Blue Point Engineering

Instruction I

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Pointing the Way to Solutions!

Single Servo Controller

Controller

Ver 1.5

Introduction

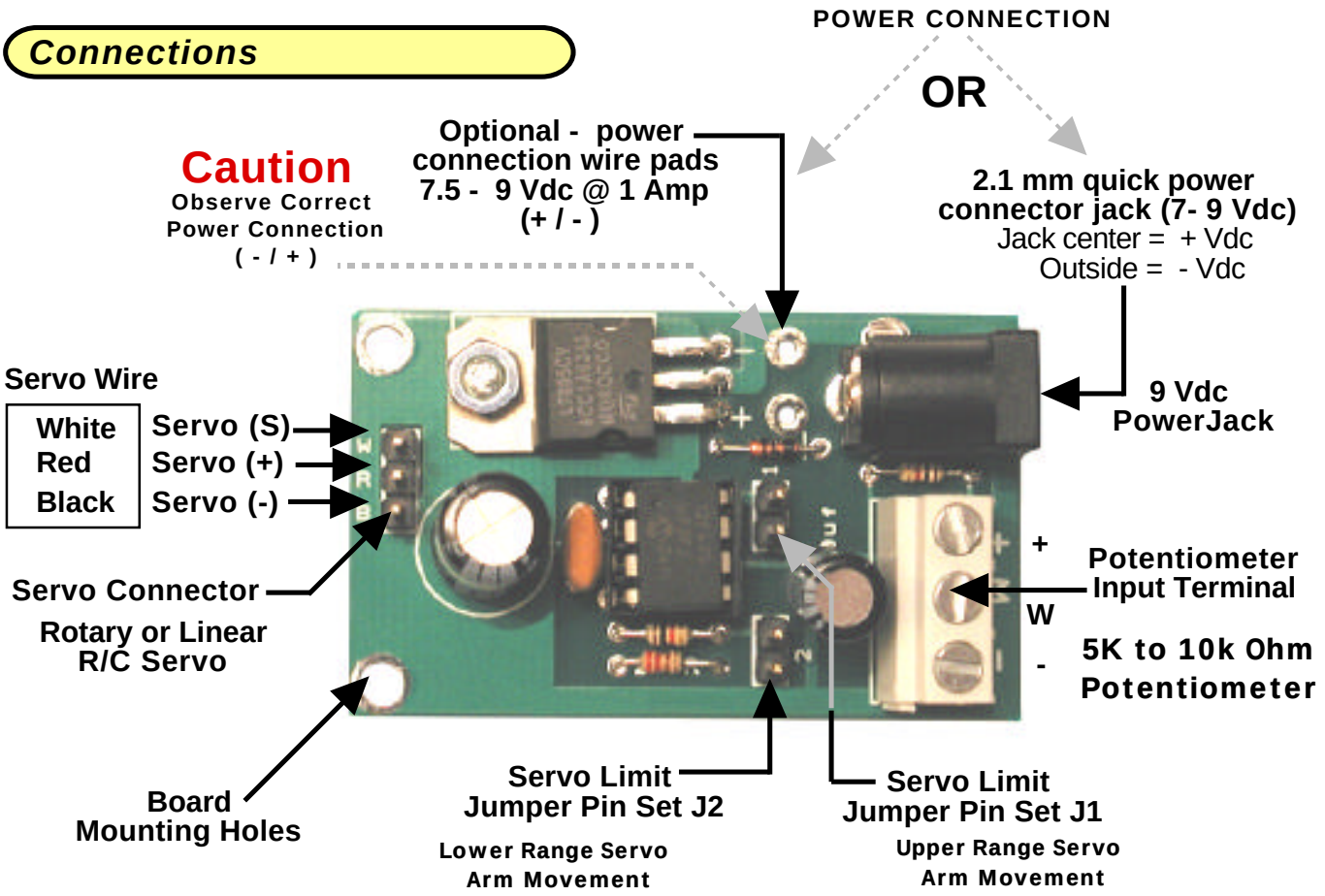
Single Servo Manual Controller with Programmable Servo Travel Limits.

Manual operated servo driver board will move a R/C servo in response to hand held remote slide, rotary position or joystick potentiometer input.

Specifications:

- 1 - channel manual servo control.
- Servo output 1msec to 2msec pulses.
- Servo Travel A - B limits can be easily set.
- Servo quick pin header connection.
- Wire terminal block for remote potentiometer control.
- Servo Travel 0 - 90 Degrees.
- Quick power connection.
- Operates from 7 - 9 Vdc @ 1 Amp power supply.

Connections



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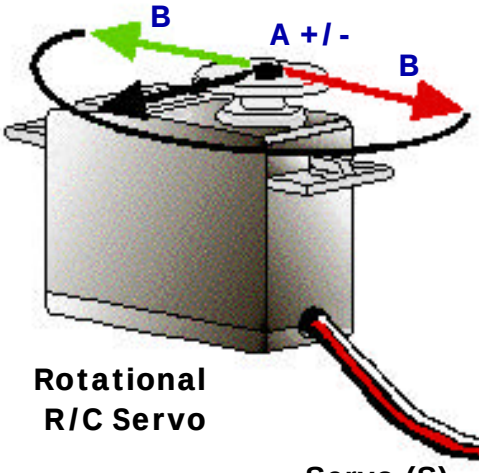
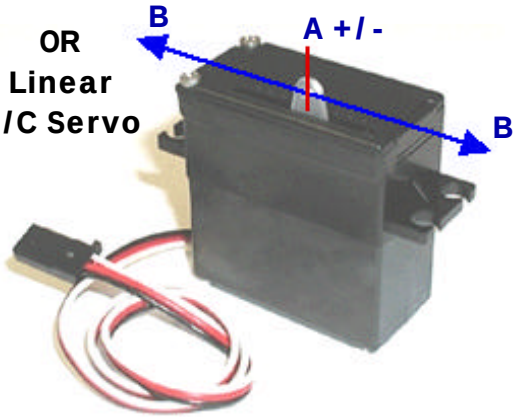
Single Servo Controller

