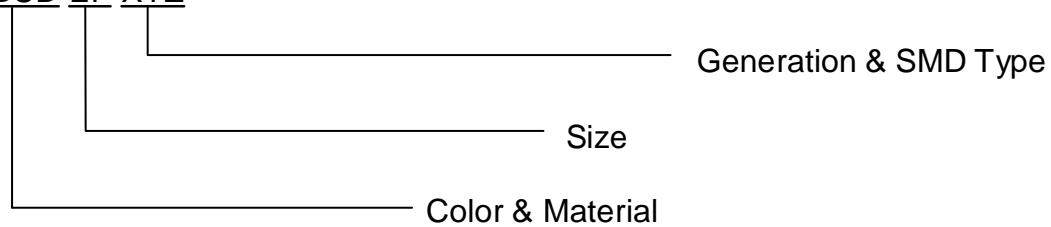


LED Illumination System for Channel Letters and 12VDC Power Supplies Installation Guide

Products covered in this guide:

LED Module: Part Number Description

JE-00ABCD-EF-XYZ



ABC:

1R	2G	3B	4CW	4WW	4W	5A	6M	7O
Red	Green	Blue	Cool White	Warm White	Pure White	Amber	RGB	Orange

D: / - standard material of Plastic case
U - Ultra material of Aluminum case

EF: / - standard size
MN - mini size

XY: 01st to 99th generation

Z: / - standard SMD
C - Constant Current SMD
V - Constant Voltage SMD
S - Side illuminating SMD
D - Direct illuminating SMD



whole bag of Standard LED modules



whole box of Mini LED modules



single piece of Standard LED modules



single piece of Mini LED modules



single piece of Super LED modules



single piece of RGB LED modules

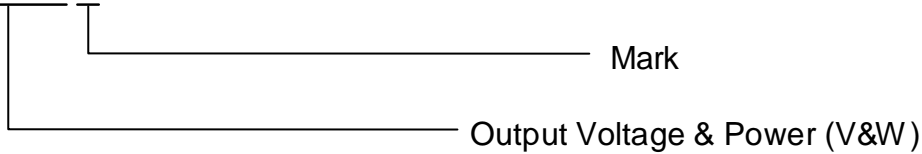
Fig.1 LED Modules options

Power Supplies: Part Number Description

Regular Driver:

- Common use
- Constant voltage

MJ-ABCDE-X



AB: Constant Output Voltage

CDE: Constant Output Power

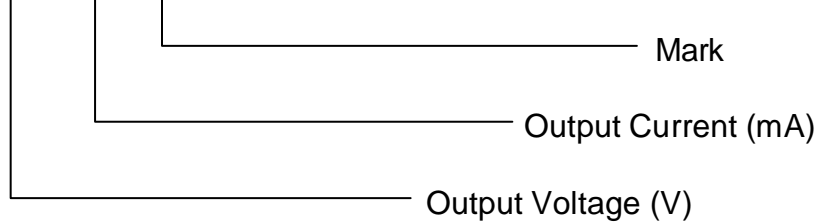
- X:
- / - Standard Outdoor Power supply
 - I - Indoor Power supply
 - L - Little size
 - M - Multiple output channels
 - S - Single out put channel

JS LED® LED Illumination System for Channel Letters and 12VDC Power Supplies Installation Guide

Advanced Driver:

- Special design for LED products
- High Efficiency
- Constant voltage
- Constant current

MJ-AB-CDEF-XY



AB: Constant Output Power

CDEF: Constant Output Current

XY: / - Standard Outdoor Power supply
 OJ - Potting compound housing
 CN - Regular housing



MJ-1220 Outdoor Power supply



MJ-12100 Outdoor Power supply



MJ-60-5000-OJ Outdoor Power supply



MJ-12150I Indoor Power supply

Fig.2 Power Supply options

Attention!

Scope

This procedure is designed to aid in the installation of J's LED Power Inc. LED Module channel letter illumination product.

Skilled trades people that are familiar with general construction, electrical and sign installation techniques should do the installation.

Licensed electricians should provide all installation and hook-up of both the primary input and secondary outputs of the Power Supply.

All installation and hook-up should be done in accordance with all national and local codes.

In no way is this document intended to construe warranty or fitness of use of the products described, nor is it intended to provide safety instruction for those installing the product.

