolated to the heater control circuit.
- 2 Inspect the heater circuit wiring and connectors for damage, corrosion, or loose pins, and repair as needed.
- 3 Check the fuse and relay for the reductant reservoir heater circuit, replacing any blown fuse or faulty relay.
- 4 Measure resistance of the heater element with a multimeter and compare to the manufacturer's specification to determine if the heater is open or shorted.
- 5 Test the control circuit for voltage and ground signals at the heater connector while commanding the heater on with a scan tool, to verify the control module is sending the correct signal.
- 6 If the heater element is faulty, replace the reductant reservoir heater assembly according to the service procedure.
- 7 Clear the codes and perform a road test or heater activation test to confirm the repair and ensure the code does not return.

Reductant heater circuit pitfalls to avoid

- A common misdiagnosis is replacing the heater element when the actual fault is a corroded connector or chafed wire in the harness, so always perform a thorough visual and electrical inspection first.
- The code can be set by a intermittent fault that only occurs in cold temperatures, so testing the circuit when the fluid is warm may not reveal the problem; consider cold-soak testing.
- Some vehicles use a smart heater control module that communicates over a data bus, and a fault in that module can set P20EB even if the heater element itself is good.
- A weak battery or charging system issue can cause low voltage to the heater control circuit, triggering the code without any defective component in the heater circuit itself.
- The reductant reservoir heater is part of the diesel exhaust fluid system, and a failure can lead to frozen fluid and a subsequent no-start condition, so address the code promptly in freezing weather.

Can I keep driving with P20EB?

You can generally continue driving with this code, but in freezing temperatures the diesel exhaust fluid may freeze and cause a no-start or reduced power condition, so avoid leaving the vehicle parked in extreme cold until the fault is repaired. If the vehicle enters limp mode, seek service promptly.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Wire repair kit with crimpers and heat shrink
- Electrical contact cleaner
- Fuse puller and test light
- Vehicle service information for wiring diagrams and specifications



Reading P20EB

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.
EB	The exact fault within that area.

Often seen with

P20E8 Reductant Pressure Too Low · **P20E9** Reductant Pressure Too High · **P20EA** Reductant Pump Control Circuit Open · **P20EC** Reductant Heater "A" Control Stuck Off · **P20ED** Reductant Heater "A" Control Stuck On

See it working

Watch the animated explainer [EV Powertrain Trainer: How an Electric Car Drives](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20eb/>

