



VARI\***LITE**

# PHASE LOSS SENSE PANEL 120/277 V

INSTALLATION & OPERATION MANUAL

# PREFACE

The material in this manual is for information purposes only and is subject to change without notice. Vari-Lite assumes no responsibility for any errors or omissions which may appear in this manual. For comments and suggestions regarding corrections and/or updates to this manual, please contact your nearest Vari-Lite office.

Information contained in this document may not be duplicated in full or in part by any person without prior written approval of Vari-Lite. Its sole purpose is to provide the user with conceptual information on the equipment mentioned. The use of this document for all other purposes is specifically prohibited. Certain features of the equipment described in this document may form the subject of patents or patent applications.



## IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed, including:

- READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
- Do not use outdoors.
- Do not mount near gas or electric heaters.
- Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Do not use this equipment for other than intended use.
- Refer service to qualified personnel.

SAVE THESE INSTRUCTIONS.

The document provides installation and operation instructions for the following products:

- Phase Loss Sense Panel 120/277 V, order code 53815-001

Download the product datasheet from the Vari-Lite website at [www.vari-lite.com](http://www.vari-lite.com) for the full technical specifications.

## INCLUDED ITEMS

Quick Start Guide

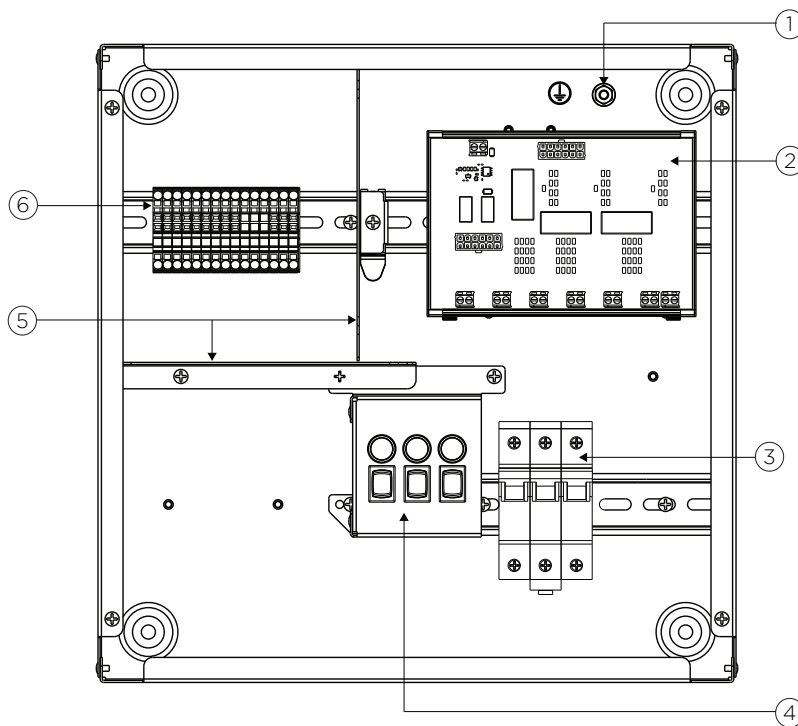
Wire diagram (in enclosure)

2x terminal block jumpers

# 1 DESCRIPTION

## OVERVIEW

The Phase Loss Sense Panel 120/277 V (PLSP) monitors 3-phase feed power and provides two independent contact-closure outputs when any phase of the main power source is lost. During a power outage or when an emergency contact signal is received, the unit is able to instruct a transfer switch to go to auxiliary power (generator, battery system, etc.). The Phase Loss Sense Panel may be used with Vari-Lite A21, C21, or Contact Relay Panels, or any other compatible lighting control panel or dimmer rack.



