LED SIGN LIGHTING INSTALLATION GUIDE
Warning

- Installation must only be performed by a licensed electrician.
- To prevent death, injury or damage to property this product must be installed in accordance with the National Electric Code in the USA or Canadian Electrical Code (CSA22.1) in Canada.
- P-LED modules are only to be used with the Class 2, 12VDC or 24VDC power supplies listed in this guide.

Cabinet/Channel Letter Installation Guide

Tools Required:

- Screwdriver
- Drill
- Wire Stripper
- Silicone & Gun

Supplies Required:

- UL Listed PTL Cable
- Wire Nuts
- #4 Panhead screws

A. Arrange the modules per the P-LED product estimate and layout found at P-LED.com, remembering that this is only a guide. Be sure to test your cabinet or letters, making sure the lighting is even and output is adequate before adhering the modules to the back of the sign.

B. Clean mounting surface with alcohol to remove dirt or oil. Surface may be the back of the cabinet (single-sided), square tubing or extrusion (double-sided). Adhere the modules to the back of the can by peeling the release liner from the VHB tape on the back of the module and pressing the module down firmly to the back of the sign can. Additional security must be added by adding silicone to the edge of the module or utilizing a number #4 screw for modules with a mechanical screw hole option. All runs should be terminated with the wire being cut down to the module and sealed using weather-rated silicone, or a wire nut covering the exposed leads at the end.

C. For power supply loading, refer to our website: P-LED.com. Use only UL (USA) or cUL/CSA (Canada) approved Class 2 wire to connect the modules from each can back to the power supply with wire nuts as shown in Figure 1 below. P-LED module wires are generally white or colored (+) and black or gray (-). Class 2 wire may be used to jump from one letter or run of LEDs to another; however, it is recommended that the total number of modules in a single run not exceed the recommended amount found on the individual spec sheets at P-LED.com.

D. Visit P-LED.com for power supply wiring and installation based upon the power supply type and application. All runs through a wall must be in conduit or pass through with Class 2 wire consistent with the National Electric Code or Canadian Electric Code.

E. Attach the channel letter or cabinet face and energize the sign.

![Figure 1](image-url)
Principal LED Sign Systems

See product specs here: P-LED.com/qwik-mod

See product specs here: P-LED.com/street-fighter

See product specs here: P-LED.com/fusion

See product specs here: P-LED.com/fusion-freedom

For product depth charts visit: P-LED.com/documentation
Principal LED Power Supplies

Tools Required:
Screwdriver, Drill, Wire Stripper, Silicone & Gun

Supplies Required:
UL Listed PTLC Cable, Wire Nuts, #8 Panhead screws

Power Supply:
Primary Side:
AC/L (Black)
AC/N (White)

Secondary Side:
V+ (Red)
V- (Black)
FG (Green)

Attach Power Supply to J-Box:
Attach power supply(s) to junction box using a 1/2” locknut. Multiple power supplies may be connected and configured to the same junction box. For wet locations, use a junction box that is UL rated for wet use.

Note: Operating temperature is -22°F to 140°F (-30º to 60ºC) therefore it is required by UL that the power supplies are spaced at least 4” apart side to side, 1” end to end, and not in secondary enclosure to ensure optimal ventilation to ensure maximum lifetime of the power supply. It is highly recommended that a photo-cell or timer be used to prevent operation during daylight hours. Do not use more modules than recommended on the product installation guide. Total amperage should not exceed 5.0A per power supply.

Mount Power Supply:
Using a drill and the #8 Panhead screws, mount the power supply using the mounting tabs at the bottom of the supply.

Make Primary Connection:
A licensed electrician is required in order to bring conduit to the junction box and make the primary connection.

Make Secondary Connections:
Secondary output is 12VDC. Secondary Class 2 Cables DO NOT require conduit per NEC 2008 Articles 725.121-130. Always seal wall penetrations carefully to prevent water damage.

Do not exceed 5A DC load. To minimize light loss it is recommended to split the load equally in two parallel runs (2.5A) of LED modules, or wire the secondary input to both ends of the fully loaded 5A strand of LEDs.

The following gauge PTLC wire should be used based on the distance from the primary to the first letter.

<table>
<thead>
<tr>
<th>Distance</th>
<th>Wire Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td>48</td>
<td>14</td>
</tr>
<tr>
<td>75</td>
<td>12</td>
</tr>
<tr>
<td>120</td>
<td>10</td>
</tr>
<tr>
<td>187</td>
<td>8</td>
</tr>
</tbody>
</table>

For all P-LED parts, connect black to gray or black striped wire, connect red to colored or white wire.
Enclosure/Raceway Mount Power Supplies

INSTALLATION GUIDE, SELF-CONTAINED PS - INPUT 100-277 VAC or 277-347 VAC / OUTPUT: 12VDC or 24VDC, SEE POWER SUPPLIES ON PAGE 6.

