

GENERIC · POWERTRAIN

P016A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P016A

Excessive Time To Enter Closed Loop Air/Fuel Ratio Control

P016A indicates that the engine computer has detected an excessive amount of time for the air/fuel ratio control system to enter closed loop operation after a cold start. Closed loop is when the computer uses oxygen sensor feedback to fine-tune fuel delivery; if it takes too long, the system remains in open loop, running a fixed fuel strategy that can hurt emissions and fuel economy.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or stumbling during the first few minutes after a cold start
- Noticeable decrease in fuel economy, especially on short trips
- Hesitation or sluggish acceleration while the engine is warming up
- A strong fuel odor from the exhaust during warm-up
- In some cases, the engine may stall shortly after starting when cold

Common causes, most likely first

- 1 A faulty oxygen sensor that is slow to respond or has a biased signal
- 2 A stuck-open or leaking fuel injector causing a rich condition that delays closed loop entry
- 3 A coolant temperature sensor that reads colder than actual, making the computer think the engine is not warmed up
- 4 A thermostat that is stuck open, preventing the engine from reaching normal operating temperature quickly
- 5 An intake air temperature sensor that is inaccurate or has a wiring fault
- 6 A vacuum leak or unmetered air entering the engine, leaning out the mixture and confusing fuel trim learning
- 7 Exhaust leaks upstream of the oxygen sensor allowing outside air to skew the sensor reading



How to diagnose and fix it

- 1 Connect a scan tool and check for stored codes in all modules, then record freeze-frame data to see the conditions when P016A set
- 2 Verify the engine coolant temperature sensor reading against actual engine temperature with an infrared thermometer or by letting the engine cold-soak overnight
- 3 Inspect the thermostat operation by monitoring coolant temperature rise during warm-up; replace if it does not reach operating temperature within a reasonable time
- 4 Check the oxygen sensor response with a scan tool or oscilloscope; a good sensor should switch rapidly between rich and lean once closed loop is commanded
- 5 Perform a fuel pressure and injector balance test to rule out a leaking injector or incorrect fuel pressure
- 6 Smoke-test the intake system for vacuum leaks and inspect all intake hoses and gaskets
- 7 Inspect the exhaust system for leaks upstream of the oxygen sensor, especially at the manifold and downpipe connections

Why P016A Often Isn't the Oxygen Sensor

- A thermostat that is stuck open is one of the most common causes of P016A because the engine never reaches the temperature required to enter closed loop, yet the oxygen sensor is often replaced first with no fix.
- A coolant temperature sensor that is skewed cold will keep the computer in open loop longer, but it may not set its own code because the reading is still within the normal range for a cold engine.
- Exhaust leaks upstream of the oxygen sensor can pull in outside air and make the sensor report a false lean condition, delaying closed loop entry and mimicking a failed sensor.
- A leaking fuel injector can cause a rich condition that the computer cannot correct quickly enough, so it stays in open loop until the excess fuel is burned off.
- P016A can be set by a low battery or charging system issue that causes the computer to reset adaptive fuel trims, forcing a relearn period that exceeds the expected time.

Can I keep driving with P016A?

You can usually drive the vehicle with P016A, but avoid heavy acceleration and long trips until it is diagnosed, because prolonged open loop operation can damage the catalytic converter and increase emissions. If the engine runs rough, stalls, or the check engine light flashes, stop driving and seek repair immediately.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Infrared thermometer
- Fuel pressure gauge
- Smoke machine for intake leaks
- Digital multimeter
- Oscilloscope for oxygen sensor signal analysis



Reading P016A

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- 6A** The exact fault within that area.

Often seen with

P0113 Intake Air Temperature Circuit High Input · **P0128** Coolant Thermostat (Coolant Temperature Below Thermostat Reg · **P0133** O2 Sensor Circuit Slow Response (Bank 1 Sensor 1) · **P0171** System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1)

See it working

Watch the animated explainer [Master the Four-Stroke Engine Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p016a/>

