



2036 Fillmore Street  
Davenport, Ia. 52804  
563-324-1046  
[www.racedigitaldelay.com](http://www.racedigitaldelay.com)

## 4 - Digit

### **WARRANTY AND DISCLAIMER**

DIGITAL DELAY INC. WARRANTS THE PRODUCTS IT MANUFACTURES AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD LIMITED TO 1 YEAR FROM THE DATE OF SHIPMENT, PROVIDED THE PRODUCTS HAVE BEEN STORED, HANDLED, INSTALLED, AND USED UNDER PROPER CONDITIONS.

The company's liability under this limited warranty shall extend only to the repair or replacement of a defective product, at the company's option. DIGITAL DELAY INC. disclaims all liability for any affirmation, promise, or representation with respect to the products.

The customer agrees to hold DIGITAL DELAY INCORPORATED harmless from, defend, and indemnify DIGITAL DELAY INC. against damages, claims, and expenses arising out of subsequent sales of or use of DIGITAL DELAY INC. products, or products containing components manufactured by DIGITAL DELAY INC. and based upon personal injuries, deaths, property damage, lost profits, and other matters which BUYER, its employees, or sub-contractors are or may be to any extent liable, including without limitation, penalties imposed by the Consumer Product Safety Act (P.L. 92-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L. 93-637), as now in effect or as amended hereafter.

No warranties expressed or implied, are created with respect to the company's products except those expressly contained herein. The customer acknowledges the disclaimers and limitations contained and relies on no other warranties or affirmations.

# INSTRUCTIONS FOR 4-DIGIT DELAY

## BENEFITS

Quartz Crystal Timing.

All Solid State--no relays-30 Amp. output(for 30 seconds)-no scattering of the .001 second due to relays.

Time delays may be set to 1/1000th. of a second resolution. Instant cycle restart when button is pushed in middle of cycle.

The case is heavy industrial-type die-cast

The Delay Timer is electronically protected against shorts on the transbrake line.

LEDs indicate box status.

Red LED - power on when lit-If not lit when the external power switch is on, the output is shorted. The red LED will flash on and off if voltage to the transbrake is below 11.5 volts when the transbrake is engaged.

Yellow LED - turns on when pushbutton is pushed, telling you that pushbutton is working . It goes out when the button is released.

Green LED - shows delay output turned on-transbrake power to the terminal strip is applied.

## SPECIFICATIONS

Input Voltage Range: 10.5 to 15.0 VDC

Voltage Drop Through Delay Box: 0.2 VDC at 6 Amp. Load 0.45 VDC at 20 Amp load

Output Current Range: 20 Amps. continuous-30 Amps for 30 seconds.

Standby Current Draw: 0.02 Amp. (Would take over 1 year to discharge an average racing battery if left turned on)

Operating Temperature Range: -45 to +150 degrees F. internal temperature.

Timing Range: 0.000 to 9.999 seconds. All zeroes may be used for bypass.

Pushbutton Contact Current: 0.100 amps. at 12 VDC.

## **OPERATION NOTES**

The red led, on, indicates the box is turned on, has power and is not in the short circuit protection mode. When the red led is not on, and the yellow led comes on when the button is pushed, the Transbrake wires or the Transbrake solenoid is possibly shorted. The red led will flash on and off if voltage to the Transbrake is below 11.5 volts when the Transbrake is engaged.

The yellow led turns on any time that the pushbutton is pushed. This tells you that the pushbutton circuit is working. The pushbutton terminal on the terminal strip must go to ground to turn this led on. This is done when the pushbutton switch is pressed. The timer will not operate if the yellow led is not turning on. If it does not turn on and the red light is on, check the button wiring. The yellow led turns off when the pushbutton is released.

The green led turns on whenever the Transbrake output is turned on. It stays on for the duration of the delay cycle. The Transbrake should be engaged whenever the green led is on. If the green led is on and the Transbrake is not engaged, check the wiring for an open circuit. If the green led does not turn on when the pushbutton is pushed check red led for short circuit indication. Disconnect the Transbrake wire from the terminal strip. Cycle the box, if the green led turns on when the button is pushed, there is a possible short in the wiring or in the Transbrake solenoid. Please check the wiring and the Transbrake before calling so that we have enough information to get the problem worked out.

One very important feature of the Delay Timer is the ability to restart your delay cycle if you slip off the button while you are staged. Every time that you press the pushbutton, the timer resets to the beginning of the timing cycle. This means that you can instantly recover without having to complete the timing sequence.

