



Stock Narrowband Sensor Replacement

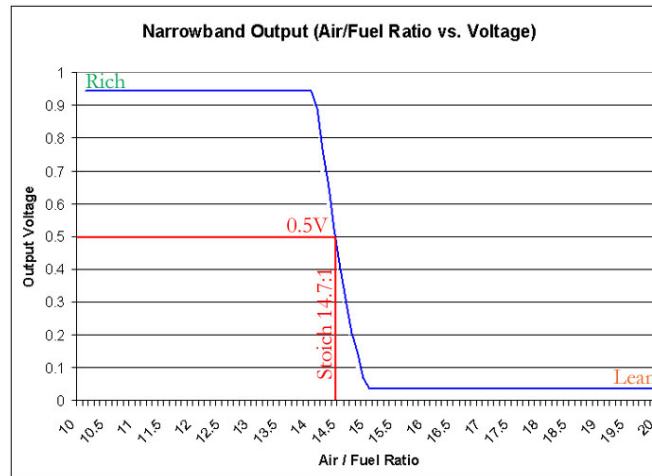
PLXApp004 (V1.1) July 19, 2005

Summary

This application note outlines the procedures for direct replacement of your vehicle's stock narrowband oxygen sensor with the PLX R-Series/M-Series wideband oxygen sensor while maintaining ECU narrowband closed loop operation. This setup is ideal if you do not want to weld an additional sensor bung on to your down pipe. Also if you desire to utilize the simulated narrowband output (gray wire) from the R-Series/M-Series controller to maintain "like stock" ECU operation.

Determining Compatibility

Not all vehicles are equipped with a 0-1V narrowband oxygen sensor. You must first determine if your stock oxygen sensor outputs 0-1V and conforms to the following voltage characteristic. Otherwise, this application note does not apply to your setup.



Typically, if your stock sensor is a 4-wire, 3-wire, 2-wire or 1-wire, the output should match, and your setup will be compatible. The procedure below assumes that a 4-wire or 3-wire narrowband oxygen sensor is being replaced. You can identify a wideband sensor if there are more than 4 wires.

*For 2-wire or 1 wire narrowband o₂ sensor replacement, ignore the step #8. You do not need to install the power resistors.

Installation Procedure

1. Locate and disconnect the stock narrowband oxygen sensor, if your vehicle is an OBD II system or above, replace the primary sensor. The primary sensor is located before the catalytic converter. As a general rule, vehicles 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

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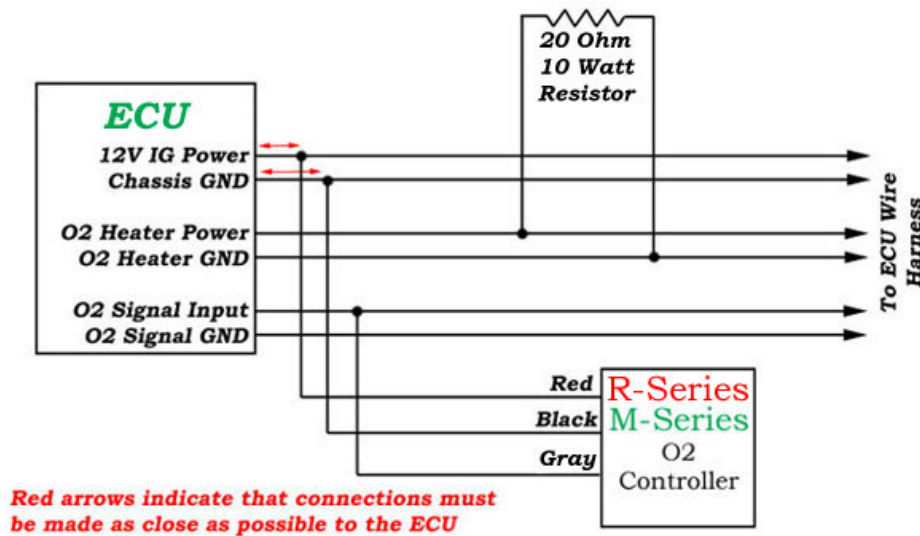


4. Connect the gray sensor harness between the wideband O2 sensor and the R-Series/M-Series Controller.
5. Connect the power (red) wire of the R-Series/M-Series to a 12V power source at a location near the ECU. This power should only be supplied when the key is turned past a specific position. Make sure 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 more accurate and reliable narrowband closed loop operation.
7. Connect the simulated narrowband signal (gray) wire from the R-Series/M-Series controller to the O2 signal input wire. This is the same wire that would come from your stock narrowband 0-1V signal.
8. Install the 20 Ohm, 10 Watt load resistor to prevent the engine check error code. This allows your ECU to "think" that your stock narrowband sensor is still being heated. This resistor can be obtained from your local radio shack or electronics store. If 20 Ohms is not available, two 10 Ohm, 10 Watt resistors connected in series (not parallel) will also work.
9. Install the noise filtering capacitor across Chassis GND and O2 Signal Input as close as possible to the ECU. This eliminates unwanted electrical noise and increases close loop ECU performance. This capacitor is not illustrated below. See installation instructions for more information.

***It is EXTREMELY IMPORTANT that your 20 Ohm resistor is rated 10 Watts or greater. This resistor gets hot during operation and extreme care must be taken to find a suitable location to mount. Avoid contact with plastic, wires, tubes and any material that may potentially be flammable.**

*You may use two 10 Ohm 10 Watt resistors connected in series as an alternate solution. Radio Shack part#271-132.

Connection Diagram



Revision History

Version 1.0 (9/20/04)	Initial release
Version 1.1 (7/19/05)	Revised format to PDF