

R/C Servo to Analog Converter Board

Controller

This servo-analog converter board provides a two channel capability of converting standard R/C servo PWM pulses to 0-10 Vdc and/or 0-5 Vdc outputs suitable for driving standard lighting dimmer packs or any device that requires a 0-5 and / or 0-10 Vdc variable controlled analog signal input.



Board Size:
3-5/8" L x 1-1/4" W x 3/4" H

Specifications:

- R/C type Servo input pin headers from R/C unit.
- **2 - Channel** Analog 0-5 and/or 0-10 Vdc DC output is available from the 4 way terminal block for wire connection.
- No external power supply is required, the module takes it's supply from the incoming servo drive connections.
- Servo inputs: 1 to 2msec pulses.
- **1-msecs servo pulse gives 0 V DC output.**
- **2-msecs servo pulse gives 5 or 10 VDC output.**
- 0-5 and/or 0-10 Vdc DC Analog outputs in **80mV increments**.
- Adjustable Resistor variable voltage ranges 0 - 10 Vdc Outputs.
- **125 steps** between 0 and 10 Vdc available.
- **Maximum driver current is 10mA per Channel.**
- Small Board Size: 3-5/8" L x 1-1/4" W x 3/4" H

Connections:

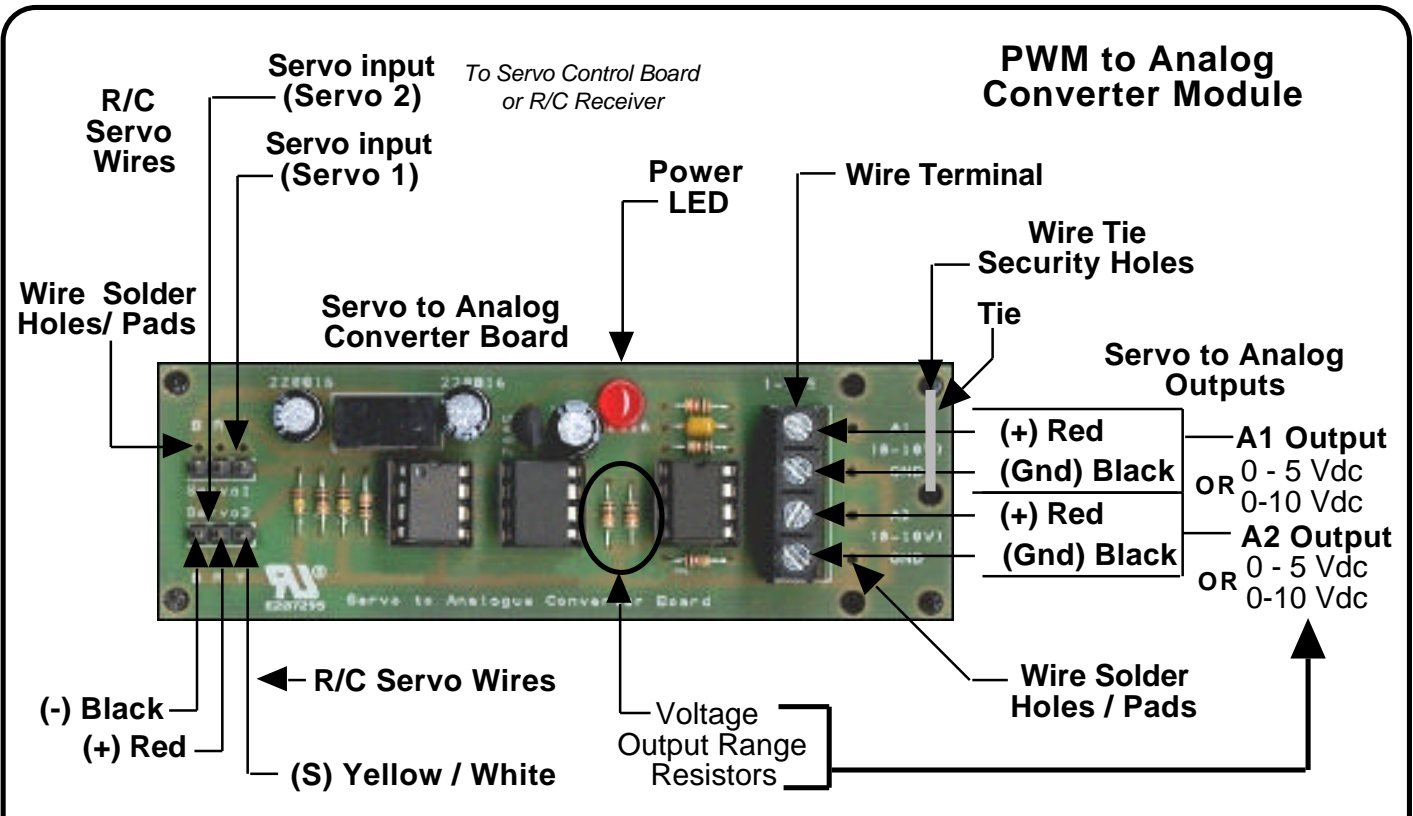
Connect standard R/C servo plugs from input 1 and 2 on the 3-pin headers marked Servo 1 and Servo 2, to a servo controller board or R/C receiver servo channels. **Ensure the wire polarity is correct.** (R=+5v, B=Ground, Y=Signal) / (R=Red, B=Black, Y=Yellor or White Wire)

