

Adjustable O2 Simulator

The adjustable o2 simulator module is intended for custom application when the ready to use o2 simulators are not available or there is a need to tweak o2 simulator parameters from time to time. Adjustable module allows changing High output voltage, Low output voltage and Frequency of the generated signal.

Feature:

- Adjustable High/Low output voltage from 0-1v (60 steps) and 0-5v (256 steps).
- Adjustable signal Frequency from 0.1 to 4 hz (32 steps).
- Waterproof
- Low current (5 - 8 mA)
- Indicator LED to confirm operation
- Light weight
- Small package (0.8" x 0.12" x 0.5")
- 1 year warranty

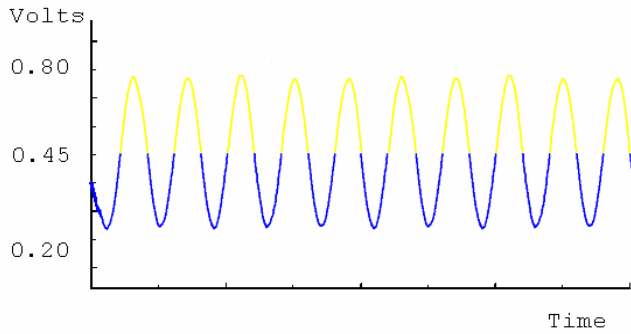
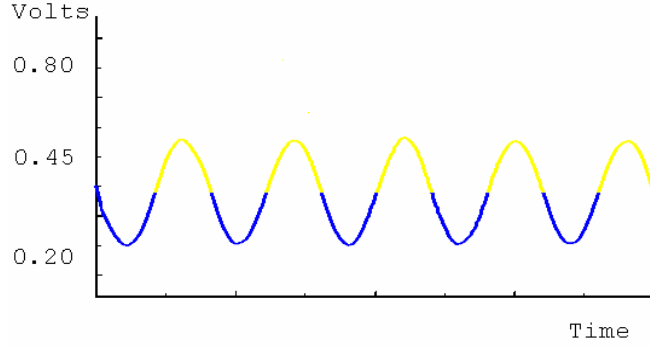
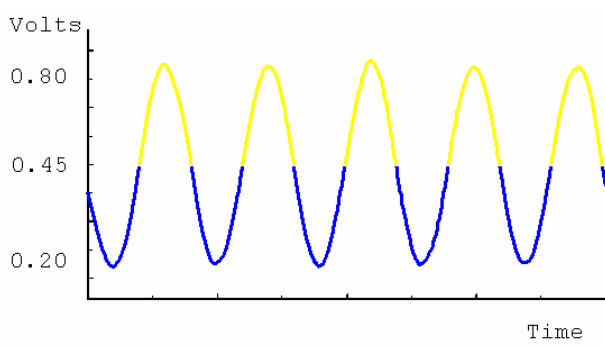
Adjustable o2 simulator has three wires normally found on the regular o2 simulator:

- Red – Power
- Black – Ground
- White – Signal

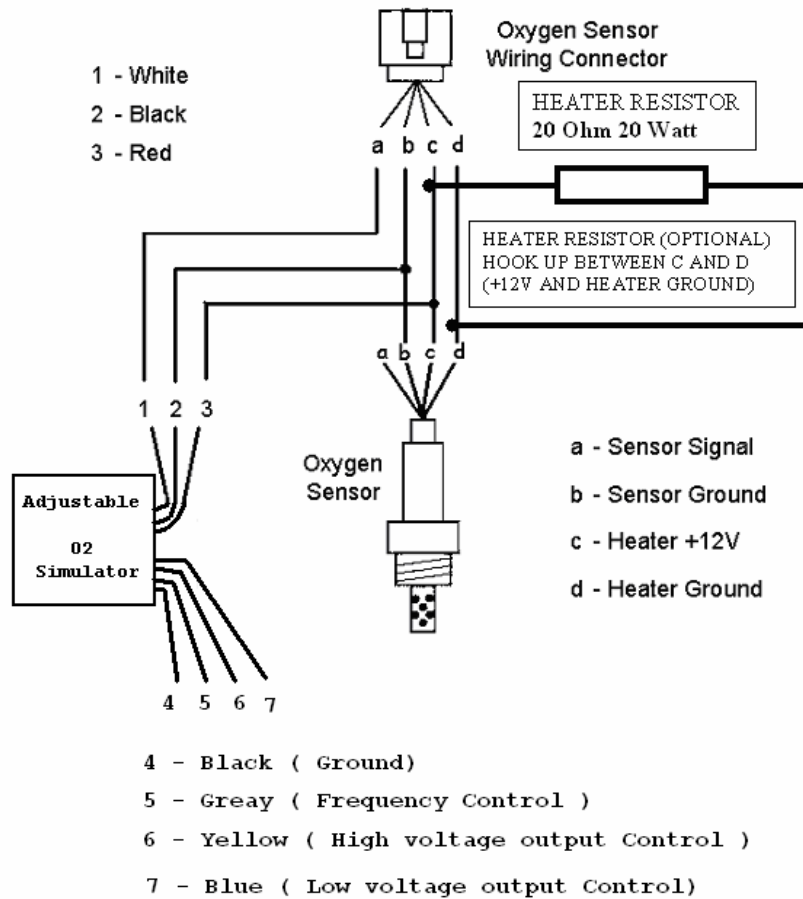
It also has extra four wires for a signal control:

- Black – Ground
- Grey – Frequency Control
- Blue – Low side voltage control
- Yellow – High side voltage control

Below are just some examples of a signal produced by adjustable o2simulator:



Connection Diagram



Installation procedure

WARNING: Removing or defeating of a vehicle emissions system may be prohibited in your State or Country. Please check your local State laws.

