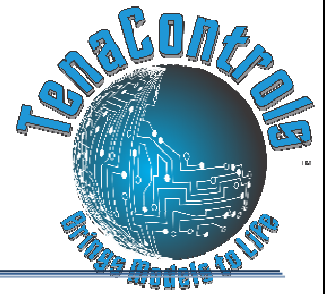


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- WIRING DIAGRAM & INSTRUCTIONS-

WIRING DIAGRAM OF THE COMBO-NCL BOARD FOR THE ENTERPRISE 1701 & 1701-A

ITEMS YOU WILL NEED:

Soldering Iron

Solder

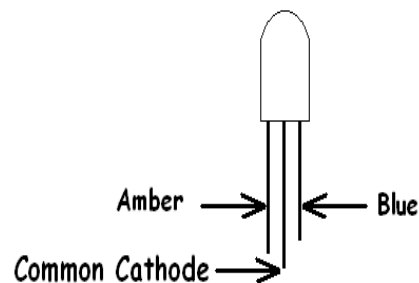
Cutter

Wire Stripper

Refer to the master wiring diagram on page 9 for all external connections to the circuit board.

See below pictorial of how to tell which side is the Amber, which side is the Blue and which is the Cathode on the Bicolor LED for the Deflector Dish and Crystal.

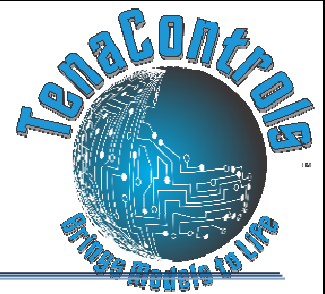
It's very important to wire it correctly.



Deflector Dish LED

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INSTRUCTIONS

1. Connect the 9 volt battery clip, red to one side of the on/off switch, the other side of switch to plus terminal block side, then the black to minus of the terminal block side. Or use a wall power adapter from 9 to 12 volts DC output for extended life to power up the ships entire electrical systems.
2. Connect the momentary switch as shown below in the master wiring diagram
3. Next, connect the bicolor LED inside the Deflector Dish as explained below. For best fit, make the hole as tight as possible and hot glue the LED in place on the back side. It's easy to use, sets in minutes and if you make a mistake you can un-stick it and start again.
4. Run the wires to the Deflector Dish board section. You can refer to the master wiring diagram shown on page 9 as well as the actual pics of the process.

A digital version of this Manual can be requested via email:
sales@tenacontrols.com



Housing with hole just big enough for the led

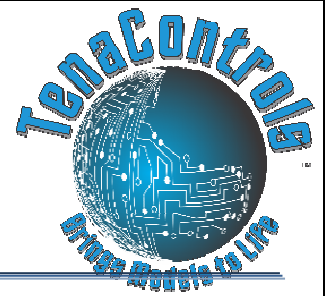


Push the led in from the back and hot glue in place

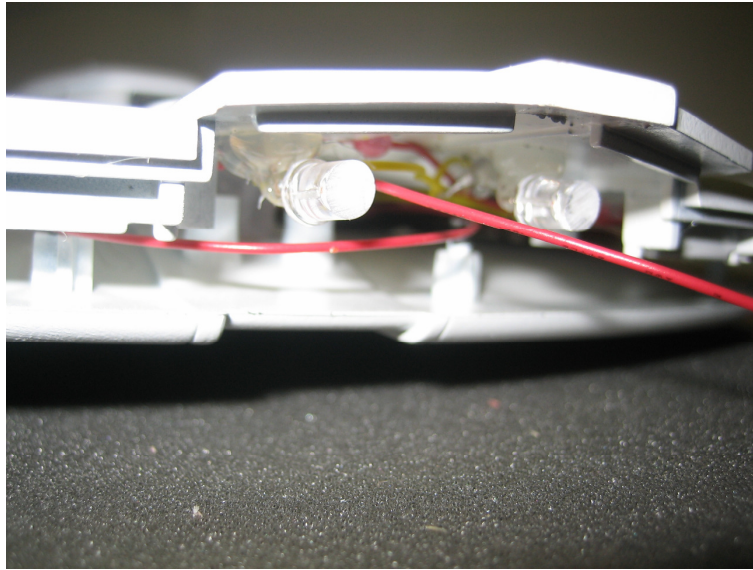
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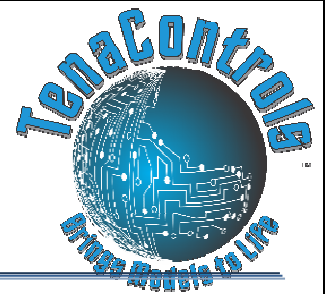
For a more diffused look, file the top of LED's

