

FORD · POWERTRAIN

P1340

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1340 · Ford

Camshaft Position Sensor B Circuit Malfunction

P1340 on Ford vehicles means the powertrain control module (PCM) has detected an electrical fault in the circuit for camshaft position sensor B, which on many Ford engines is the exhaust cam sensor on the right-hand bank. The PCM monitors the signal voltage and flags the code when the circuit is open, shorted to ground or power, or the signal is missing or erratic when the engine is running.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Ford specific	Medium	Intermediate	Ignition system and misfire

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms besides the warning light
- Rough idle or intermittent misfire as the PCM loses accurate camshaft timing information
- Reduced engine power or limp-home mode on some models
- Hard starting or extended cranking, especially when the engine is cold
- Poor fuel economy or increased emissions due to incorrect variable cam timing scheduling
- Occasional stalling when coming to a stop, particularly on engines with variable valve timing

Common causes, most likely first

- 1 Failed camshaft position sensor B due to heat, oil contamination, or internal winding failure
- 2 Damaged or chafed wiring harness between the sensor and PCM, often near the exhaust manifold or valve cover
- 3 Corroded, loose, or pushed-back pins in the sensor connector or PCM connector
- 4 Oil or debris fouling the sensor tip or the tone ring on the camshaft, disrupting the magnetic signal
- 5 Failed or leaking variable cam timing solenoid affecting camshaft phaser position and sensor signal
- 6 PCM internal fault on the sensor input circuit, though this is rare and should be diagnosed last
- 7 Aftermarket sensor with incorrect resistance or output waveform installed during a previous repair



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes, then check live camshaft position sensor B data while cranking and running to confirm the signal is missing or erratic
- 2 Visually inspect the sensor, connector, and wiring harness for chafing, oil intrusion, corrosion, or loose pins, and repair any obvious damage before replacing parts
- 3 Measure sensor resistance and compare to Ford specifications for the engine, and check reference voltage and ground at the connector with the key on
- 4 Perform a wiggle test on the harness while watching sensor data to expose intermittent opens or shorts that only appear under vibration
- 5 Remove the sensor and inspect the tip and tone ring for metal shavings, sludge, or mechanical damage, cleaning or replacing as needed
- 6 If the circuit and sensor test good, scope the signal waveform at the PCM to confirm the sensor output is clean and the fault lies in the PCM or harness
- 7 After repair, clear codes and run a drive cycle that includes idle, steady cruise, and variable cam timing activation to verify the code does not return

What Ford techs check before replacing the sensor

- A loose or failing variable cam timing solenoid can set P1340 because the phaser moves the camshaft to a position the sensor cannot read correctly, so always check VCT solenoid function and oil condition before condemning the sensor.
- Oil leaks from the valve cover gasket or camshaft seal often contaminate the sensor connector and cause intermittent P1340, and the code may not return until the engine heat-soaks after a long drive.
- On Ford engines with two cam sensors per bank, swapping sensor B with sensor A is a quick diagnostic step: if the code follows the sensor, the sensor is faulty, but if it stays on the same circuit, the wiring or PCM is at fault.
- A weak battery or poor engine ground can cause a crank-no-start with P1340 because the PCM loses its reference during cranking, so load-test the battery and check grounds before chasing sensor circuits.
- Aftermarket cam sensors for Ford engines are a common source of repeat P1340 codes because their output waveform does not match the PCM's expected profile, so use a known-good OEM sensor for diagnosis.

Can I keep driving with P1340?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration, towing, or long trips because the PCM may be running on default cam timing, which can cause poor performance and increased emissions. If the engine runs rough, stalls, or enters limp mode, stop driving and have it diagnosed promptly.



Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter with back-probing pins
- Oscilloscope for viewing camshaft sensor waveform
- Basic hand tools including socket set and trim removal tools
- Wiring diagram for the specific Ford model and engine

Reading P1340

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (Ford): its meaning depends on the make.
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- 3** Ignition system and misfire.
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- 40** The exact fault within that area.

Often seen with

P1341 Ignition Coil Output Stage 1 Short To Ground · **P1341** Camshaft Position Sensor B Circuit Range Performance · **P1341** Multiple Cylinder Misfire With Fuel Cut-off · **P0010** 'A' Camshaft Position Actuator Circuit (Bank 1) · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0340** Camshaft Position Sensor A Circuit Malfunction (Bank 1) · **P0344** Camshaft Position Sensor A Circuit Intermittent

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/ford-p1340/>

