Diagnosing Air/Fuel Sensors Live Training Q&A
May 2013

Q: Wide band O2s can measure a ratio much wider than narrow band. If the EPA requires a 14.7 to 1 A/F why are wide bands needed since the ratio has to be controlled over a very narrow band?

A: The EPA does not require a particular air/fuel ratio. What they are concerned about are harmful emissions (HC, CO, NOx). If manufacturers can control these with a ratio other than 14.7:1, no problem.

Q: What tool are you using for the propane?

A: I believe we got it from OTC, but we're not sure they make it anymore.

Q: If you ground the sensor with the Power Probe that would make me think the computer was the issue.

A: Yes, the sensor was working at that time. The sensor was bad, but was only acting up on a cold engine start.

Q: Didn't the test you just did show that the sensor heater is capable of working? How is that a bad sensor?

A: Yes, the sensor was working at that time. The sensor was bad, but was only acting up on a cold engine start.

Q: When the front sensors were unplugged, why didn't the system start trimming from the rear sensors? Is this Honda strategy?

A: The system would likely trim from the rear sensors eventually, but for testing purposes, you have plenty of time to check the actual A/F ratio before that strategy would happen.

Q: Did you simulate a broken ground wire when you supplied ground to the yellow wire?

A: There was nothing wrong with the circuit when we were testing, but yes, that would be like simulating a broken wire between the sensor heater and the PCM.

Q: So the factory Honda scan could not turn on the heater? Do other scan tools?

A: No, not on this car.

Q: why Does nernst wire read 6 volts KOEO?
A: That voltage comes from the PCM. That's the voltage you get when the sensor is cold or dead.

Q: Chrysler uses a PID called goal voltage. What is 02 sensor goal voltages? How is a tech supposed to interpret these PIDs? Which I think is an average voltage.

A: Chrysler's goal voltage is a value learned by the PCM. It is the "middle" voltage that the PCM wants to see the O2 sensor switching above and below. The PCM alters this value as necessary in an attempt to produce the best mixture to make the CAT work the best. Personally, I don't pay a lot of attention to those PIDs, I use the live O2 voltages and the fuel trims.

When something like this happens on Ford or GM, they will stay in closed loop and stay happy.