5. Then connect the three wires from the Deflector Dish and Crystal Amber/Blue LED's as well as the wires from the Impulse Engines Red LED's. See above picture as well as master wiring diagram on page 9
6. When it is all hooked up, throw the on/off switch to the on position, press the momentary switch and the Deflector Dish Amber LED, Crystal Amber led and Impulse Engines will ramp up to full brightness, and stay like that until the switch is pressed again. Which will cause the Deflector Dish Amber LED, Crystal Amber led and Impulse Engines to ramp down off and start the Deflector Dish Blue LED, Crystal Blue LED and Nacelle LED Strips ramping up to full brightness (**LED STRIPS NOT SUPPLIED**), and stay like that until the switch is pressed again. Press the switch again and the Deflector Dish Blue LED, Crystal Blue LED and Nacelle LED Strips will ramp down and stay off (**LED STRIPS NOT SUPPLIED**), until the cycle is repeated again.

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NAVIGATION/STROBE SECTION

****Note:** When using the shrink tubing, you need to only slide the shrink tubing over one leg of the LED to keep it from shorting against the other leg. Then use heat gun or flame from lighter to heat the shrink tubing until it shrinks around the wire connected to one of the LED legs.

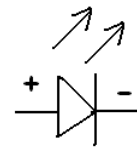
How to distinguish a LED:



Shorter leg is Cathode (-)

Longer leg is Anode (+)

Anode
Side



Cathode
Side

STROBE SIDE

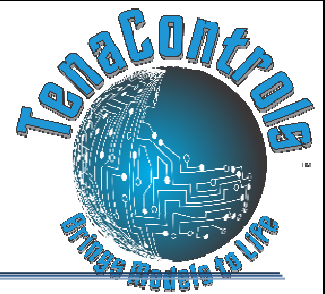
1. Four White LED's: LED10-LED13

All the Four Anodes (+) of the Strobe LED's, LED10-LED13 will terminate to terminal block connection "1" on the pc board. Then connect the Cathode (-) of LED10-LED13, to one end of their respective resistor and the other end of resistor will terminate to terminal block connection "12" on the pc board. (See master wiring diagram pg. 9)

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NAVIGATION SIDE

1. Five White LED's: LED5-LED9

All the Five Anodes (+) of the Navigation LED's, LED5-LED9 will terminate to terminal block connection "1" on the pc board. Then, connect the Cathode (-) of LED5-LED9, to one end of their respective resistor and the other end of resistor will terminate to terminal block connection "11" on the pc board. (See master wiring diagram pg. 9)

2. Two Green LED's: LED3-LED4

The Two Anodes (+) of the Navigation LED's, LED3-LED4 will terminate to terminal block connection "1" on the pc board. Then connect the Cathode (-) of LED3-LED4, to one end of their respective resistor and the other end of resistor will terminate to terminal block connection "11" on the pc board. (See master wiring diagram pg. 9)

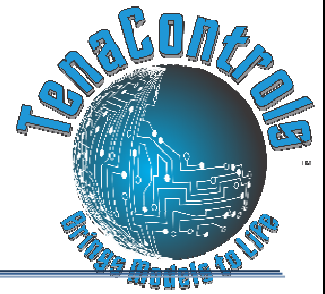
3. Two Red LED's: LED1-LED2

The Two Anodes (+) of the Navigation LED's, LED1-LED2 will terminate to terminal block connection "1" on the pc board. Then connect the Cathode (-) of LED1-LED2, to one end of their respective resistor and the other end of resistor will terminate to terminal block connection "11" on the pc board. (See master wiring diagram pg. 9)