CAUTION: TURN OFF ALL INTEGRAL DISCONNECTS BEFORE SERVICING (IF INTEGRAL DISCONNECTS ARE NOT PROVIDED, TURN OFF POWER TO THE SIGN BY OTHER MEANS i.e. TURN OFF THE CIRCUIT BREAKER OR REMOVE THE FUSE AT THE SERVICE PANEL).

THE FIELD ASSEMBLY OF THIS SECTIONAL SIGN IS SUBJECT TO THE ACCEPTANCE OF LOCAL INSPECTION AUTHORITY.

Instruction

LED Modules

J'S LED Power Inc. LED Modules are a low voltage, long life alternative to neon and florescent lighting for channel letters, light boxes and indoor decoration. The light source for the LED Module is the Light Emitting Diode (LED) instead of traditional neon or florescent tubes. LED technology allows the LED Modules to provide excellent color and brightness in a safe, low voltage circuit (12 Volts DC). LED Modules are a robust, easily installed product designed for a long life of safe, maintenance free operation.

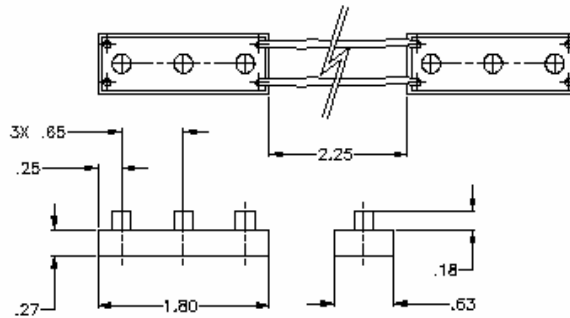


Fig.3 LED Module Layout

Tools Required

1. Wire stripper/cutter
2. Measuring Tape
3. Drill
4. Screw Drivers

Standard Hardware and Supplies (UL listing may be required on certain items)

(Supplies listed below may be purchased from J's LED Power Inc.)

1. Silicon Glue
2. Splice connector or Molex IDC (Insulation Displacement Connector) Type
3. 4" or 8" nylon zip ties
4. 18 AWG UL Listed PLCC



Fig.4 Hardware

Populating the Channel Letter

Populating a channel letter with LED Modules is as easy as peeling the liner off the mounting tape and firmly pressing the light modules in the desired locations.

NOTE: Bonding surface should be clean and dry.

To determine where the LED Modules should be placed and how many to use, J's LED Power Inc. offers the following guidelines: (Results may vary based upon desired light intensity and letter construction).

1. LED Modules are designed to be place in rows:
 - a. LED Modules should have approximately 2.5 inch spacing between modules within the row. This will result in 3 modules per foot.
2. LED Modules are designed to cover a stroke width of 4 inch in a channel letter (letter depth of 4 to 8 inches). Letters with a 4 inch stroke width or smaller should have one 1 row of LED Modules. Letters with a stroke width larger than 4 inches should have multiple rows of LED Modules placed according to the following schedule;
 - a. 4 to 6 inch stroke= 2 rows
 - b. 6 to 8 inch stroke= 3 rows
 - c. 8 to 10 inch stroke= 4 rows
 - d. Actual number of rows/modules may vary depending upon the application. The above schedule is offered only as a guideline.
3. When all modules are in place, the secondary output from the power supply can be connected. Multiple letters in a sign must be connected to the power supply in parallel. Use UL listed Insulation Displacement Connectors to make this connection and to cap off the open ends of the row.

