

RWS (RPM Window Switch)

The RWS module is an electric switch (no mechanical contacts to wear out) that will activate its output above a pre-selected RPM and will deactivate above a higher pre-selected RPM, also called a window switch because its output is active during a window of RPMs. Perfect for applications like enabling/disabling your NOS (Nitrous Oxide System) injection, shift lights, Rev-limiter or turning on/off just about anything. The RWS works on the standard coil signal that most tachometers would use, without effecting your tachometer readout, as well as 0-5V engine speed signals that some newer vehicles use. The module's output can ground 2.0A directly or the output can be used to activate a relay to operate any required loads. No expensive RPM plug in "pills" to buy, the RWS comes preprogrammed with the RPM turn-on and turn-off setting that you request. Once programmed, the RWS is not adjustable or reprogrammable. If adjustability is needed please consider the ARWS (Adjustable-RWS) that comes with eight settings to chose from. When ordering we will need to know what type of engine this will be used with (4, 6, 8, 12, LS1, Vortec, ect.) and what RPM selections you need. Please see page 3 for examples.



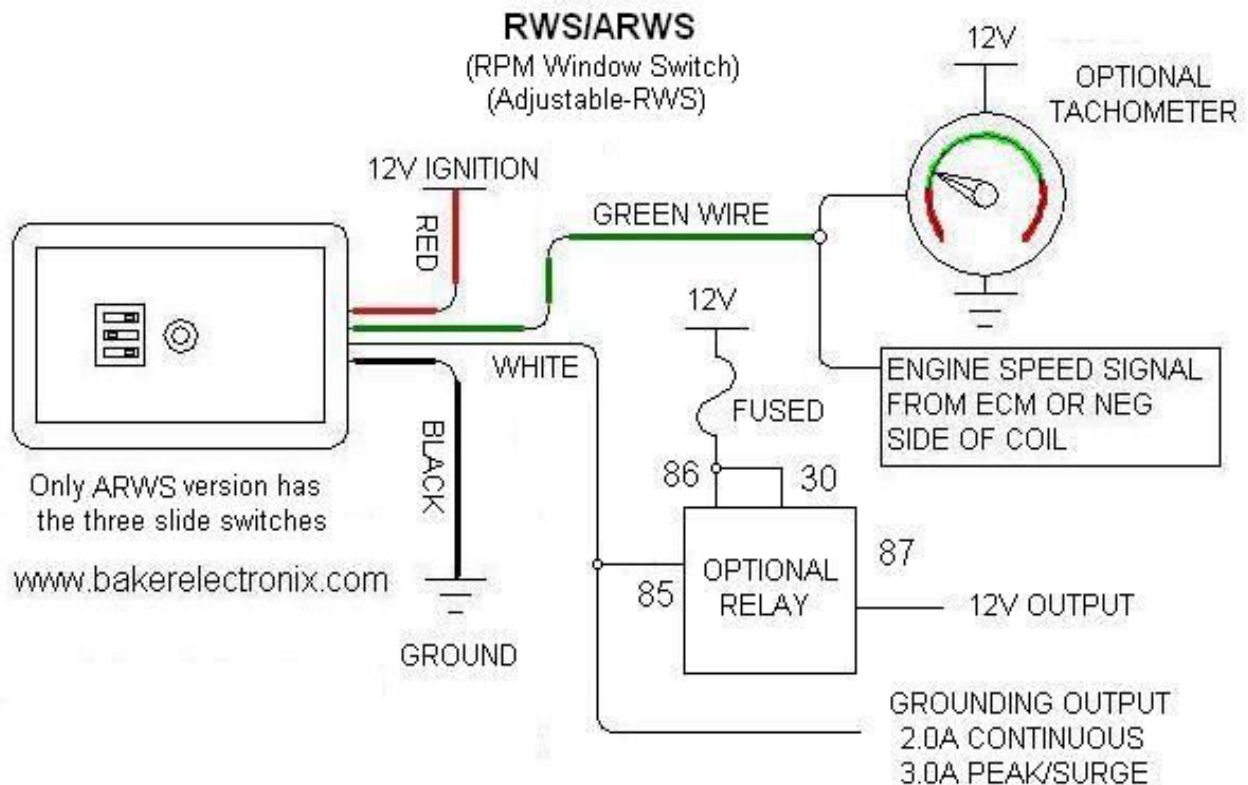
Features:

