

Features

- Dual high current 2.5Amps¹ switches
- Single channel input controls both switches
- Configurable as a single 5A switch
- Ultra-light: 4g
- Low current consumption: 5mA
- Wide input voltage: 2.7V to 6.0V

Applications

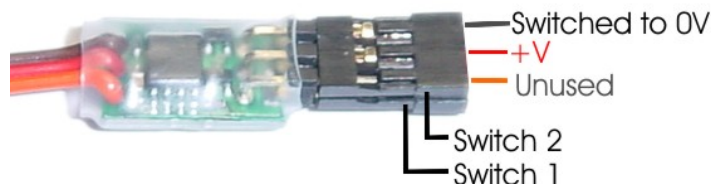
- Strobe and/or Lighting System (eg. Landing Lights)
- Smoke System
- External Relays for Higher Power Switch

1 Description

RCSwitch is a miniature dual-switch capable of handling 2.5A per switch. The control of these switches are unique in that they only need a single channel to operate both switches. The state of each switch depends on the position of the stick (or the programmed lever position on the transmitter). When the switch is closed, the supply voltage appears across the positive and negative output pins. This is suitable for driving strobes, high-bright LEDs, lights and 5V relay coils directly (a fly-back diode is required for inductive loads such as coils or motors).

2 Connections

Insert the RCSwitch's RC lead into the receiver channel intended for use. There are 2 options when connecting a load to the switches. The schematics are shown alongside. Use option 1 when the load to be powered must be supplied from the input voltage (usually 4.8V). Use option 2 to power a load from an external supply (max 16V), for example, a 12V relay coil supplied from a car battery. In this case pin 1 must be connected to the external supply's ground (0V).

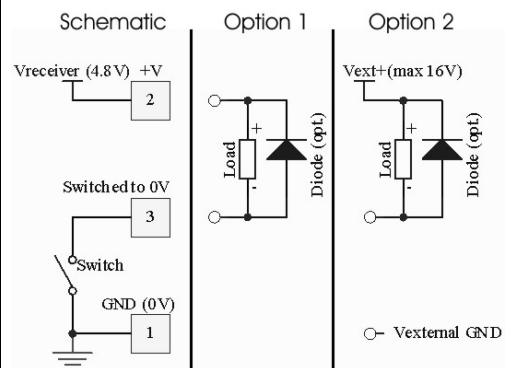


¹ Dependent on availability of current from supply.



www.firmtrronics.com
info@firmtrronics.com

RCSwitch User Guide



Switch Schematic

3 Operation

The switches are configured to turn on or off depending on the transmitter stick position. When the transmitter (Tx) stick moves from one extreme to the other (0% to 100%), the RC signal generally changes from 1.2ms to 1.8ms, although this can vary from manufacturer to manufacturer. The switches will turn on or off depending on the transmitter (Tx) stick position (and corresponding received signal) according to the table below:

Tx Stick Position	Received Signal	Switch 1	Switch 2
0% - 25%	< 1.3ms	OFF	OFF
25% - 50%	1.3ms – 1.5ms	ON	OFF
50% - 75%	1.5ms – 1.7ms	OFF	ON
75% - 100%	> 1.7ms	ON	ON

When the switch closes, the negative terminal will be switched to 0V. The positive (+V) terminal will always be at the supply voltage (normally 4.8V). Please refer to the diagram labelled “Switch Schematic” on page 1.

To configure the RC Switch to handle up to 5A, connect both +V pins together and both switched 0V pins together to give a single +V and a single switched 0V. Operate the Tx stick either below 25% so that both switches are off, or greater than 75% so that both switches are on, never between 25% and 75% since only one switch will be on which may not be enough to handle the required current.

4 Driving Inductive Loads

When driving relay coils or a motor, a flyback diode is required. General purpose diode, part number 1N4001, is recommended. It is available from most electronic component supply outlets. The diode’s cathode, identified by a ring on the casing, must be connected to the positive (+V) terminal with the anode to the negative terminal, as shown. Failing to add this diode will destroy the RC Switch when driving inductive loads.



5 Technical Information

Absolute Maximum Ratings

Operation cannot be guaranteed outside the absolute maximum ratings.

Minimum Input Voltage.....	2.7V
Maximum Input Voltage.....	6.0V
Max Switch Current (continuous at Vin = 5.0V).....	2.5A
Max Switch Current (1s Pulse).....	3.5A
Operating Temperature Range.....	-25°C to +85°C
Storage Temperature Range	-65°C to +150°C

WARRANTY

FirmTronics guarantees this product to be free from defects in materials and workmanship for a period of 90 days from the original date of purchase, verified by a sales receipt. This warranty does not cover incorrect application, incorrect installation, components worn by use, reversed voltage, improper voltage, tampering, misuse or shipping. Our warranty liability shall be limited to repairing the unit to our original specifications and in no case shall liability exceed the original cost of the product. By the act of installing or operating this product, the user accepts all resulting liability. We reserve the right to modify the provisions of this warranty at any time without notice.