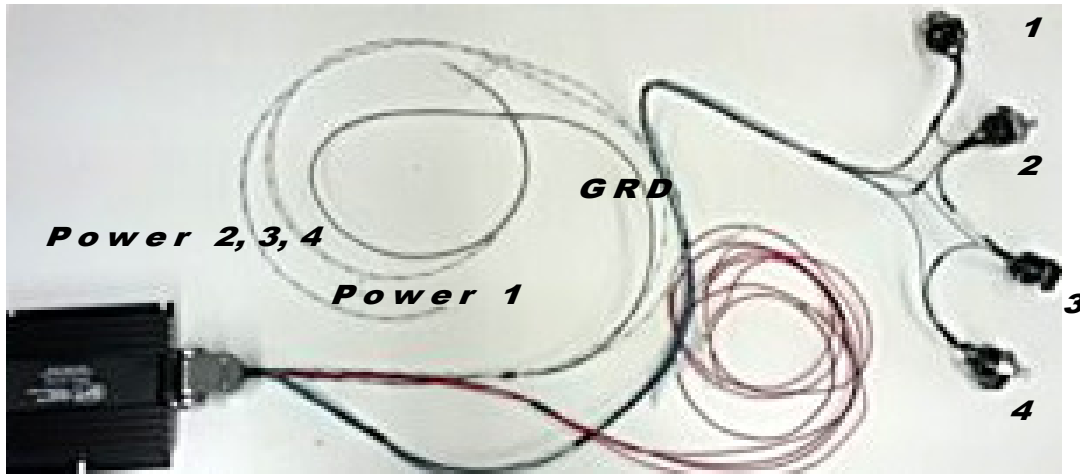


Superior Panel Technology

Multi-Circuit Dimmer Installation Instructions



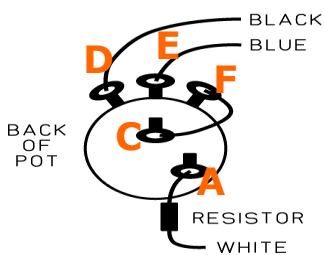
CAUTION – These instructions apply to our revised circuit board which is **RED** in color. These instructions DO NOT apply to the prior version circuit board (which is **GREEN**).

Superior Panel Technology’s Multi-Control Dimmer is easy to install by following the steps below. Unlike rheostats and pulse-width modulating dimmers, the SPT solid-state dimmer will provide even dimming even when a combination of incandescent bulbs, electroluminescent lamps and even LEDs are used on the same circuit. Also, our dimmers have an OFF position that cuts the current flow, unlike most rheostats.

WIRING THE POTS: (Refer to wiring diagram on page 3 as you read this)

It’s best to wire the pots first. Then the wires can be trimmed to equal length when soldering to the 15 pin connector. Also, you may wish to temporarily twist the wires to the tabs on the pots until all wires are cut to size. This will help you to determine where you need heat shrink wire supports to secure the wire bundle prior to soldering. Apply heat shrink to all exposed solder connections. You will be able to space pots 2, 3 and 4 up to a maximum of 4” apart when wired as described below (pot #1 is wired independently and can be spaced much further apart).

1. Using a Sharpie or similar marker, number your potentiometers 1, 2, 3 and 4 (you will have one pot for each circuit on the dimmer kit that you purchased).
2. Solder a 2” jumper from tab F to tab C on ALL pots. (See picture 1).
3. Solder a long blue wire on all pots to tab E.
4. On pot 1, solder one resistor to tab A. Then solder one long white wire to the open end of the resistor on pot #1. This is the power input for pot 1 only.
5. On pot 2, solder a resistor to tab A along with a 7.25” white wire for a 3 or 4 circuit dimmer. (Note: This 7.25” white wire is the wire that is daisy chained to pots 3 and 4 for power input, so it will not be needed for a 2 circuit dimmer.) Then solder a long white wire on the open end of the resistor on pot #2. (See green lines on wiring diagram on page 3.)
6. Solder the 7.25” white wire from pot 2 to tab A on pot 3, along with another 7.25” white wire that will be used to daisy chain to pot 4 for a 4 circuit dimmer. (A 3 circuit dimmer will not need this wire). A resistor is not used on pots #3 and #4.
7. Solder one long black wire to tab D on pot #1. This black wire is the ground wire for pot 1 only.
8. On pot 2, solder one long black wire along with an 8.25” black wire if doing a 3 or 4 circuit dimmer. (Note: This 8.25” black wire is daisy chained to pots 3 and 4 for ground, so it will not be needed for a 2 circuit dimmer) Solder this wire along with another 8.25” black wire to tab A on pot 3 in order to daisy chain from pot 3 to pot 4. (This added wire will not be needed for a three circuit dimmer. (See blue lines on the wiring diagram on page 3. See also picture 3 below.)
9. Bundle and heat shrink wires together at the back of each pot. (See picture 2)
10. You can now also bundle all the long blue, black and white wires coming off all the pots. (see picture 4)



