Strand Lighting

User's Guide

Published by the Marketing Department of Strand Lighting

A0
By: Don Lammers
2-450129-010

System 6 Dimmer Cabinet

Overview

System 6 is a compact wall mounted dimmer cabinet suitable for applications requiring a small number of dimmers, or where distributed dimming is adopted to reduce wiring costs. System 6 features include:

- Compact 6 x 15A or 6 x 20A, self contained pre-wired dimmer cabinet.
- Suitable for dimming incandescent or low voltage loads.
- Switch selectable non-dim, neon, cold cathode, and fluorescent options.
- "Panic" facility for turning dimmers to full in an emergency.
- System "Bypass" for installation test and verification.
- Supplied complete with primary circuit breaker protection.
- Hinged access doors for ease of installation.
- Accepts analog 0 to +10 volts DC control signals.
- Compatible with Microcontrol and Outlook control systems.
- Compatible with Premiere control systems when used with an appropriate demultiplexer unit.
- UL listed and CSA approved.

Analog Control

System 6 accepts analog 0 to +10 volts DC control signals for direct connection to Microcontrol stations or other suitable analog control systems. The main PCB can provide 10.6VDC for up to 5 Microcontrol stations. The System 6 with power supply option supports an additional 20 Microcontrol stations.

Digital Network Control

Outlook control stations can use the digital control network to directly access preset lighting scenes stored within the System 6. Using Outlook stations, several System 6 cabinets can be connected to distributed Outlook stations via a common network cable to create an integrated system for controlling the lights in up to 9 independent rooms. Power for Outlook control stations can be provided from an external power supply or from an optional built-in power supply in one or more of the cabinets. Each optional built-in power supply can provide power for up to 20 Outlook control stations.

When using Digital Network Control, rotary switches inside the System 6 cabinet must be set during installation to assign the following:

- A room number (0 to 9).
- A channel number (corresponding to the first dimmer in the cabinet).
- The option of splitting the rack into two consecutive rooms with three channels in each room.

Installation

Inspect the shipping carton carefully. DO NOT overlook small pieces such as control stations which may be lost in the packing material.

Read all of the installation instructions before trying to install the equipment. Save these instructions for future reference.