- |                      |                                   |
|----------------------|-----------------------------------|
| ① Ground stud        | ④ Indicator LEDs and test buttons |
| ② Main control board | ⑤ High voltage barriers           |
| ③ Circuit breakers   | ⑥ Output terminals                |

## 2 INSTALLATION

**The following steps are required to successfully install this product:**

1. Review this document completely before starting the installation.
2. Unpack and inspect equipment. Compare the equipment you received with your packing list. If these do not match, contact Vari-Lite Customer Service at: 1-214-647-7880.
3. Choose an appropriate location for installation. The unit should be installed in an area of “office” level cleanliness. The room in which it is installed should have sufficient volume to allow exhaust air to circulate and cool. (For more details and clearance requirements, refer to **Location and Clearances on page 4.**)
4. Plan the wire routings and connection order. Decide where the Feed, Load, and Control wiring will enter the unit(s).
5. Remove access panels and knockouts in the unit as required for conduit or busway entry. Perform all conduit connections to the unit before it is permanently installed. Be sure to remove all knockout debris.
6. Securely mount the unit and terminate all Feed, Load, and Control wiring following the directions in this manual. Clean up the work site and unit(s) for checkout by Vari-Lite Technical Services (see **Notice to Contractor on page 11**).
7. Contact Vari-Lite when ready for checkout.

### LOCATION AND CLEARANCES

When installing this product, the location site **MUST** meet the following requirements:

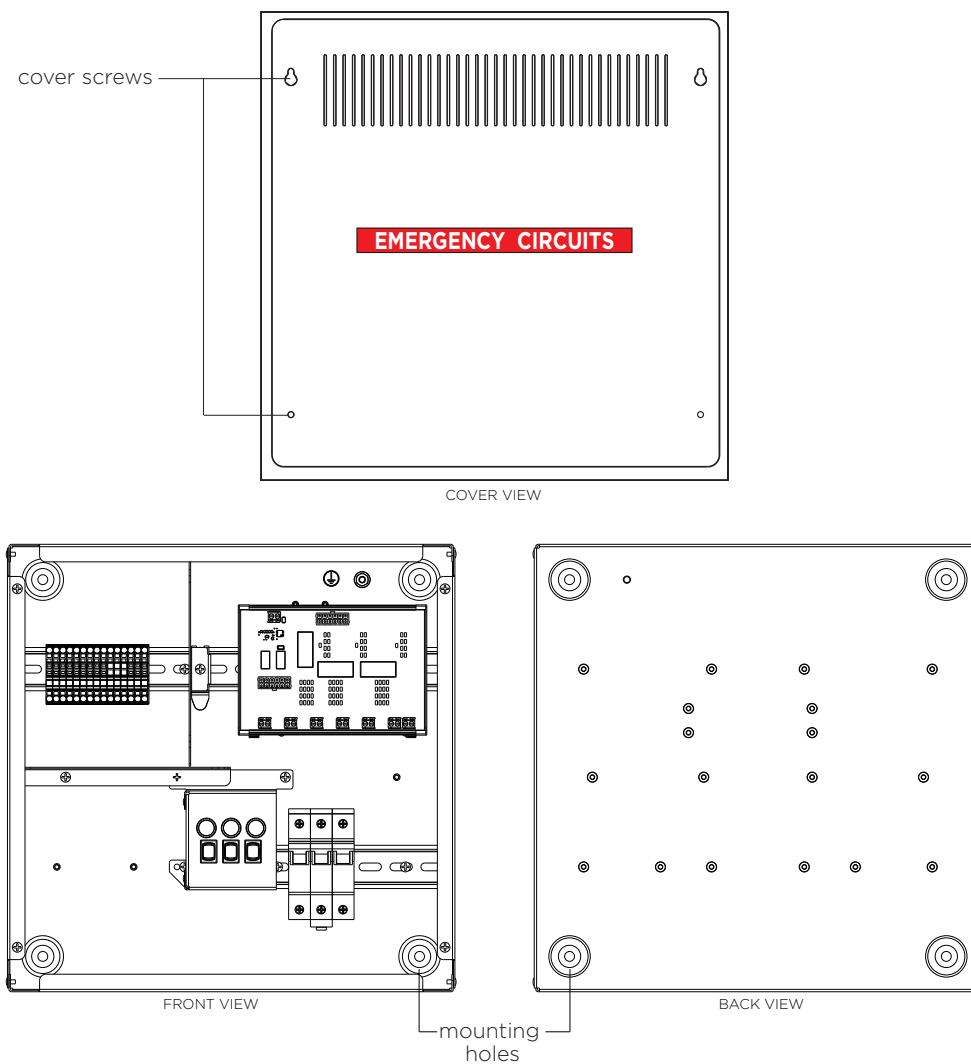
- Wall must be capable of supporting the weight of the unit.
- Allow 4 inches above and below the unit to ease cover removal and installation.
- All units require 12 inches of ventilation space above and below.
- Indoor Use Only: The unit **MUST** be installed indoors.
- Dry Locations Only: The unit can only be installed in an “office clean” area that is never exposed to moisture of any kind. Vari-Lite is not responsible for damage to equipment caused by moisture, paint, dust, solvents or cleaning supplies.
- Refer to National Electrical Code® and local codes to determine whether additional requirements must be met.

