

GENERIC · POWERTRAIN

P20A9

OBD-II TROUBLE CODE

P20A9

Reductant Injection Air Pressure Control Valve Circuit High

P20A9 indicates the powertrain control module (PCM) has detected an abnormally high voltage on the reductant injection air pressure control valve circuit, which is part of the diesel exhaust fluid (DEF) injection system on selective catalytic reduction (SCR) equipped vehicles. The PCM commands a specific current to the valve to regulate air pressure for DEF atomization, and a high voltage reading on the control circuit suggests an open circuit, a short to voltage, or a faulty valve, causing the PCM to set this code and likely disable SCR dosing.

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 malfunction indicator lamp (MIL) on the dashboard
- Often no symptoms besides the warning light, especially in early stages
- Reduced engine power or limp mode due to SCR system disablement
- Increased diesel exhaust fluid (DEF) consumption or failure to dose
- Possible rough idle or hesitation if the valve affects air injection
- Emissions test failure due to SCR system fault

Common causes, most likely first

- 1 Open circuit or high resistance in the reductant injection air pressure control valve control wire
- 2 Short to voltage on the valve control circuit
- 3 Faulty reductant injection air pressure control valve (internal open or high resistance)
- 4 Corroded or damaged electrical connector at the valve or PCM
- 5 PCM internal driver circuit failure (rare but possible)
- 6 Wiring harness damage from chafing, heat, or rodent damage



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related pending or stored codes in the SCR system
- 2 Inspect the reductant injection air pressure control valve connector and wiring for corrosion, damage, or loose pins
- 3 Measure resistance of the valve solenoid and compare to manufacturer specifications
- 4 Check for short to voltage or open circuit on the control wire between the valve and PCM using a multimeter
- 5 Perform a functional test of the valve with a bidirectional scan tool to command it on and off and observe voltage changes
- 6 If wiring and valve test good, suspect the PCM and perform pinpoint tests according to service information
- 7 Replace the faulty valve or repair wiring as needed, clear codes, and verify the repair with a test drive

Don't overlook the air pressure control valve circuit

- A high voltage code often results from an open circuit rather than a shorted valve, so check continuity before condemning the valve.
The reductant injection air pressure control valve is sometimes confused with the DEF injector, but they are separate components with distinct circuits.
- Intermittent faults can be caused by wiring harness chafing near hot exhaust components, so wiggle-test the harness while monitoring live data.
- A weak battery or poor ground can cause false high voltage readings on sensitive control circuits, so always verify power and ground integrity first.

After repairs, the SCR system may require a relearn or adaptation reset with a scan tool to restore proper dosing.

Can I keep driving with P20A9?

It is generally safe to drive with this code, but the vehicle may enter limp mode or fail emissions testing, and continued driving can lead to increased DEF consumption or SCR system damage. Avoid heavy loads or long trips until diagnosed, and address the fault promptly to maintain compliance and performance.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter
- Wiring diagram and service information
- Basic hand tools for connector and component access
- Test light or jumper wires for circuit testing



Reading P20A9

- 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.
- A9** The exact fault within that area.

Often seen with

P20A8 Reductant Injection Air Pressure Control Valve Circuit Low · **P20AA** Reductant Injection Air Pressure Control Valve Stuck Open · **P20AB** Reductant Injection Air Pressure Control Valve Stuck Closed · **P20AC** Reductant Metering Unit Temperature Sensor Circuit · **P20AD** Reductant Metering Unit Temperature Sensor Circuit Range/Per

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20a9/>

