

# MSD INSTALLATION INSTRUCTIONS

## MSD Three Stage Delay Timer PN 7760

**ONLINE PRODUCT REGISTRATION:** Register your MSD product online. Registering your product will help if there is ever a warranty issue with your product and helps the MSD R&D team create new products that you ask for! Go to [www.msperformance.com/registration](http://www.msperformance.com/registration).

### Parts Included:

- 1 - Module
- 1 - Parts Bag

### Required Items for Operation:

- MSD Power Grid - PN 7730
- MSD CAN-Hub - PN 7740

The MSD 3-Stage Delay Timer is an add on module for the Power Grid ignition controller. This module allows for three additional RPM/Time Switch outputs similar to the RPM/Time switch function built into the Power Grid (Brown/White wire).

### INSTALLATION

The 3-Stage Delay Timer module should be securely mounted near the MSD CAN-Hub. Plug the 3-Stage Delay Timer CAN connector to an available port on the MSD CAN-Bus Hub, PN 7740. Do NOT cut the CAN-Bus connector wires.

The output wires will switch to ground any time the 3-Stage Delay Timer is programmed to activate by Time/RPM/ or both settings. The output circuit is a low current circuit designed to be used with a relay or activation switch. The output wires should **not** be connected directly to solenoids or lights (Figure 1).

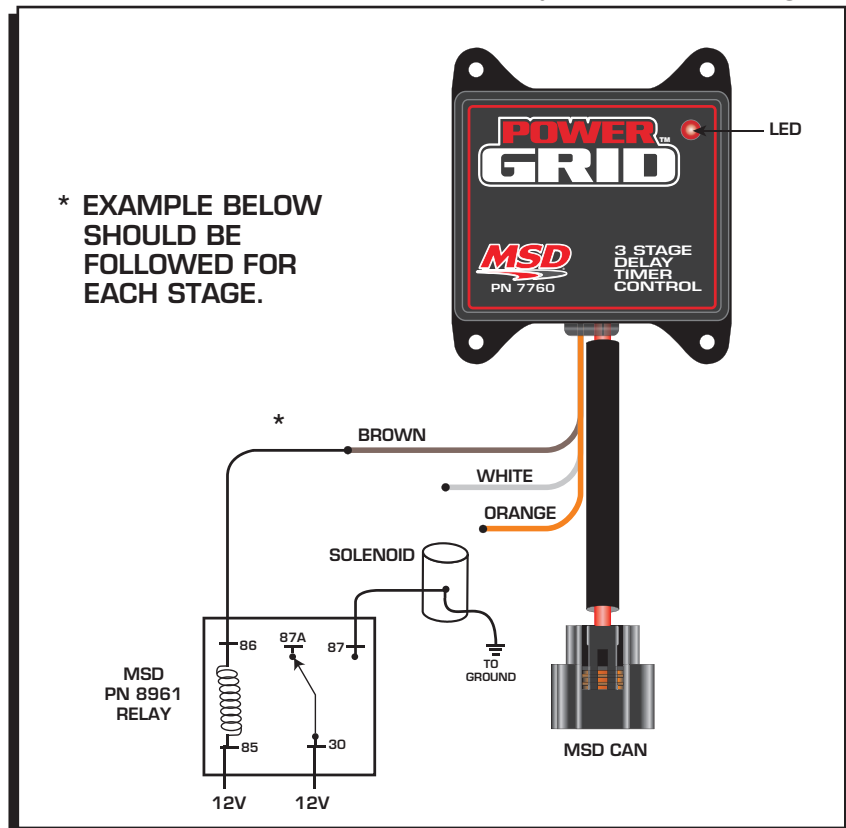


Figure 1

## WIRING

Leading Group	Wire Color	Function	Description
6-Pin CONN	RED 22ga.	MSD CAN HI	Receives 12V switched from Power Grid Controller. Also communicates between modules and Power Grid System Controller. This connector is only used with modules added onto the system.
	BROWN 22ga.	SHIELD	
	RED 18ga.	POWER	
	BLACK 22ga.	MSD CAN LO	
	BLACK 22ga.	MSD CAN GND	
Loose Wires	BROWN	STAGE 1	These wires switch to a low current ground when activated. Should be used in conjunction with a relay. Figure 1
	ORANGE	STAGE 2	
	WHITE	STAGE 3	

## OPERATION

To program the 3-Stage Delay Timer module start MSD View and connect to the 7760 with the ignition on.