Set - Up



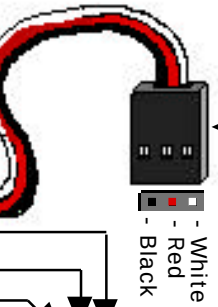
Rotational R/C Servo

OR Linear R/C Servo



Caution

Check Correct Servo Connection



R/C Servo Connection

Servo (S)
Servo (+)
Servo (-)

See guide on using the Jumper Blocks for setting the Upper and Lower Servo Travel Movements

JP2 Configuration

Jumper Block **Momentary Short**

JP1 Configuration

Jumper Block **Momentary Short**

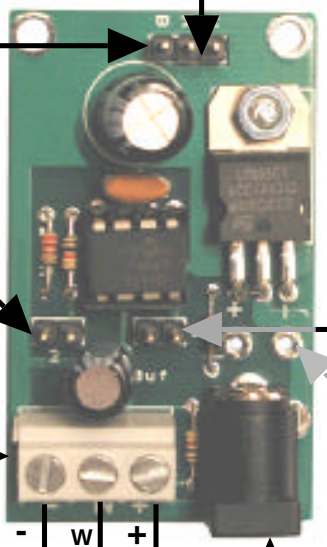
5K to 10k Ohm POTENTIOMETER

Upper Servo Travel Range

Jumper Block **OFF when operating Controller**

Lower Servo Travel Range

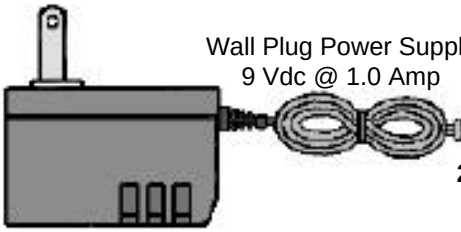
Jumper Block **OFF when operating controller**



Potentiometer Connection Terminal

\- W +

Or power wire pad connection (wire + / -)



Wall Plug Power Supply
9 Vdc @ 1.0 Amp

- Vdc outside

2.1 mm

+ Vdc center

Power Connection

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Single Servo Controller

Controller

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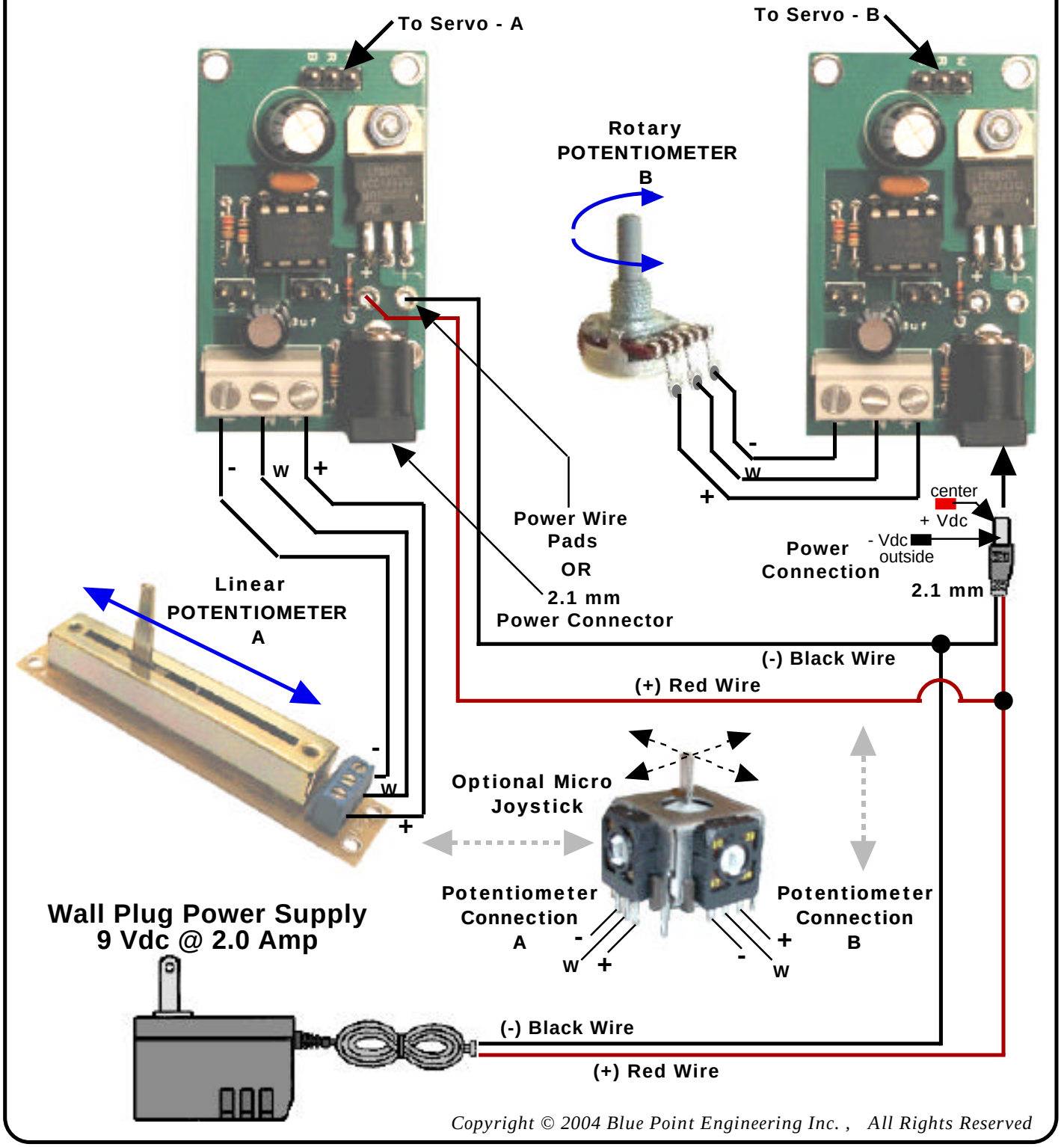
Set - Up / Duo Control - Power



Single Servo Controller

Operation

Connect a potentiometer, servo and power supply to the controller board.