## MOUNTING

Phase Loss Sense Panels are intended for on-wall or in-wall mounting.

### To install panel:

- Step 1. Locate suitable location for mounting. (Refer to [Location and Clearances on page 4.](#))
- Step 2. Loosen top screws and remove bottom two screws securing cover.
- Step 3. Slide cover upward and remove. Be careful not to break or disconnect any wiring.
- Step 4. Install conduit (not supplied) in accordance to local and national codes (as applicable).
- Step 5. Secure Phase Loss Sense Panel to a permanent structure using suitable mounting hardware (not supplied) in accordance to local and national codes (as applicable). Refer to [FIGURE 1. Mounting Hole Locations](#) for mounting hole locations.



**FIGURE 1. MOUNTING HOLE LOCATIONS**

## WIRING

**WARNING:** You must have access to a main circuit breaker or other power disconnect device before installing any wiring. Be sure that power is disconnected by removing fuses or turning the main circuit breaker off before installation. Installing the device with power on may expose you to dangerous voltage and damage the device. A qualified electrician must perform this installation.

**WARNING:** Refer to National Electrical Code® and local codes for cable specifications. Failure to use proper cable can result in damage to equipment or danger to persons.

**CAUTION:** Wire openings MUST have fittings or lining to protect wires/cables from damage. Use 90° C solid core copper wire only! Aluminum wire may not be used.