4. Then place the Strobe and Navigation LED's in the locations shown on the LED Locations drawings shown below in the master wiring diagram on page 9

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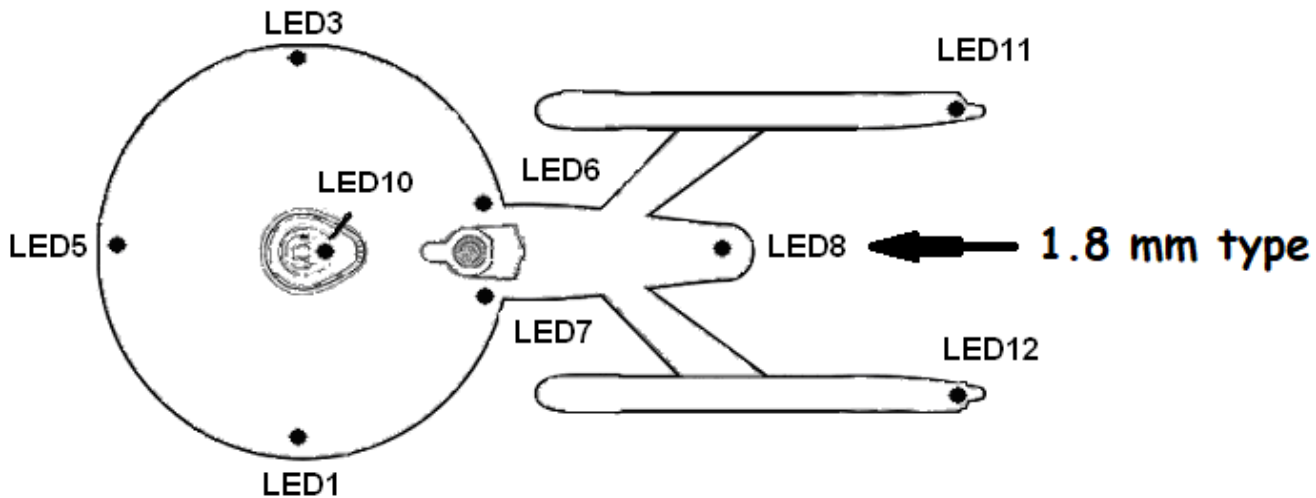