Adjusting the potentiometer will control the position of the attached servo.
The full range of the potentiometer and board electronics will generate pulse width equivalent to a 180-degree servo movement. (1ms - 2ms) Some servos will not accommodate this movement range. so take care not to drive the servo into its limit stops at the extreme setting range.

Setting the Servo Movement Range
To set the upper and lower range movements that a servo will move in as the potentiometer is adjusted do the following:

Upper Limit Range:
Adjust the potentiometer and move the servo output to the upper range point that you want the servo to stop at.
Temporarily short the JP1 pin pain set by placing the jumper onto the pin pair for a few seconds, then remove the jumper.
This will record in memory the upper movement range limit. This setting will be retained even after the power is turned off, and will stay in memory until manually reset to a new range.

Lower Limit Range:
Adjust the potentiometer and move the servo output to the lower range point that you want the servo to stop at.
Temporarily short the JP2 pin pain set by placing the jumper onto the pin pair for a few seconds, then remove the jumper.
This will record in memory the upper movement range limit. This setting will be retained even after the power is turned off, and will stay in memory until manually reset to a new range.

Note: If the servo does not move as the potentiometer is adjusted, it may be that the upper and lower limit ranges are overlapping. Try re setting the limits again or **RESET** the limit settings and start again with the servo limits

To Reset the Servo Lower and Upper Limit Ranges:
Temporarily short JP1 pin pain set or JP2 pin pair set by placing a jumper onto the pin pair for a few seconds, then remove the jumper. This will reset the servo movement limit values recorded in memory to a 0 value allowing the servo to move the full range.

Troubleshooting:

Q. I am having trouble getting the servo to move when I adjust the potentiometer.
A1. Reset the Servo Lower and Upper Limit Ranges:
Temporarily short JP1 pin pain set or JP2 pin pair set by placing a jumper onto the pin pair for a few seconds, then remove the jumper.
A2. Check to see that the Potentiometer has been wired correctly to the control board terminal block. Wires +, - and W
A3. Check to see that the Potentiometer is in the range of a 5-10K ohm rating.

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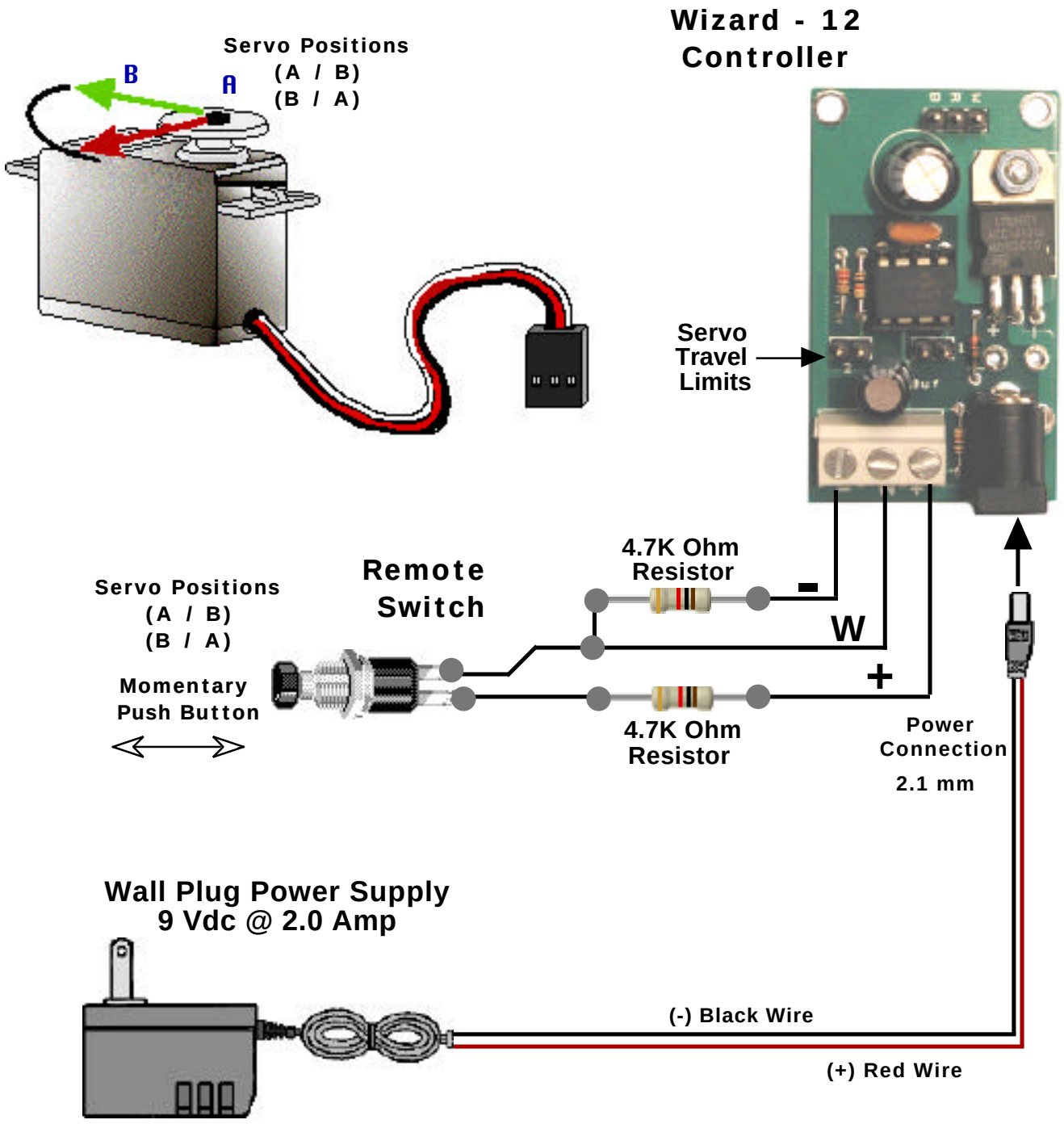
Pointing the Way to Solutions!

