Elite RPM Switch

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Elite RPM Switch
Instructions

Congratulations on purchasing the latest shift controller from Digital Delay.   The Elite RPM Switch has some new features so please read the instructions before using.

Contents:

Features and Specifications

Features:

- Microprocessor controlled timing
- Programmable on pulse lengths for shifts (.20 - .99)
- Ignition Switch input to disable the Shift Output when the engine is off
- Retains all numbers even with power disconnected from unit
- Large LCD (liquid crystal display)
- Works on 4, 6, and 8 cylinder engines
- 4 programmable shift points
- High current output, no external relay needed in most cases

Specifications:

- Input Voltage Range: 10 to 18 Volts DC (16 Volt compatible)
- Operating Temperature Range: 0 to 150 degrees F.
- RPM Switch Range: 3000 to 9900
- Shift Output (40Amp Capacity)

The Terminal Strip

SHIFT: Connect the Shift terminal to the shift solenoid.

IGN: Connect the Ignition terminal to the wire that turns your ignition on/off.

+12V: Connect the +12V terminal to 12 Volt source capable of supplying enough current for the shift solenoid.

GND: Connect the Ground terminal to the Neg. terminal on the battery or to a good steel ground, <u>not</u> aluminum.

TACH: Connect the Tach terminal to the Tach output on the ignition. The Tach terminal must be connected for proper operation of the unit.

Initial Setup

The Setup screens allow the Elite RPM Switch to be configured to best meet your needs. There are three Setup settings that need to be set before the Elite RPM Switch can be used. Once set, these values should not need to be adjusted unless a change is made to the vehicle setup. The Setup values can only be changed when the engine RPM is below 2,000 RPM or off. To enter Setup, press and hold the Select Shift button until the top LED starts flashing. The Shift Pulse is displayed first, to move to Shift Mode or Number of Cylinders, press the Select Shift button again. The flashing LED will move each time the Select Shift button is pressed. Use the Change Number buttons to adjust the values. To exit Setup once all the values have been set, press and hold the Select Shift button until the LED stop flashing. Additionally the Elite RPM Switch will automatically exit Setup after ten seconds if no button is pressed.

Note: The LEDs flash only when the Elite RPM Switch is in Setup.

Shift Pulse Time

The Shift Pulse Time is the amount of time the Shift output is activated for when the set shift RPM is reached. The Shift Pulse time can be set from .20 to .99 seconds.

To set the Shift Pulse Time, press and hold the Select Shift button until the top LED is flashing. Then use the Change Number buttons to set the desired Shift Pulse Time.

Shift Mode

The Shift Mode setting is used to select whether the Shift Output will supply +12 Volts or Remove +12 Volts when the shift point is reached. A setting of "01" means the Elite RPM Switch will supply +12 Volts. While a setting of setting of "00" will remove +12 Volts.

To set the Shift Mode, press and hold the Select Shift button until the top LED is flashing. Then use the Select Shift button until the second LED is flashing. Then use a Change Number button to set the desired Shift Mode.

Number of Cylinders

The Number of Cylinders setting is used by the Elite RPM Switch to calculate engine RPM. Therefore it must be set correctly for proper operation of the unit.

To set the Number of Cylinders, press and hold the Select Shift button until the top LED is flashing. Then use the Select Shift button until the third LED is flashing. Then use a Change Number button to set the desired Number of Cylinders.

Note: Cylinder settings of 4, 6, and 8 are available.

Shift Points

The Shift Points are used to select at what RPM each shift will occur. The Elite RPM Switch can have up to four separate Shift Points RPM values entered.   The Shift Point values can only be changed when the engine RPM is below 2,000 RPM or off. When changing a Shift Point, the Select Shift button is used to select which Shift Point will be changed and the Change Number buttons are used to change RPM value. When the top LED is on steady the first Shift Point is displayed on the screen. To move to the next Shift Point, press and release the Select Shift button. The RPM value entered is multiplied by 100. For example if 68 is entered on the screen the RPM value would be 6,800.

If less than four shifts are needed, unwanted shifts can be turned off by setting the shift point to "00". For example if only two shifts are needed, set the 3rd and 4th shift points to "00".

Note: The LEDs <u>do not flash</u> when in Shift Points.

1st Shift Point

To set the 1st Shift Point, quickly press the Select Shift button until the top LED is on steadily. Then use the two Change Number buttons to set the desired RPM for the shift.

2nd Shift Point

To set the 2nd Shift Point, quickly press the Select Shift button until the second LED is on steadily. Then use the two Change Number buttons to set the desired RPM for the shift. If this shift is unused enter "00".

3rd Shift Point

To set the 3rd Shift Point, quickly press the Select Shift button until the third LED is on steadily. Then use the two Change Number buttons to set the desired RPM for the shift. If this shift is unused enter "00".

4th Shift Point

To set the 4th Shift Point, quickly press the Select Shift button until the fourth LED is on steadily. Then use the two Change Number buttons to set the desired RPM for the shift. If this shift is unused enter "00".

Operation

The Ign. input is used to enable or disable the Shift output and is usually connected to the switch used to turn the Ignition on/off. The Elite RPM Switch will only work when the Shift output is enabled. The Shift output is enabled any time the Ign. input on the unit has +12Volts applied. If it is desired to have the Shift output enabled any time the Elite RPM Switch is turned on, simply connect the Ign. terminal to +12Volts instead of the Ign. on/off switch on the vehicle.

The Elite RPM Switch automatically resets back to the first Shift Point any time the engine RPM goes below 2,000 RPM. The shifts then occur sequentially starting with the first Shift Point. When the engine reaches the RPM for a Shift Point the Shift output will activate for the amount of time entered for the Shift Pulse Time. Then when the Shift Pulse Time completes, the Shift output will deactivate. The Elite RPM Switch will then wait for .5 seconds before looking for the next shift. This process is repeated until all shifts have been completed.

Shift Output Test

To test the shift output, with the engine off, hold down either of the change number buttons. Keep in mind the Ign. input needs to be enabled. After about two seconds the Shift output will activate and stay activated until the change number button is released. This is a good way to test the Shift output, the wiring to the solenoid, and the shift solenoid operation.

Wiring

Connect to Shift Solenoid

Connect to Ign. on/off switch

Connect to a +12Volts source capable of supplying the current needed for the shift solenoid.

Connect to chassis ground

Connect to Tach output of Ign.

⊕ Shift
⊕ IGN
⊕ +12 Volts
⊕ GND
⊕ Tach