Web Address: http://www.con-sys.com

8810 El Toro Way Stockton, CA 95210



Wire Wrap tool with stripped wire in place ready to apply.

LED WIRE WRAPPING INSTRUCTIONS

Tools

	Description	Source/Data
1	No-Nick Wire Strippers	30 Gauge (.015")
		http://www.twacomm.com/catalog/model_NN008.ht
		<u>m</u>
		This tool is preferred for high volume. The tool below includes a wire stripper.
2	Wire-Wrap Tool	http://elexp.com/pro_sr30.htm
3	Wire-Wrap Wire	Red or Yellow – bright color for (+) lead
		Electronics Express <u>http://www.elexp.com/</u>
		http://elexp.com/cbl_wwrd.htm
4	Wire-Wrap Wire	Green or Blue – Cool color for (-) lead
		http://elexp.com/cbl_wwrd.htm
5	510 ohm ¹ / ₄ watt resistors	Mouser 291-510-RC
		http://www.mouser.com/catalog/catalogUSD/639/65
		<u>8.pdf</u>
6	Pactra Transparent Amber Paint – RC ACRYL – PAC5314	http://www.wholesaletrains.com
7	Soldering Iron	35W
8	Rosin Core Solder for Electronic work	
9	Quik Grip Glue	Wal-Mart Craft Dept.
10	Styrene sheet .080	Cut in ~5/8" squares
11	Styrene Strip .080" x .125"	Cut 5/8" lengths
12	.025" Pins	http://elexp.com/con_210s.htm

3		CONCEPT MODE
13	Bright White LEDs	See application sheet on las page for polarity and current limiting specifications. LEDs are available in quantity on eBay from Hong Kong sources at reasonable prices
		http://stores.shop.ebay.com/hktaiyuen-LED- storeW0QQ_armrsZ1
		http://shop.ebay.com/led- hk/m.html?_nkw=&_armrs=1&_from=&_ipg=25

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Instructions

1 Color the LEDs by dunking the head in the amber paint. This gives the bright white of the LED an incandescent type of coloration. Amber LEDs would be too dark. The cut edge of a corrugated box makes a good dry rack. Do not proceed until the paint is dry.

2 Prepare equal lengths of the wires in the colors you have selected for the + and – lead wires by stripping approximately 1" of insulation from one end of the lead wires.



3 Cut off the long lead of the LEDs which is the + lead. Save the cut off pins since they make good terminating leads for the thin 30 gauge wire.



4 Cut the resistor leads to 1" on one end and $\frac{1}{2}$ " on the other end. Insert the 1" end of resistor into the slot of the wire wrap tool. Insert the + lead of the LED (was cut off in previous step) in the center hole of the wire wrap tool. Rotate the wire wrap tool until all of the resistor lead is applied to the LED.



5 Now take the + wire and wire wrap it onto the resistor lead as shown. Apply solder to this connection since the resistor lead is round. Soldering is not required when wrapping wire to a square post such as the LED terminals.

Now cut off the other LED lead and wire wrap the – wire to the – LED lead. You may further trim the LED leads to make as small as possible.



6 Make an angle bracket from two pieces of styrene as shown. Drill a #32 hole through the the bracket and press the LED into place. If you don't have a #32 drill use what you have and glue the LED into place using Quick Grip (Wal-Mart craft section).



7 Glue the bracket mounted LED's into place in the top of the structure you are going to illuminate as shown.

8 When using more than one LED in a structure, connect them in parallel use the .025" pins as junctions. The pins come in long strip and you snap off in pairs as needed. Connect to a 10-12 volt DC power source.

The Amber coating can be removed with lacquer thinner or more paint can be applied to subdue the light.





9 Here's what the result is. There's plenty of light to make it evident in broad daylight that the buildings are lighted. Now there's a need for detail since it's easy to see inside!



LED Reference Data

