

LightSync Line Voltage Dimmer Installation

This guide will provide basic information for installing the LightSync Line Voltage Dimmer control panel. Follow these instructions and all NEC and local code requirements.

Specifications:

- Input Voltage: 120 VAC, 60Hz
- Input Current: 20 Amps
- Outputs Watts: 4 x 500 Watts
- Location: Interior space
- Ambient Temp: 0-40° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary
- Use copper conductors only
- Field wiring minimum rated 90° C
- Wire insulation minimum rating of 150 VAC
- UL916
- FCC Part 15
- Loads: LED, incandescent, or cold cathode

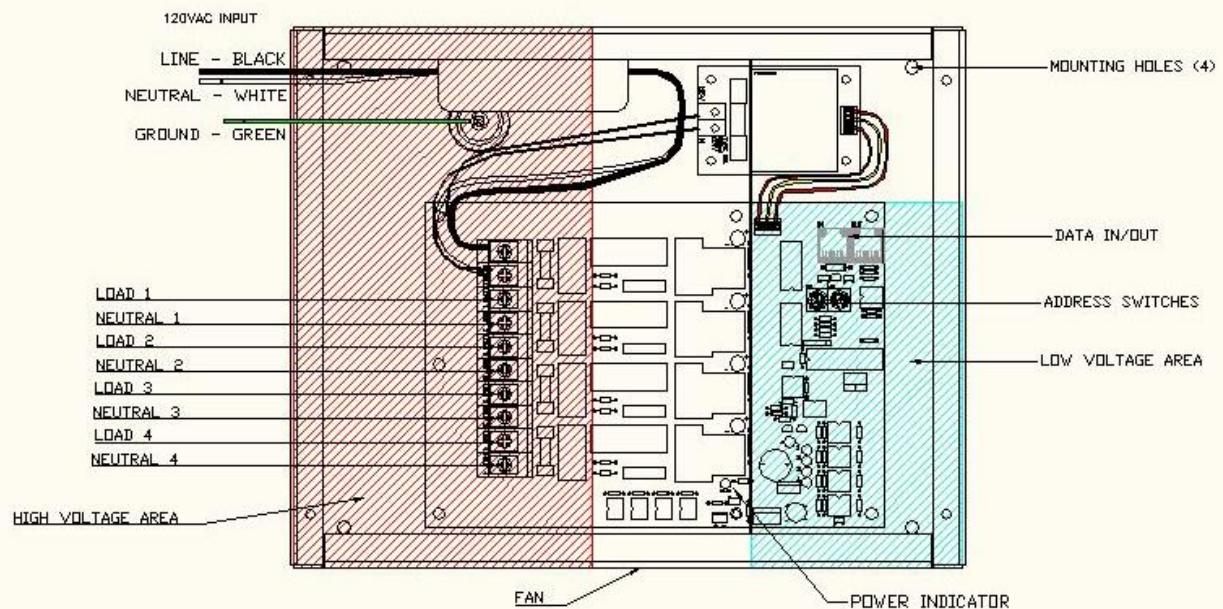


Figure 1 LightSync Line Voltage Dimmer

Panel Installation

1.0 Installation Check List

- Unpack the lighting control panel.
- Report any damage to the freight carrier.
- Remove the enclosure door and set aside.
- Determine appropriate mounting location for panel.
- Mount the panel to the wall with the appropriate fasteners.
- Open desired electrical knockouts for high/low voltage compartments.
- Install conduit between breaker panel, lighting loads, and lighting system.
- Pull a dedicated 20 Amp line, neutral, and ground from the circuit breaker panel.
- Connect line, load, neutral, and ground wires to the leads provided.
- Pull load and neutral wires from lighting loads to the dimmer.
- Connect load and neutral from lighting loads to connections provided.
- Pull CAT5 data line wires to panels and devices and terminate with RJ45 connectors.
- Test all cables with the appropriate cable tester.
- Terminate data lines between dimmer and lighting system.
- Clean the cabinet of any construction debris and dust.
- Double check all high voltage connections.
- Install enclosure cover.
- Apply power to the panel.
- Program the dimming control from the lighting system.
- Test dimmer functionality for each load.

1.1 Mounting the Controller

Determine the proper location for mounting the dimmer. Typically the panels are mounted near the lighting circuit breaker box and near the lighting loads that will be controlled. The panels should be mounted in an area that the temperature is between 0 and 40° C and humidity from 10 to 90% non-condensing. The enclosure is provided with 4 holes located at each corner of the enclosure. Secure the enclosure to the mounting surface with the appropriate hardware for the application. Mount the panel vertically with the fan at the bottom. Allow 6" clearance around the panel for proper air circulation.

1.2 Conduit Installation

Conduit needs to be connected to the High Voltage and Low Voltage compartments to provide interface to circuit breaker panel, lighting loads, and the lighting control system. Use the provided knockouts in the enclosure to interface the line, load, and data. Keep within the boundaries for the high and low voltage wiring areas as shown in the figure 1.

1.3 Wiring the Controller

This section will guide you in the wiring of the dimmer. Be sure the circuit is deactivated prior to working on this panel.

