

GENERIC · POWERTRAIN

P05C2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P05C2

Engine Coolant Pressure Sensor Circuit

P05C2 indicates that the powertrain control module (PCM) has detected an abnormal condition in the engine coolant pressure sensor circuit, which monitors the pressure within the cooling system. The PCM compares the sensor's voltage signal to expected values and sets this code when the signal falls outside the normal operating range or is inconsistent with other engine data.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) on the dashboard.
- Often no symptoms besides the warning light, especially if the fault is intermittent.
- Possible overheating if the sensor failure causes the PCM to misjudge cooling system pressure and affect fan operation or engine protection strategies.
- Reduced engine performance or power derating in some vehicles as a protective measure.
- Coolant leaks or low coolant level may accompany pressure sensor issues, though not directly caused by the sensor fault.
- Erratic temperature gauge readings if the pressure sensor shares data with the temperature display system.

Common causes, most likely first

- 1 Faulty engine coolant pressure sensor.
- 2 Damaged or corroded wiring or connector at the sensor.
- 3 Open or short circuit in the sensor signal circuit.
- 4 Poor electrical connection at the PCM.
- 5 Low coolant level or air pockets in the cooling system affecting pressure readings.
- 6 Failed PCM (rare).



How to diagnose and fix it

- 1 Verify coolant level and condition; top off or bleed the cooling system if needed.
- 2 Inspect the sensor and its connector for physical damage, corrosion, or loose pins.
- 3 Perform a visual inspection of the wiring harness for chafing, breaks, or short circuits.
- 4 Use a scan tool to monitor live data from the coolant pressure sensor and compare with mechanical pressure gauge readings.
- 5 Test the sensor's reference voltage and ground circuits with a multimeter; repair any wiring faults.
- 6 Replace the coolant pressure sensor if testing indicates it is faulty.
- 7 Clear the diagnostic trouble codes and verify the repair by test-driving the vehicle and confirming the code does not return.

Coolant Pressure Sensor Circuit Pitfalls

- A low coolant level or trapped air in the cooling system can cause pressure readings outside the expected range and set this code, so always check the coolant level and bleed the system before condemning the sensor.
- The coolant pressure sensor is sometimes confused with the coolant temperature sensor; ensure you are testing the correct component because their circuits and connectors may look similar.
- Intermittent wiring faults can set P05C2 without any drivability symptoms, so a wiggle test of the harness while monitoring live data can reveal a bad connection that a static test misses.
- Some vehicles use the coolant pressure sensor signal for fan control and engine protection; a faulty sensor can cause the cooling fan to run constantly or not at all, leading to overheating or poor fuel economy.
- After replacing the sensor, verify that the new sensor's resistance or voltage output matches the manufacturer's specification, as aftermarket parts can have incorrect calibration.

Can I keep driving with P05C2?

It is generally safe to continue driving with P05C2 set, but monitor the engine temperature closely and avoid heavy loads or long trips until the fault is repaired. If the temperature gauge rises above normal or you notice coolant loss, stop driving and address the issue immediately to prevent engine damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Mechanical cooling system pressure tester
- Socket set and wrenches
- Wiring diagram for the specific vehicle



Reading P05C2

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- C2** The exact fault within that area.

Often seen with

P0116 Engine Coolant Temperature Circuit Range/Performance · **P0117** Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P05C1** Active Grille Air Shutter Module B Over Temperature · **P05C3** Engine Coolant Pressure Sensor Circuit Range/Performance

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p05c2/>