Wizard - 12 Single Servo Controller

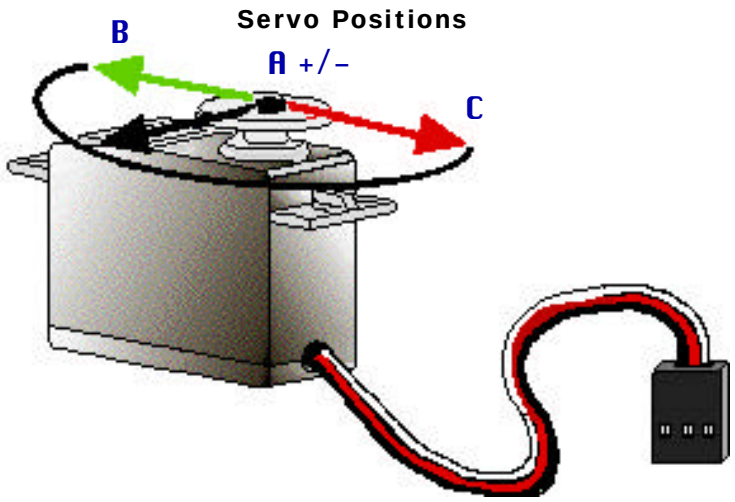
Controller Ver 1.5

Set - Up / Single Switch Control

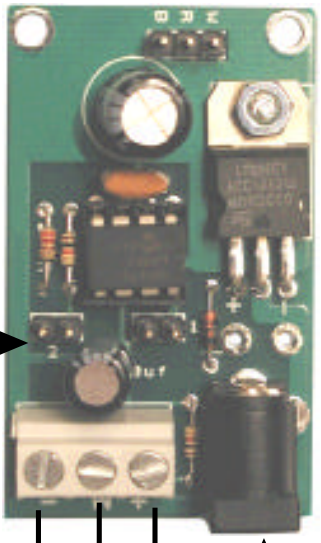


Set - Up / Toggle Switch Control

With the remote momentary toggle switch in the center OFF position the voltage to the Wizard -12 wiper input will be 2.5Vdc and will send the servo to its **center position**. The combined resistance of the 470 and 4.7K resistors will produce a wiper input voltage of 0.5 Vdc or 4.5 Vdc and will send the servo almost to the **ends of its travel +/- 45 degrees**. The Wizard - 12 has programmable limits which could be set using a potentiometer before connecting the resistors, if less servo travel movement is needed.

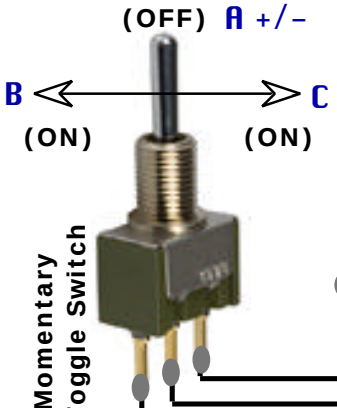


Wizard - 12 Controller



Servo Travel Limits

Remote Switch



470 Ohm Resistor

4.7 K Ohm Resistor

-

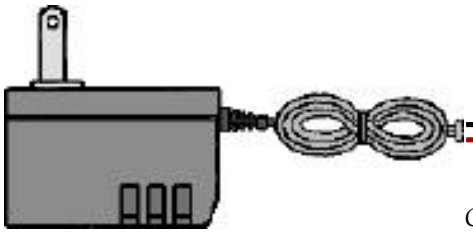
W

4.7 KOhm Resistor

470 Ohm Resistor

+

Wall Plug Power Supply 9 Vdc @ 2.0 Amp



(-) Black Wire

(+) Red Wire

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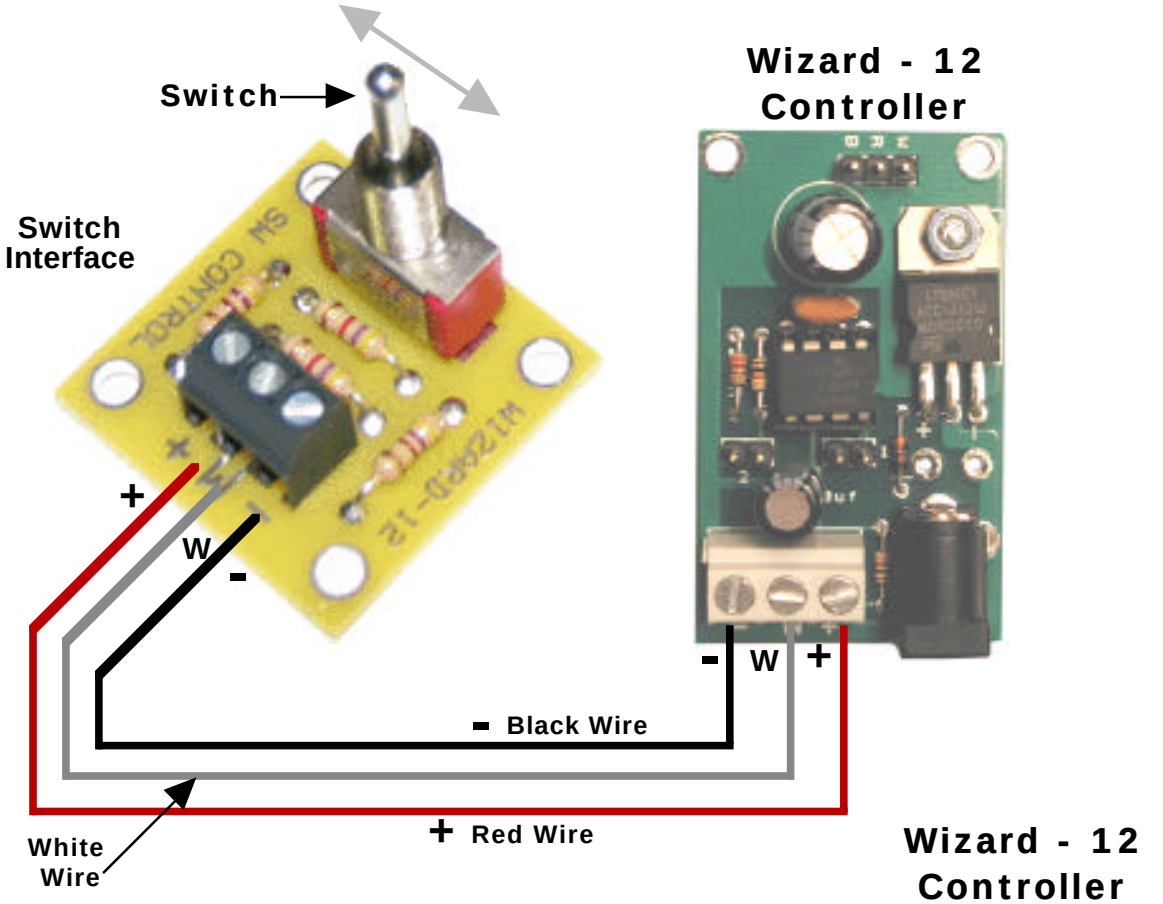
Pointing the Way to Solutions!