1.3.1 Wire Dimmer Input

Run a dedicated 120 VAC 20 Amp circuit from the circuit breaker panel to the dimmer panel including a ground wire. Terminate to the leads provided with UL approved wire nuts per NEC. See below and figure 1 for termination details.

1.3.2 Power Input Terminations:

- Neutral to white wire lead
- Line to black wire lead
- Ground to green wire lead

1.3.3 Wiring Loads

Pull separate line and neutral wires from dimmer outputs to the lighting loads. Be sure to keep the high voltage wires isolated to the high voltage side as shown in figure 1. Torque wire terminations to 12 lb. /in. **Note: Do not interconnect outputs together to increase wattage capability.**

1.4.0 Data Line Cable

The data line cables required for communications between panels and devices use standard Category 5, Category 5e, or Category 6 cable. RJ45 connectors must be rated for the type of cable being terminated to. Be sure that cable run in a plenum is rated for that use. Contact ILC for job specific questions.

1.4.1 Data Cable Installation

Data line cable needs to interconnect all of the lighting control panels and all of the LightSync data line devices. Each controller has a local port that connects LightSync devices only. The controller also includes “in” and “out” ports for connecting panels together, which can also connect LightSync devices (it is suggested that they are connected to the local port). Data cable to either panels or LightSync devices are run in a daisy chain pattern to form a network. “T” connections are permitted with the use of a Power Supply Repeater (PSR) and home-run LightSync devices may be done with a LightSync Hub. Be sure to keep the high voltage wires isolated to the low voltage side as shown in figure 1. **Note: LightSync Line Voltage Dimmers must be terminated to the local data port only.**

1.4.2 Data Cable Termination and Testing

Follow the pin-out shown in figure 2 and/or pin-out below. Be sure the color coded wires are terminated exactly as shown. Always visually inspect for a completely seated crimp, as damage could occur to the mating connector on the processor or device. Test every cable prior to installation for shorts, opens, and inducted voltage. We suggest the use of a LandRover Pro tester manufactured by Test-Um, Inc. Be sure not to connect your tester to a cable connected to any hardware as damage may occur.

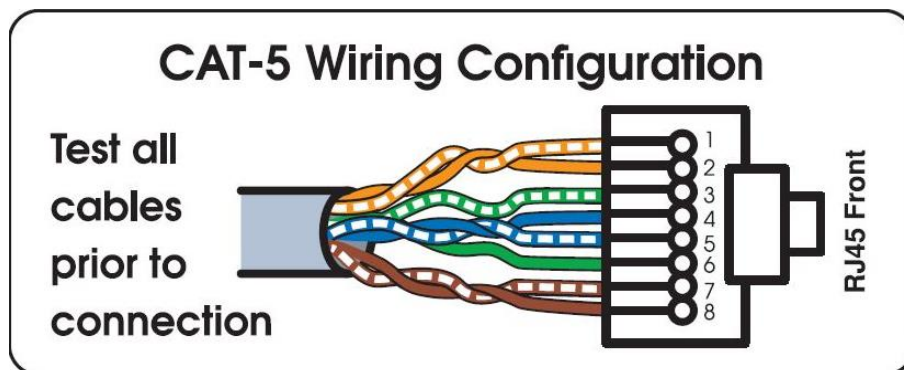


Figure 2 Data Line Termination

1.4.3 Data Cable Termination Pin-out (T568B)

1. Orange/White
2. Orange
3. Green/White
4. Blue
5. Blue/White
6. Green
7. Brown/White
8. Brown

1.4.4 Data Cable Installation Guidelines

- Observe all ILC Data Cable Requirements and LightSync Cable Run Distance Requirements as they pertain to your project in laying out the cable runs.
- Maintain the twists of the pairs all the way to the point of termination, or no more than 1" untwisted.
- Make gradual bends of the cable, where necessary. No sharper than a 1" radius.
- Dress the cables neatly with cable ties. Use low to moderate pressure.
- Use low to moderate force when pulling cable.
- Use cable pulling lubricant for cable runs that may otherwise require great force to install.
- Do not pull ANY data cable or switch wires with or along any high voltage wires.
- Keep all low voltage totally separate from ALL high voltage. Failure to do so will void the ILC warranty.
- Keep cables 2'-3' away from any potential sources of EMI as possible. (Line voltage runs, transformers, light fixtures, etc.)
- Install proper cable supports, spaced no more than 5 feet apart.
- Always label every termination point. Use a unique number for each cable segment. This will make moves, adds, changes and troubleshooting as simple as possible. Document these onto a riser provided.
- Always test every installed segment with a CAT-5 cable tester.
- Always leave extra slack in the cable run, neatly coiled up in the ceiling or nearest concealed place.
- Always use grommets to protect the cable when passing through metal studs or anything that can possibly cause damage.
- Always follow all local and national building and fire codes. Be sure to "fire stop" all cables that penetrate a firewall. Use plenum rated cable where it is mandated.
- Always contact ILC on installations between buildings or cable pulled underground. Special considerations may be needed.