



# CHANNEL LETTER LIGHTING

RETROFIT INSTALLATION GUIDE

**UNIQUE  
LIGHTING  
SOLUTIONS**

**USLED™**  
*Always the Right Choice!*

### WARNING

- The retrofit installation must only be performed by a licensed electrician.
- To prevent death, injury or damage to property this product must be installed in accordance to National Electric Code in the US or Canadian Electrical Code (CSA22.1) in Canada.
- Disconnect power before installing the product or servicing it.
- Wait until the lamp(s) have cooled down before retrofitting or servicing the fixture.
- The retrofit kit is to be installed only in UL Listed signs.
- US LED Channel Letter modules are only to be used with the 12VDC power supplies listed in this guide.



## RETROFIT COMPONENTS

### LED Modules (Figure 1):

Q ABC-XX-YY-ZZZZ: Generic part number for all channel letter LED modules, where Q may be P, M, AC or blank; AB, XX and YY may be replaced by any alphanumeric characters (0-99 or A to ZZ or combinations); C may be blank or may be any alphanumeric characters (0-9 or A to Z or combinations); and ZZZZ may be any alphanumeric characters (0-9999 or A to ZZZZ or combinations) or blank.

### Quick Connect Jumper Wires (Figure 2):

RLSW-6: Pair of 6" Quick Connect Jumper Wires  
RLSW-12: Pair of 12" Quick Connect Jumper Wires  
RLSW-24: Pair of 24" Quick Connect Jumper Wires  
RLSW-36: Pair of 36" Quick Connect Jumper Wires

### 5-Foot Whip (Figure 3):

RLSWhip-5FT: 5-foot Sleeved Wire Assembly with Connectors

### Class 2 Power Supply, 12VDC (Figure 4):

PSA-12-12: Advance model number LED120A0012V10F, 120VAC, 12VDC, 12W power supply  
PSA-12-60: Advance model number LED120A0012V50F, 120VAC, 12VDC, 60W power supply  
PSA-12-60V: Advance model number LEDINTA0012V50FO, 120VAC-277VAC, 12VDC, 60W power supply

### Wire nuts (Figure 5)

Figure 1: Example of LED Modules

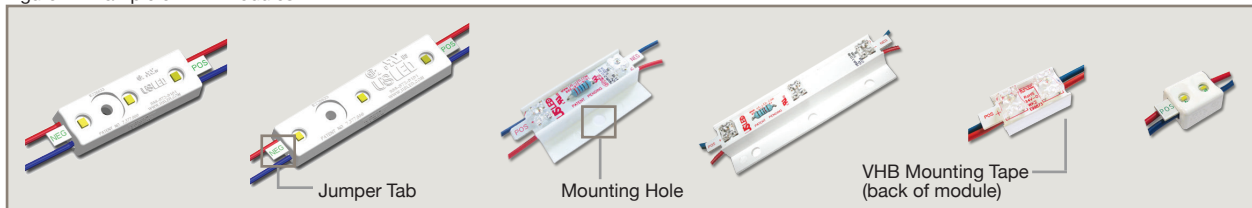


Figure 2: Quick Connect Jumper Wires

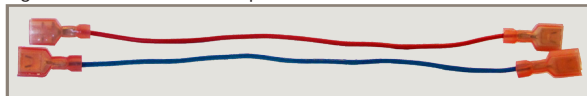


Figure 3: 5-foot Whip

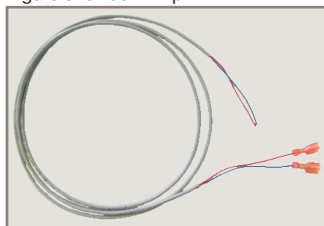


Figure 4: Example Power Supply



Figure 5: Wire Nuts



### REQUIRED TOOLS

Screwdriver  
Wire cutter

## INSTALLATION INSTRUCTIONS

1. Disable power.
2. Open channel letter face(s), disconnect source and remove all ballasts, neon or other light source to be retrofitted.
3. Clean interior and exterior of sign.
4. Layout the modules like neon, only without double-backs approximately 2-4 per foot, depending on the module type (see Figure 5 for spacing modules center-center). Be sure to test your first letter to make sure you are satisfied before proceeding.

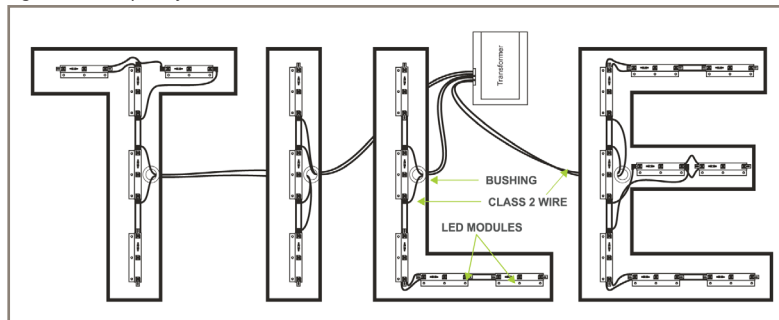
Figure 5: Module spacing

Module Series	Approximate Center - Center
MegaWhite	6"
Right Light	4" - 5"
Tadpole	3"

Module Series	Approximate Center - Center
Point2	8"
Saver2	8"

5. For power supply loading, see Page 6 or follow this link: [www.usled.com/channel\\_letter\\_loading.htm](http://www.usled.com/channel_letter_loading.htm).
6. Install length of product in letters by fastening mounting clips with VHB tape (supplied) or mechanically through holes in the clip, or both. Add silicone for additional security if desired (see Figure 6).

