400/450 Series Connector Strip
Set Up Guide

1. Position connector strip container near area to be installed. Disassemble container so that connector strip remains in bottom tray without sides. Be sure of power feed location and stage orientation (see below).

Use the cardboard shipping pylons as stands to support the connector strip for joining sections and attaching brackets.

2. Connect all sections with steel section joiners and hardware provided. Details page 2

DO NOT DISCARD—Cardboard shipping pylons act as stands to assist in assembly of the connector strip.

3. Install hanging brackets onto connector strip. Details page 3

Note: Type 11 & 16 brackets have one 3/4" diameter hole at top for rigging shackle.

4. Attach connector strip to rigging or stage electrics pipe.

5. After connector strip is rigged and hanging, remove cardboard pylons and attach Schedule 40 1-1/2" pipe to hang lighting fixtures. (pipe provided by others)

6. Connect to power & data sources and test. Details page 4

Note:
- Typical connector strip layouts have the circuit numbering facing the upstage side. Be certain of orientation prior to unfolding and joining sections together. Diagram above shows circuit numbering upstage and power terminals stage Left.

Be sure to remove ALL protective packaging materials from around wires prior to joining sections together.

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400/450° Series is UL and cUL listed under File E31501 for Stage and Studio.
400/450 Series Connector Strip Assembly Instructions

Extended length connector strips (exceeding 6') are shipped partially assembled and folded. All internal wiring is complete and all necessary components are included unless noted. Open each shipping container and check the contents according to your packing slip. The wiring between sections should be undamaged and covered by protective plastic tubing. Metal parts should be free from scratches and dents. Contact your Altman Lighting representative immediately if you discover any problems.

Tools required in assembling connector strip:

- #2 Philips screwdriver to assemble strip sections. (power driver w/torque control recommended)
- 1/8" Straight blade screwdriver to install wire feed into spring 20A circuits. (included in this package)
- 1/2" Hex deep socket & ratchet to assemble hanger brackets.
- Power drill and drill bits.
- Greenlee® or equivalent punch for conduit or metal strain relief. (strain relief not included)
- Large straight blade screwdriver for ground lug and 30A, 50A 60A, and 100A circuits

General assembly information

Fully assembled connector strips can be very long and difficult to move for installation. Assemble the connector strips in an area with good access to the final installation point.

**CAUTION:** The section joiners are designed to hold the connector strip together for normal operation and not designed for unusual load stresses such as lifting entire length of strip from one end.

Assembling the connector strip sections

1. Identify which end of the connector strip is the terminal access end (Stage Left, Stage Right) and confirm that this end is near the power source to be connected to. The terminal access end is identified by label: **TERMINAL ACCESS**, and an orange sticker. Outlets and numbering typically face upstage.
2. Carefully remove the connector strip from the shipping container and stretch onto the floor with enough room to assemble the entire connector strip. Use the cardboard shipping pylons as stands to assist in assembly of the connector strip.
3. Each section requires fourteen (14) #10 self tapping screws and one steel joiner. (supplied with extra screws)
4. Attach steel joiner to 1st section to be joined with 7 screws and tighten.
5. Carefully slide mating 2nd section onto steel joiner and attach with 7 screws. Make sure electrical wires are not being pinched or distorted in any way.
6. Repeat steps 4-5 above for all remaining sections.

**Note:** A powered screw gun with torque control will greatly speed the assembly of the connector strip.

**DO NOT** exceed 20 in/lbs of torque when installing sheet metal screws.

Be sure to remove ALL protective packaging materials from around wires prior to joining sections together.

*Wires and DMX barrier panels not shown for clarity purposes.*
Installing Hanging Brackets-All Types
After assembling the connector strip sections, attach the hanging brackets to support it. Connector strips are shipped with enough hangers for installation every five feet, with a hanger at each end. This is the maximum spacing allowed. Hanging brackets may be included in connector strip packaging, or in some cases a separate container. Confirm that all packaging materials are thoroughly inspected prior to disposal. Schedule 40 pipe is not provided by Altman.