Note: the board has corresponding wire holes, if you want to solder the R/C servo wires to the board directly. Carefully pull-away the rubber backing from the board, place the wires through the correct hole and solder. Ensure the wire polarity is correct.

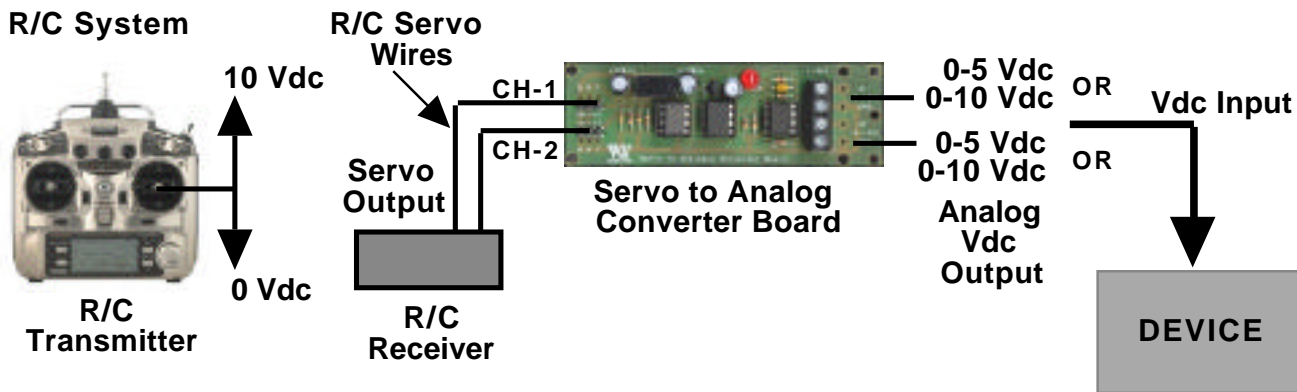
Analog Range 0-5 and / or 0-10 output is available from the 4-way terminal block.

Power Supply

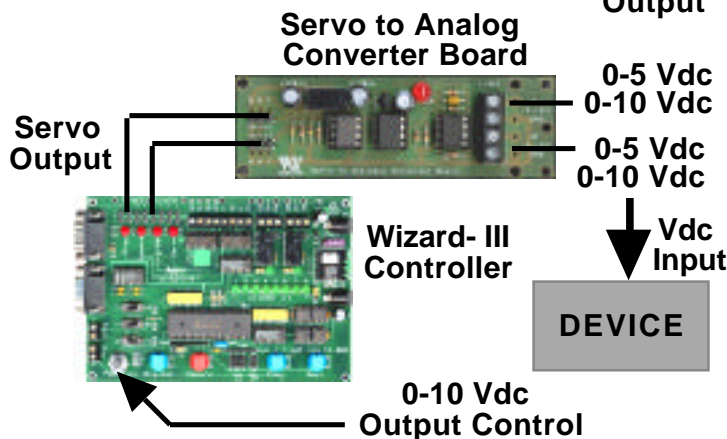
No external power supply is required. The module takes its power from the incoming servo drive connections.