- Turn on ignition power
- Connect 7730 to PC via USB
- Start MSD View
- In the Connect box select 7760
- Click "Connect"

MSD View will display three tabs 1, 2, 3. Each tab corresponds to each output wire.

## RED LED

The LED indicates that the module is communicating with MSD View. Without a connection to a PC or Laptop the LED will be "Off".

## OUTPUT SWITCH 1, 2, 3:

RPM Switch: There are two settings for this function Enabled/ Disabled. Default value is Disabled. To activate the RPM ON/OFF function change the value to Enabled.

RPM ON/RPM OFF: These settings can range from 0-15000RPM.

If the RPM ON setting is set below the RPM OFF setting, the RPM Switch functions as a window switch, and will activate the output wire when RPM increases above the RPM ON setting. The output wire will deactivate once the RPM increases above the OFF setting (Figure 2).

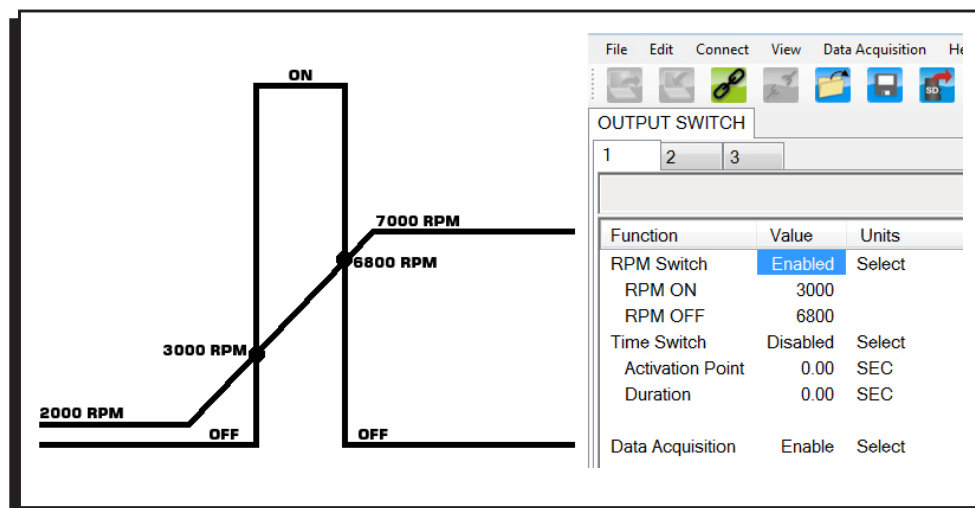


Figure 2

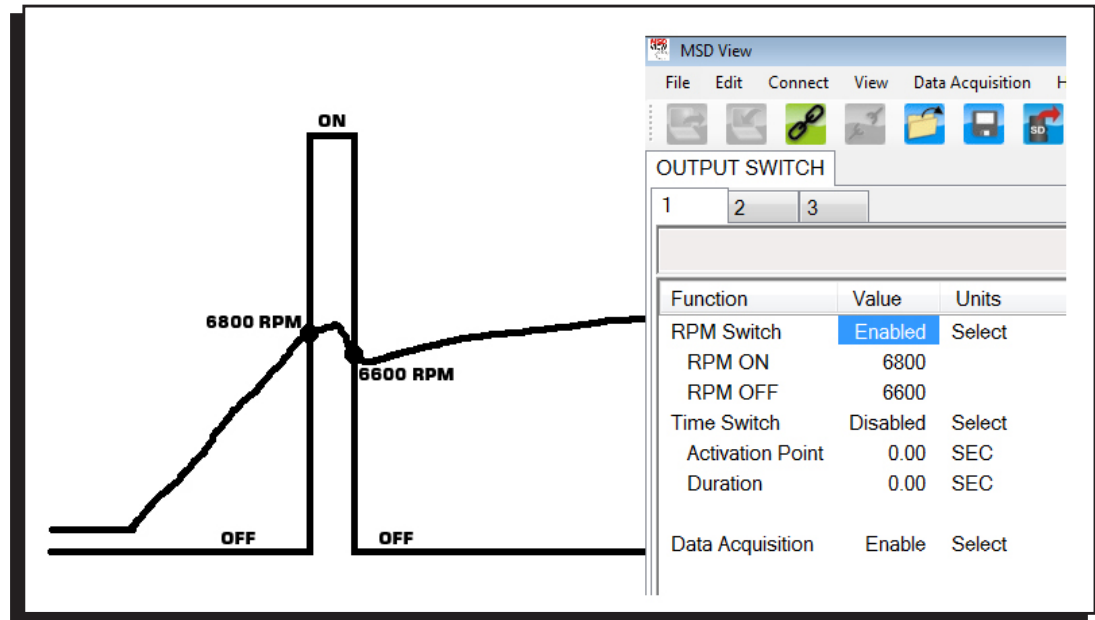


Figure 3

If the RPM ON settings is programmed with a value higher than the RPM OFF setting, the RPM switch functions as a hysteresis switch. The RPM switch will remain off until RPM increases above the ON setting. The RPM Switch will remain active until the RPM decreases below the RPM OFF setting (Figure 3).

**Time Switch:** There are two settings for this function Enabled/ Disabled. Default value is Disabled. To activate the Time function change the value to Enabled

**Activation Point:** The setting can range from 0.00-30.00sec. This setting determines when the output wire will activate after the launch wire is released from 12v. If this setting is set at 0.00 the output wire will activate as soon as the launch wire is activated with 12v.

**Duration:** This setting can range from 0.00-30.00sec. This setting determines how long the output wire will remain active after the Activation Point setting has been met. This setting will start counting down after the launch wire has been released (in the event the Activation Point is set at 0.00).