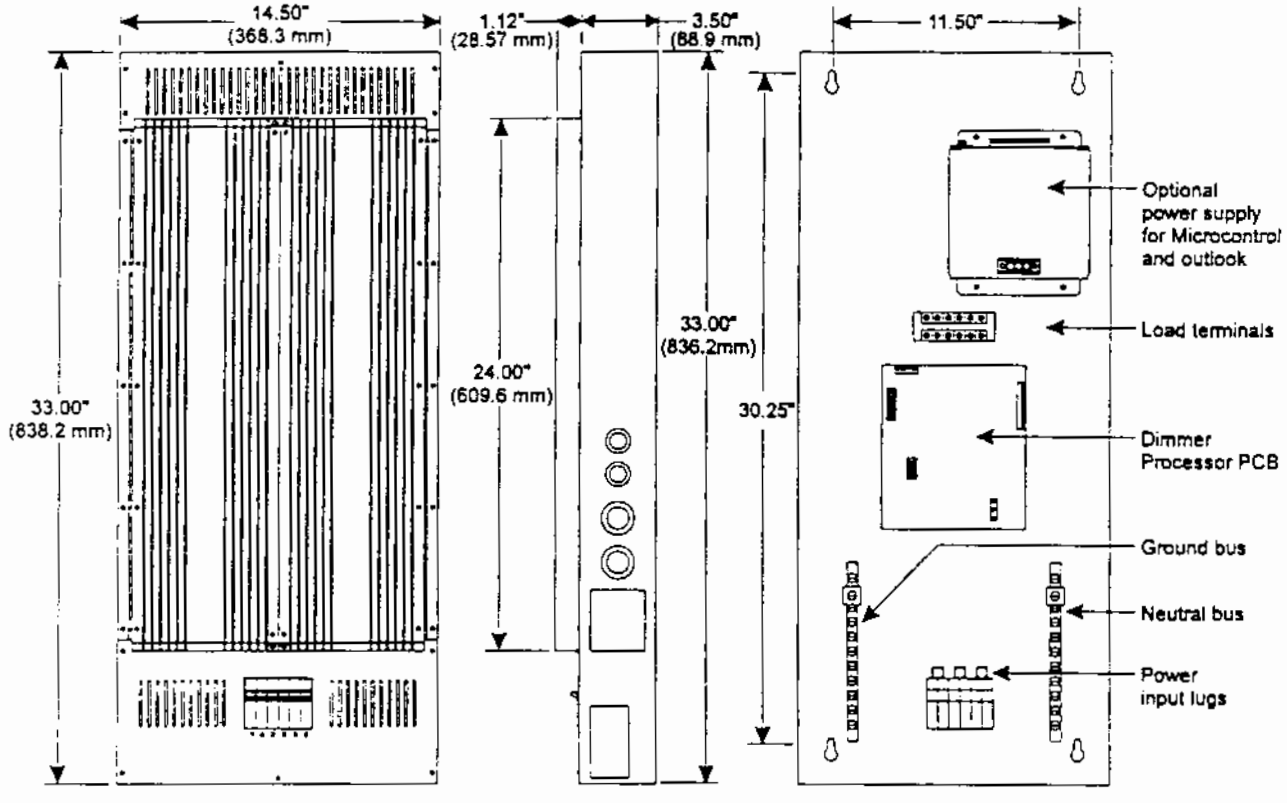
This is a delicate and complicated piece of electrical control apparatus. Use caution when handling the System Six. Be especially careful to dress all field wiring to the rear of the cabinet to clear the power devices on the doors, while clearing all factory installed devices and wiring on the back panel.

Warning

> ***The dimming system must be installed with the power OFF! Make sure that feeders are not energized.***
>
> ***Single phase 3 wire feeds must not be 2 phases of a 3 phase supply.***

Install the Cabinet

1. Position System Six properly. Mount vertically plumb, using the mounting holes provided. Allow 4" (10 cm) clearance on the top and the bottom to assure proper airflow over the heatsink. Be sure that the doors will swing open freely. Dimensions and the location of major components are shown below.



Cabinet Dimensions and Main Component Locations

2. Make up conduits, per the locator labels on the top and side of the cabinet. Watch for proper clearance of the doors, both open and closed.

Connect the Wiring

1. Connect load GROUND and NEUTRAL wires to the ground and neutral busses.

2. Connect load wires to terminals "L1-L6" in the center of the cabinet.

3. Connect GROUND and NEUTRAL for the feed power to the lugs provided on the ground and neutral busses.

4. Connect PHASES (or "hot legs") for the feed power to input lugs provided on the top of the circuit breakers. This is configured at the factory for three phase 4 wire or single phase 3 wire, as ordered, and is not field changeable.

   System Six is a digital system, so phase rotation sequence must be correct. On systems of software Rev. 1.2 or less, if the phase rotation is incorrect, you will have to reverse the phase B & C input wires on the lugs. See below for more details. Locate the software version on the label on the chip. If the software version is 1.3 or higher, see switch 3 below.

