SHIFT LIGHT CONTROLLER
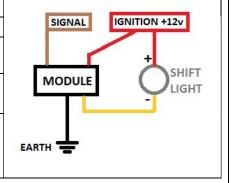## RPM ADJUSTABLE SWITCH

MRMODULE.COM.AU

This module is connected to a tachometer / engine RPM signal, and provides a switched output that can be programmed to switch on at 100 to 10,000 RPM

The module can accept DC square wave (hall effect), as well as inductive (AC sine wave) input RPM signals, including direct connection to the ignition primary circuit (coil negative). The output is a negative side switch rated at 1 amp.

CONNECTION

The module requires power + earth, as well as one of the 2 input signals. The other unused input signal wire should be insulated and taped away so it doesn't short out on anything.

RED	Ignition +12v		
BLACK	Earth		
BROWN	DC Square Wave Input	Signals from ECU, ignition module, coil	
BROWN + WHITE	AC Inductive Input	Inductive sensors, commonly used on older diesel engines	
YELLOW	Output	Negative switching **1 amp maximum current!**	

PROGRAMMING

Remove the 2x Phillips screws and open the case. Programming of the module is via the 3x rotary switches inside.

PPR SWITCH

The input signal frequency is selected via the PPR (Pulse Per Rev) switch. This refers to how many pulses of the signal exist for a single engine revolution. This is commonly 0.5 or 2, but will depend on application (and where you are connecting the input signal).
When '0' is selected, the actual value is 0.5 PPR. For all other whole numbers, the number on the switch applies.

X1000 + X100 RPM SWITCHES

Set the desired RPM for the output to become active in 100 RPM increments using these 2 switches. When both are set to 0 it is set at 10,000 RPM. Otherwise, it is the values on the switches (the possible range is 100 to 10,000 RPM).   example: X1000 switch on 5, X100 switch on 7 = 5700 RPM

INPUT + SHIFT LEDs

There are 2 LEDs on the PCB which can assist with setup and troubleshooting.
-   The yellow 'INPUT' LED will light up when the module is receiving a valid RPM signal.
-   The red 'SHIFT' LED will light up when the programmed RPM has been reached and the output is active.

IMPORTANT NOTES

The output will switch to ground as soon as the module detects the input signal has reached the programmed RPM. The output has hysteresis to provide a smooth output, and prevent rapid switching on/off around the set point. It will remain turned on until the RPM signal drops below the programmed value minus 2%.
EG. It will switch on at 6000 RPM, then remain on until the engine drops below at 5880 RPM. This filter can be disabled by soldering a bridge over the 2 pads labelled "HYST" (at the opposite end from the switches).

The input signal is filtered / averaged over 3 cycles to help prevent noise interfering with the output. This is useful in most applications, however may create a slight delay when using very low frequency input signals. This filter can be disabled by soldering a bridge over the 2 pads labelled "DISABLE FILTER".

When using an input signal with 0.5 or 1 PPR, a "multi-fire filter" is automatically applied to the input. This will ignore input pulses faster than approx. 2.5mS / 400 Hz. This is useful for getting an RPM signal from engines that fire the coils multiple times per cycle at idle (such as Ford Barra engines).