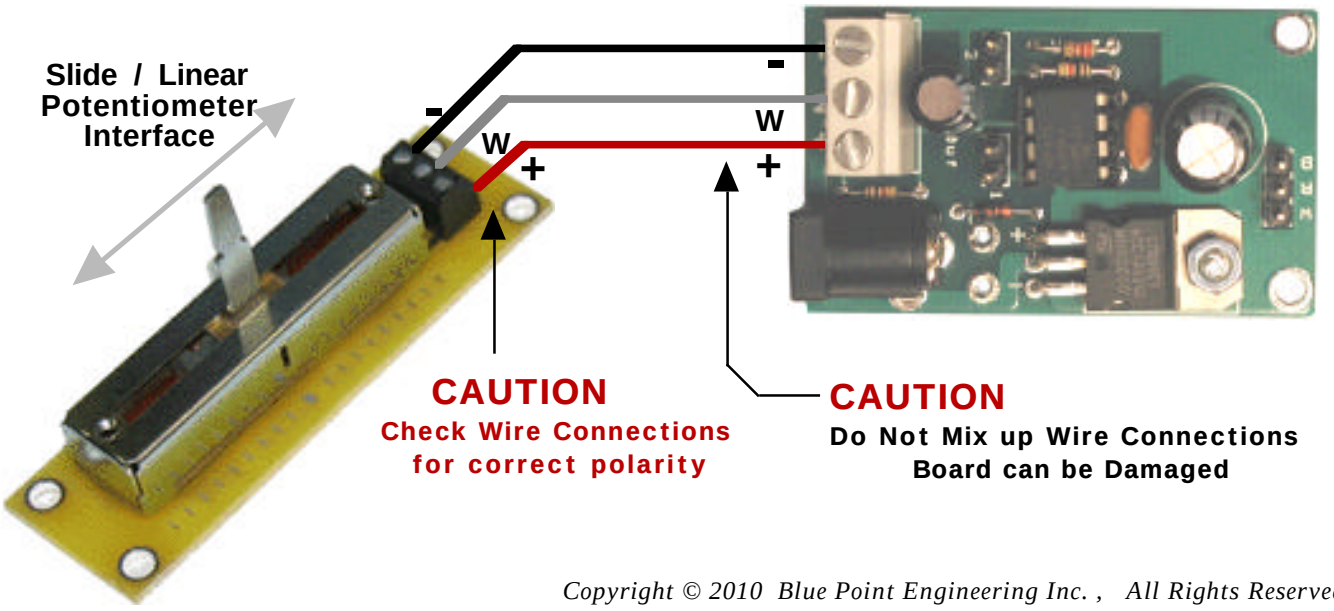
Wizard - 12 Optional Input Devices

Controller Ver 1.0

Set - Up / Input Devices

Optional Devices





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Wizard - 12 Optional Input Devices