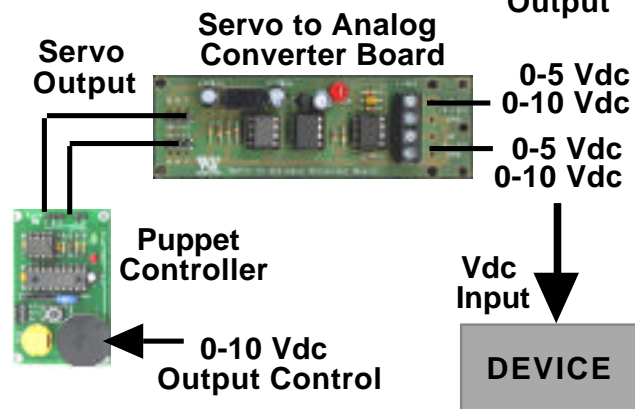
R/C-Servo PWM to Analog Converter Module Application



Wizard Control Board Connection



Puppet Control Board Connection



Changing the Voltage Output Range (0-5 / 0-10 or other Values)

The voltage output range may be modified from 5 Vdc up to a maximum of 10Vdc.

The output voltage is determined by the following equation:

$$\text{Maximum Voltage Output} = 5 \times [1 + 10 / R_A]$$

Where R_A is expressed in k ohms

As supplied, R_A is 10k so the maximum output is 10 Vdc

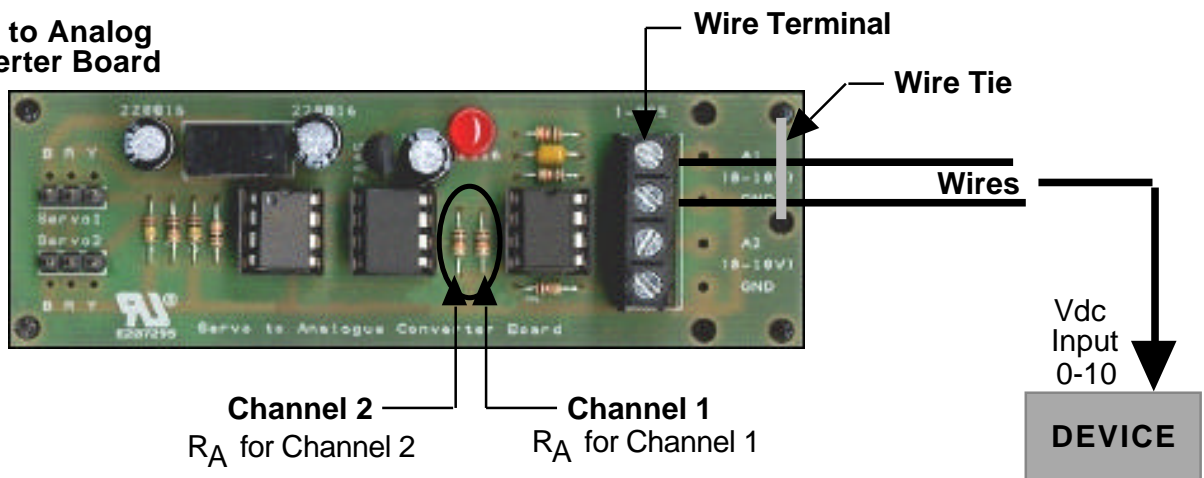
Removing, R_A will limit the maximum output to 5 Vdc

Replacing, R_A with a 20k resistor will limit the maximum output to $5 \times [1 + 10/20] = 7.5$ Vdc

R_A may be a different value (output Vdc) for each channel.