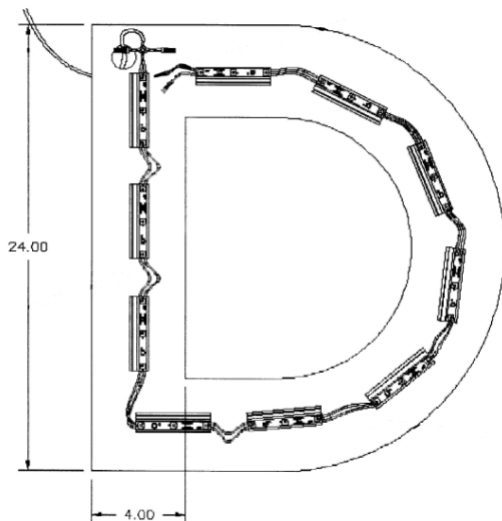
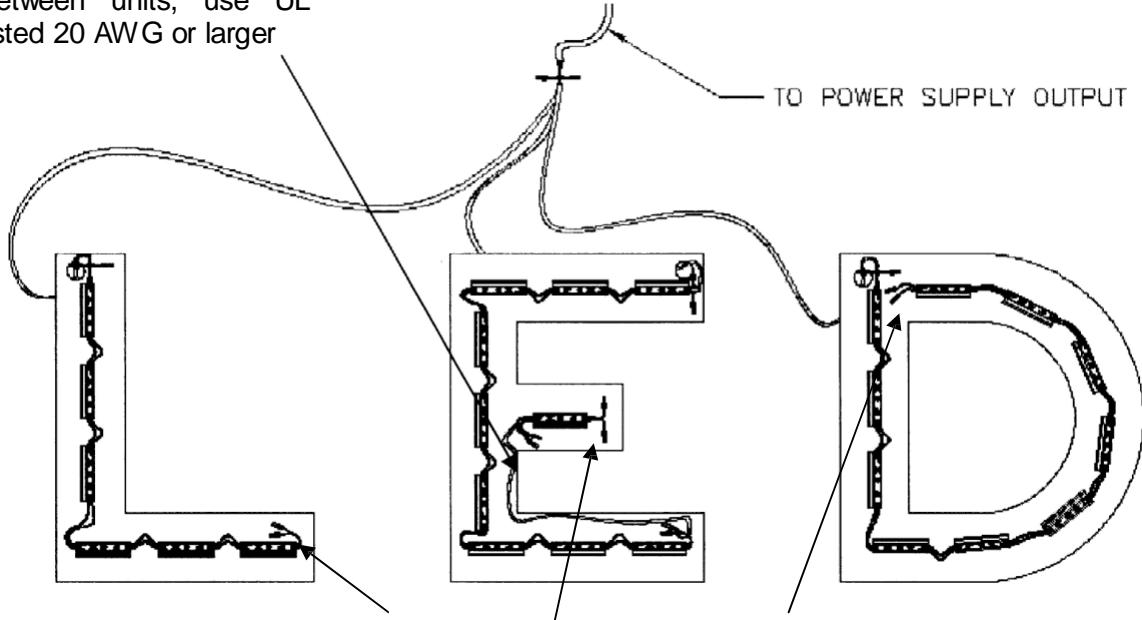


Fig.5 Example of 24" Channel letter with 4" stroke populated with one stroke of LED Modules

If extra wire is needed between units, use UL listed 20 AWG or larger



Use insulating tape to connect bare wires of modules or power supplies. Positive end and Negative end of wires should be connected accordingly. Pull wire gently to avoid damaging modules.

Fig.6 Sample Sign Layout and Connections

4. Put Silicon Glue at least two points on each side of each LED modules.

Do not use highly acid or alkali glue to fix modules, such as 502 glue.



Fig.7 Sample Sign Bonding

5. The modules connected in a single line of the power supply should not over 50 PCS. If modules connect to two power supplies fore and aft ends at the same time, the quantity can be increased to 80 PCS.

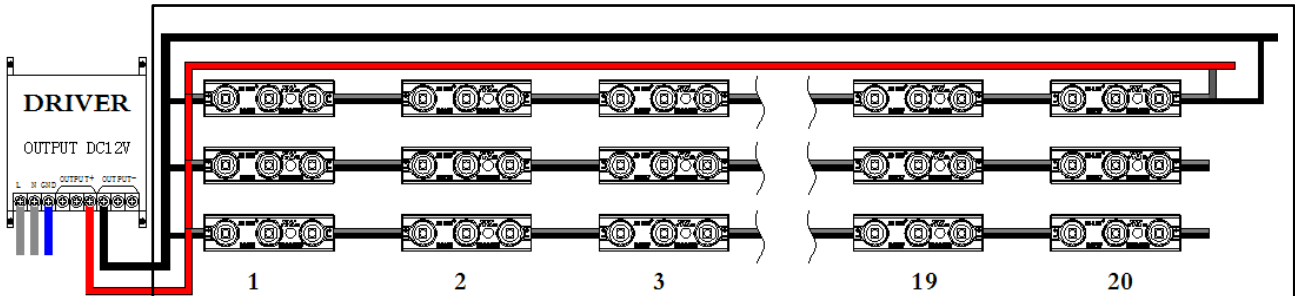


Fig.8 Lighted Channel Letter

NOTE: All LED Modules operate on 12VDC. All color modules can be connected to the same power supply. Colors can be mixed on the same power supply. Different colors can be connected to the same power supply and mixed on the same power supply output, while different types cannot.

