Integration with Hondata ECUs

PLXApp002 (V1.1) July 19, 2005

Summary

This application note outlines the procedures for proper R-Series/M-Series linear wideband output signal integration with Hondata ECUs. The Hondata ECU will be capable of accurately interpreting the precise air/fuel ratio with this interface.

Hardware Setup Procedure

1. Locate and disconnect the stock narrowband oxygen sensor. If your Honda/Acura is an OBD II system, disconnect the primary sensor. The primary sensor is located before the catalytic converter. As a general rule, cars after 1995 are OBD II.

2. Remove the narrowband sensor and install the wideband sensor in its place.

3. Torque the sensor to 45 N*m or 33 lb-ft

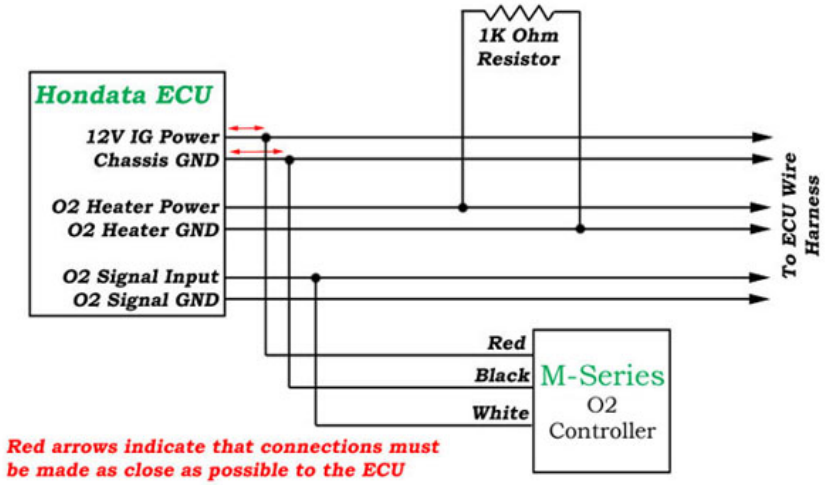
4. Connect a 1K Ohm resistor across the +12V heater and heater ground wires (two black wires on the sensor side). This can be obtained from your local Radio Shack. 1KOhm with 5% tolerance 1/4 watt power rating will work fine. This eliminates error code 41(heated oxygen sensor error) and "fools" the ECU to think that a sensor is present and is properly being heated. The ECU will still function normally even if you get the error code.

5. Connect the power (red) wire of the R-Series/M-Series to a 12V power source at a location near the ECU. This power should only be supplied when the key is turned past a specific position. Make sure that this connection is capable of supplying at least 3Amps of current.

6. Connect the ground (black) wire of the R-Series/M-Series to chassis ground near the ECU. By keeping the wires short and close to the ECU allows the R-Series/M-Series and the ECU to see the same reference ground. This results in a more accurate air/fuel ratio voltage interpretation.

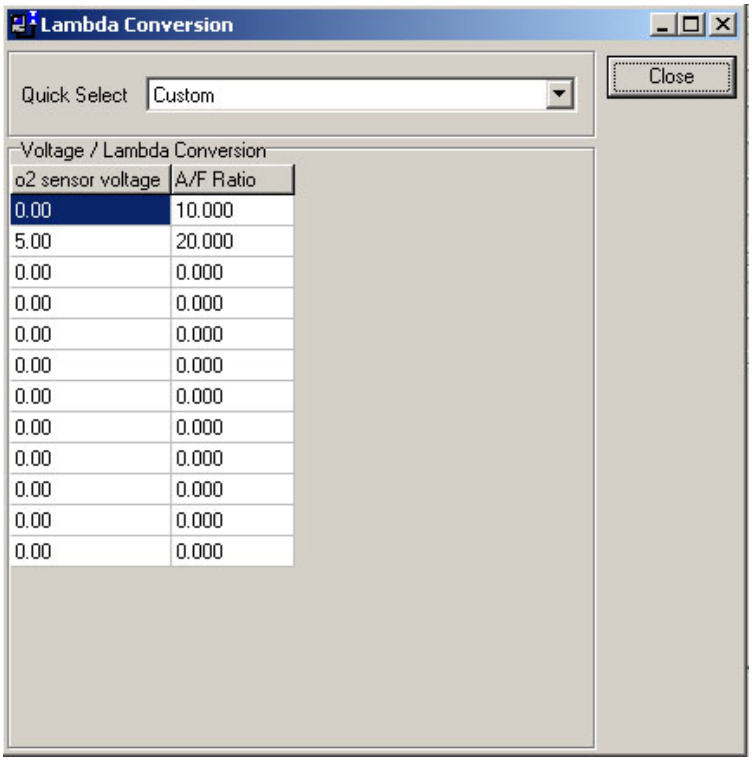
7. Connect the linear output signal wire (white) from the R-Series/M-Series to the O2 signal input wire. This connection may be done at the narrowband connector and is not extremely crucial that it is near the ECU.

8. Do not use the cigarette lighter power. It is a poor connection and reference ground may be off as much as 0.5V. Only use this power connection if you intend on using the R-Series/M-Series as a stand alone unit.



www.plxdevices.com
(408)745-7591

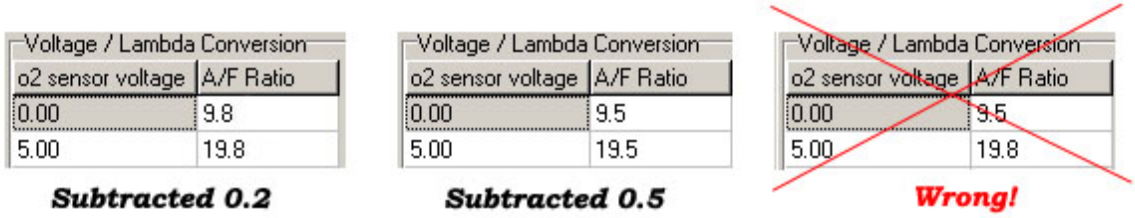
Software Setup Procedure



Special Considerations

Proper grounding of the R-Series/M-Series wideband controller to your vehicle's chassis ground near the ECU is essential to accurate measurements. If these precautions have already been taken and there are still discrepancies between the R-Series/M-Series digital display and the Hondata Logger readout, a small correction factor to the AFR table will alleviate the problem. This phenomenon is seen in all aftermarket wideband controllers and have been a result of many frustrated tuners. Here's how to resolve it.

Subtract a fixed value (usually between 0 to 0.5) from the A/F Ratio column in each row. Once the R-Series/M-Series digital display and your Hondata Logger values match, your software setup is complete. Here's an example.



www.plxdevices.com
(408)745-7591

Revision History

Version 1.0 (1/7/04)	Initial release
Version 1.1 (7/19/05)	Revised format to PDF Added R-Series Support

www.plxdevices.com
(408)745-7591