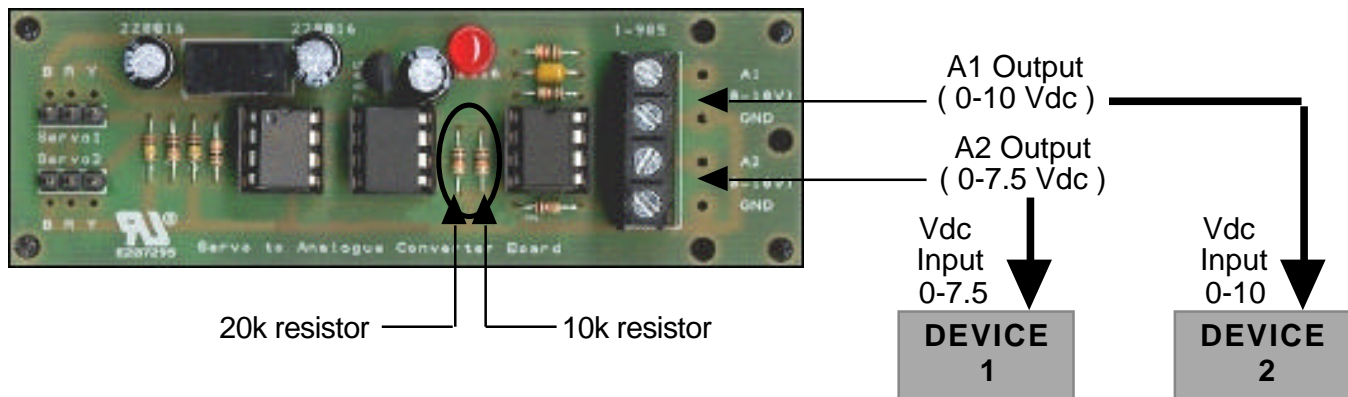
R_A for each channel is shown below.

Servo to Analog Converter Board



Servo to Analog Converter Board

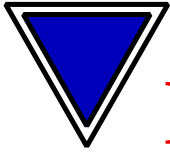
Servo to Analog Converter Board Output Example



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Servo - Analog to Valve Controller

Controller

To Wizard Controller
(servo output channels 1 - 2)

Servo to Analog Converter Board Output Example
Pneumatic Air Valve Controller



0-10 Vdc Output
GND Output

A1 Output
(0-10 Vdc)

White Wire

Black Wire

Black Wire

Red Wire

Blue (3)
Brown (1)
White (2)

1- Brown = 12Vdc @ 3 Amp
2- White = 0-10 Vdc Control
3- Blue = Common Ground

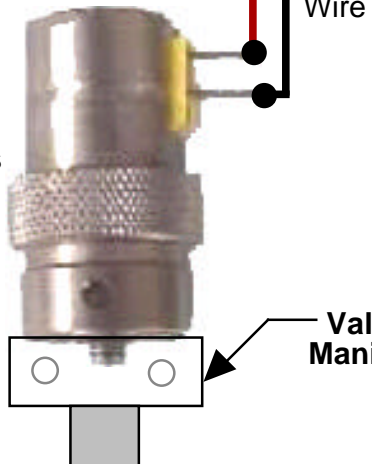
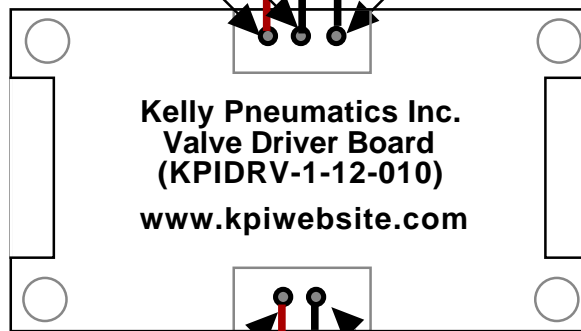
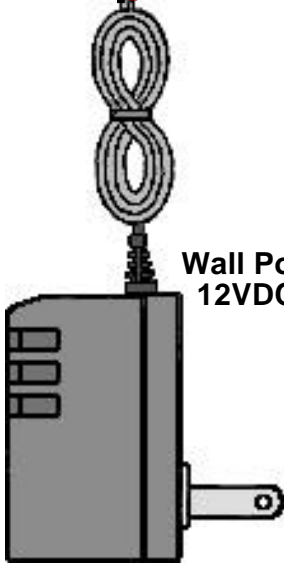
Kelly Pneumatics Inc.
Valve Driver Board
(KPIDRV-1-12-010)
www.kpiwebsite.com