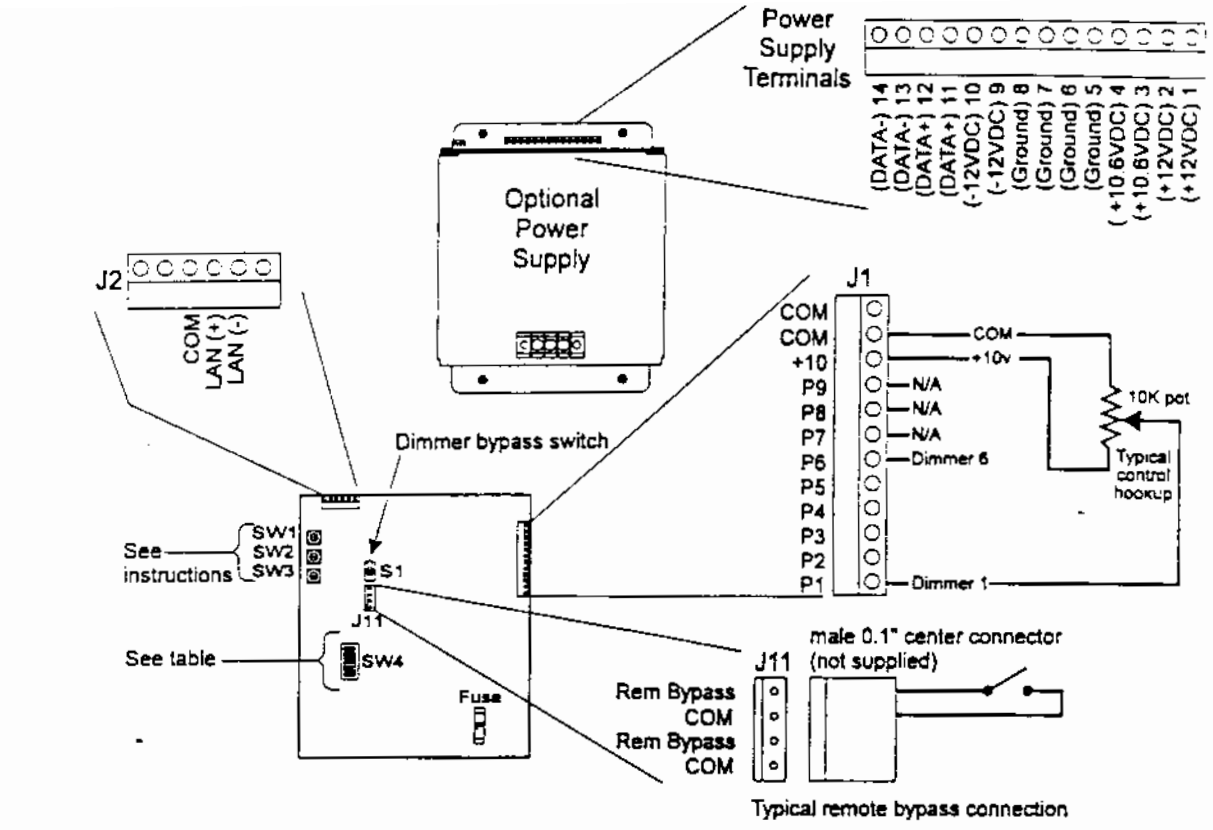
5. Connect analog control wires as follows:
   a. Connect discrete analog control wires to J1.
   b. Supply the +10.6VDC power for Microcontrol stations from an external power supply or use the 10.6VDC provided on J1 for up to 5 Microcontrol stations. If you use an external power supply you must make sure that COMMON from the external supply is tied to one of the COM terminals on J1.

6. Connect Digital Netword Control wires as follows:
   a. Connect DATA wires from Outlook control stations to LAN+ and LAN- on J2 if there is no optional power supply, or to DATA+ and DATA- on the optional power supply terminals if it is available.

