

GENERIC · POWERTRAIN

P20AC

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P20AC

Reductant Metering Unit Temperature Sensor Circuit

P20AC indicates that the powertrain control module (PCM) has detected an abnormal signal from the reductant metering unit temperature sensor circuit, which monitors the temperature of the diesel exhaust fluid (DEF) injector or metering unit. The PCM expects a voltage within a calibrated range and sets this code when the signal is out of range, erratic, or missing.

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 noticeable drivability symptoms besides the warning light.
- Possible reduction in engine power or limp mode if the fault triggers derate strategies.
- Increased diesel exhaust fluid (DEF) consumption or poor DEF dosing.
- In rare cases, a message on the driver information center indicating emissions system fault.
- Difficulty restarting the engine after shutdown in some vehicles with advanced emissions controls.

Common causes, most likely first

- 1 Faulty reductant metering unit temperature sensor.
- 2 Damaged or corroded wiring harness or connector at the metering unit.
- 3 Open or short circuit in the sensor signal or ground circuit.
- 4 Failed reductant metering unit (injector) assembly due to internal sensor failure.
- 5 Contaminated or crystallized diesel exhaust fluid (DEF) affecting sensor readings.
- 6 PCM software issue or internal PCM driver fault (less common).
- 7 Poor electrical connection at the PCM connector for the sensor circuit.



How to diagnose and fix it

- 1 Verify the stored code and check for any related pending or history codes using an OBD-II scanner.
- 2 Inspect the reductant metering unit connector and wiring for damage, corrosion, or loose pins.
- 3 Measure the resistance of the temperature sensor at the metering unit and compare to specifications.
- 4 Check the sensor signal voltage at the PCM connector while wiggling the harness to detect intermittent faults.
- 5 Test the sensor circuit for opens, shorts to ground, or shorts to voltage using a digital multimeter.
- 6 If the sensor is faulty, replace the reductant metering unit or sensor as per manufacturer procedure.
- 7 Clear the codes and perform a road test to verify the repair and ensure the monitor runs to completion.

Reductant Metering Unit Sensor Pitfalls

- A common oversight is replacing the entire reductant metering unit when only the temperature sensor is faulty, but on many units the sensor is not serviced separately, so the complete unit must be replaced.
- Crystallized diesel exhaust fluid (DEF) around the metering unit can cause false temperature readings and set this code, so cleaning the area before testing is essential.
- The code can be set by intermittent wiring issues that only appear when the engine is cold or during vibration, so a thorough wiggle test of the harness is critical.
- Some vehicles use the same temperature sensor for both DEF tank and metering unit monitoring, so a fault in the tank sensor circuit may also trigger P20AC if the PCM cross-checks values.
- After repairs, the PCM may require a relearn or adaptation reset for the reductant system to clear the code permanently, which is often missed by DIYers.

Can I keep driving with P20AC?

It is generally safe to continue driving with P20AC as long as the engine is not in limp mode, but avoid long trips or heavy loads until the fault is repaired because the vehicle may enter derate mode and limit speed. Monitor for additional warning messages and address the issue promptly to prevent more severe emissions system damage.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter (DMM)
- Wiring diagram for the specific vehicle
- Socket set and basic hand tools
- Contact cleaner and dielectric grease
- Manufacturer service information for sensor specifications



Reading P20AC

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.
AC	The exact fault within that area.

Often seen with

P20A9 Reductant Injection Air Pressure Control Valve Circuit High · **P20AA** Reductant Injection Air Pressure Control Valve Stuck Open · **P20AB** Reductant Injection Air Pressure Control Valve Stuck Closed · **P20AD** Reductant Metering Unit Temperature Sensor Circuit Range/Per · **P20AE** Reductant Metering Unit Temperature Sensor Circuit Low

See it working

Watch the animated explainer [How a Boxer Engine Works: Flat Engine Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20ac/>

