

## P0042: HO2S HEATER CONTROL CIRCUIT (BANK 1 SENSOR 3)

### OVERVIEW

|                      |   |                                |
|----------------------|---|--------------------------------|
| Severity             | : | <div><div>Medium</div></div>   |
| DIY Difficulty Level | : | <div><div>Beginner</div></div> |
| Repair Cost          | : | <b>\$100-\$200</b>             |
| Can I Still Drive?   | : | <b>Yes</b> (Short-term only)   |

### What Does The P0042 Code Mean?

Fuel-injected vehicles use heated oxygen sensors in the exhaust system before and after the catalytic converters to determine oxygen content. This feedback is used to adjust the fuel system accordingly to maintain a proper air/fuel ratio of 14.7:1.

The oxygen sensors used a heated circuit to warm up the sensor for faster feedback operation. The oxygen sensor may use three or four wires depending on the vehicle, two are usually used for the sensor feedback to the Powertrain Control Module (PCM) / Engine Control Module (ECM) and the other wires are for the heater to power the heated circuit. Three wire sensors are usually grounded through the exhaust system, and four wire sensors have a separate ground wire.

The P0042 code refers to the third sensor downstream from the engine on bank 1, which is on the side of the engine with the #1 cylinder. The heater circuit may be supplied power or ground by the PCM/ECM or another source that can be controlled by the PCM/ECM.

Note: Be careful not to work around an exhaust system that has been ran recently as they can become very hot.

### What Are The Symptoms Of The P0042 Code?

Symptoms of a P0042 DTC includes MIL (Malfunction indicator lamp) illumination. You will probably

not notice anyother symptoms associated with the failure of the heated circuit since it only runs momentarily when the vehicle is first started. This sensor is also after the catalytic converter, so it will not affect the air/fuel ratio input to the PCM/ECM; it is primarily used to verify the catalytic converters efficiency.

## What Are The Potential Causes Of The P0042 Code?

Potential causes of a P0042 trouble code may include:

- Open circuit inside oxygen sensor or open power or ground wires to bank 1, #3 oxygen sensor
- Exhaust system ground strap may have become corroded or broken
- PCM/ECM or oxygen sensor heater circuit wiring has failed

## How Can You Fix The P0042 Code?

Visually inspect the oxygen sensor wiring for damaged or loose wiring to the sensor.

Unplug the oxygen sensor and using a digital volt ohm meter (DVOM) set to the ohms scale, test the resistance of the heater circuit using a wiring diagram for reference. The heater circuit inside the sensor should have some resistance present, excessive resistance or an over limit reading would indicate an open in the heated portion of the circuit and the oxygen sensor will need to be replaced.

Back-probe the ground wire at the connector and check for resistance between a good known ground and the connector to the oxygen sensor.

Back-probe the power supply wire at the connector with the DVOM set to DC volts with the positive lead on the power supply wire and the negative lead at a good known ground to check for power to supply at the oxygen sensor. If no power is present at the connector during the initial car startup (cold start), there may be a problem with the power supply circuit to the oxygen sensor or the PCM itself.

## Reference Sources

[P0042: Heated Oxygen Sensor Control Circuit B1S3](#), OBD-Codes.