

# TenaControls LLC

Milford, MA 01757 U.S.A.  
[www.TenaControls.com](http://www.TenaControls.com)



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## - WIRING DIAGRAM -

### WIRING DIAGRAM OF THE SHIELDS UP BOARD MODEL: SHLD-B FOR THE STAR TREK ENTERPRISE 1701-A

Refer to the wiring diagram shown below for all external connections to the Shields Up Circuit board.

**Please take your time to fully understand how to wire the LED's or it won't work!**

Before **powering up** the unit make all the connections to the board. Press the momentary switch button once and the LED's go **"on"** sequentially around the Shields Up plaque, when all 48 are **"on"** they will stay **"on"** until the button is pressed again and the led's will go **"off"** sequentially around the Shields Up plaque.

Make sure you make the wires long enough as to where you will be locating the speaker. Putting the speaker in a case or tube is a **must** to get the proper sound requirement.

A digital version is available upon request, send request to [sales@tenacontrols.com](mailto:sales@tenacontrols.com)

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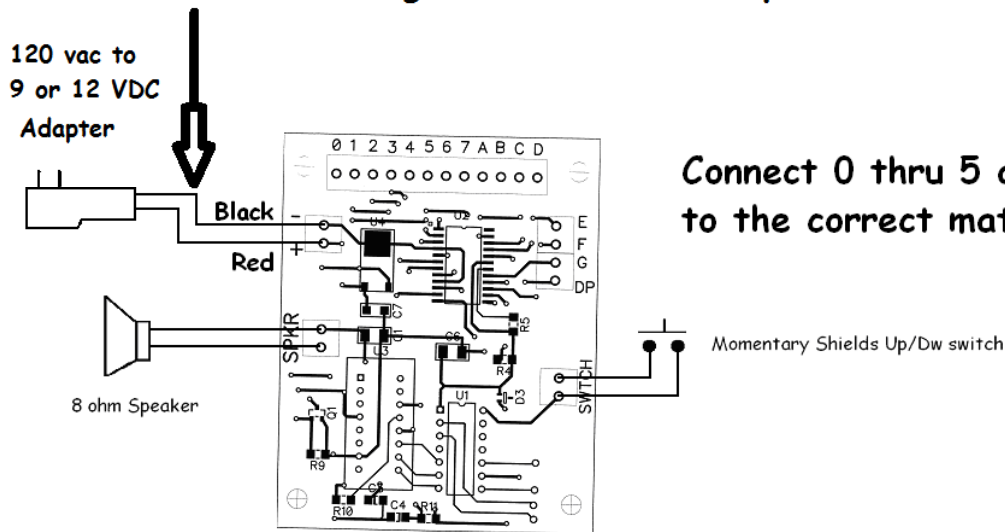
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**Very Important! Pay attention to polarity,  
or you will damage the Control Board.**

If the power adapter we included does not have  
a Red wire to indicate positive polarity, the wire  
will have a marking on it indicate it's positive.



Connect 0 thru 5 and A thru DP  
to the correct matrix point.

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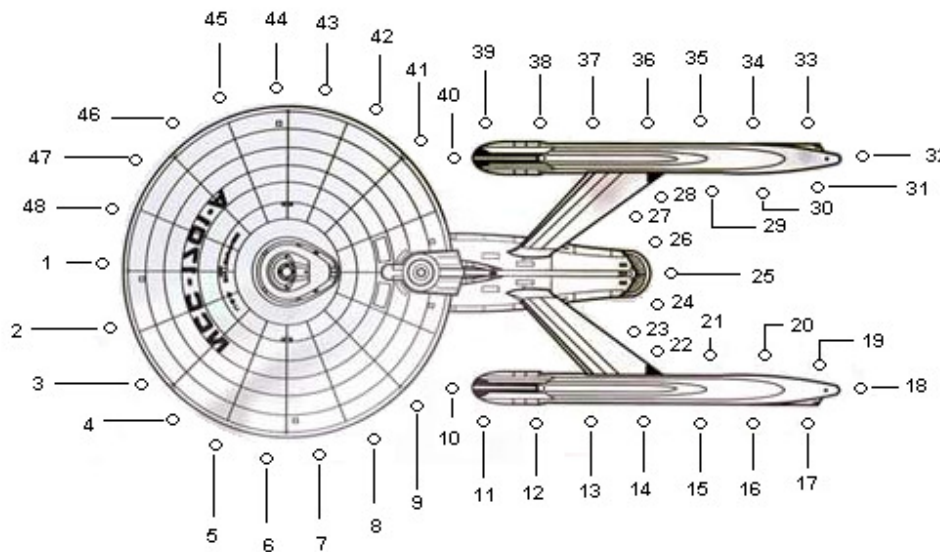
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## BOTTOM VIEW OF THE SHIELDS UP LED NUMERICAL SEQUENCE:

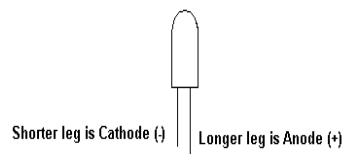
This is the bottom side where the 48 LED's are glued into place and soldered according to the below matrix.