Picture 1



Picture 2



Picture 3



Picture 4

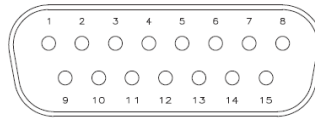
WIRING THE 15 PIN CONNECTOR:

See the 15 pin connector wiring chart below and also the wiring diagram on the following page to solder the correct wires to the pins.

Pull the wires together from the pots that go to the 15 pin connector. Cut them so that they are of equal length and then strip 1/8" insulation from all the long wires coming from the pots. Also, strip 1/8" of insulation off of the two black/white wires and each red wire (you have one red wire for each circuit). Tin the ends of each stripped wire with solder.

Clamp the 15 pin connector in a vise and tin all 15 sockets on the back side of the connector. With the wires and sockets tinned you can easily heat and insert the wires into the connector without adding more solder. Minimize the amount of exposed bare wire coming out of the sockets. Make sure that there are no loose wires that could touch other sockets and short a connection.

Follow the wiring diagram and the chart below, noting the footnotes. The chart below shows which pins are used for each of the different circuits. The same 15 PIN connector is used for all the 2, 3, or 4 circuit dimmer control units we sell; therefore, depending on the number of circuits of the dimmer you are installing, not all pins will be used. (i.e. On a two circuit dimmer system, you would not be using the blue and red wires for pots #3 and #4.)



15 PIN CONNECTOR WIRING CHART

PIN numbers are printed on the socket side of the connector

PIN Numbers

Pot#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	BL				R				W/B ¹	W ²	B ³	B ⁷	B ⁴		
2		BL				R								W ⁵	W/B ⁶
3			BL				R								
4				BL				R							

BL= Blue B=Black W/B=White with black strip R=Red W=White

FOOTNOTES:

¹ This white/black wire soldered to pin #9 powers circuit #1 exclusively. NOTE: Many Superior Panel Technology customers use circuit 1 to control the dimming for either our LED Glare-Shield lighting kit or our Electroluminescent Glow Strip Glare-Shield lighting kit. Many customers elect to wire it directly to the battery with an inline fuse so they can turn on the glare shield lighting without turning on the master switch. This allows the pilot to organize the cockpit without sending power to the gyros etc. Both SPT's LED and EL Glow Strips provide excellent general cockpit lighting. They both kits draw a VERY minimal amount of current. Visit our website at www.sptpanel.com for more information on these lighting kits.

² White wire from pot #1.

³ Only one black wire for ground from pot #1 is soldered to this pin #11.

⁴ This black wire on pin #13 goes to a grounding buss.

⁵ Only one white wire from pot #2 is soldered to this pin #14. The output power to pots 3 and 4 is transferred from pot #2 by daisy chaining. (see pictures)

⁶ This white/black wire soldered to pin #15 carries the input power for pots 2, 3, and 4 only.

⁷ Only one black wire for ground from pot #2 is soldered to this pin #12. The ground is transferred to pots 3 and 4 by daisy chaining. (see pictures and wire diagram)