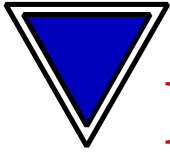
Wall Power Supply
12VDC @ 3 Amp

(+)
Red Wire
Black Wire
(-)

Clippard Minimatcs
Proportional Air Valve
EC-PM-1025A0

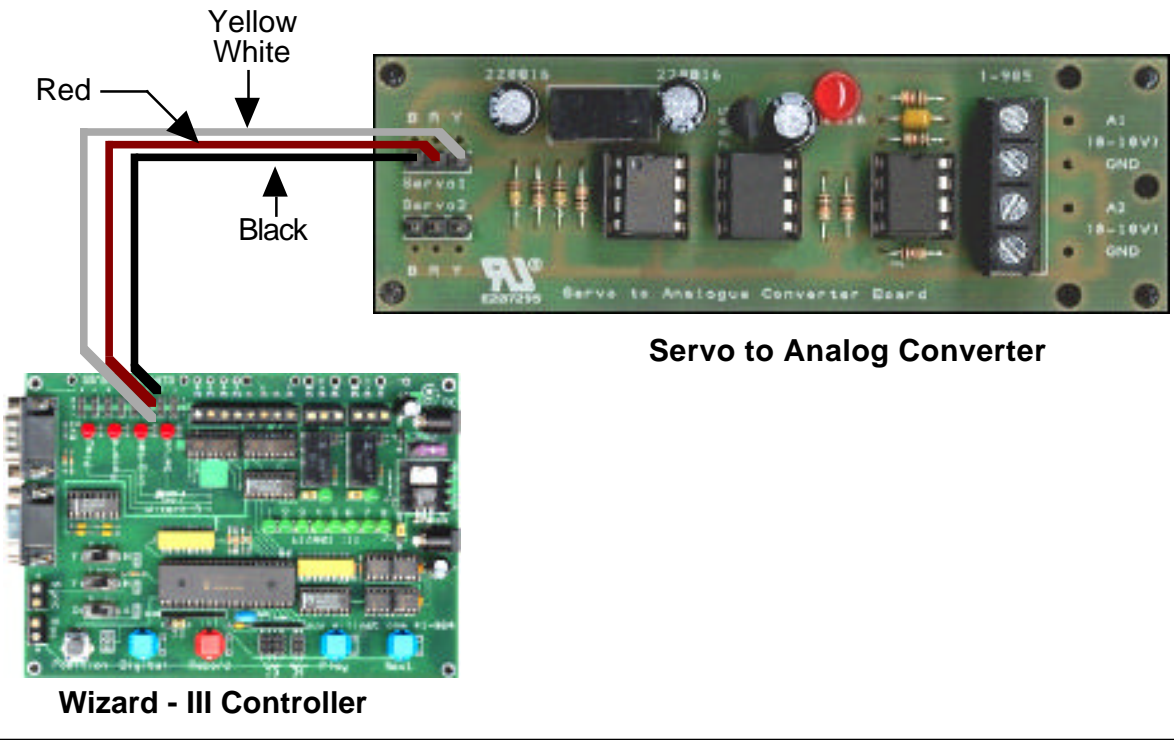