Here is a pictorial of how to tell which side is the **Anode** and which is the **Cathode** on an LED:



Anode Side



Cathode Side

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## - INSTRUCTIONS -

There are a total of 48 LED's on the Shields Up Plaque, numbered 1-48.

You will connect the Cathode of LED's in banks of **eight** and the Anode of LED's in banks of **six**, as the below instructions will explain.

Below is also a schematic of the LED's and their number sequence. As stated earlier, you can see the banks of **eight Cathodes** and banks of **six Anodes**. You will connect all the Anodes labeled DP to the Terminal block labeled "DP" on the PC board. Do likewise on A through G to its corresponding Terminal block labeled "A" through "G" on the PC board.

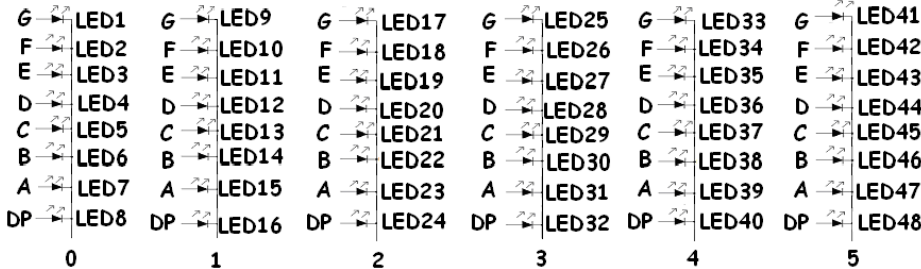
Once above is completed, go over the wiring coming from the "**LED matrix**" to make sure they are **not wired incorrectly**, as this will potentially damage the Integrated Chip that controls the forty eight LED's.

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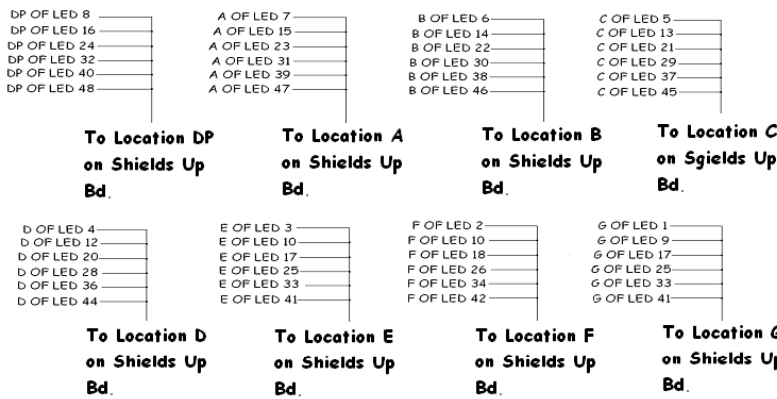


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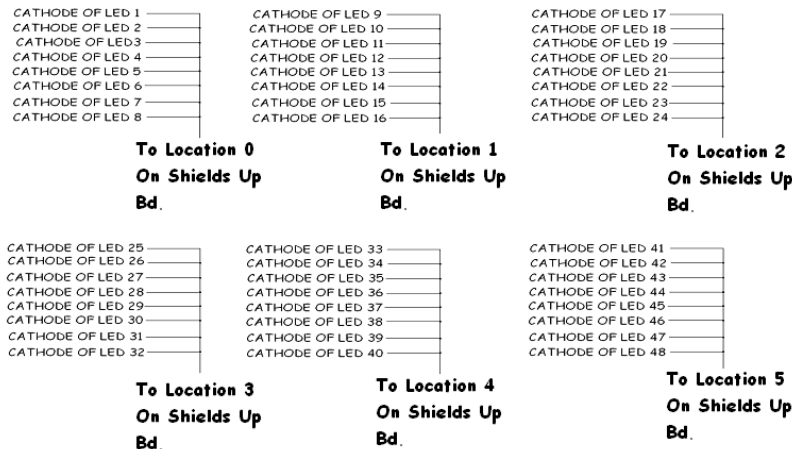
Connect the above "led matrix" like it is shown below.

Connect Anodes of all like letters together, A to A, B to B, etc., . . . Then connect those six like connections to one wire, then connect that one wire to corresponding location on the Shields Up Board.



Connect the Cathodes of led1-led8 together and bring one wire to location 0 on Shields Up Bd, Cathodes of led9-led16 together and bring one wire to location 1, Cathodes of led17-led24 together and bring one wire to location 2, Cathodes of led25-led32 together and bring one wire to location 3, Cathodes of led33-led40 together and bring one wire to location 4, Cathodes of led41-led48 together and bring one wire to location 5.

See below matrix as a reference



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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.