Tools Required:
- Screwdriver
- Drill
- Wire Stripper
- Silicone & Gun

Supplies Required:
- UL Listed PTLC Cable
- Wire Nuts
- #8 Panhead screws

Power Supply:
- AC/N (White)
- AC/L (Black)
- FG (Green)
- V+ (Red)
- V- (Black)

Note: Operating temperature is -22ºF to 158ºF (-30º to 70ºC) (see de-rating chart at p-led.com for higher temperature option), therefore it is recommended that the power supplies are spaced at least 4” apart side to side, 2” end to end, and not in secondary enclosure to ensure optimal ventilation. To ensure maximum lifetime of the power supply, it is highly recommended that a photo-cell or timer be used to prevent operation during daylight hours. Do not use more modules than recommended on the product installation guide. Total amperage should not exceed 5.0A for the 60W and 1.67A for the 20W power supply, respectively.

Mount Power Supply:
Using a drill and the #8 Panhead screws, mount the power supply inside the channel letter, inside the raceway, or in a separate UL enclosure using the mounting tabs at the bottom of the supply.

Make Primary Connection:
A licensed electrician is required in order to bring conduit to the junction box and make the primary connection.

Make Secondary Connections:
Secondary output is 12VDC. Secondary Class 2 Cables DO NOT require conduit per NEC 2008 Articles 725.121-130. Always seal wall penetrations carefully to prevent water damage.

Do not exceed 5A DC load. To minimize light loss it is recommended to split the load equally in two parallel runs (2.5A) of LED modules, or wire the secondary input to both ends of the fully loaded 5A strand of LEDs.

The following gauge PTLC wire should be used based on the distance from the supply to the first letter.

<table>
<thead>
<tr>
<th>Distance</th>
<th>Wire Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td>48</td>
<td>14</td>
</tr>
<tr>
<td>75</td>
<td>12</td>
</tr>
<tr>
<td>120</td>
<td>10</td>
</tr>
<tr>
<td>187</td>
<td>8</td>
</tr>
</tbody>
</table>

For all P-LED parts, connect black to gray or black striped wire, connect red to colored or white wire.

Wall Penetration (fill with silicone)
<table>
<thead>
<tr>
<th>Power Supplies</th>
<th>Part Number</th>
<th>Input Voltage</th>
<th>Input Current</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal 60W</td>
<td>PL-60-12-U (P-OH060-12-PL)</td>
<td>120-277VAC</td>
<td>1.1A @ 120VAC, 0.45A @ 277VAC</td>
<td>12VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
<tr>
<td>Threaded Universal 60W</td>
<td>PL-60-12-MU (P-OH060-12-PL-T)</td>
<td>120-277VAC</td>
<td>1.1A @ 120VAC, 0.45A @ 277VAC</td>
<td>12VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
<tr>
<td>Plastic Universal 60W</td>
<td>PL-60-12-PCM-U (P-OH060-12-PL-P)</td>
<td>120-277VAC</td>
<td>1.1A @ 120VAC, 0.45A @ 277VAC</td>
<td>12VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
<tr>
<td>Universal 36W</td>
<td>PL-36-12-PCM-U (P-OH036-12-PL)</td>
<td>120-277VAC</td>
<td>0.95A @ 120VAC, 0.40A @ 277VAC</td>
<td>12VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
<tr>
<td>Universal 20W</td>
<td>PL-20-12-PCM-U (P-OH020-12-PL)</td>
<td>120-277VAC</td>
<td>0.49A @ 120VAC, 0.23A @ 277VAC</td>
<td>12VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
<tr>
<td>Universal 120W</td>
<td>PL-120-12-U (P-OH120-12-PL)</td>
<td>120-277VAC</td>
<td>2.2A @ 120VAC, 0.90A @ 277VAC</td>
<td>12VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
<tr>
<td>347VAC-60W</td>
<td>PL-60-12-347 (P-OX060-12-PL)</td>
<td>277-347VAC</td>
<td>0.3A @ 277VAC, 0.23A @ 347VAC</td>
<td>12VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
<tr>
<td>Universal 96W</td>
<td>PL-96-24-U (P-OH096-24-PL)</td>
<td>120-277VAC</td>
<td>1.1A @ 120VAC, 0.45A @ 277VAC</td>
<td>24VDC</td>
<td>5.0 Amps</td>
<td>47-63 Hz</td>
</tr>
</tbody>
</table>