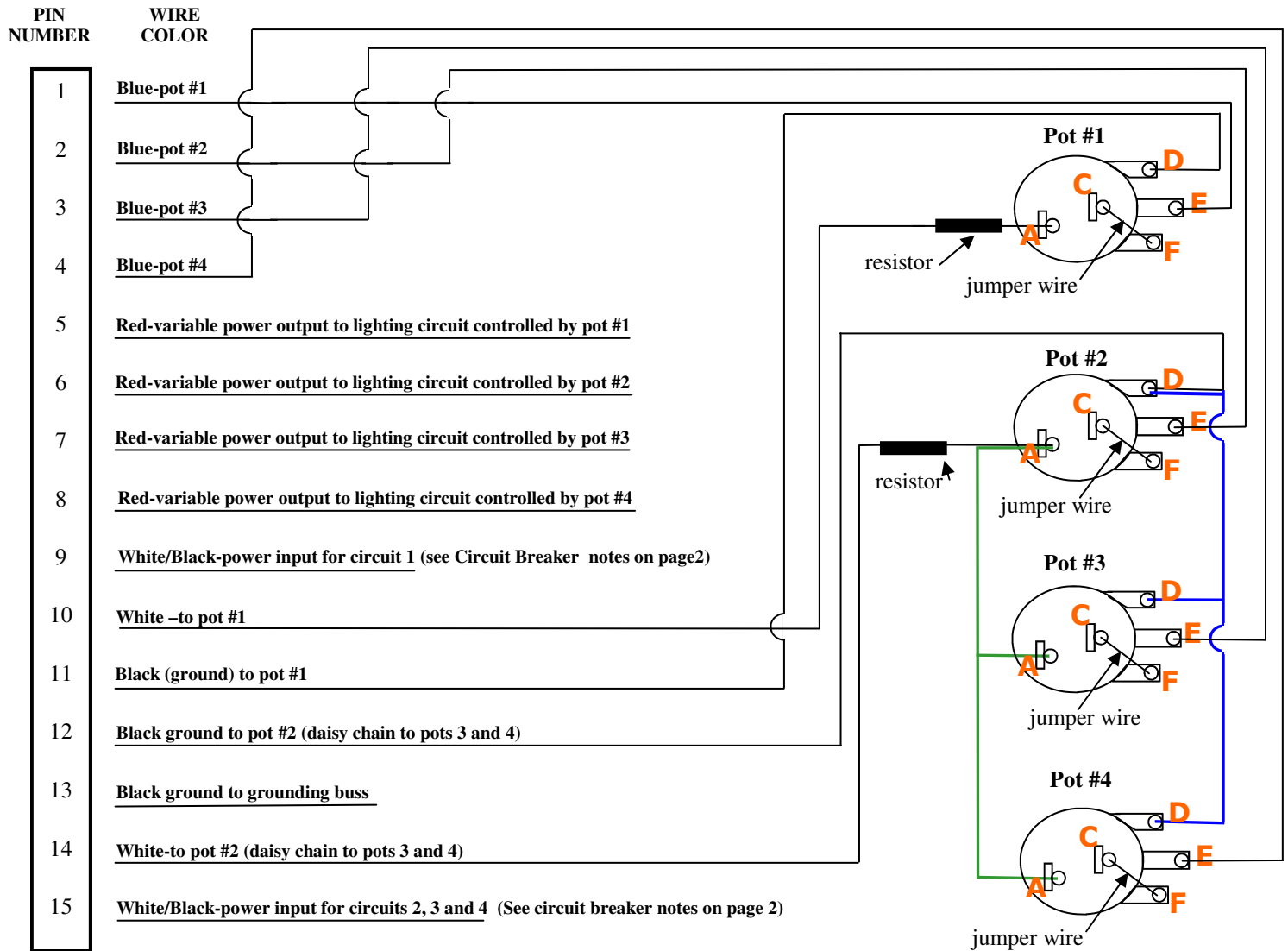
NOTE: All red wires are the variable-power wires that go to the specific light circuit to be dimmed.

Circuit Breaker sizing:

IMPORTANT: Use a 2 amp circuit breaker for the power input for circuit 1. A 5 amp breaker can be used for the power input that controls circuits 2, 3 and 4. HOWEVER no single circuit should have more than a 2 amp current draw. Mount the heat sink in an open area to allow for air circulation.

WARNING: The power transistors on the heat sink are + voltage and will short if they contact ground! Use caution to insure heat sinks are mounted properly and that the transistors on the heat sink do not touch a ground. It is fine for the heat sink itself to touch ground.

Superior Panel Technology's Solid-State Multi-Circuit Dimmer Wiring diagram



NOTES:

1. Blue lines indicate daisy chaining of black ground.
2. Green lines indicate daisy chaining of white power.
3. No resistor on pots 3 and 4.

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