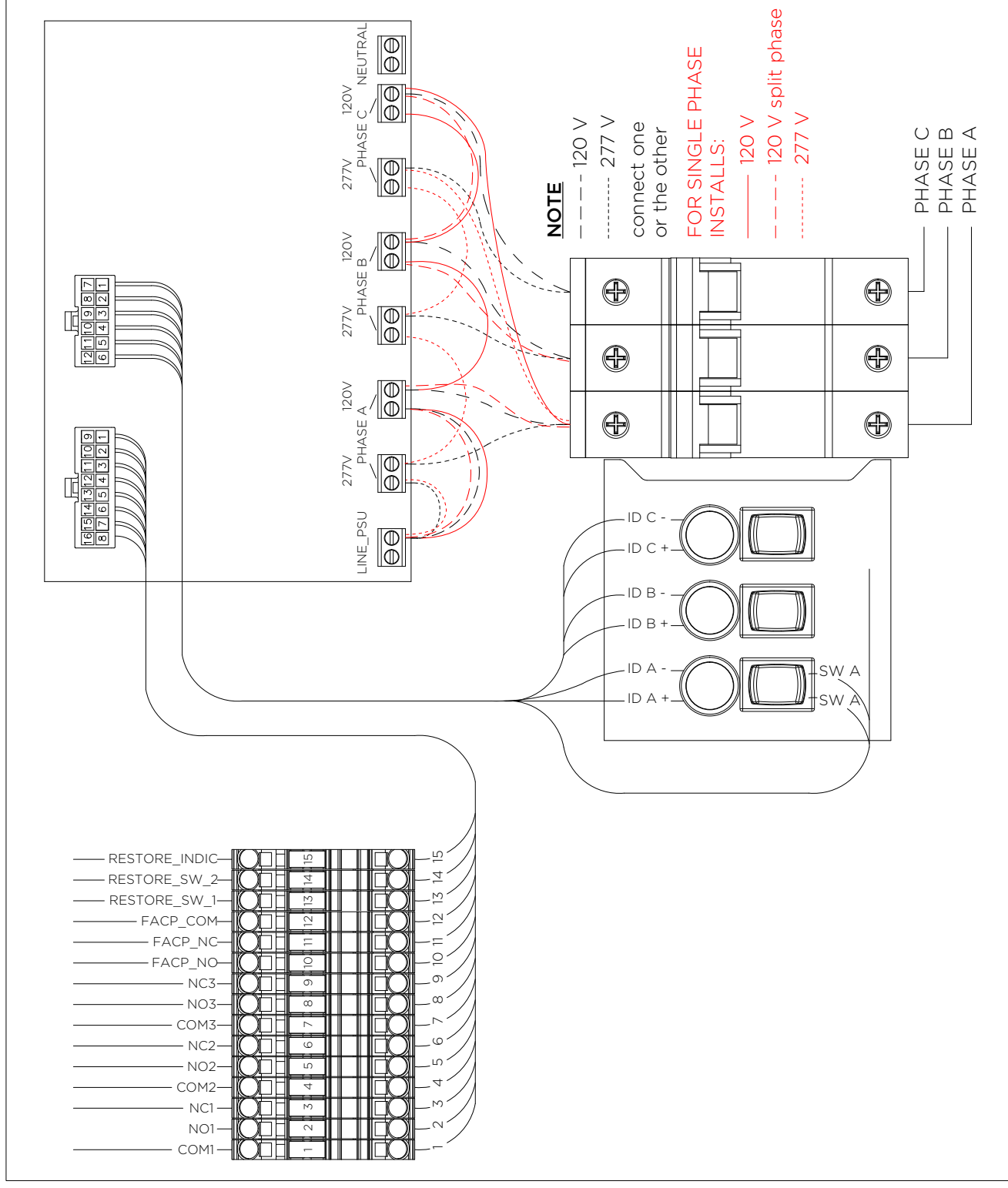
Connect wiring according to **FIGURE 2** on the next page. See **FIGURE 3**, **FIGURE 4**, and **FIGURE 5** for optional wiring.

Observe the following guidelines:

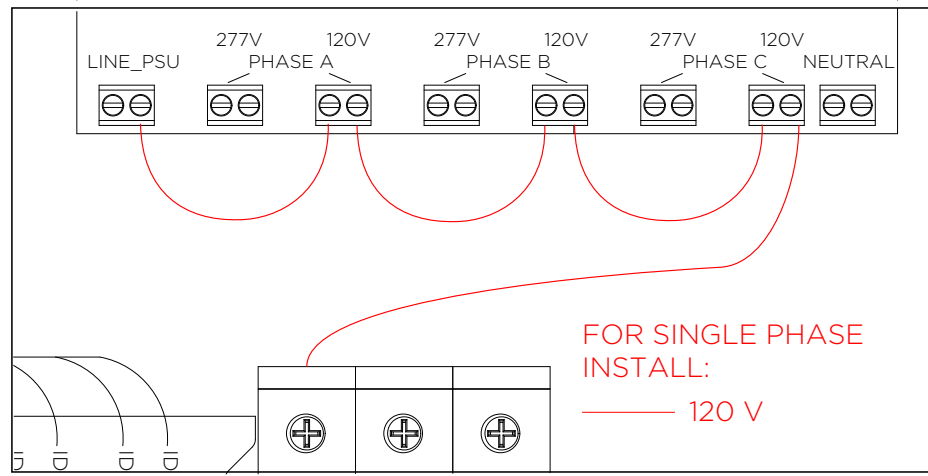
- For A21 Dimming and Contact Relay Panels, connect the dry contact output wiring to the Normally Closed (N. Closed) and Common (COM) connection points of the Phase Loss Sense Panel.
- For C21 Dimming Cabinets, connect dry contact output wiring to the Normally Open (N. Open) and Common (COM) connection points of the Phase Loss Sense Panel.