1. Starting at one end, fasten the hanger brackets onto the connector strip at intervals no greater than 5 feet.
   DO NOT place brackets in a manner that would prevent access to TERMINAL ACCESS panel!
2. Use the provided 5/16"-18 fasteners and a 1/2" socket & ratchet to attach the hanging brackets to the con-

| Table below: One pair of brackets, plus one additional bracket for each additional 5 feet. |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Length              | 1'- 10'             | 11'- 15'            | 16'- 20'            | 21'- 25'            | 26'- 30'            | 31'- 35'            | 36'- 40'            | 41'- 45'            | 46'- 50'            | 51'- 55'            | 56'- 60'            |
| Bracket Qty.        | 2                   | 3                   | 4                   | 5                   | 6                   | 7                   | 8                   | 9                   | 10                  | 11                  | 12                  |

CAUTION: The installer must verify the mounting structure, support, or surface is capable of supporting the connector strip weight, in addition to any other loads hung from it. Always follow applicable building codes when attaching connector strips to structural elements of a building.

WARNING: Attaching hangers more than five feet apart risks structural failure of the connector strip.

DO NOT place brackets in a manner that would prevent access to TERMINAL ACCESS.
### 400 Series Brackets

For bracket types 11-13, be certain connector strip is mounted against FLAT SURFACE SIDE of bracket.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-TYPE-11</td>
<td>Single Pipe</td>
<td><img src="image1" alt="Diagram" /></td>
</tr>
<tr>
<td>400-TYPE-12</td>
<td>Double Pipe</td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td>400-TYPE-13</td>
<td>Double Pipe Extended</td>
<td><img src="image3" alt="Diagram" /></td>
</tr>
<tr>
<td>400-TYPE-14</td>
<td>90° Pipe Grid</td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td>400-TYPE-15</td>
<td>All Thread Bracket</td>
<td><img src="image5" alt="Diagram" /></td>
</tr>
<tr>
<td>400-TYPE-16</td>
<td>In-Line Single Pipe</td>
<td><img src="image6" alt="Diagram" /></td>
</tr>
<tr>
<td>400-TYPE-17</td>
<td>In-Line Double Pipe</td>
<td><img src="image7" alt="Diagram" /></td>
</tr>
</tbody>
</table>

* = Hole not used on 400 series brackets

### 450 Series Brackets

For bracket types 11-13, be certain connector strip is mounted against FLAT SURFACE SIDE of bracket.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>450-TYPE-11</td>
<td>Single Pipe</td>
<td><img src="image8" alt="Diagram" /></td>
</tr>
<tr>
<td>450-TYPE-12</td>
<td>Double Pipe</td>
<td><img src="image9" alt="Diagram" /></td>
</tr>
<tr>
<td>450-TYPE-13</td>
<td>Double Pipe Extended</td>
<td><img src="image10" alt="Diagram" /></td>
</tr>
<tr>
<td>450-TYPE-14</td>
<td>90° Pipe Grid</td>
<td><img src="image11" alt="Diagram" /></td>
</tr>
<tr>
<td>450-TYPE-15</td>
<td>All Thread Bracket</td>
<td><img src="image12" alt="Diagram" /></td>
</tr>
<tr>
<td>450-TYPE-16</td>
<td>In-Line Single Pipe</td>
<td><img src="image13" alt="Diagram" /></td>
</tr>
<tr>
<td>450-TYPE-17</td>
<td>In-Line Double Pipe</td>
<td><img src="image14" alt="Diagram" /></td>
</tr>
<tr>
<td>450-TYPE-17TB</td>
<td>In-Line Double Pipe for Terminal Box</td>
<td><img src="image15" alt="Diagram" /></td>
</tr>
</tbody>
</table>

* = Hole not used on 450 series brackets
400/450 Series Connector Strip Assembly Instructions

**WARNING:** ALL ELECTRICAL WIRING AND CONNECTIONS MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN.

**WARNING:** This equipment MUST be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.

### Electrical Connections

- **From End Plates** Each end plate has (4) .125” diameter pilot holes. These pilot holes act as centers for optimal positioning of holes up to 2.5” in diameter for attaching wiring strain relief devices into connector strips. Use the pilot hole to drill the required size for a Greenlee® or equivalent punch to obtain proper hole size for your installation requirements. Use 1st hole from the top for data input, and 3rd hole from the top for AC power connection.

