

CHRYSLER · POWERTRAIN

**P1140**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1140 · Chrysler

## HO2S Transition Time Ratio Bank 1 Sensor 2

P1140 on Chrysler vehicles means the powertrain control module (PCM) has detected that the downstream oxygen sensor (HO2S Bank 1 Sensor 2) is switching too slowly or too quickly compared to what the PCM expects during its internal transition time ratio test. This ratio compares the sensor's actual switching time to a modeled value, and when the ratio falls outside the calibrated window, the PCM stores this code and turns on the check engine light.

SYSTEM

**Powertrain**

CODE TYPE

**Chrysler specific**

SEVERITY

**Medium**

FIX DIFFICULTY

**Intermediate**

AREA

**Fuel and air metering**

### Symptoms you may notice

- Check engine light illuminated, often with no other noticeable symptoms
- Slightly reduced fuel economy over time as the PCM may default to a richer mixture
- Occasional rough idle or hesitation during light acceleration
- Failed emissions test due to increased tailpipe emissions
- In rare cases, a subtle sulfur or rotten egg smell from the exhaust

### Common causes, most likely first

- 1 Aging or contaminated downstream oxygen sensor (Bank 1 Sensor 2) that responds sluggishly
- 2 Exhaust leak between the catalytic converter and the downstream sensor, allowing outside air to affect readings
- 3 Wiring damage or corrosion at the downstream sensor connector or along the harness
- 4 A failing catalytic converter that is no longer storing and releasing oxygen properly, altering the sensor's switching behavior
- 5 PCM software calibration issue or a faulty PCM driver circuit for the downstream sensor
- 6 Engine misfire or rich/lean condition upstream that has degraded the downstream sensor over time



## How to diagnose and fix it

- 1 Inspect the downstream oxygen sensor wiring and connector for chafing, corrosion, or loose pins, and repair as needed
- 2 Check for exhaust leaks between the catalytic converter and the downstream sensor using a smoke machine or by listening for ticking sounds
- 3 Use a scan tool to view live data for Bank 1 Sensor 2 and compare its switching activity to the upstream sensor; a lazy or flat-lined signal points to a bad sensor
- 4 Perform a resistance and voltage test on the downstream oxygen sensor heater circuit to rule out a heater fault
- 5 Replace the downstream oxygen sensor if it is slow to respond or contaminated, then clear the code and verify the repair with a test drive
- 6 If the sensor and wiring are good, evaluate catalytic converter efficiency with a backpressure test or an infrared thermometer, and replace the converter if it is degraded
- 7 After repairs, complete a drive cycle that includes steady cruise and deceleration to allow the PCM to run its transition time ratio monitor and confirm the code does not return

## What the transition time ratio really tests

- The transition time ratio compares how long the downstream sensor takes to switch from lean to rich versus rich to lean; a ratio outside the calibrated window can be caused by a slow sensor or by a converter that is not properly storing oxygen.
- A common misdiagnosis is replacing the downstream sensor when the real problem is a small exhaust leak or a failing catalytic converter that has already contaminated the sensor.
- Chrysler's PCM may set P1140 only after a specific drive pattern; clearing the code without completing the monitor can lead to a false sense of repair.
- Aging downstream sensors can become sluggish without setting a heater circuit code, so live data comparison with the upstream sensor is more reliable than a simple resistance check.
- Aftermarket sensors with incorrect response characteristics can trigger P1140 even when new, so using an OEM-quality sensor is important for this monitor.

## Can I keep driving with P1140?

You can generally continue driving with P1140, but avoid ignoring it for long because a failing catalytic converter or sensor can worsen emissions and fuel economy. If the check engine light begins flashing or you notice misfire symptoms, stop driving and have the vehicle inspected promptly.



## Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Smoke machine for exhaust leak testing
- Oxygen sensor socket
- Infrared thermometer or backpressure gauge for converter testing

## Reading P1140

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

## Often seen with

**P0133** O2 Sensor Circuit Slow Response (Bank 1 Sensor 1) · **P0136** O2 Sensor Circuit Malfunction (Bank 1 Sensor 2) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2) · **P0171** System Too Lean (Bank 1) · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

## See it working

Watch the animated explainer [How a Jet Engine Works: Two-Spool Turbofan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/chrysler-p1140/>