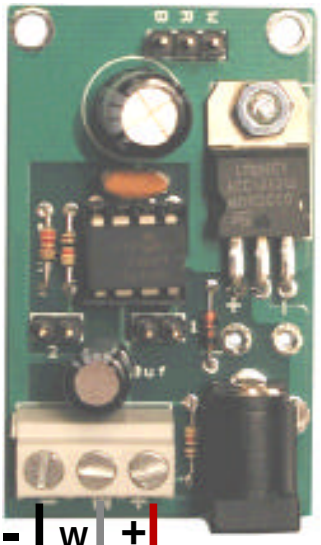
Controller Ver 1.0

Set - Up / Input Devices

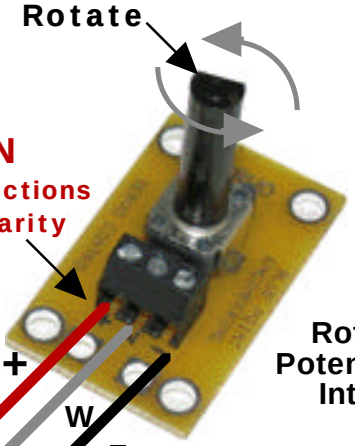
Optional Devices

10k Ohm POTENTIOMETER

Wizard - 12 Controller



Rotate



CAUTION
Check Wire Connections for correct polarity

Rotational Potentiometer Interface

+
W
-

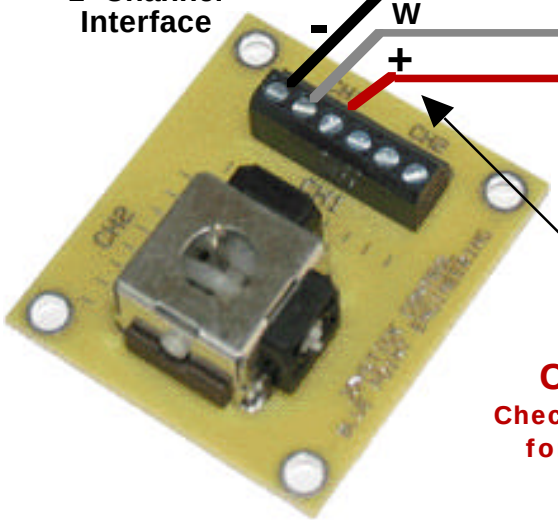
- W +

Black Wire

+ Red Wire

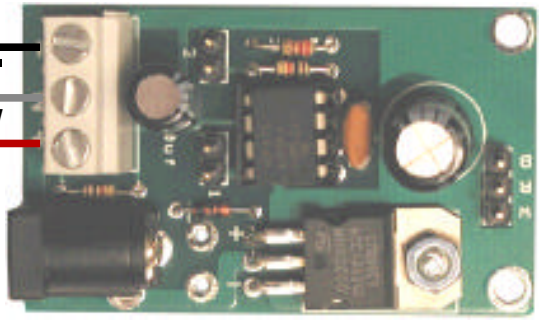
White Wire

Micro Joystick 1- Channel Interface



-
W
+

- W +



Wizard - 12 Controller

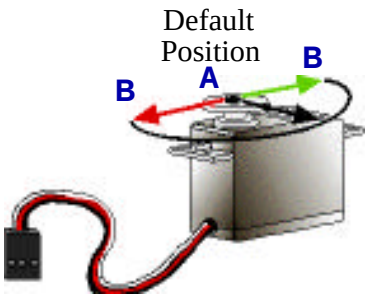
CAUTION
Check Wire Connections for correct polarity
(+ / W / -)

Wizard - 12 Optional Input Devices

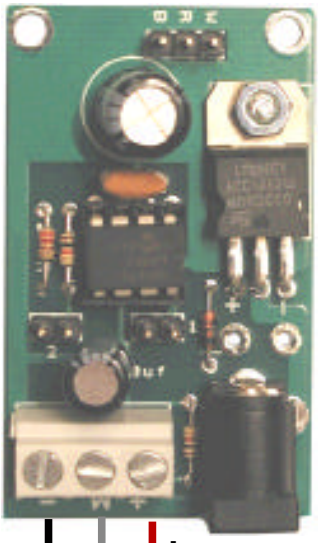
Controller Ver 1.0

Set - Up / Input Devices

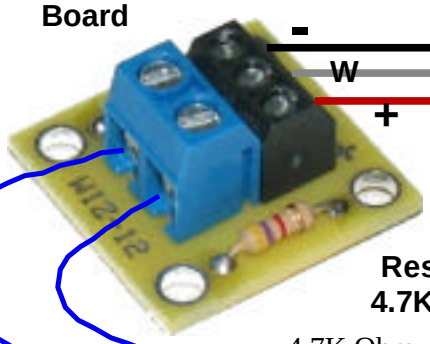
Optional Devices

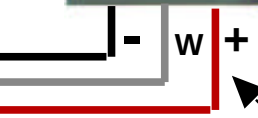


Wizard - 12 Controller



Switch Interface Board





CAUTION

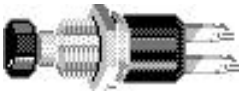
Check Wire Connections for correct polarity (+ / W / -)