- Reverse voltage protection in the event of incorrect power connections
- Short circuit protection on all inputs and outputs to 12V or ground
- Output can sink 2.0A continuous to ground, up to a 3A surge
- Waterproof
- Low current (5 - 15mA)
- Indicator LED to confirm operation and indicate mode
- Works from 8V to 25V supply voltage
- Light weight (1.1oz)
- Small package (2.12in. by 1.38in. by 0.58in.)
- 12 month warranty from date of purchase against manufacturer defects

RWS module wires:

- **Red:** 12V from ignition
- **White:** Output - connect to negative side of device to turn on
- **Green:** Engine speed signal input - connect to negative side of coil or signal from PCM/ECM
- **Black:** Ground

We recommend connecting the wires by using insulated crimps or soldering and using appropriate insulation, electrical tape or heat-shrink tubing. The 12V supply should be taken from a fused source. The RWS module should be installed in a location that does not exceed 65°C or 150°F.



Normal operation: When the ignition key is turned on the RWS's LED indicator will flash one long pulse indicating it has been reset, then the LED will briefly flash once every 2 seconds to indicate it has power and is waiting for engine speed pulses. Once the engine has started the LED will flash once per every two pulses detected. Please note it is hard to detect any flashing above 1,200 RPM, the LED will just appear dim above this point. If the engine speed signal stops the RWS module will reset and wait for the signal to start again. Once the RPM has reached selected set point the output will turn on or off (depending on which set point) and won't change back until the RPM is 10% lower than that set point (this is called hysteresis) or until the other set point RPM is reached. The hysteresis is done to eliminate output on/off pulsing, or chattering, when the RPM is at the set point, we can change the hysteresis value upon request.

Possible output examples:

1. Standard Window operation: On above a minimum RPM set point and off above a maximum upper RPM limit. Typically used for NOS applications.
2. RPM Switch operation: On above a selected RPM set point (shift point) and no higher RPM turn-off. Typically used for shift light and rev-Limit applications.
3. Rev Limit operation: On from cranking speed up to a maximum allowed RPM.

The RPM settings can be chosen anywhere from 250 to 10,000.

This Table is provided for selecting your settings.

Hysteresis value for lower RPM	Turn on RPM (Lower RPM)		Hysteresis value for upper RPM	Turn off RPM (Upper RPM)
*			*	

Unless other wise selected, the Hysteresis values will be 10% lower then the set points. If desired, latching is also available, if you want the output to stay on or off, after a selected RPM has been reached, until the ignition has been turn off. To indicate a setting as latching, just write Latch in the Hysteresis column.

In rev-Limit applications you may want the Hysteresis to be higher then 10%, you can select what RPM you want the engine speed to drop back down to before reactivating the RWS.

Troubleshooting:

Check the LED on RWS module:

- **If LED is off and never flashes:** check both power and ground to RWS module
- **If LED flashes about once every 2 seconds:** Engine speed signal is missing, check connection to PCM or negative side of coil
- **If LED flashes 1 to 12 times, pauses, then starts flashing again:** this indicates the RWS module has detected an error and will continue to flash this error code until the ignition key is cycled. Count the number of pulses between pauses to find the error number 1-12. Please Email us at bakerelectronix@verizon.net with this information.

For warranty service, questions, or comments regarding this or any of our products, please contact Baker Electronix at bakerelectronix@verizon.net

Please do not call us with technical questions as we are better equipped to answer your questions by email and this also allows us to send you copies of documentation when applicable.