- **From Top** The top surface at each end of the connector strip has .875” knockouts.

**Note:** Minimal top clearance with double pipe type brackets.

### DIN Rail Terminal Block System

The connector strip uses a 35MM DIN rail modular terminal block system. Terminal blocks range from 15 amps to 115 amps depending on product configuration when ordered.

#### Terminal Block Sizes

*Note: Not all terminal blocks listed in chart below may be present in connector strip.*

<table>
<thead>
<tr>
<th>Color</th>
<th>Amps</th>
<th>Wire Size</th>
<th>Strip Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beige*</td>
<td>15A</td>
<td>14 AWG</td>
<td>1/2”</td>
</tr>
<tr>
<td>Beige**</td>
<td>50A</td>
<td>8 AWG</td>
<td>1/2”</td>
</tr>
<tr>
<td>Gray**</td>
<td>50A</td>
<td>8 AWG**</td>
<td>1/2”</td>
</tr>
<tr>
<td>Orange</td>
<td>35A</td>
<td>10 AWG</td>
<td>3/8”</td>
</tr>
<tr>
<td>Blue</td>
<td>50A</td>
<td>8 AWG</td>
<td>1/2”</td>
</tr>
<tr>
<td>Yellow</td>
<td>65A</td>
<td>6 AWG</td>
<td>1/2”</td>
</tr>
<tr>
<td>Black</td>
<td>115A</td>
<td>2 AWG</td>
<td>3/4”</td>
</tr>
</tbody>
</table>

**Note:** 50A spring clamp terminal blocks are used for 20A circuits. The up sizing allows for contactors to use #10AWG or #8 AWG line feed wire. All load side components are rated at 20A.

- **50A Spring Clamp Terminal Blocks** (Gray or Beige, 12)
- **15A or 25A Spring Clamp Terminal Blocks** (Beige or Gray, 2 shown) For Data Power Supply
- **75A Screw Terminal Blocks** (Yellow, 2 shown)
- **50A Screw Terminal Blocks** (Blue, 2 shown)
- **115A Screw Terminal Blocks** (Black, 2 shown)
- **30A Screw Terminal Blocks** (Orange, 2 shown)

**Constant, non dimmable source**

### Attaching Wires to Spring Clamp Type Terminal Blocks. (15A-50A Circuits Only)

20 Amp circuits are gray in color with white marking labels that accept up to maximum 8 AWG wire.

1. Insert 1/8” wide flat blade screwdriver (supplied) into the square slot and push all the way down so that screwdriver bottoms out.
2. Insert the stripped wire into the oblong shaped hole.
3. Push screw driver to release spring clamp.
4. Repeat steps 1-3 for all remaining connections.

400/450* Series is UL and cUL listed under File E31501 for Stage and Studio.
DMX IN TERMINAL BLOCK STYLE

Passive DMX

DMX IN/OUT XLR 5 PIN STYLE

DMX IN 5 PIN
MALE

DMX IN 5 PIN
FEMALE

DMX By Pass Switch Usage

If the DMX outputs are not being used, the position of the red switch should be pushed in to IN position (bypass).

If the DMX outputs ARE being used, the red switch should be in OUT position (loop). Data cables should come out of the female connector, into the DMX device, and then out of the DMX device, and into the male connector. Not using the return will disable all DMX downstream.

Note on Category Wire Chart

This chart is intended for DMX512 cabling only - NOT DMX-over-Ethernet cabling. Great care must be taken to prevent the accidental connection of DMX equipment to non-DMX equipment. The connection of DMX equipment to non-DMX equipment such as Ethernet switches or telephone equipment may result in serious equipment damage and/or personal injury, as pins 4 and 5 may carry voltages of up to 48VDC or greater. Category wire is not recommended for loose or temporary cabling. The use of RJ45 connectors for DMX equipment should be restricted to patch bays in access controlled rooms and should not be used for the direct connection of portable equipment.

Please be aware that some non-standard pin-outs are also in use (i.e. Color Kinetics).