Resistor 4.7K Ohm

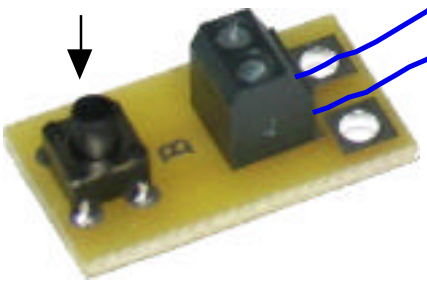
4.7K Ohm - Yellow,Violet, Red, Gold

Connection Wires

Remote Switches



Switch



Palm Switch

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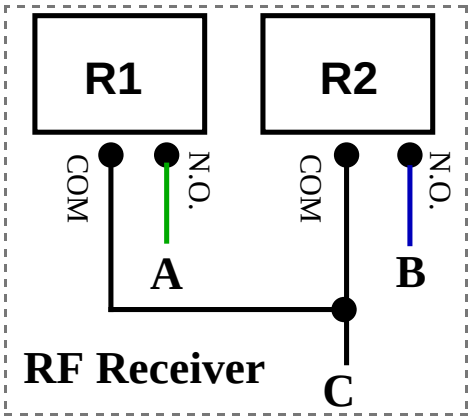
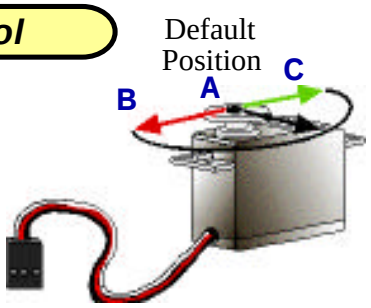
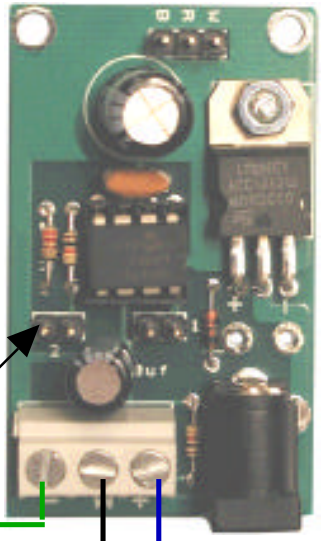
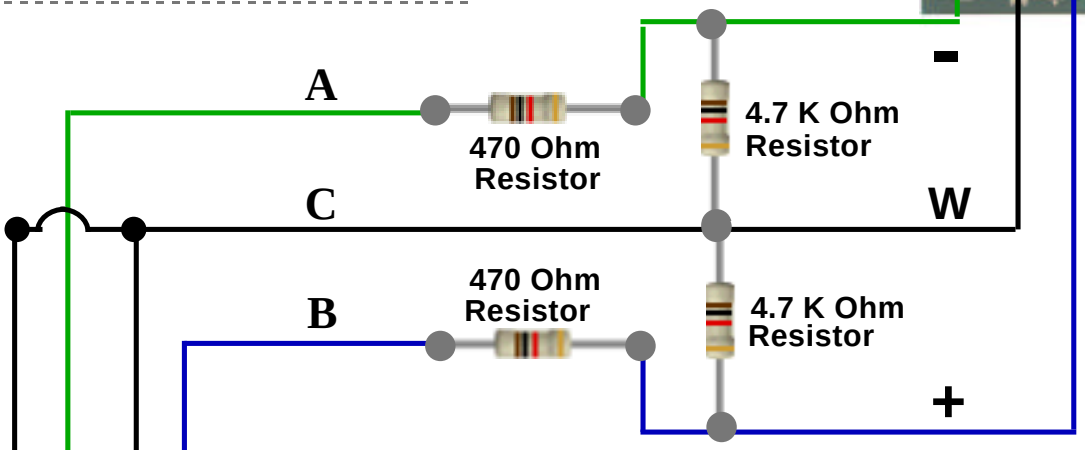
Wizard - 12 Optional Input Devices

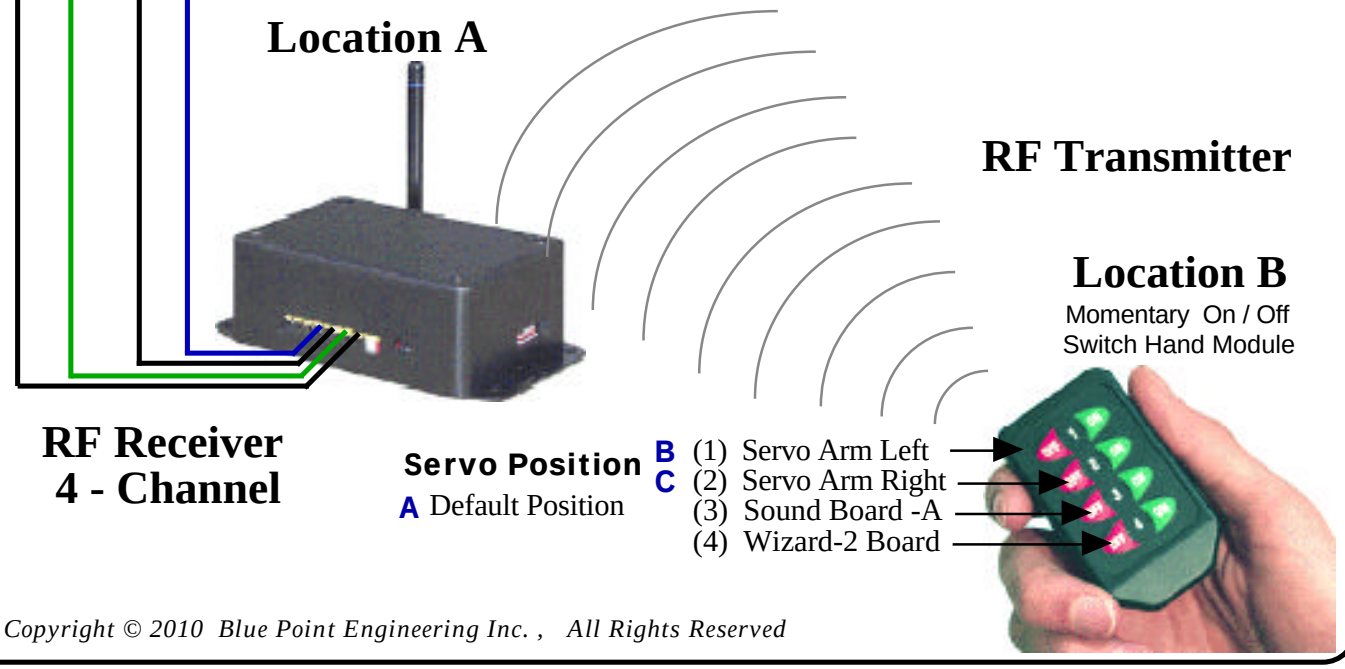
Set - Up / RF Switch Control











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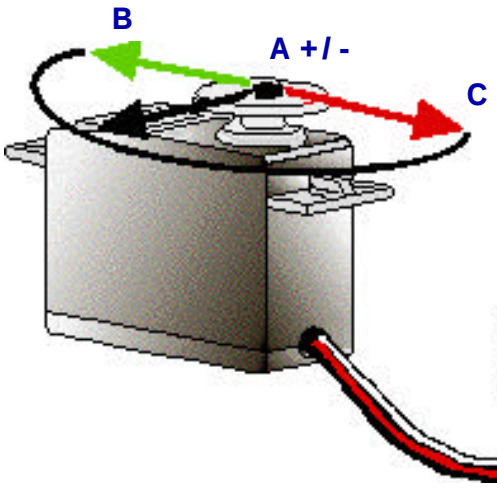
Wizard - 12 Optional Input Devices

