P0040: O2 SENSOR SIGNALS SWAPPED BANK 1 SENSOR 1 / BANK 2 SENSOR 1

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$100-$200**
Can I Still Drive?	:	No

What Does The P0040 Code Mean?

In a nutshell, a P0040 code means that the vehicle's computer (the PCM or powertrain control module) has detected that the first O2 oxygen sensors downstream from the engine have swapped wiring. The vehicle's PCM uses the oxygen sensor readings to adjust how much fuel to inject into the engine for most efficient operation.

The PCM monitors the engine sensor readings and if for example it puts more fuel into bank 2 of the engine but then sees that the bank 1 oxygen sensor is reacting instead of bank 2, that is the type of thing that triggers this code. For this DTC, the first O2 oxygen sensor that is in the exhaust manifold or downstream from it is the sensor #1. It will be upstream from the catalytic converter.

This trouble code is not common and only applies to vehicles with engines that have more than one bank of cylinders. If you have an inline engine you won't get this code. Bank 1 is always the bank of the engine that contains cylinder #1.

What Are The Symptoms Of The P0040 Code?

Symptoms of a P0040 engine code may include:

- Malfunction indicator lamp (MIL) illuminated solid or flashing
- Decreased engine power and possible limp mode

- Increased fuel consumption
- Rough idle or rough running

What Are The Potential Causes Of The P0040 Code?

A P0040 DTC trouble code may be caused by one or more of the following:

- Oxygen sensor wiring connectors swapped from bank to bank (most likely)
- O2 sensor wiring crossed, damaged, and/or shorted
- Failed PCM (less likely)

How Can You Fix The P0040 Code?

A good first step is to find out if there was any recent work done in the area of the exhaust and O2 sensors. If there was, then there is a good chance that the most likely cause is the issue. That is, swapped wiring connectors for the first O2 sensor from bank 1 to bank 2.

Visually inspect all wiring and connectors leading to the first O2 sensors (these will be between the engine and catalytic converters). Look to see if the wires are intact and not burned or twisted, etc. More than likely the connectors are swapped. If you are a DIY you could even try swapping these front two oxygen wiring connectors as a first repair step, then clear the trouble codes and road test to see if the code returns. If it does not return then that was most likely the problem.

A next step would be to closely inspect the O2 wiring & connectors at the PCM end. Make sure wires are in the correct pin locations going into the PCM and it's harness (refer to a vehicle specific repair manual for that). Be aware if there are swapped wires, damaged wires, etc. Repair as required.

If necessary, perform a continuity test of each individual wire from the PCM to the O2 sensor. Repair as necessary.

If you have access to an advanced scan tool, use it to monitor (graph) the O2 sensor readings and compare to specs. PCM failure is kind of a last resort and isn't always DIY friendly. If the PCM has failed, you likely should take it to a qualified technician for repair or replacement.

Other related DTCs: P0041

Severity Description

This is a code that should be attended to right away. Ignoring this code could lead to a damaged catalytic converter which is very costly.

Reference Sources

Diagnostic Trouble Code (DTC) Charts and Descriptions for P0040 - Pages 11-12.