

GENERIC · POWERTRAIN

P26A4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P26A4

Engine Coolant Bypass Valve A Position Sensor Circuit

P26A4 indicates that the powertrain control module (PCM) has detected an out-of-range or implausible signal from the position sensor built into the engine coolant bypass valve 'A' circuit. The bypass valve routes coolant around the radiator to speed warm-up and manage temperature, so the PCM cannot confirm the valve is in the commanded position.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms noticed by the driver
- Prolonged engine warm-up time or coolant temperature that rises more slowly than normal
- Coolant temperature gauge fluctuating or reading higher or lower than usual
- Reduced heater performance in cold weather because coolant flow is not being diverted correctly
- In some vehicles, the cooling fan may run continuously or the engine may enter a reduced-power mode

Common causes, most likely first

- 1 Failed coolant bypass valve position sensor or a sensor that has drifted out of calibration
- 2 Wiring damage such as an open circuit, short to ground, or short to voltage in the sensor signal or reference circuit
- 3 Corroded, loose, or water-intruded electrical connector at the bypass valve or PCM
- 4 Sticking or mechanically binding bypass valve that prevents the sensor from reaching its expected positions
- 5 Coolant contamination or debris interfering with valve movement and sensor feedback
- 6 Internal fault in the powertrain control module (PCM) driver or signal processing circuit



How to diagnose and fix it

- 1 Connect a scan tool and record the P26A4 freeze-frame data along with any other stored codes to understand the conditions when the fault set
- 2 Visually inspect the bypass valve, its connector, and the wiring harness for chafing, corrosion, or coolant intrusion, and repair any obvious damage
- 3 Back-probe the position sensor connector and check for the correct reference voltage, ground, and signal voltage with the key on and during valve command
- 4 Command the bypass valve through its full range with the scan tool and compare the sensor voltage or percentage to the commanded position to identify a dead spot or binding
- 5 Test the valve actuator circuit for continuity and resistance where the manufacturer provides a specification, and compare with a known-good value
- 6 If wiring and connectors pass, remove the bypass valve and inspect for mechanical binding, debris, or coolant passage blockage before condemning the sensor
- 7 Replace the faulty bypass valve assembly or sensor, clear the codes, and verify the repair by running a readiness monitor or a commanded valve sweep

Why the bypass valve sensor code misleads

- A low coolant level or air pocket in the cooling system can cause the bypass valve to move outside its expected range and set P26A4 even when the sensor and valve are healthy.
- Technicians often replace the bypass valve when the real problem is a chafed signal wire near the exhaust or a corroded connector pin that only acts up when hot.
- The PCM may set P26A4 as a rationality fault when the sensor signal is plausible but does not match the commanded position during a cold start, so the valve can pass a simple resistance test and still be faulty.
- Some vehicles use the same bypass valve position sensor signal for multiple control strategies, so a failing sensor can also trigger codes for cooling fan control or thermostat performance without those systems being at fault.
- After replacing the bypass valve, a coolant bleed procedure is often required; trapped air can cause the new valve to set the same code immediately and lead to a misdiagnosis.

Can I keep driving with P26A4?

The vehicle is generally safe to drive short distances because the fault mainly affects warm-up and temperature regulation, but avoid heavy loads or long trips until it is repaired. If the coolant temperature gauge climbs into the red or the engine enters reduced power mode, stop driving and have the cooling system inspected.



Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter with back-probe pins
- Wiring diagram and manufacturer service information for the cooling system
- Coolant drain pan and appropriate coolant for top-up
- Basic hand tools including socket set and trim removal tools

Reading P26A4

- P** Powertrain: engine, transmission and emissions.
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- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
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- 6** Computer and output circuits.
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- A4** The exact fault within that area.

Often seen with

P0128 Coolant Thermostat (Coolant Temperature Below Thermostat Reg · **P0597** Thermostat Heater Control Circuit/Open · **P2181** Cooling System Performance · **P26A3** Engine Coolant Bypass Valve A Range/Performance · **P26A5** Engine Coolant Bypass Valve A Position Sensor Circuit Range/

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/p26a4/>