Controller Ver 1.0

Set - Up / Input Devices

Optional Devices

Servo Positions



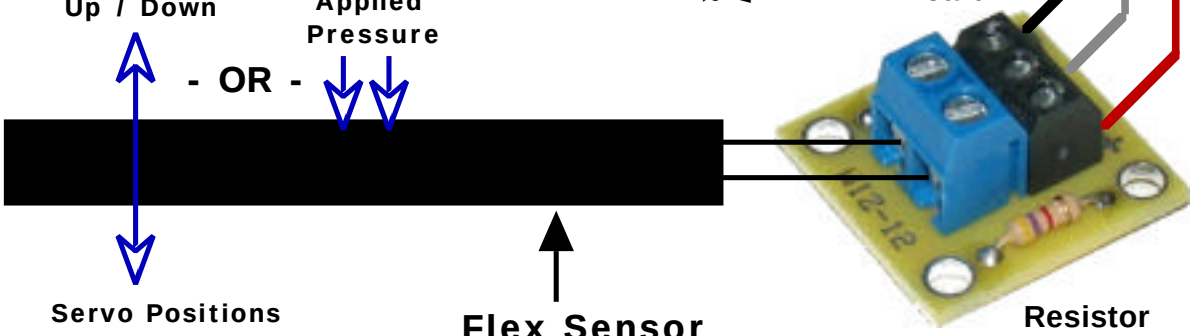
White = W
Red = R
Black = B

Sensor Interface Board

Flex Sensor Up / Down

Applied Pressure

- OR -



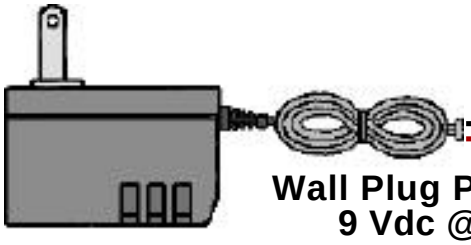
Servo Positions (B / A / C)

Flex Sensor

Resistor 4.7K Ohm

Power Connection

4.7K Ohm - Yellow,Violet, Red, Gold



(-) Black Wire

(+) Red Wire

Wall Plug Power Supply
9 Vdc @ 1.0 Amp

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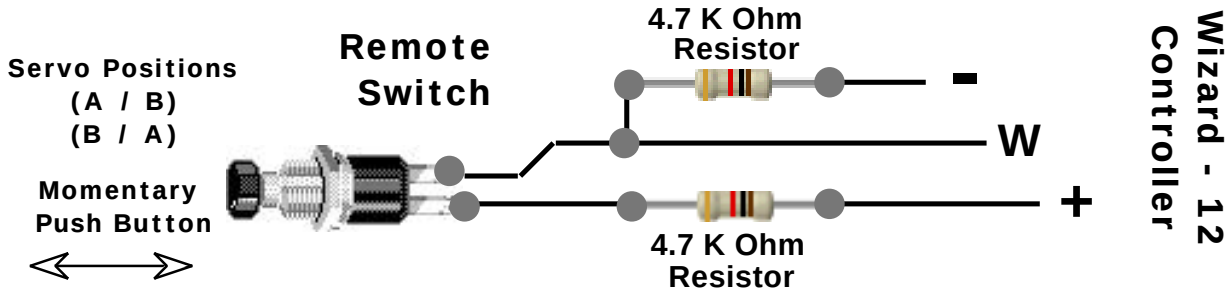
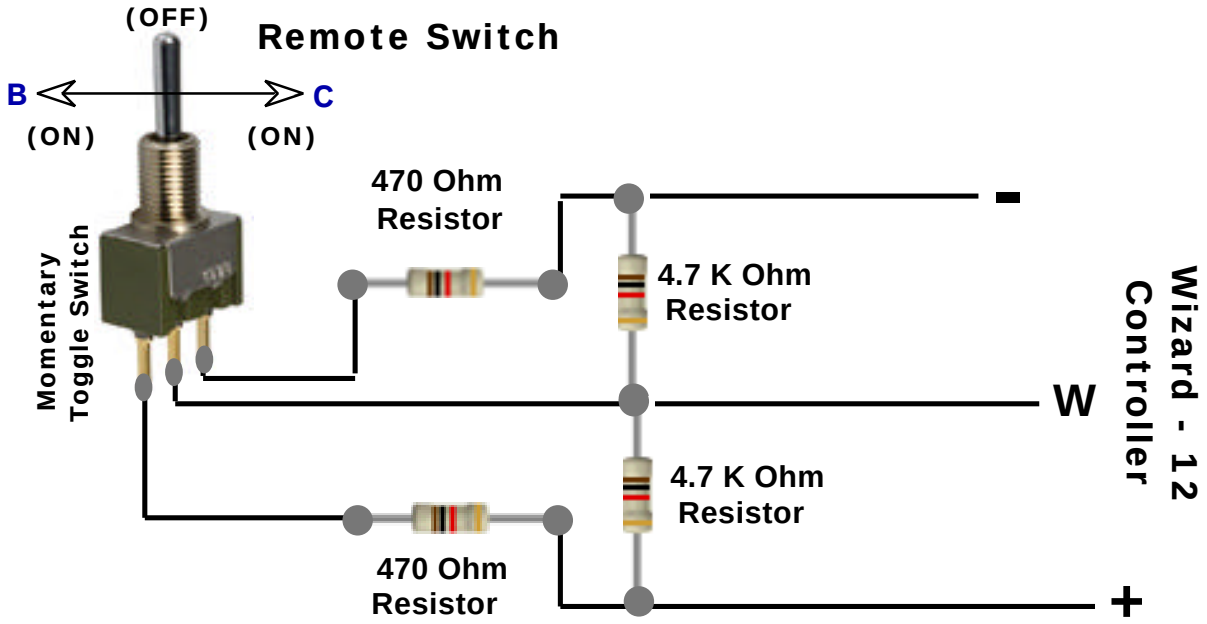
Wizard - 12 Switch Input Setup

Controller Ver 1.0

Set - Up / Input Devices



4.7 K Ohm - Yellow, Violet, Red, Gold



470 Ohm - Yellow, Violet, Brown, Gold
4.7 K Ohm - Yellow, Violet, Red, Gold

1- Ch Joystick