

# DIGITAL DELAY, INC.

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Instructions

## High Current 2 Stage Nitrous Relay Board

### WARRANTY AND DISCLAIMER

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## High Current 2 Stage Nitrous Relay Board

### Instructions

The High Current 2 Stage Nitrous Relay Board made by Digital Delay simplifies wiring between the Nitrous systems and Timer(s), whether using a Timer from a Delay Box or a standalone Timer to activate a Stage of Nitrous. Additional benefits of the High Current 2 Stage Nitrous Relay Board are 80 Amp outputs, status LEDs, and fused outputs. Because both Nitrous and Fuel Solenoids can be driven by one fused output, if the Fuel Solenoid was to short out and blow the fuses for that stage, the Nitrous solenoid for that stage would also be turned off to protect the motor.

The 2 Stage Nitrous Relay Board has Eight inputs;

1. The two inputs for +12 Volts both need to be connected to a power source capable of driving up to 150 Amps. Each input should be connected to power using one of the supplied 8 gauge wires. DO NOT connect the two power inputs together with a jumper.
3. GND (Ground) needs to be connected to Ground.
4. WOTS (Wide Open Throttle Switch) which is used to ensure that the Nitrous only activates when the Throttle is wide open. Needs to be connected to one side of the throttle switch with the other wire from the switch going to ground.
5. OVERRIDE can be used to activate the Stage 1 Nitrous system any time the WOTS is active. This optional input needs to be connected to one side of a switch with the other side of the switch going to +12 Volts
6. TIMER 1 this needs to be connected to the output of the Delay box or a stand alone Timer. As long as the WOTS is active, any time the TIMER 1 input receives +12 Volts, the Nitrous Stage 1 will be activated.
7. TIMER 2 this needs to be connected to the output of the Delay box or a stand alone Timer. As long as the WOTS is active, any time the TIMER 2 input receives +12 Volts, the Nitrous Stage 2 will be activated.
8. PURGE BUTTON this is used only when a purge solenoid is incorporated into the system. This optional input needs to be connected to one side of a switch with the other side of the switch going to +12 Volts.

NOTE: For both of the +12Volt inputs use the supplied 8 Gauge wire. The rest of the inputs can use a 16 or larger gauge wire.

The 2 Stage Nitrous Relay Board has three fuse protected outputs;

1. Stage 1 - this is connected to first stage solenoids. Connect one side of the Nitrous and Fuel solenoid with the other side of the solenoids going to ground. The retard control for the ignition, to be activated while the first stage of Nitrous is active is also connected here.
2. Stage 2 - this is connected to the second stage solenoids. Connect one side of the Nitrous and Fuel solenoid with the other side of the solenoids going to ground. The retard control for the ignition, to be activated while the second stage of Nitrous is active is also connected here.
3. PURGE - this is connected to one side of the Purge solenoid with the other side of the Purge solenoid going to ground, if used.

Each solenoid should have its own wire to connect it to the Relay board. If you want to run two or more solenoids off the same feed wire, the wire needs to be sized for the total current. To calculate the total current add the individual currents for each solenoid together. Once the total current is known, use the list below to select the correct wire size.

For solenoids pulling 10 Amps or less a 16 or larger gauge wire can be used.  
For solenoids pulling 15 Amps or less a 14 or larger gauge wire can be used.  
For solenoids pulling 25 Amps or less a 12 or larger gauge wire can be used.  
For solenoids pulling 40 Amps or less a 10 or larger gauge wire can be used.  
For solenoids pulling 75 Amps or less a 8 or larger gauge wire can be used.

There are 5 green LEDs, two for the Nitrous Stage 1, two for Nitrous Stage 2, and one for the Purge, which when lit are used to indicate that the fuses are ok. They can also be used to check to make sure the unit has power. There are also 3 yellow LEDs, one for Nitrous Stage 1, one for Nitrous Stage 2, and one for the Purge output, which are used to indicate when the outputs are active.