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TOP VIEW OF LED LOCATIONS

LED1-LED2 ARE RED NAV LED'S, LED3-LED4
ARE GREEN NAV LED'S, LED5-LED9 ARE WHITE
NAV LED'S

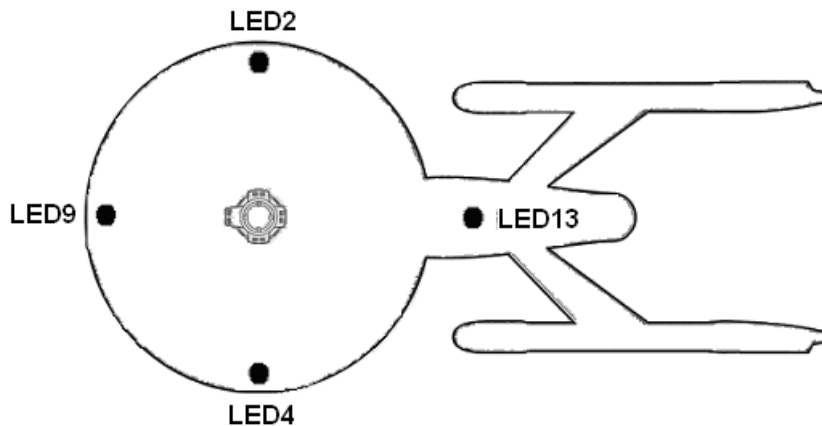
LED10-LED13 ARE WHITE STROBE LED'S



BOTTOM VIEW OF LED LOCATIONS

LED1-LED2 ARE RED NAV LED'S, LED3-LED4
ARE GREEN NAV LED'S, LED5-LED9 ARE WHITE
NAV LED'S

LED10-LED13 ARE WHITE STROBE LED'S

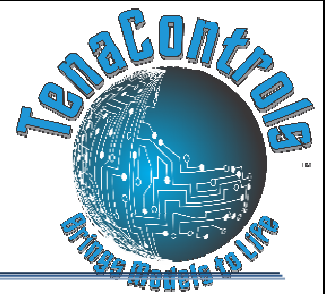


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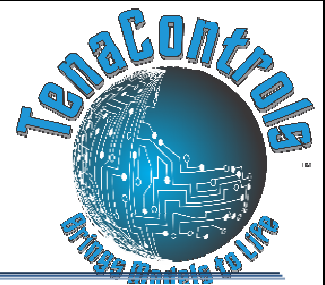
LANDING BAY SECTION

Refer to the wiring diagram shown below for all external connections to the Landing Bay board.

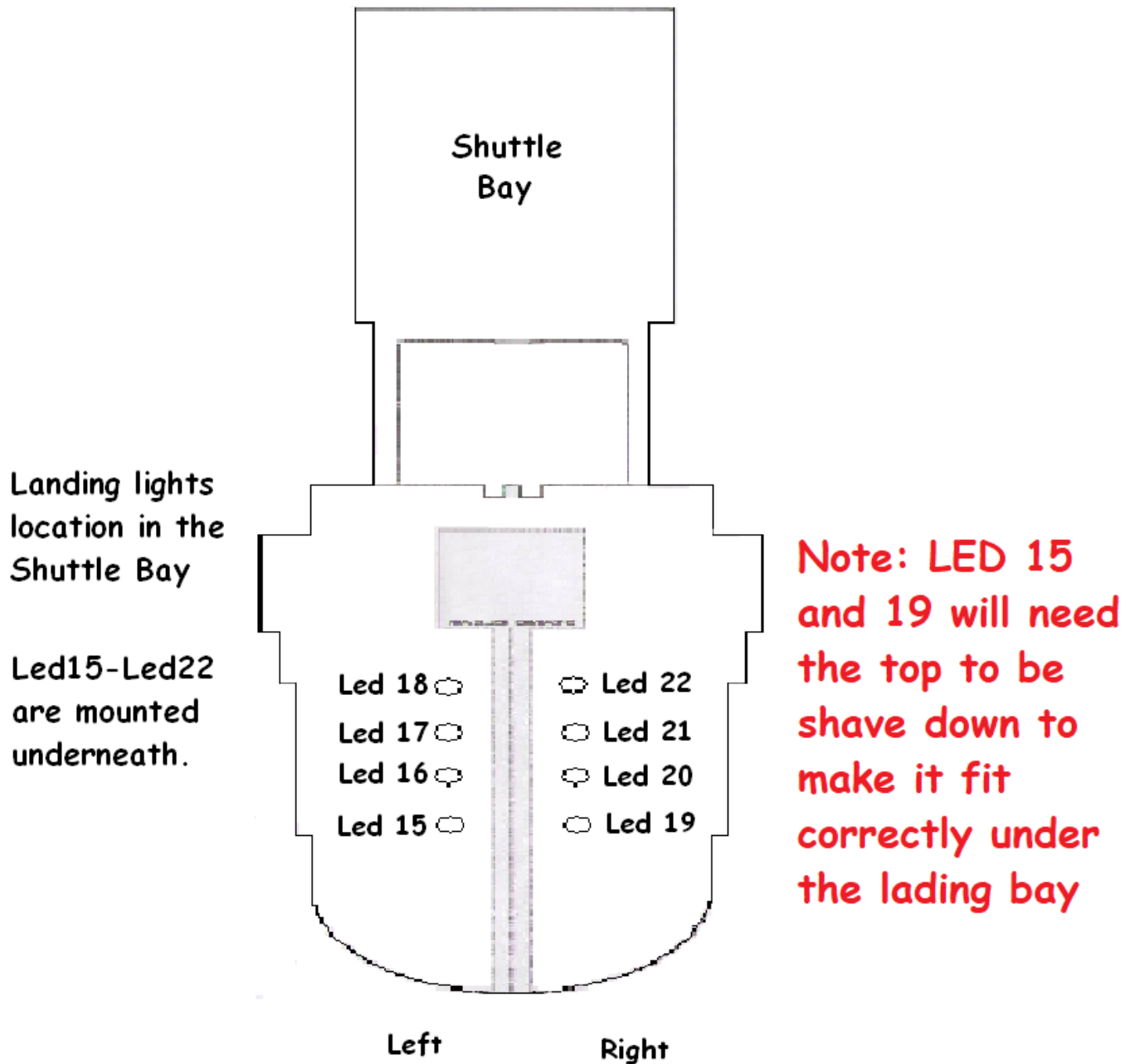
1. Connect the four pairs of LED's under the landing of model according to the below wiring diagram. The anode of LED 15 and LED 19 connect to terminal block position 7. The anode of LED 16 and LED 20 connect to terminal block position 8. The anode of LED 17 and LED 21 connect to terminal block position 9. The anode of LED 18 and LED 22 connect to terminal block position 10.
2. Then, connect all eight Cathodes of LED15-LED22 to terminal block position 14. Some of the LED's may need to be ground down to fit in the small space under the landing bay and the rear hull of the Enterprise, or you can use surface mount LED's if you want. The easiest way to adhere Led 15 through LED 22 is by using a hot glue gun. It's easy to use, sets in seconds and if you make a mistake you can un-stick it and start again.
3. Run the wires to the Landing Bay connection points as shown below in the master wiring diagram on page 9