1. Locate secondary o2sensor (sensors).

2. Establish which o2sensor wires are: Signal, +12V and o2sensor ground. Use factory service manual for reference. You can find secondary oxygen sensor color coding table on: www.o2simulator.com/doc/makespecifico2colorcoding.pdf

3. Verify +12V wire with Voltmeter, by probing the wire with respect to chassis ground, when Ignition key is in ON position. +12V is one of the o2sensor heater element wires, they are usually same color (2 white, 2 black, 2 brown, 2 red). Some cars cut +12V heater power, when o2sensor heater element reaches normal operating temperature (JEEP,FORD etc.), so you can use any constant +12V source (ignition).

4. Look at the wires of two different colors. They are: o2sensor ground wire (usually gray) and o2sensor signal wire (usually black). Verify o2sensor ground wire by measuring resistance or continuity test between wire and chassis. The resistance should be around 4ohms or less. Please note: o2sensor ground, heater ground and chassis ground are different. Remaining wire would be: o2sensor signal wire.

Email us if you need color of your secondary o2sensor harness wires (engine side)

5. Disconnect Negative battery terminal to avoid damaging vehicle electric system.

6. Connect o2 simulator Black wire to o2sensor Ground wire. *Recommendation: connect wires by using insulated crimps or soldering and using appropriate insulation, electrical tape or heat-shrinking tubing.*

7. Splice o2 simulator Red wire to o2sensor +12V or +12V ignition wire. Do not cut +12V heater wire. *Recommendation: connect wires by using insulated crimps or soldering and using appropriate insulation, electrical tape or heat-shrinking tubing.*

8. Cut (do not splice) the o2sensor Signal wire and connect the o2sensor harness wire (not the o2sensor side) to o2simulator White signal wire. If you have two secondary o2 sensors, connect second o2simulator white wire to remaining o2sensor harness end. *Recommendation: connect wires by using insulated crimps or soldering and using appropriate insulation, electrical tape or heat-shrinking tubing.*

9. Insulate cut oxygen sensor signal wire with the electrical tape. Secure O2 Simulator with the double-sided tape and the plastic strap. Reconnect negative battery terminal.

10. With the Ignition in ON position o2simulator internal LED should blink.

11. If you want to eliminate secondary o2sensor completely, you have to use our heater resistor (20 Ohm, 20 Watt) to simulate o2sensor heater element and avoid the P0141 (faulty o2 heater error code). Hook up heater resistor between 2 heater wires (usually same color): +12V and heater ground. One heater resistor for each o2sensor. Please be aware: Heater resistor will get hot, too hot to touch. Mount heater resistor in a location that keeps anything flammable or melt-able from touching it.

12. If you have any questions, please contact us via web Contact form. Please provide: Make/Model/Year/engine size, color of your secondary o2sensor, how o2simulator connected, and what error code you are getting. You can scan PCM/ECM for free in AutoZone stores. To reset error code: disconnect battery for 3 minutes.

Output Signal Adjusting Procedure.

Adjustable o2simulator has four short wires (black, grey, blue, yellow. See diagram above) which allows user to set any desired o2simulator voltage and frequency.

High side output voltage change: In order to change the High side of the signal use OBDII scanner or voltmeter connected between Black and White wires of the o2simulator to monitor the output voltage. Once you set OBDII scanner or voltmeter to monitor o2simulator voltage take YELLOW wire and short it with BLACK. The simulator LED will blink twice confirming the change of the High side voltage which you can monitor via OBDII scanner or voltmeter. As soon as LED blinks twice disconnect YELLOW wire from the BLACK. Otherwise if you keep YELLOW wire shorted with BLAK the simulator will continue changing the output voltage and confirming it with twice blinking LED. The simulator checks the control wires connection with BLACK wire every cycle so you might need to wait a second or two before o2simulator confirms the first change of the voltage.

During the output voltage adjustment the simulator will keep outputting the High side voltage when the control wire is shorted with BLACK to make it easier to view the actual output. As soon as the control wire is disconnected from BLACK wire the simulator returns to normal operation and output signal will began oscillating.

Low side output voltage change: Procedure to change the Low side voltage is identical to the High side but use the BLUE wire instead of the YELLOW.

Output frequency change: In order to change output frequency short the GREY o2simulator control wire with BLACK wire. Disconnect the GREY wire as soon as simulator LED blinks twice. Repeat the above procedure until the desired frequency is achieved.

From the factory the o2simulator output can be changed from 0 to 1v. In some cases when $> 1v$ signal is desired the simulator needs to be switched from 1v to 5v output mode. Perform the following procedure to accomplish that: short GREY, YELLOW and BLUE wires together. Once all control wires are shorted together add the BLACK wire to that connection. The simulator LED will blink four times and stay ON confirming switch to 5v. Now use High and Low side adjustment procedure above to achieve the right output voltage.

To switch back to 1v mode perform the above procedure again.

All adjustments are permanently stored onto internal flash memory and will not be lost when o2simulator is disconnected from the power source.