Figure 6: Example layout



7. Connect separate runs of product within a letter using Quick Connect jumper wires with pre-crimped connectors. These wires come in pairs of Blue (negative) and Red (positive). Simply connect one negative tab at the end of any module on one run to a negative tab at the end of any module on the second run. Then repeat process connecting a positive tab on one run to a positive tab on the other (Figures 7 and 8). See Wiring Diagram on Page 6 for further details.

Figure 7: Example power jump

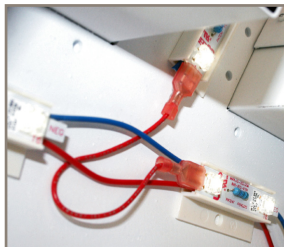
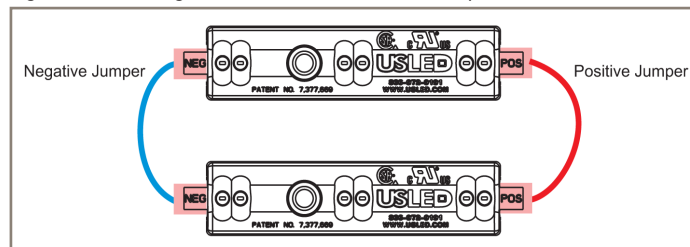


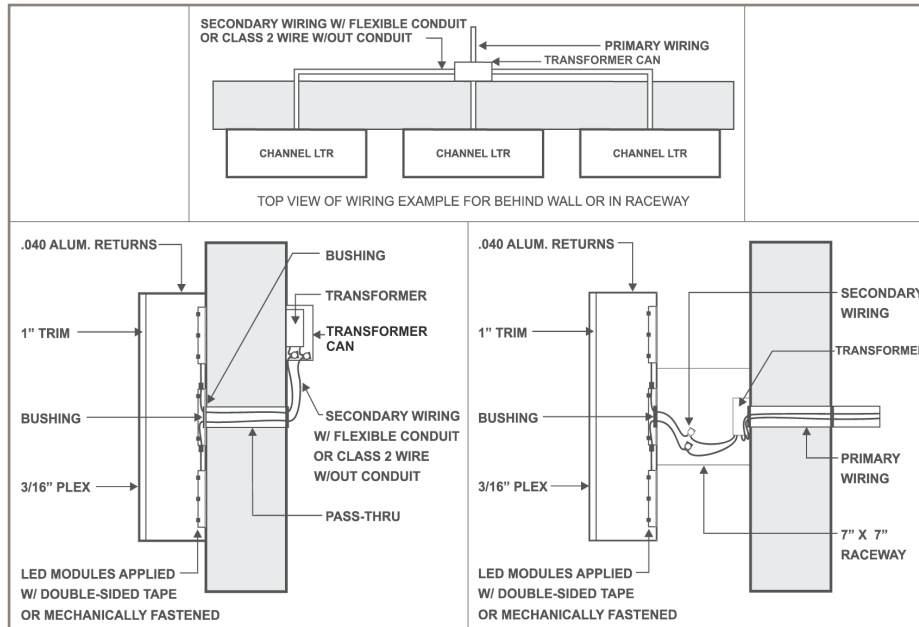
Figure 8: Connecting modules with Quick Connect Jumper Wires



## INSTALLATION INSTRUCTIONS (cont)

- The 36" Quick Connect jumper wires with class 2 wire should be used to connect modules from letter to letter, while the 5-Foot Whip is to be used to connect a run of modules to a power supply (See Wiring Diagram on Page 6). Although jumps can be made from letter to letter and then from the final letter to the power supply, the preferred method is to run each letter to the power supply. The secondary wires on the power supplies are color coordinated to match (Blue for negative and Red for positive or Black for negative and Yellow for positive on older products). All runs through a wall must either be in a conduit or "pass-thru" or be made with class 2 wire. See Figure 9 for an example installation.

Figure 9: Example layout



Limit the total number of modules per run to 1/3 of the total power supply load. This will increase your load balance and light uniformity. For example: using the Quasar (QZR-6-12-W) on a 60W power supply, you would limit the total number of modules on each run to 26 (or 13 feet) and connect at the midpoint.

- Repair and seal any unused openings in the rain enclosure. Openings greater than 1/2 inch diameter require a metal patch secured by screws or rivets and caulked with non-hardening caulk. Smaller openings may be sealed with non-hardening caulk.
- Attach channel letter face(s).
- Energize sign.

