



Two Line Lyte Lynx®
Stand Alone Enclosures

P31216, P31217, P31218, P31219

Description & Installation

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1.0 SCOPE

This document describes the technical specifications, technical requirements and installation instructions for the SNC Lyte Lynx® Two Line Stand Alone Enclosures. It provides an understanding of the basic functions and features available with these products.

2.0 PRODUCT OVERVIEW

Lyte Lynx® systems are intended for use at power substations and similar locations where high voltage isolation is required on the incoming copper telephone pairs to protect the telco network from harm and to provide a personnel safety barrier against voltages. This specifically includes protection from longitudinal voltage surges and Ground Potential Rise (GPR) that may occur during power system faults.

2.1 Two Line Models for POTS Circuits

Two line models are offered for POTS circuits. Models are available with 120VAC, 24VDC, 48VDC or 130VDC powering. The product components are packaged in a fiberglass enclosure with a hinged and removable cover.

3.0 INTENDED USES

These units are ideal for small substations, co-generation plants and construction projects served by two POTS lines. Their primary function is to provide an isolation from hazardous voltages while being "transparent" in the circuit. All signaling information within the specified frequency bandwidth will be unaffected.

These models are designed for POTS circuits, 2-wire loop start trunks, fax lines, dial up modem lines or remote meter reading. They are capable of ringing five 500 type phones. Ring signals ranging from 40 to 150 volts and 15 to 68 Hz are detected on the remote interface.

4.0 PRODUCT FEATURES

4.1 Fiber Optic Separation

High voltage isolation is the result of a 5.25 inch fiber optic separation between the station side and the CO/Remote side circuitry. Because the isolation depends only on this physical separation, protection remains intact even if components of the system fail.

Two Line Lyte Lynx® Models

Part No.	Type	POWERING	
		Station	CO/Remote
P31216	POTS	120VAC	Loop Current
P31217	POTS	48VDC	Loop Current
P31218	POTS	24VDC	Loop Current
P31219	POTS	130VDC	Loop Current

5.0 POWERING

5.1 Substation Side

The station side electronics of the isolation cards require 24VDC to function. Four choices are offered:

- 1.) 24VDC provided by an external source (power supply) from the substation. (P31218)
- 2.) 48VDC provided by a substation battery (P31217). This model has a built-in DC/DC converter to provide 24 VDC to the station side electronics.
- 3.) 120 VAC from the substation (P31216). This model has a built-in AC/DC power supply, two sealed gel cell backup batteries and a battery charger. The unit automatically switches to battery power whenever the 120 VAC power is disrupted.
- 4.) 130VDC provided by sub-station battery (P31219). This model has a built-in DC/DC converter to provide 24 VDC to the station side electronics.

5.2 CO/Remote Side

The electronics on the remote (telco) side are powered by battery feed from the central office (loop current).

