

NISSAN · POWERTRAIN

P1165

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1165 · Nissan

Swirl Control Valve Control Vacuum Switch

P1165 on Nissan vehicles indicates that the engine control module (ECM) has detected an unexpected signal from the swirl control valve control vacuum switch, which monitors the vacuum applied to the swirl control valve actuator. The ECM commands the swirl control valve to open or close based on engine speed and load, and the switch confirms whether vacuum is present or absent; when the switch signal does not match the commanded state, the ECM stores this code.

SYSTEM

Powertrain

CODE TYPE

Nissan specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

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 swirl control valve remains in a default position.
- Slight hesitation or stumble during light acceleration at low engine speeds.
- Reduced engine performance or fuel economy in some cases due to incorrect swirl control valve operation.
- Rough idle or unstable idle quality if the valve is stuck partially open or closed.
- In rare instances, a noticeable loss of power at higher engine loads if the valve fails to open as commanded.

Common causes, most likely first

- 1 Failed or sticking swirl control valve control vacuum switch (the sensor itself).
- 2 Damaged, disconnected, or clogged vacuum hose between the swirl control valve actuator and the vacuum switch.
- 3 Faulty swirl control valve actuator diaphragm or linkage, preventing proper vacuum response.
- 4 Carbon buildup or mechanical binding in the swirl control valve or intake manifold swirl flaps.
- 5 Open or shorted wiring in the vacuum switch circuit, including poor connector contact.
- 6 Failed vacuum solenoid valve that supplies vacuum to the swirl control valve actuator.
- 7 Engine control module (ECM) software issue or internal fault, though this is less common.



How to diagnose and fix it

- 1 Inspect all vacuum hoses connected to the swirl control valve, actuator, and vacuum switch for cracks, disconnections, or blockage; replace as needed.
- 2 Test the vacuum switch using a hand vacuum pump and multimeter to verify it changes state (continuity or voltage) when vacuum is applied and released.
- 3 Check the swirl control valve actuator for free movement and hold vacuum; repair or replace the actuator if it does not hold vacuum or is seized.
- 4 Measure resistance and voltage on the vacuum switch electrical connector to rule out wiring faults; repair open or shorted circuits.
- 5 Test the vacuum solenoid valve that controls vacuum to the actuator; confirm it opens and closes with 12 volts applied and is not clogged.
- 6 Clean or replace the swirl control valve and intake manifold flaps if carbon buildup or mechanical binding is found.
- 7 After repairs, clear the diagnostic trouble code and perform a road test to confirm the code does not return; verify swirl control valve operation with a scan tool if possible.

Don't overlook the vacuum switch circuit

- A common mistake is replacing the swirl control valve actuator when the actual fault is a clogged vacuum port inside the switch or a brittle vacuum hose that leaks only under heat.
- The vacuum switch often fails intermittently, so a static test may pass; wiggle the connector and hoses while monitoring the switch signal to catch an intermittent fault.
- Carbon buildup on the swirl flaps can prevent the valve from reaching its commanded position, causing the switch to report an incorrect state even when the switch itself is good.
- On some Nissan engines, the swirl control valve system is only active during certain low-load conditions, so a fault may not trigger a drivability symptom until the vehicle is driven under specific circumstances.
- A faulty vacuum solenoid can cause the switch to see vacuum when it should not, mimicking a switch failure; always test the solenoid before condemning the switch.

Can I keep driving with P1165?

The vehicle is generally safe to drive with P1165 because the swirl control valve defaults to a safe position and the effect on performance is minimal. Avoid heavy acceleration or sustained high-load driving until the fault is repaired, as incorrect swirl control valve operation may slightly increase emissions or reduce fuel economy.



Tools that help

- Hand vacuum pump with gauge
- Digital multimeter
- Scan tool with Nissan-specific capabilities
- Vacuum hose pliers and assorted hose clamps
- Basic socket and wrench set

Reading P1165

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (Nissan): its meaning depends on the make.
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- 1** Fuel and air metering.
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- 65** The exact fault within that area.

Often seen with

P1164 Fuel Temperature Sensor Range Performance · **P1166** Bank 1 Long Term Fuel Trim Range 2 Upper Rich Limit Exceeded · **P1164** HO2S11 Circuit Fault Bank 1 Sensor 1 · **P1166** HO2S11 Heater Circuit Fault Bank 1 Sensor 1 · **P1164** HO2S11 Circuit Fault Bank 1 Sensor 1 · **P1166** HO2S11 Heater Circuit Fault Bank 1 Sensor 1 · **P1164** HO2S Bank 2 Sensor 3 Rich Or High Voltage · **P1164** HO2S Bank 2 Sensor 3 Rich Or High Voltage · **P1164** Fuel Trim Adaptation Additive Per Ignition Bank 2 Low · **P0171** System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0505** Idle Control System Malfunction

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/nissan-p1165/>