ATTENTION:

If you use our -15 and -16 modules, we strongly recommend you to have 5 inch stroke. If it is under 5 inch, the modules could be overheating, and if it is over 5 inch, it might not be bright enough as desired.

NOTE:

Light transmittance is very important to the channel letter/light box face. Acrylic is typically used for the letter faces and comes in a variety of colors. It is recommended to use 7328 white acrylic as your channel letter/light box face.

Maximum Parallel Connection Quantity

Note:

Every different modules have different maximum parallel connection quantity, please check it with table 1 below.

Attention:

We strongly recommend that do **not** connect 2 wires of modules in one single line together. Please connect them in parallel. If the wires of modules are not connected to the power supply correctly, they might not work correctly as desired.

Module	Maximum parallel connection quantity
JE-00XY-05	100 pcs
JE-00XY-06	30 pcs
JE-00XY-07	50 pcs
JE-00XY-08	50 pcs
JE-00XY-09	50 pcs
JE-00XY-10	50 pcs
JE-00XY-11	100 pcs
JE-00XY-14	50 pcs
JE-00XY-15	50 pcs
JE-00XY-16	25 pcs
JE-00XY-21	20 pcs
JE-00XY-MN-31	100 pcs

Table 1: Maximum number of modules per wire

Power Supply Installation

Mounting

Mount the power supply directly to the wall with #8 or #10 pan head screws. The power supply must be mounted in a well ventilated area that allows for accessibility after installation and must not be adjacent to combustible materials or in an area that exceeds temperatures of 50°C (122°F). Mount the power supply indoors, out of the weather, and do not leave exposed to rain or water. For outdoor or wet location, power supply can be enclosed inside a raceway, inside the channel letter itself, in a UL Listed for wet location transformer box or in a NEMA 3R box with ventilation. Some acceptable Boxes for power supplies being mounted outdoors are Hoffman p/n A12R126, Wes trim TC18SO-UL or equivalent. Use of a Class 2 power supply can also be used for outdoor or wet locations.

Connecting the Primary

After securely mounting the power supply, have the primary connected by a licensed electrician in accordance with local and national codes. For the 40Watt Remote Power Supply simply plug the AC power cord into a standard 3 prong grounded outlet.

Connecting the Output

LED, Inc power supplies have Class 2 DC outputs. For reliability and performance the following loading is not to be exceeded, usually 80 % loaded recommended.