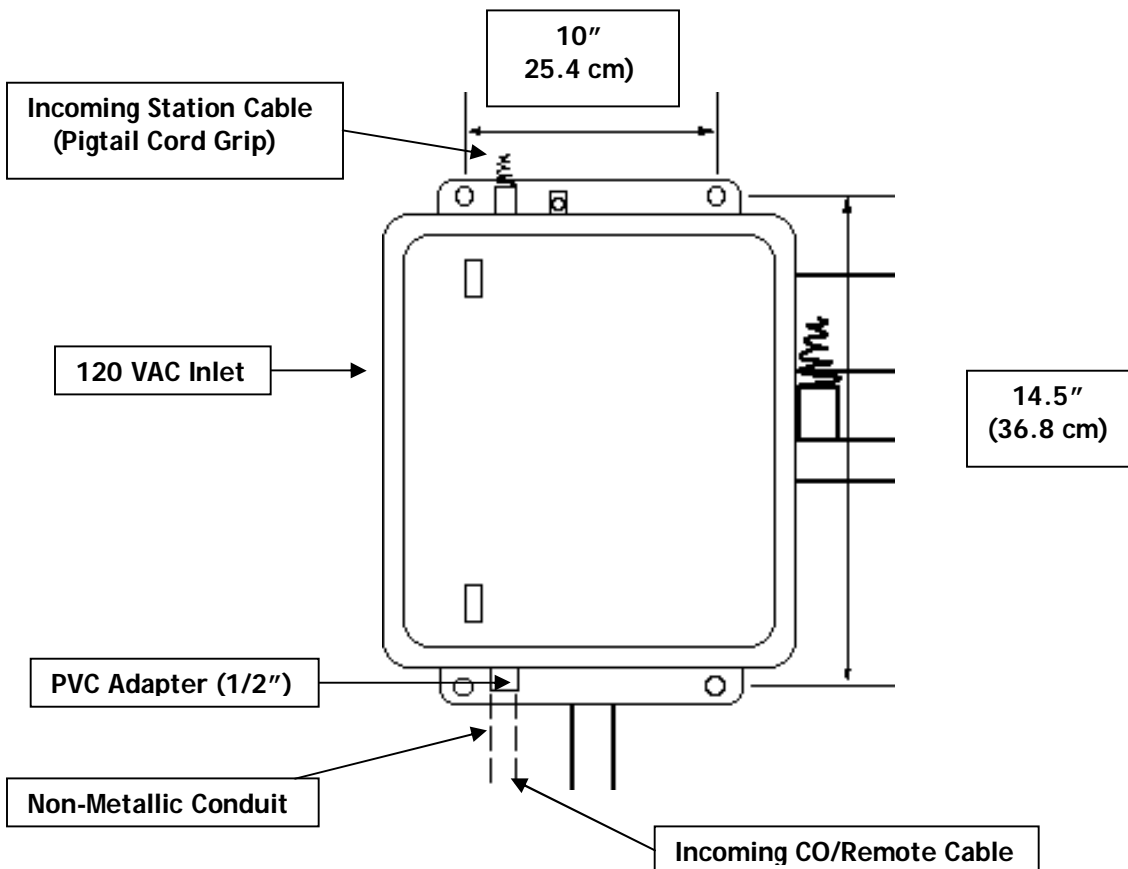


Figure 1: Two Line Card Lyte Lynx® Mounting Dimensions

6.0 INSTALLATION

6.1 Mounting

Mount the Lyte Lynx® enclosure on a backboard (3/4" thickness) with (4) 1/4" lag screws. Use a flat washer under the head of each screw.

7.0 CABLE CONNECTIONS

7.1 Station Cable

Loosen the pigtail cord grip on top of the Lyte Lynx® enclosure. Insert a 2, 4 or 6 conductor, 22 AWG jacketed cable through the cord grip. Connect the tip and ring conductors to the T1, R1 and/or TA, RA terminals on the Station Backplane on TB2 and/or TB3 block. See Figure 2. Retighten cord grip.

7.2 CO/Remote Cable

Add an extension of non-metallic conduit to the PVC adapter on the bottom of the enclosure as outlined in the Caution Notes. Bring the CO/Remote cable in through this conduit and terminate on the T1, R1 and/or TA, RA terminals on the CO/Remote Backplane(TB4 and TB5). See Figures 1 and 2.



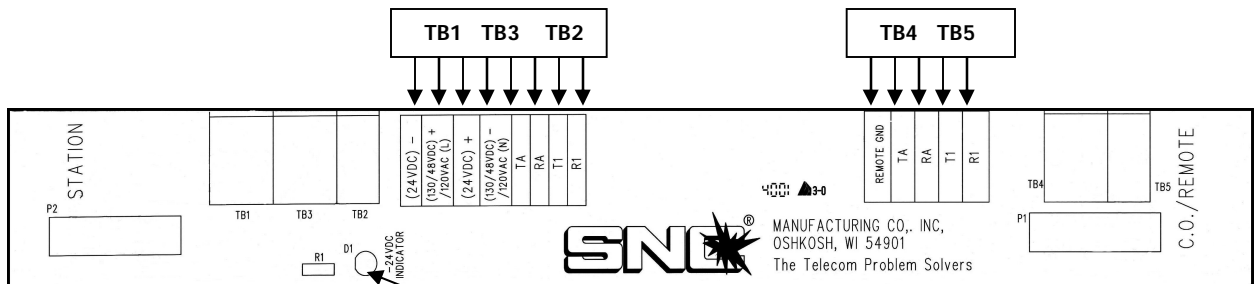
CAUTION: The incoming telephone pair should be contained in insulated conduit (PVC, etc.) or the pair should be jacketed with sufficient insulation to withstand a voltage rise from ground fault potential and from fault induction voltage.

8.0 POWERING CONNECTIONS - STATION SIDE

8.1 AC Power - (P31216)

Connect the cord to the power inlet on the left side of the enclosure. Plug the other end of the cord into a 120 volt, 50/60 Hz service outlet. An LED voltage indicator on the backplane will illuminate when 24VDC is being supplied to card. See Figure 2.

NOTE: The power inlet has a self-contained fuse. A spare 0.400 amp, 250 volt metric fuse is also included in the fuse drawer.



-24VDC LED Power Indicator

Figure 2: Two Line Lyte Lynx® Backplane

Batteries - (P31216)

Connect the unconnected black wire to the black negative (-) lug of the left battery.



NOTE: Batteries are shipped fully charged. If Lyte Lynx® is installed more than six months after it is received, the batteries may have become discharged. If more than two years have passed, batteries may be bad. Discharged batteries may be recharged by running the Lyte Lynx® with power for 72 hours. Battery backup will then be functional.

8.2 24VDC Station Power (P31218)

Connect -24VDC conductor from station power supply to (24VDC) -terminal on TB1. Connect (24VDC) + conductor from station power supply to (24VDC) + terminal on TB1. Station power can be brought in the same cable along with the tip and ring pairs. See Figure 2.