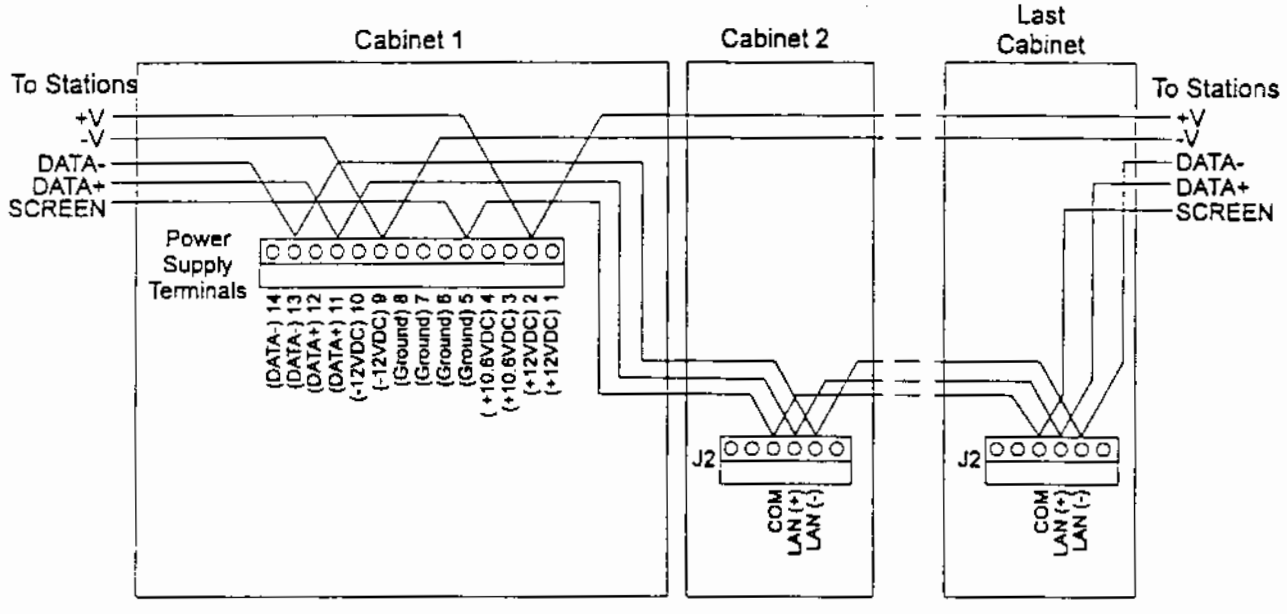
      An optional power supply is required in at least one rack for systems using Outlook control stations, unless power is supplied externally. Each optional power supply can provide power for up to 20 Outlook control stations.

   b. Connect V+ and V- wires from Outlook control stations to the +12VDC and -12VDC terminals on the optional power supply. In multiple rack systems this power supply is usually provided only in one rack.
   c. Connect the screen of the Digital Network Control cable to COM on J2 if there is no optional power supply or to Ground on the optional power supply if available.

      Unless specifically shown on your job drawings, do not expect to have both analog and Digital network Control wiring.



Switch and Terminal Locations



Hooking Up Outlook Stations

6. After all connections are made, check your work for accuracy, tight connections, wire dressing (towards the cabinet back), and verify that factory wiring is secure.

Before you can operate dimming system, control stations must be in place, wired up, and properly energized. Take the same care to install the various control stations as you took in installing the dimming cabinet. Wiring and other instructions are included in your submittal drawings and in the "as built" drawings.

Set Dimmer and Cabinet Parameters

1. Locate the toggle switch on the mainprocessor board labeled "S1". This switch bypasses all control signals and turns all dimmers to full.

2. Locate the 8 tiny switches (SW4) on the Dimmer Processor PCB. These are numbered 1-8, and set the dimmer parameters. The settings for your system are shown on your job drawings.

Sw	Pos.	Function
1	ON	Three phase input power.
	OFF	Single phase 3 wire input power.
2	ON	Outputs 1-4 are dimmed, outputs 5 and 6 are switched (non-dim).
	OFF	All outputs are dimmed.
3	ON	Phase rotation ACB (software version 1.3 or later).
	OFF	Phase rotation ABC (software version 1.3 or later).
4	ON	Not used.
	OFF	Not used.
5	ON	Not used.
	OFF	Not used.
6	ON	Not used.
	OFF	Not used.
7	ON	Dimmer 5 is fluorescent curve. Dimmer 6 is fluorescent constant.
	OFF	Dimmer 5 and 6 are normal.
8	ON	2 second fade ON.
	OFF	2 second fade OFF.