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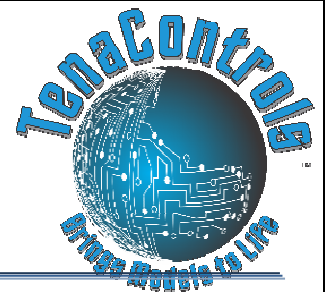
Connect up the above LED 15 - LED 22 according to the below master wiring diagram.

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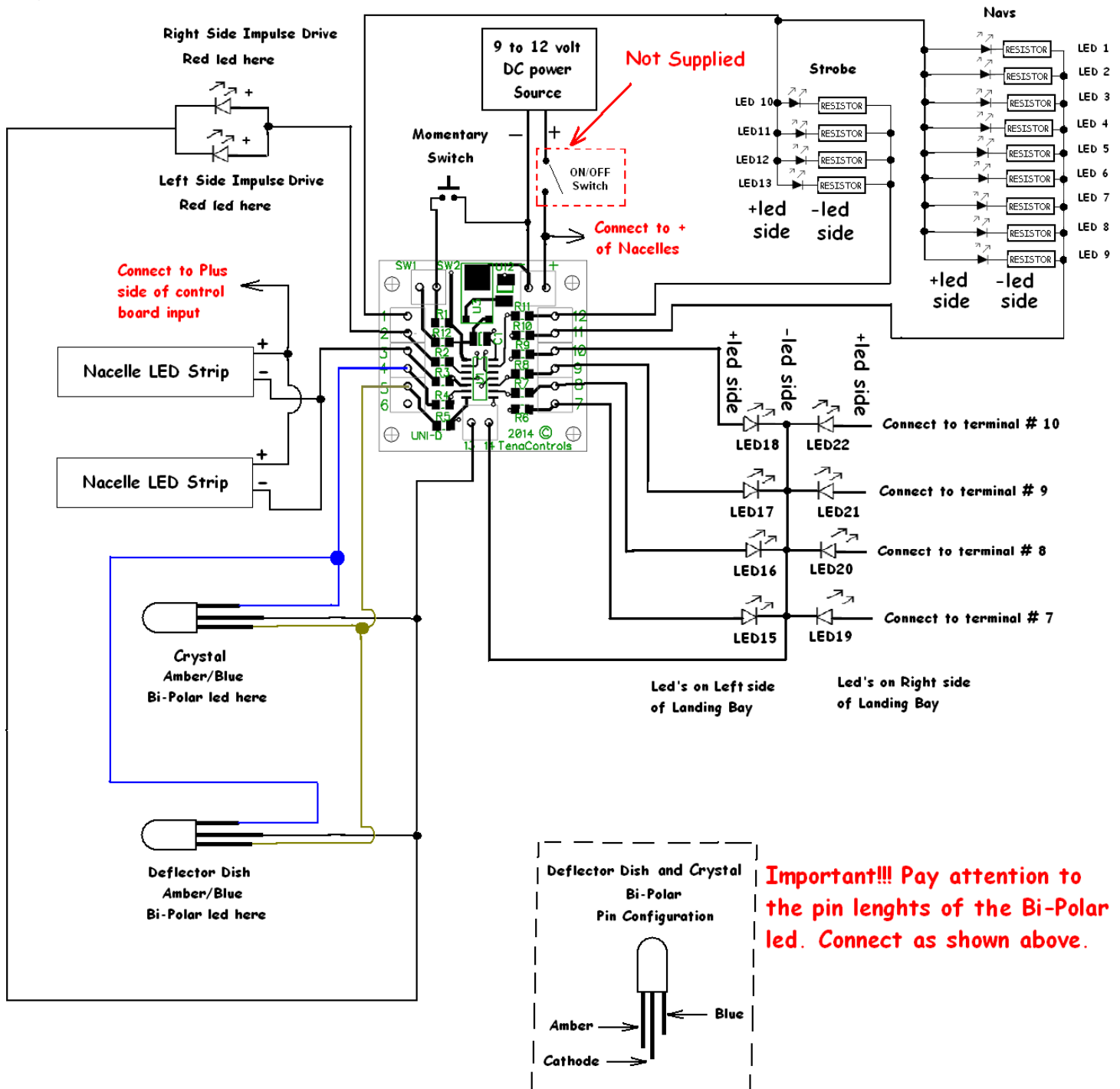
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MASTER WIRING DIAGRAM

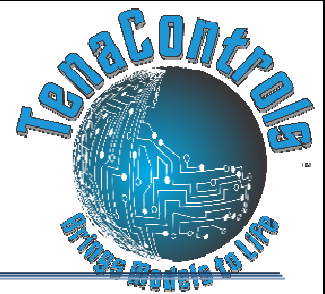


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Warranty

TenaControls LLC warrants that the control boards sold meet TenaControls specifications and are adequately contained, packaged and labeled and conform to the promises and affirmations of fact made on the container and label. THE FOREGOING WARRANTIES ARE EXCLUSIVE, AND ARE IN LIEU OF ALL OTHER WARRANTIES (WHETHER WRITTEN, ORAL OR IMPLIED) INCLUDING WARRANTY OR MERCHANTABILITY IN OTHER RESPECTS THAN EXPRESSLY SET FORTH ABOVE AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

In the event that there is a breach of express warranty by the manufacturer made in connection with the purchase of this product, if any, the sole remedy of any buyer shall be to return the product along with original sales receipt, at **buyer's expense** for repair (or replacement of the product if repair is impossible) to the manufacturer's facility in the Commonwealth of Massachusetts, located at 22 Hancock Street, Milford, MA 01757. Some states do not allow the exclusion or limitation of any incidental or consequential damages, so the above limitation may not apply to you. Nothing herein contained shall be construed to be a waiver by the manufacturer of any of the obligations imposed upon said buyer under the laws of the Commonwealth of Massachusetts except as herein specifically stated.

This warranty is enforceable only by the buyer of the product or a person in the buyer's immediate family. This warranty is enforceable for a period of **FIVE YEARS** from the date of purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above warranty may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Warranty Void if:

- A) Product is altered in any way.
- B) Used for other than its intended use.
- C) Buyer mishandling.