8.3 48 or 130VDC Station Power (P31217 or P31219)

Connect the negative conductor from station battery to terminal TB-2 on the DC to DC converter. Connect the positive conductor from station battery to terminal TB-1 on the DC to DC converter. See Figure 2.

9.0 POWERING CONNECTIONS - REMOTE SIDE

The Remote/CO Side electronics are powered by battery feed from the central office (loop current) on the incoming T1, R1 or TA, RA conductors. No special connections are required.

10.0 GROUNDING CONNECTIONS

10.1 CO/Remote Side

No remote ground should ever be brought into the Two Line Lyte Lynx® enclosure. If drainage is required, arrangements for separate external drainage/protection must be made.



CAUTION: Any metallic shielding on the incoming CO/Remote pair must be isolated from substation grounds all the way from the network low voltage interface (300 volt peak GPR point per IEEE Standard 487) to the entry into the Lyte Lynx®. The conductors must also be isolated.



CAUTION: The Lyte Lynx® Remote/CO terminals and electronics are isolated from substation ground. To provide personnel isolation from local ground, stand on a thick rubber mat and use other adequate insulation devices (rubber gloves) when working on the Lyte Lynx®.



CAUTION: If any additional low voltage surge protection is applied to the Two Line Lyte Lynx®, it is recommended that it be placed at the telephone network low voltage interface (300 volt peak GPR point per IEEE Standard 487). The Lyte Lynx® provides 20 kV RMS continuous dielectric protection from CO/Remote terminals and electronics (bottom) to station electronics (top), and greater than 65 kV peak impulse voltage because of its fiber isolation. Lyte Lynx® also has built-in metallic surge protection across its incoming (CO/Remote) terminals. For any incoming (CO/Remote) multi-paired cable protection applications, review IEEE Standard 487.



P31218 - Two Line Stand Alone Enclosure

11.0 ISOLATION CARD

Refer to the isolation card installation instructions (provided) for specific isolation card information.

12.0 PHYSICAL CHARACTERISTICS

12.1 Mechanical Configuration

The enclosure is molded of a high dielectric material that meets Underwriters Laboratories Standard 94V-0 flammability test. The Isolation Card is a two-sided printed circuit board manufactured in accordance with the appropriate PCB standards.

13.0 ENVIRONMENTAL REQUIREMENTS

Lyte Lynx® systems may be installed in an indoor or moderate outdoor environment and are guaranteed operable in temperatures ranging from 0° C - 70° C (32° F - 158° F) and under humidity conditions from 0-95%, non-condensing.

14.0 ISOLATION CARD REPLACEMENT

1. Disconnect the AC power cord or other power source.
2. Disconnect the telephone cable pair, power conductors and black and red wires from power supply from backplane.
3. Remove slot head screws from each corner.
4. Remove PVC coupler and strain relief from lower right corner.

5. Disconnect brown, blue and green/yellow wires from back side of AC power cord receptacle.
6. Lift out entire assembly as a unit.
7. Loosen four nylon PC card locator studs from back side of back panel.
8. Slide PC card out of connectors on backplane.
9. Insert replacement PC voice card and re-assemble in reverse order.

15.0 MISCELLANEOUS CONNECTIONS

These units are shipped with these connections already in place. This information is provided only for reconnection reference should they become disconnected for some reason (i.e. battery replacement).

15.1 Batteries - 120VAC Models (P31216)

The two 12 VDC batteries are connected as follows:

1. Red wire from AC/DC power supply PC board goes to positive (+) Red terminal on the right battery.
2. Black wire from AC/DC power supply goes to negative (-) Black terminal on the left battery.
3. Blue jumper wire connects (-) Black terminal on right battery with (+) Red terminal on left battery.

15.2 Other AC/DC Power Supply PC Board Connections

1. Brown wire from ACL (line) goes to the left lug on the 120VAC inlet looking down at backside).
2. Blue wire from ACN (neutral) goes to the middle lug on the 120VAC inlet (looking down at backside).
3. Green wire with Yellow stripe from power supply ground goes to right lug on 120VAC inlet (looking down at backside).
4. Red wire from power supply goes to (24VDC)+ terminal on TB1).
5. Black wire from power supply goes to (24VDC)- on TB1).

TABLE 1: ISOLATION SPECIFICATIONS

LONGITUDINAL SURGE	65 kV BIL
CONTINUOUS RATING	20 kV RMS

TABLE 2: EXTERNAL SYSTEM INPUT REQUIREMENTS

PARAMETER	SPECIFICATIONS
REMOTE SIDE DC REQUIREMENTS	11.5V Minimum @20 mA Current Draw
SINGLE SOURCE AND TERMINATION IMPEDANCES	600 Ohm, +/- 10%
LOOP ATTENUATION (sum of remote side and station side loops)	34 dB Maximum
INPUT SIGNAL AMPLITUDE (measured at 1000 Hz)	3.0 dB Maximum
INPUT RINGING VOLTAGE	40 - 50 Vrms

For further information or for technical support - call 800-558-3325
or visit www.sncmfg.com



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