Use the following torque settings and wire gauges:

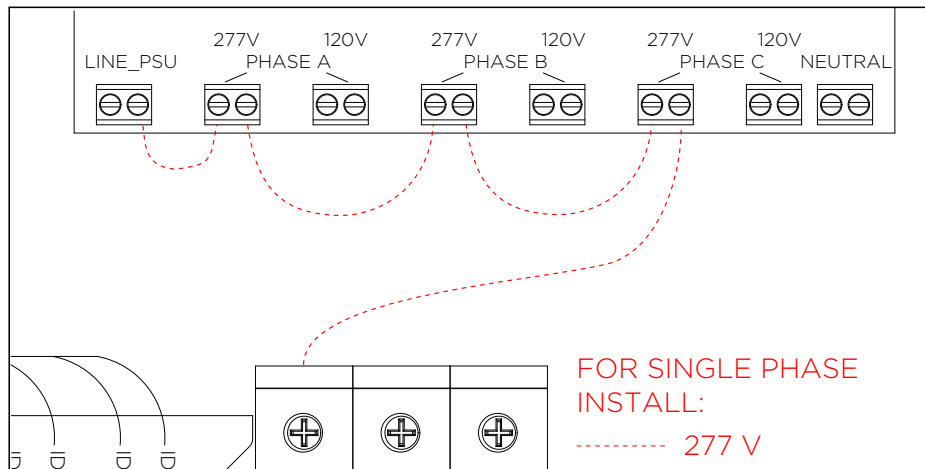
<b>TORQUE ON BREAKERS</b>	17.5lb-in. max
<b>CROSS SECTION ON BREAKERS</b>	#3 - #18 AWG
<b>CROSS SECTION BETWEEN BREAKERS AND PCB</b>	#2 - #18 AWG (solid core copper)
<b>CROSS SECTION ON LOW VOLTAGE TERMINALS</b>	#12 - #18 AWG