LED Module Model# (XY:1R/2G/3B/4W/4WW/4CW/5A/7O/8Y)	Power Consumption per modul	Maximum modules per 20W Power Supply	Maximum modules per 30W Power Supply	Maximum modules per 40W Power Supply	Maximum modules per 60W Power Supply	Maximum modules per 100W Power Supply	Maximum modules per 150W Power Supply	Maximum modules per 200W Power Supply
JE-004CW-05	0.36W	44pcs/18ft	66pcs/27ft	89pcs/36ft	133pcs/53ft	222pcs/89ft	333pcs/133ft	444pcs/177ft
JE-006M-06	0.72W	22pcs/11ft	33pcs/17ft	44pcs/22ft	67pcs/33ft	111pcs/55ft	167pcs/83ft	222pcs/111ft
JE-00XY(Z)-09	0.72W	22pcs/11ft	33pcs/17ft	44pcs/22ft	67pcs/33ft	111pcs/55ft	167pcs/83ft	222pcs/111ft
JE-00XY(Z)-10	1.44W	11pcs/4ft	17pcs/7ft	22pcs/9ft	33pcs/13ft	55pcs/22ft	83pcs/33ft	111pcs/44ft
JE-001R-11	0.48W	33pcs/13ft	50pcs/20ft	64pcs/25ft	100pcs/40ft	167pcs/67ft	250pcs/100ft	333pcs/133ft
JE-002G-11	0.36W	44pcs/18ft	66pcs/27ft	89pcs/36ft	133pcs/53ft	222pcs/89ft	333pcs/133ft	444pcs/177ft
JE-003B-11	0.36W	44pcs/18ft	66pcs/27ft	89pcs/36ft	133pcs/53ft	222pcs/89ft	333pcs/133ft	444pcs/177ft
JE-004W-11	0.36W	44pcs/18ft	66pcs/27ft	89pcs/36ft	133pcs/53ft	222pcs/89ft	333pcs/133ft	444pcs/177ft
JE-005A-11	0.36W	44pcs/18ft	66pcs/27ft	89pcs/36ft	133pcs/53ft	222pcs/89ft	333pcs/133ft	444pcs/177ft
JE-008Y-11	0.36W	44pcs/18ft	66pcs/27ft	89pcs/36ft	133pcs/53ft	222pcs/89ft	333pcs/133ft	444pcs/177ft
JE-004W-14	0.72W	22pcs/9ft	33pcs/13ft	44pcs/18ft	67pcs/27ft	111pcs/44ft	167pcs/67ft	222pcs/89ft
JE-00XY(Z)-15	0.72W	22pcs/9ft	33pcs/13ft	44pcs/18ft	67pcs/27ft	111pcs/44ft	167pcs/67ft	222pcs/89ft
JE-004CW-16	1.2W	13pcs/7ft	20pcs/10ft	27pcs/13ft	40pcs/20ft	67pcs/33ft	100pcs/50ft	133pcs/67ft
JE-004W-21	1.32W	12pcs/5ft	18pcs/7ft	24pcs/10ft	36pcs/14ft	60pcs/24ft	91pcs/36ft	121pcs/48ft
JE-004W-MN-31	0.36W	44pcs/15ft	66pcs/22ft	89pcs/29ft	133pcs/43ft	222pcs/73ft	333pcs/109ft	444pcs/145ft

Table 2: Power Supply loading table

JS LED[®] LED Illumination System for Channel Letters and 12VDC Power Supplies Installation Guide

It is recommended that the current be checked on each power supply output after loading is complete. The current drawn by each leg should not exceed the current rating on the power supply label. If the measured current does exceed the rated current, reduce the number of LED modules on that leg until the current is below the rated output. **The total number of module per power supply is not to exceed the schedule as shown in Table 2.**

NOTE: If any power supply output leads are left unused, the not terminated wires must be individually capped inside an UL Listed junction box, race way or sign housing.

Routing Secondary Wires

When wiring the secondary outputs of the power supply, all routing through walls must be sealed with outdoor rated caulk to protect the sign and building from water damage and the cable from chafing. The power supply leads and letter to letter jumpers can be routed through walls, inside and outside without conduit. It is recommended that all connections be enclosed in a UL listed junction box with strain relief.

Extension of Power Supply Leads

If a longer lead wire from the power supply to lighting modules is needed, an extension can be used. The extension should be kept as short as possible (under 15 feet for 18 AWG UL Listed or under 50 feet for 14 AWG UL Listed).

WARNING: CHECK POLARITY

After all wire routing is complete and the lighting modules are connected to the power supply, **RECHECK THE POLARITY OF ALL CONNECTIONS.** Reverse polarity connections may damage the LED modules and voids the product warranty.

Trouble Shooting Guide

1. Entire sign or leg with LED Modules does not light after complete installation.

Check the connection from the power supply lead to the first LED Module. Make sure the polarity of the connections made at the power supply lead and any jumper wire is correct.

2. Still does not light.

Using a volt meter check the output voltage of the power supply. The output voltage should be 12.0VDC +or- 0.5VDC. If there is no output voltage, have a licensed electrician check input voltage. Make sure the power supply is hooked up correctly and getting primary power. If the power supply is hooked up correctly and getting primary power and there is still no output voltage, replace the power supply with a new one.

3. The beginning of a LED Module leg lights, but the entire leg does not light or lights intermittently.

The primary cause of a portion of a LED Module leg not lighting or lighting intermittently is a bad connection between the modules that light and the modules that don't light. Check this connection.

4. One LED Module does not light, but all others in the leg light.

LED Modules are designed so if one module fails, it will not cause the entire sign or leg to go out. If one LED Module is not lighting, but all others in the leg are lighting, replace the module with a new one.