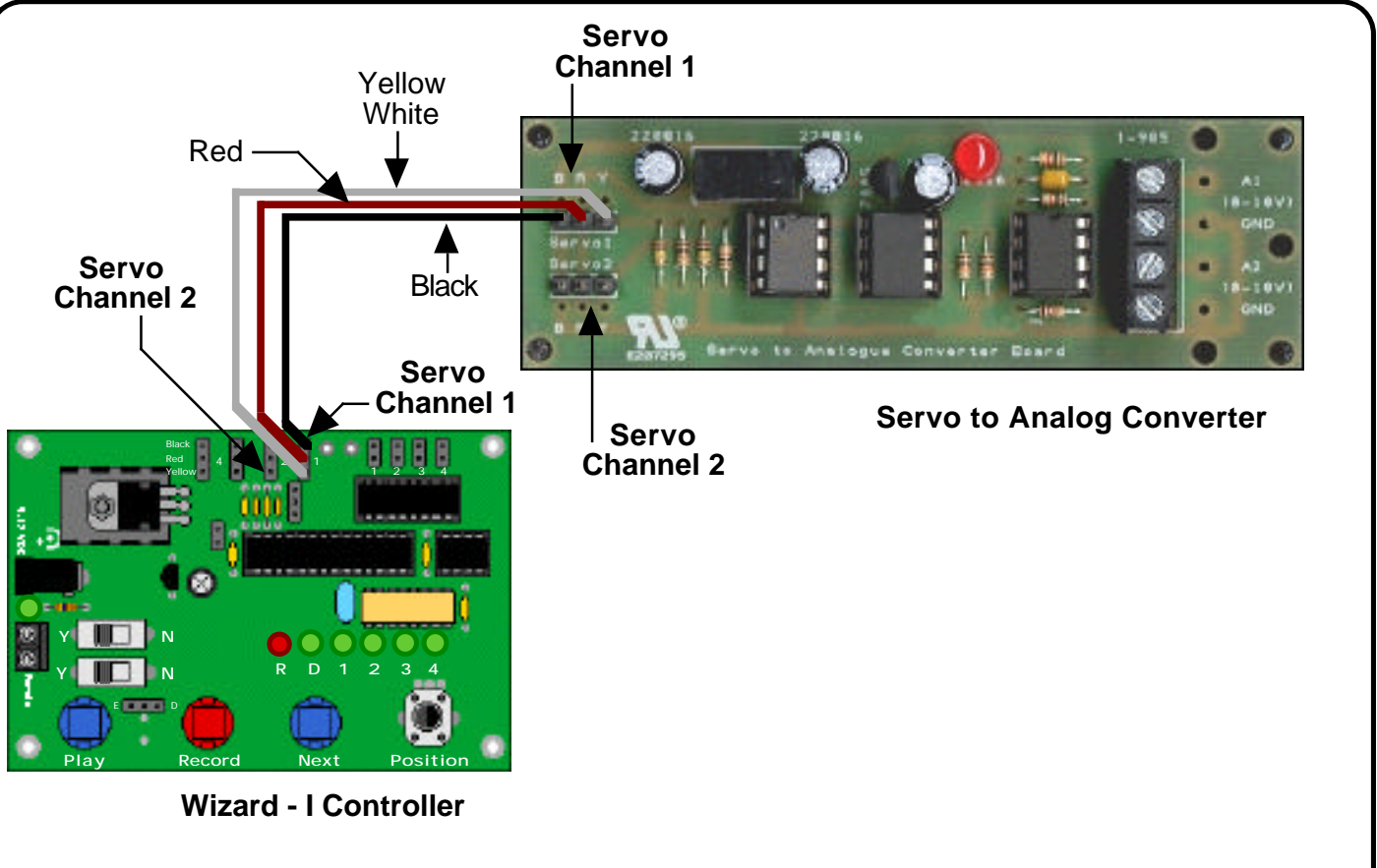
Valve Manifold

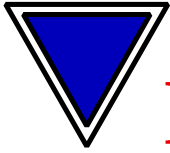




Wizard Boards to Servo - Analog Controller

Controller





Servo - Analog to Light Dimmer Control

