

P0156: O2 SENSOR CIRCUIT MALFUNCTION (BANK 2 SENSOR 2)

OVERVIEW

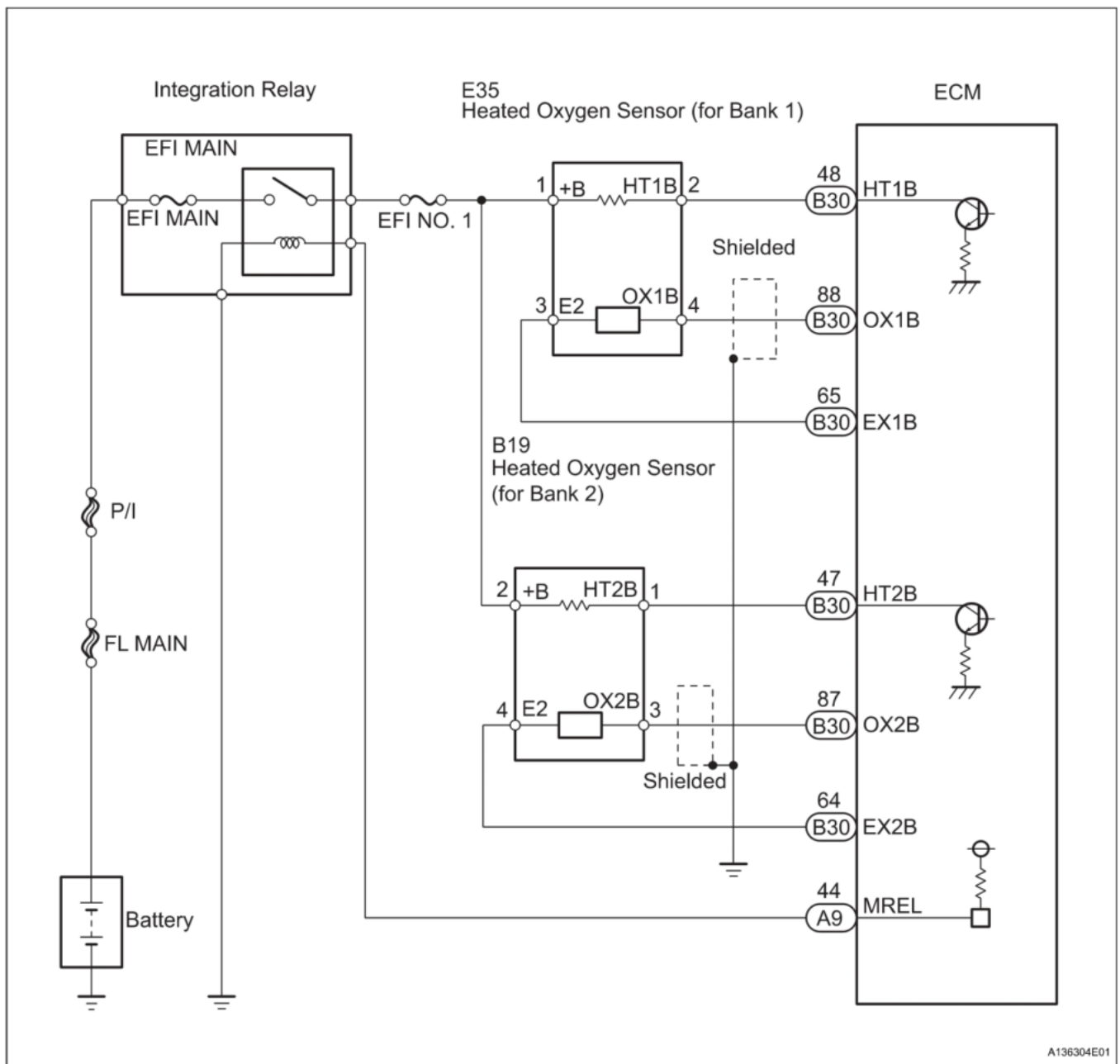
Severity	:	<div><div>Medium</div></div>
DIY Difficulty Level	:	<div><div>Intermediate</div></div>
Repair Cost	:	\$100-\$300
Can I Still Drive?	:	Yes (Short-term only)

What Does The P0156 Code Mean?

The O2 (oxygen) sensors measure oxygen content in the exhaust. The PCM (powertrain control module) then uses this information to regulate fuel injector pulse. The O2 sensors are very important for the proper operation of the engine. Inaccurate or faulty O2 sensors can cause the PCM to add or take away fuel based on the faulty O2 sensor voltage which can cause a host of problems.

A P0156 code refers to the Bank 2,2 O2 sensor or the downstream (post-cat) O2 sensor on Bank 2. It is a four wire sensor. The PCM supplies a ground circuit and a reference voltage circuit of about 0.5 volts. Also for the O2 sensor heater element there is a battery voltage supply wire and another ground circuit for that.

The O2 sensor heater allows the O2 sensor to warm up faster, thus achieving closed loop in less time than it would normally take for the exhaust to warm the sensor up to operating temperature. The O2 sensor varies the supplied reference voltage based on oxygen content in the exhaust. It is capable of varying from about 0.1 to 0.9 volts, 0.1 V indicating lean exhaust and 0.9 V indicating rich exhaust. This P0156 code indicates that the Bank 2, 2 O2 sensor is stuck low for too long or isn't active at all.



P0156 wiring diagram

What Are The Symptoms Of The P0156 Code?

Often post-cat O2 sensor problems present few symptoms since they are inputs to the PCM to monitor catalytic converter quality and don't directly control fuel. Sometimes no symptoms are noticeable. However the following may be possible on some vehicles:

- MIL (Malfunction Indicator Lamp) illumination
- Decrease in MPG
- Increase in tailpipe emissions

What Are The Potential Causes Of The P0156 Code?

Potential causes of an P0156 code include:

- Bad O2 sensor
- Signal shorted to voltage
- Wiring problems due to contact with exhaust components
- Holes in exhaust near O2 sensor

How Can You Fix The P0156 Code?

If you have access to a scan tool, check the signal voltage for the Bank 2,2 oxygen sensor with the engine at normal operating temperature. Is it stuck low currently? If so, increase RPM for a few seconds and see if it affects the reading. If it begins working with increased RPM, check for holes in the exhaust near the O2 sensor that may cause a false lean. If the exhaust pipe is intact, the sensor is sluggish, replace it.

If the Bank 2,2 O2 sensor voltage reading remains low with increased RPM, unplug it and then observe the reading. It should have increased to about 0.5 volts or thereabouts. If it did, check for water intrusion or other connector problems. If none are found, replace the shorted O2 sensor. If the voltage reading is still stuck low after unplugging the sensor, then suspect a wiring problem.

Using a voltmeter, with the O2 sensor unplugged, check for voltage on the signal circuit at the O2 sensor connector (PCM side). It can vary with model, but should be about 0.5 volts and not above 1 volt. If the voltage reading is too high, repair short to voltage on signal circuit. If the signal voltage checks out, suspect the PCM.

Reference Sources

[P0156: O2 Sensor Circuit Malfunction B2S2](#), OBD-Codes.