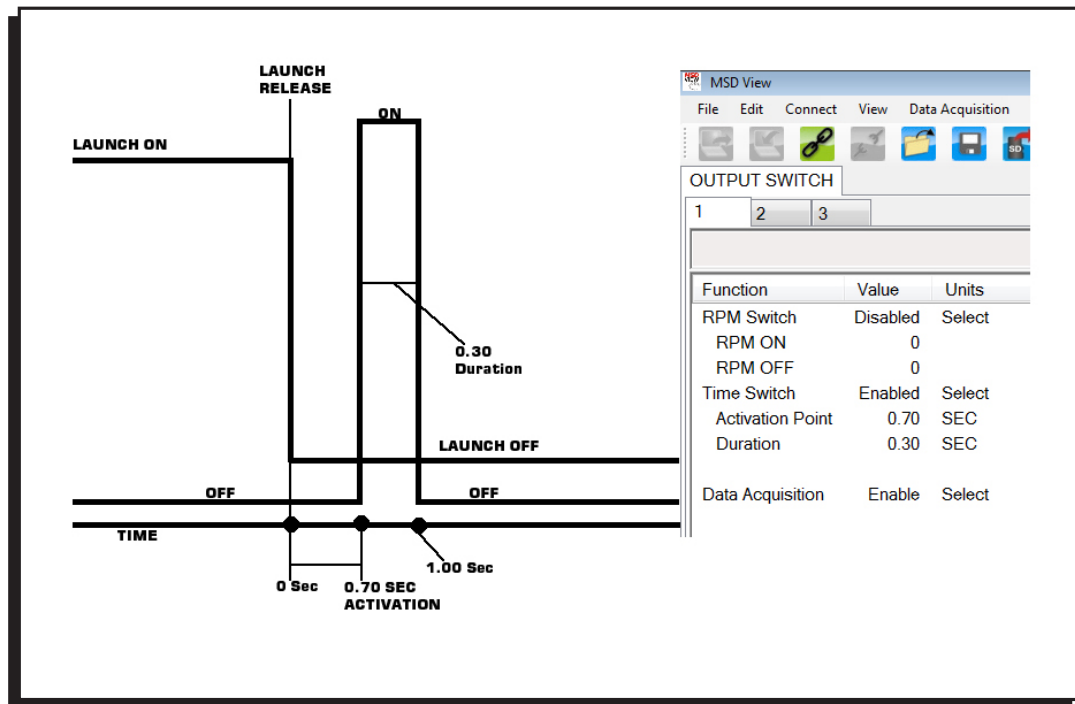


Figure 4

Example: If the Time Switch function is used with an electric shifter to shift the transmission into 2nd gear or High gear 0.70 seconds into the run with a duration of .030, figure 4 illustrates how the function works in relation to time figure 4. For most shifter applications 0.25-0.30 seconds is adequate time for the transmission to shift. Setting the duration with a lower time could cause inconsistent shifting issues. Setting the value higher could cause issues with wasted CO<sub>2</sub> (Air shifter) or a stuck plunger (electric shifter). In most cases the shifter gate will prevent the shifter from advancing further without the shifter plunger returning to the static position (Figure 4).

**Note:** Both the RPM and TIME Switch settings can be enabled at the same time. If both are enabled at the same time, both RPM ON and Activation Point settings must be met before the output wire will activate to ground. Be aware of the settings when both the timer and RPM settings are enabled as the duration timer will start at the activation point regardless if the RPM condition has been met or not. This can lead to erratic output wire results.

Data Acquisition: There are two settings for this function Enabled/ Disabled. Default value is Disabled. To activate the Data Acq. function change the value to Enabled. This enables the capture of the output wire activation in the MSD REVIEW only (Figure 5).