## POWER SUPPLY LOADS

### Right Light Series

Model Number	Feet / 12W		Feet / 60W	
	Min	Max	Min	Max
RLS-2-12-RX	1	5	5	27
P SVR-2-12-RX	2	10	9	52
RLS-3-12-RX	2	8	7	41
P SVR-3-12-RX	3	15	14	78
RLS-2-12-O	2	6	6	33
RLS-3-12-O	2	10	9	50
RLS-2-12-Y	2	6	6	33
RLS-2-12-G	2	11	10	55
RLS-2-12-B	2	11	10	55
PNT-3-12-W	2	11	10	55
PT2-3-12-W	2	6	5	30
SVR-3-12-W	3	16	14	83
SV2-3-12-W	2	9	8	45

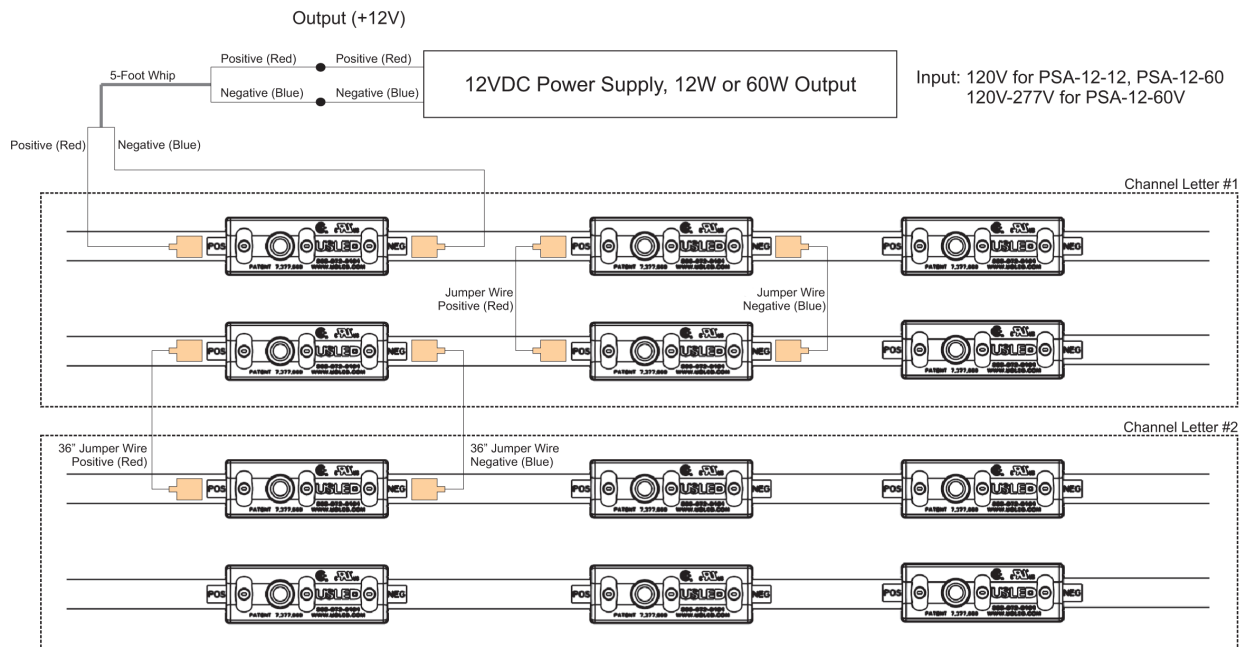
### Tadpole Series

Model Number	Feet / 12W		Feet / 60W	
	Min	Max	Min	Max
TP-2-12-RX	1	4	4	20
TP-2-12-O	1	4	4	20
TPL-2-12-G	2	8	7	41
TPL-2-12-B	2	8	7	41
P TPL-2-12-W	2	8	7	41
P TPL-2-12-7W	1	4	4	23

### MegaWhite Series

Model Number	Feet / 12W		Feet / 60W	
	Min	Max	Min	Max
QZR-6-12-W	2	8	7	41

## WIRING DIAGRAM



### TROUBLESHOOTING

Symptom	Possible Cause	Solution
A single module not lighting	Malfunction on module	Leave malfunctioning module in place. Mount replacement module alongside and using jumper wires, connect the positive tab to the positive tab of any module on the run. Do likewise with the negative tab.
LEDs flicker	A. Underloaded or overloaded B. Malfunctioning power source	A. Adjust loads on power sources to be within recommended limits. B. Replace power source.
Entire product run is not lighting	A. Bad wire connections B. If only one run of product on power source, malfunctioning power source C. Short D. Overload	A. Restore connection. B. Check power source and replace if appropriate. C. Search wiring for a short circuit between the red and blue wires. Replace bad wiring or use electrical tape to insulate the bad wire(s). D. Adjust loads on power sources to be within recommended limits.