Factory default switch position is shown **bold**

3. Locate the three rotary switches on the Dimmer Processor PCB (SW1-SW3). These switches set dimmer cabinet parameters for systems with Digital Network Control (e.g., Outlook control stations).

Switch position	(SW3) Room #	(SW2) Start channel	(SW1) Split rack
1	Room 1	1	Split
2	Room 2	4	Not split
3	Room 3	7	N/A
4	Room 4	N/A	N/A
5	Room 5	N/A	N/A
6	Room 6	N/A	N/A
7	Room 7	N/A	N/A
8	Room 8	N/A	N/A
9	Room 9	N/A	N/A
0	N/A	N/A	N/A

N/A = Not Applicable

Check the System

1. Turn all circuit breakers OFF.
2. Locate the fuse for the Dimmer Processor PCB. Does it look physically and electrically OK? Replace if required.
3. Turn the power feeding the System Six dimmer cabinet ON.
4. Look above SW1 and locate the green LED. It flashes once per second if the processor is operating correctly.
5. Did the lower green LED illuminate? This means that power is ON and that the dimmer processor is working. If not, check the incoming power and the small black wire feeding the dimmer processor from the "A" lug.
6. Turn the bypass switch SW1 ON. The green LED is illuminated permanently when the dimmer processor is in bypass either locally (SW1) or remotely.
7. Turn each load circuit breaker ON, one at a time. The load associated with the circuit breaker should turn ON. If not, check load wiring and/or lamps.
8. After all loads have been verified, turn the bypass switch OFF.
9. Turn all circuit breakers ON.
10. Check the control stations and trouble-shoot as required.

Close the Cabinet

1. Carefully close the heatsink doors, watching the wiring and internal components for interference and proper clearance.
2. Secure the doors closed with all screws provided.