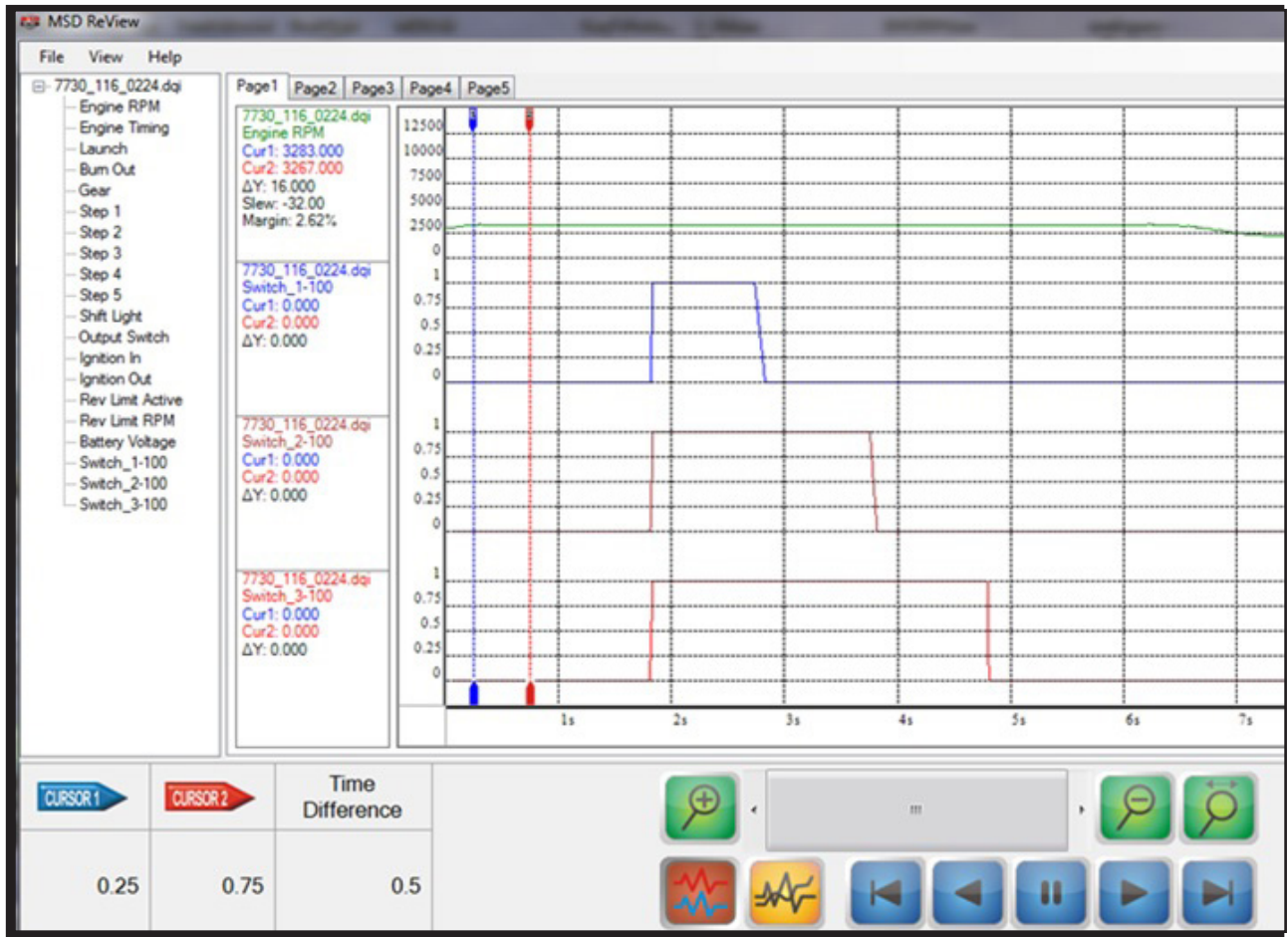


Figure 5







# INSTALLATION INSTRUCTIONS

## TECH NOTES

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**Service**

In case of malfunction, this MSD component will be repaired free of charge according to the terms of the warranty. When returning MSD components for warranty service, **Proof of Purchase** must be supplied for verification. After the warranty period has expired, repair service is based on a minimum and maximum fee.

**All returns must have a Return Material Authorization (RMA) number** issued to them before being returned. To obtain an RMA number please contact MSD Customer Service at 1 (888) MSD-7859 or visit our website at [www.msdpower.com/rma](http://www.msdpower.com/rma) to automatically obtain a number and shipping information.

When returning the unit for repair, leave all wires at the length in which you have them installed. Be sure to include a detailed account of any problems experienced, and what components and accessories are installed on the vehicle. The repaired unit will be returned as soon as possible using Ground shipping methods (ground shipping is covered by warranty). For more information, call MSD at (915) 855-7123. MSD technicians are available from 7:00 a.m. to 5:00 p.m. Monday - Friday (mountain time).

**Limited Warranty**

MSD warrants this product to be free from defects in material and workmanship under its intended normal use\*, when properly installed and purchased from an authorized MSD dealer, for a period of one year from the date of the original purchase. This warranty is void for any products purchased through auction websites. If found to be defective as mentioned above, it will be repaired or replaced at the option of MSD. Any item that is covered under this warranty will be returned free of charge using Ground shipping methods.

This shall constitute the sole remedy of the purchaser and the sole liability of MSD. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representation whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall MSD or its suppliers be liable for special or consequential damages.

\*Intended normal use means that this item is being used as was originally intended and for the original application as sold by MSD. Any modifications to this item or if it is used on an application other than what MSD markets the product, the warranty will be void. It is the sole responsibility of the customer to determine that this item will work for the application they are intending. MSD will accept no liability for custom applications.