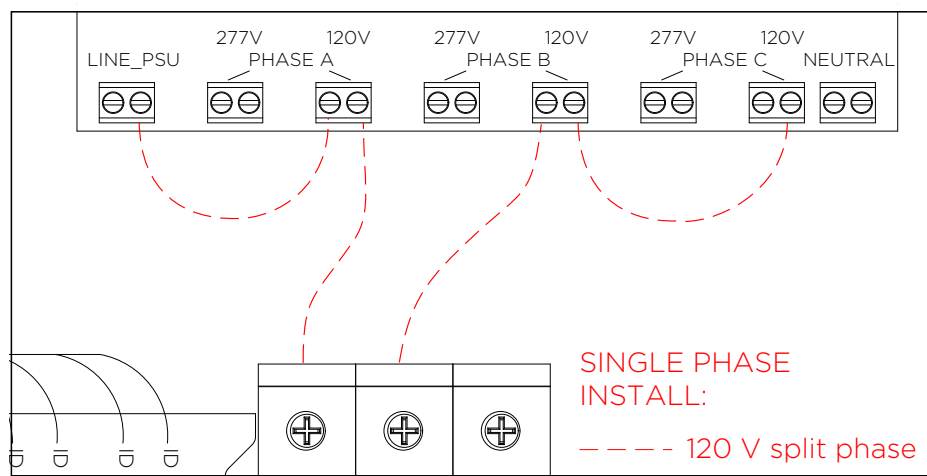
**FIGURE 2. OVERALL WIRING DIAGRAM**



**FIGURE 3. 120 V SINGLE PHASE**

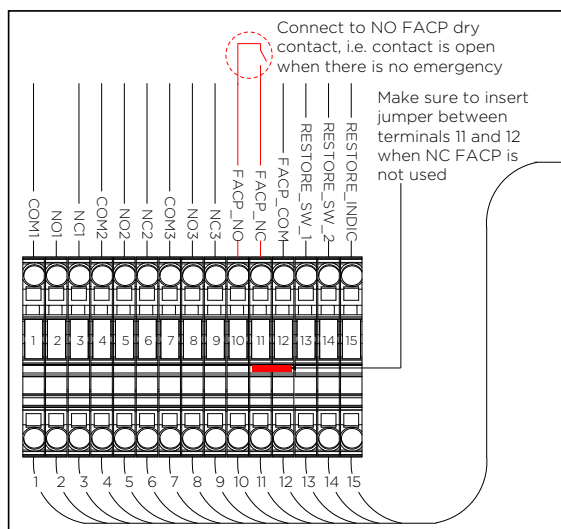


**FIGURE 4. 277 V SINGLE PHASE**

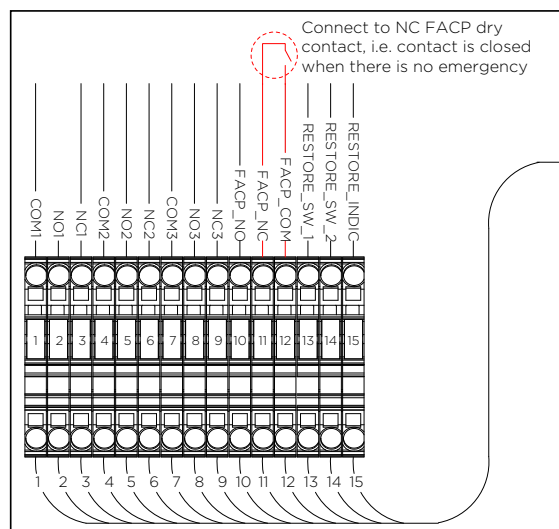


**FIGURE 5. 120 V SPLIT PHASE**

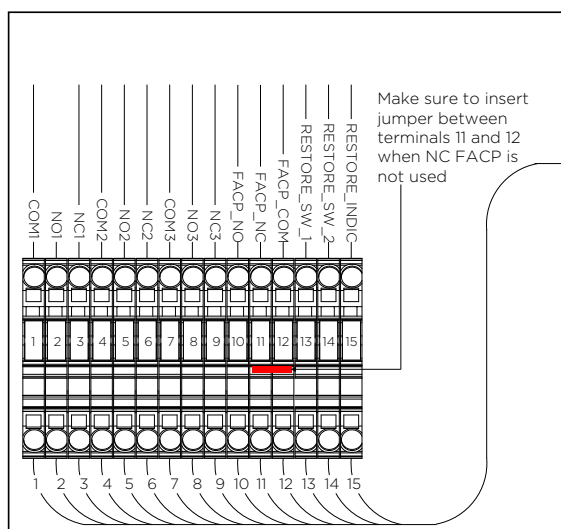




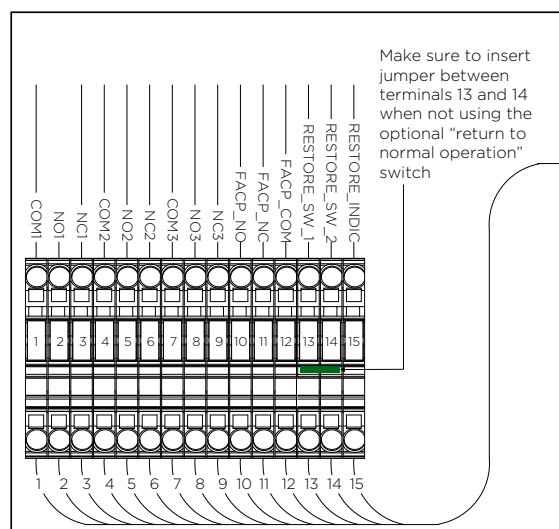
**FIGURE 6. NORMALLY OPEN FACP**



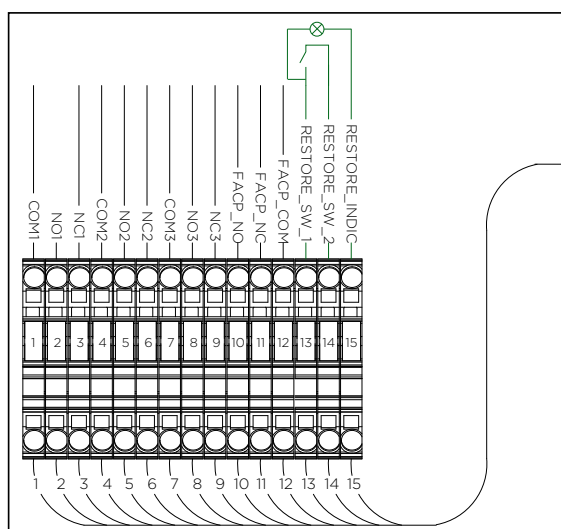
**FIGURE 7. NORMALLY CLOSED FACP**



**FIGURE 8. FACP NOT USED**



**FIGURE 9. RESET SWITCH NOT USED**



**FIGURE 10. RESET SWITCH**

# 3 OPERATION

## USING WITH A21, CONTACT, OR C21 PANELS

When using the Phase Loss Sense Panel with Vari-Lite A21, Contact, or C21 lighting control panels, note the following conditions:

For A21 and Contact, the panels will be in either one of these two states...

- State one - the circuit (contact closure in the lighting control system) is closed everything is fine (no power issues).
- State two - the circuit (contact closure in the lighting control system) is open meaning power is out or one phase is out.

For C21, the panel will be in either one of these two states...

- Opposite for the C21...
- State one - the circuit (contact closure in the lighting control system) is open meaning power is out or one phase is out.
- State two - the circuit (contact closure in the lighting control system) is closed everything is fine (no power issues).

