

GENERIC · POWERTRAIN

P20FD

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P20FD

Reductant Pump B Control Circuit High

P20FD means the engine control module has detected an abnormally high voltage on the control circuit for reductant pump B, which is one of the pumps in the diesel exhaust fluid (DEF) dosing system. The computer commands the pump on or off and monitors the return signal; a voltage that stays higher than expected tells it the circuit is shorted to power, open, or the pump driver has failed.

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 message on the dash warning of low DEF range, speed limitation, or emissions system fault
- The vehicle may enter limp mode or limit engine power after a certain number of key cycles
- Rough running or poor acceleration if the pump cannot deliver DEF and the system derates torque
- A stored pending code or freeze-frame data showing the fault occurred during a pump command
- In some cases, no drivability change at all because the fault is only in the control circuit feedback

Common causes, most likely first

- 1 A short to battery voltage in the reductant pump B control wire, often from chafed insulation or a pinched harness
- 2 A failed reductant pump B, where the internal driver or motor winding has shorted and back-feeds the control circuit
- 3 Corroded, loose, or pushed-back terminals at the pump connector or the engine control module connector
- 4 An open circuit in the control wire that causes the module to see a pulled-up high voltage instead of a commanded low
- 5 A faulty engine control module driver for that specific pump circuit, though this is less common than wiring faults
- 6 Water intrusion into the pump connector or harness, leading to intermittent high-voltage feedback
- 7 Aftermarket accessories or poor previous repairs that tapped into the reductant pump wiring



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P20FD, then clear the code and verify whether it returns immediately or only after a drive cycle
- 2 Visually inspect the reductant pump B connector and the engine control module connector for corrosion, moisture, or backed-out pins
- 3 Disconnect the pump and measure voltage on the control circuit with the key on; a constant high voltage with the pump unplugged points to a short to power
- 4 Check resistance of the pump motor and compare with the manufacturer's specification, and check for continuity from the control wire to ground with the module disconnected
- 5 Perform a wiggle test on the harness while monitoring the control circuit voltage to catch intermittent shorts or opens
- 6 If wiring and connectors are good, substitute a known-good reductant pump or use a bidirectional scan tool to command the pump and watch the feedback voltage
- 7 Repair or replace the faulty harness section, pump, or module as indicated, then clear codes and complete a DEF system relearn or drive cycle to confirm the repair

What a high voltage on pump B really means

- A high control circuit voltage does not automatically mean the pump is bad; a short to power in the harness or a poor ground elsewhere in the DEF system can set the same code.
- Many technicians replace the reductant pump first and find the code returns because the actual fault was a chafed wire near the DEF tank or a corroded connector pin.
- The engine control module often uses a low-side driver with a pull-up resistor, so an open control wire can read as a high voltage even though there is no short to battery.
- Intermittent P20FD codes that appear only in cold or wet weather frequently trace to water intrusion at the pump connector, which is easy to miss on a dry shop visit.
- A weak or failing battery can cause module voltage spikes that mimic a control circuit high fault, so always check charging system health before condemning the pump or module.

Can I keep driving with P20FD?

You can usually drive the vehicle short distances to a repair shop, but avoid long trips or heavy loads because the DEF system may derate engine power once the fault is confirmed over several drive cycles. Do not ignore a dash message about speed limitation, and do not tow heavy loads until the fault is repaired.



Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter with voltage, resistance, and continuity functions
- Back-probe kit or breakout box for testing connectors without damage
- Wiring diagram for the reductant pump B control circuit
- Basic hand tools for connector and harness access

Reading P20FD

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

Often seen with

P208E Reductant Injection Valve Stuck Closed (Bank 1 Unit 1) · **P20B9** Reductant Heater A Control Circuit/Open · **P20FC** Reductant Pump B Control Circuit Low · **P20FE** Reductant Metering Unit 1 Performance · **P20FF** Reductant Control Module Performance

See it working

Watch the animated explainer [How a Supercharger Works: Roots Blower in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20fd/>