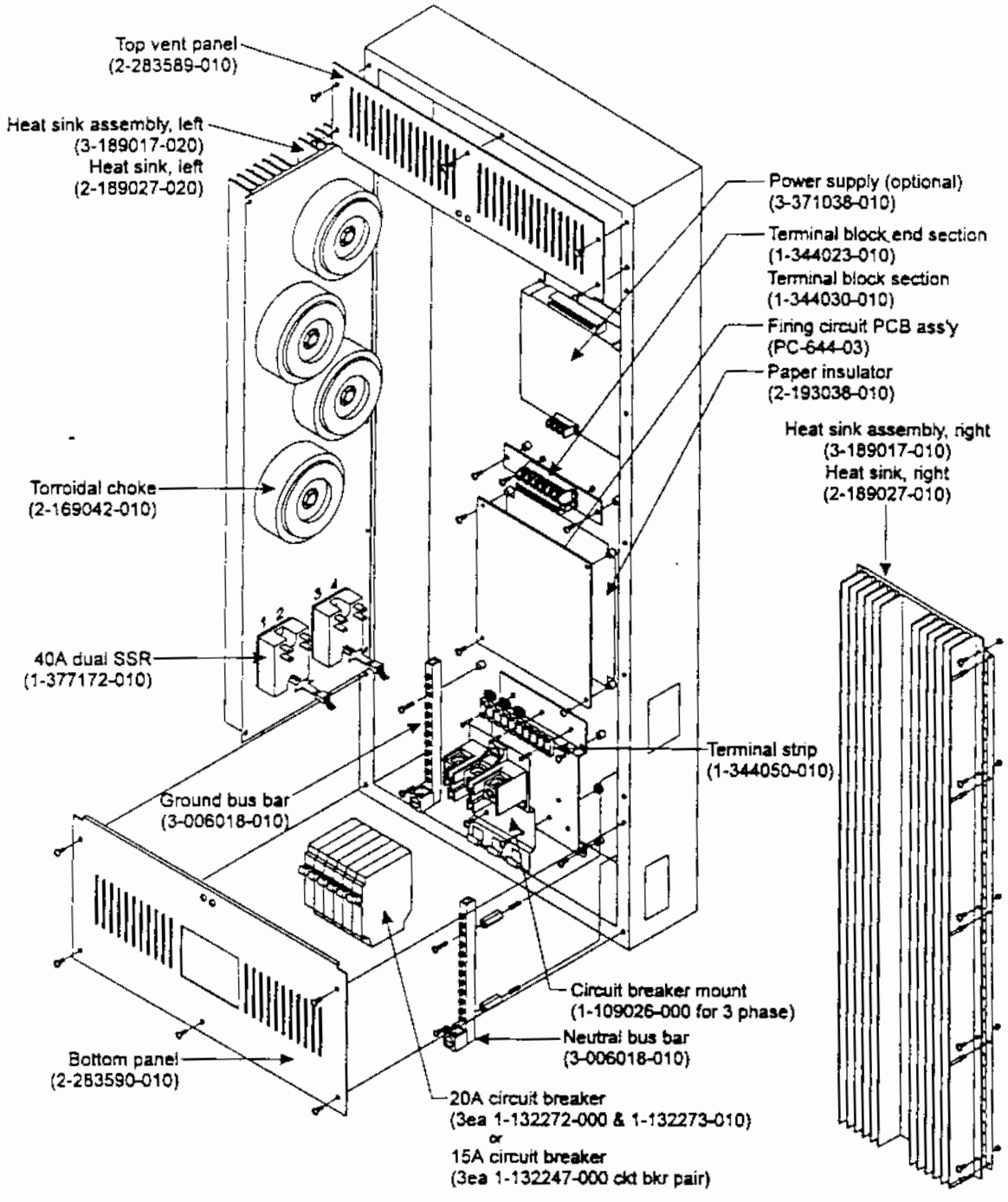
Basic Trouble-shooting

The following table shows some of the basic problems you can encounter when installing System Six dimming cabinets. If you cannot resolve the problem using this table, Please call Strand Lighting Field Service.

Warning 

Service the system with utmost care. Lethal voltages are present inside the dimmer cabinet. If you are unsure of yourself, contact the factory to arrange for service by trained personnel.

Problem	What to do
No response when dimmer bypass switch is ON, and the circuit breakers are ON.	1. Make sure that you have input power. 2. Is the LED on the dimmer processor flashing? If not, check the dimmer processor fuse and feed wire at the "A" lug. If the green LED is flashing the dimmer processor is probably OK. 3. Check all internal wiring. Check particularly for loose connections.
Dimmers flash.	1. If all dimmers flash, check for loose connections. 2. If dimmers 3 and higher flash, reverse phase rotation by either reversing the input wiring on the "B" and "C" lugs, or if software is later than version 1.3, switch mini-DIP switch #3 to the opposite position.
Dimmers do not respond to control, but work normally in bypass mode (SW1 ON).	1. Is the control system powered properly? 2. Is the control system connected to the dimmers correctly? 3. Are the switches for Digital Network Control set correctly?
One or more dimmers are always full ON, except when the circuit breaker is OFF.	1. The SSR power device is probably shorted. Check by unplugging the control leads to the SSR. If the light stays ON, Replace the SSR.


Top vent panel
(2-283589-010)
Heat sink assembly, left
(3-189017-020)
Heat sink, left
(2-189027-020)
Power supply (optional)
(3-371038-010)
Terminal block end section
(1-344023-010)
Terminal block section
(1-344030-010)
Firing circuit PCB ass'y
(PC-644-03)
Paper insulator
(2-193038-010)
Heat sink assembly, right
(3-189017-010)
Heat sink, right
(2-189027-010)
Toroidal choke
(2-169042-010)
40A dual SSR
(1-377172-010)
Terminal strip
(1-344050-010)
Ground bus bar
(3-006018-010)
Circuit breaker mount
(1-109026-000 for 3 phase)
Neutral bus bar
(3-006018-010)
Bottom panel
(2-283590-010)
20A circuit breaker
(3ea 1-132272-000 & 1-132273-010)
or
15A circuit breaker
(3ea 1-132247-000 ckt bkr pair)