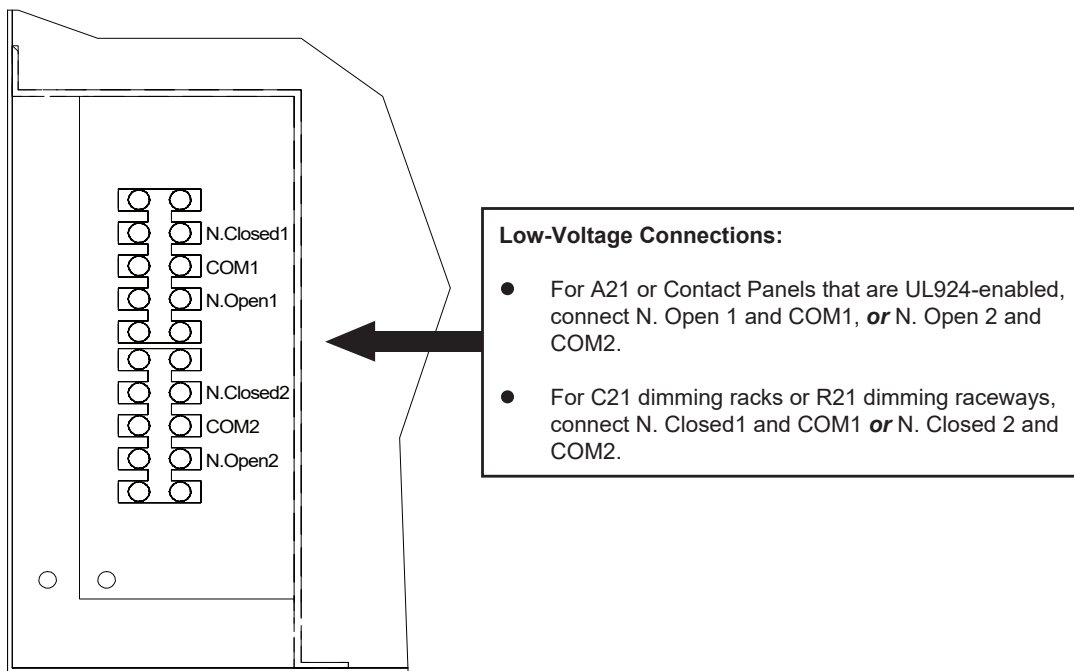


FIGURE 11. LOW VOLTAGE CONNECTIONS

## NOTICE TO CONTRACTOR

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### TECHNICAL SERVICES CHECKOUT PROCEDURE

**DO NOT APPLY POWER TO THE LIGHTING CONTROL SYSTEM!**

No part of this system may be energized or operated until the installation has been approved by a Vari-Lite Technical Services Representative. Violation of this Requirement may damage components and therefore constitute misuse under standard warranty terms. Such misuse may relieve Vari-Lite LLC of any and all further obligations under the terms of this warranty.

Equipment **MUST** be installed per the Vari-Lite drawings.

All installation and wire terminations **MUST** be completed per the Vari-Lite drawings prior to the arrival of the Technical Services Representative:

1. Input power must be connected to the system, but not energized.
2. All loads must be connected and all lighting instruments must be lamped.
3. All control wiring must be installed and terminated - including DMX512, Ethernet and Vision.net.
4. All equipment, including controllers, accessories, keys, cables and manuals must be in place.
5. Personnel for training (i.e. the users), as well as any other personnel required by contract and/or specification must be available for training at the completion of the Checkout and Energization.
6. An owner (or authorized representative), as well as any other personnel required by contract and/or specification will be present to accept the system.

The Technical Services Representative will only be able to:

- Ensure that the system is properly installed and functions correctly, including troubleshooting and providing guidance to the contractor to correct any problems.
- Train personnel in the operation of the Lighting Control System.

The Technical Services Representative will not be able to:

- Install equipment or make electrical connections required of the installing contractor, including DMX512, Ethernet, Vision.net, and/or any other connections that require a licensed electrician.
- Return to instruct any personnel who missed the original training session.

If the above requirements have not been met, the Technical Services Representative will be required to leave the job site. Return trips to complete the Technical Services Checkout require a separate Purchase Order and will be invoiced at the cost of travel (including per diem and travel time door-to-door), hourly labor, and a minimum daily on-site charge. Rescheduling will require 3 weeks notice, subject to Technical Services Representative availability.

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Please feel free to contact Vari-Lite Technical Services (1-214-647-7880) should there be any questions regarding the installation of the equipment or requirements regarding the Technical Services Checkout.

When all requirements have been met and the system is ready for inspection, please download and complete the Field Service/Commissioning Request Form (PDF). This form can be found on the Main Support Page of the Vari-Lite website: [www.vari-lite.com](http://www.vari-lite.com).

# TECHNICAL SUPPORT

## GLOBAL 24HR TECHNICAL SUPPORT:

Call: +1 214 647 7880

[entertainment.service@signify.com](mailto:entertainment.service@signify.com)

## NORTH AMERICA SUPPORT:

Call: 877-VARI-LITE (877-827-4583)

[entertainment.service@signify.com](mailto:entertainment.service@signify.com)

## EUROPEAN CUSTOMER SERVICE:

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