## **WHAT THE FLASHING RED LIGHT MEANS**

THE RED LIGHT WILL FLASH WHEN THE TRANSBRAKE IS ENGAGED AND THE BATTERY VOLTAGE IS BELOW 12 VOLTS. THIS IS WARNING YOU THAT YOU COULD BE STARTING TO HAVE PROBLEMS DUE TO LOW VOLTAGE. YOU SHOULD CHECK THE BATTERY VOLTAGE AT THE DELAY BOX WITH A VOLTMETER. PUT THE BLACK (-) METER LEAD ON THE GROUND TERMINAL SCREW AND THE RED (+) METER LEAD ON THE BATTERY TERMINAL SCREW, ENGAGE THE TRANSBRAKE AND READ THE BATTERY VOLTAGE. IF IT IS BELOW 12 VOLTS, YOU SHOULD FIND THE REASON AND CORRECT IT BEFORE PROBLEMS DEVELOP IN THE DELAY BOX OPERATION. SOME REASONS FOR LOW VOLTAGE AT THE DELAY BOX ARE:

1. Discharged or bad battery
2. Loose or broken wires
3. Wires too small for the current draw (If more than 10 AMPS. use 10 GA. wire)
4. Defective electrical component in race car drawing too many AMPS.
5. The 4-DIGIT DELAY may be defective. Check by disconnecting all the wires from the Transbrake terminal on the terminal strip. Apply and hold pushbutton, if the measured voltage is below 9 volts at the Transbrake terminal and 11.5 at the battery terminal, you will need to send the box back for repair.

# INSTALLATION INSTRUCTIONS

## READ THE WARRANTY AND THE DISCLAIMER FIRST

The digital delay timer may be located in any position . It is suggested that the box be mounted at least 12 inches from the ignition system. Test the operation of the timer with the engine running. If operation of the timer is incorrect, contact **DIGITAL DELAY INC.** at 563-324-1046. The **DIGITAL DELAY TIMER** has been designed to operate with all ignition systems, but it is impossible to cover all situations. Please call if you have a problem.

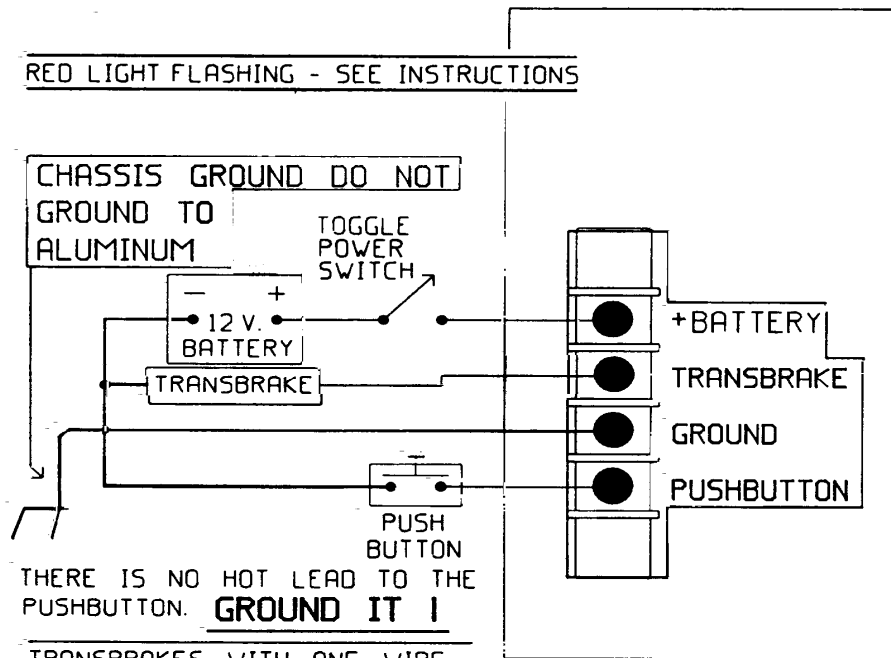
The **DIGITAL DELAY TIMER** must be operated with a negative ground 12 volt system only. Connecting to a positive ground system **will result in total destruction** of the unit.

**THE GROUND WIRE MUST BE CONNECTED BEFORE ANY OTHER WIRES.** THE WIRES SHOULD BE AT LEAST 14 GA. FOR THE +12VDC, AND THE TRANSBRAKE WIRES. **Increase the wire size to 10 Ga.** if you are using a Transbrake with more that **10 amps.** current draw. The pushbutton wire may be any size that is convenient ( at least 20 Ga.), and it does not need to be shielded wire. If the Transbrake and the pushbutton are not in good working condition,

The timer ground must be to the Chassis. The ground must not be made to aluminum parts.

### Wiring Diagram

## 4 DIGIT DELAY TIMER CONNECTIONS



TRANSBRAKES WITH ONE WIRE ARE GROUNDED THROUGH THE TRANSMISSION CASE.

THE REV LIMITER(2-STEP) WIRE IS CONNECTED TO THE TRANSBRAKE TERMINAL

**DIGITAL DELAY INC.**

**319-326-1046**