



2400 To 80K BAUD - ANALOG
300 BAUD and ABOVE - ANALOG

P31042 - Standalone Transformer
P31035 - Fiberglass Enclosure

Description & Installation

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1.0 SCOPE

This document describes the specifications, requirements and installation instructions for the SNC Lyte Lynx® P31042 56kbs transformer and P31035 Fiberglass Enclosure. It provides an understanding of the basic functions and features available with these products.

2.0 PRODUCT OVERVIEW

2.1 System Requirements

The P31035 and P31042 are mounted as standalone units and do not require a card shelf. No powering is required for these passive devices.

2.2 Intended Uses

These data isolation interface models provide an isolated interface for Synchronet services and digital data services operating at 56k bits per second (bps) and sub-rates (including 72, 64, 56, 25.6, 19.2, 12.8, 9.6, 6.4, 4.8, 3.2 and 2.4 kbps), basic rate ISDN, analog signals for data modems, SCADA, tone relay control, analog carrier and tone signaling up to 100 kHz. Two P31043 transformers are required for use as a 4-wire application.

The primary function of the card is to provide an isolation from hazardous voltages while being “transparent” in the circuit. All signaling information within the specified frequency isolation bandwidth will be unaffected. However, DC signaling is not supported. A secondary function is to provide for the loopback of DC simplex sealing current/repeater powering current on remote (Central Office) side of the units since there is no DC path for such current through the unit.

SNC Lyte Lynx® isolation is intended for use at power substations and similar locations (such as PCS antenna sites) where high voltage isolation is required on the incoming copper telecom pairs to protect the network equipment from harm and to provide a personnel safety barrier against voltages. This specifically includes protection from longitudinally induced voltage surges and Ground Potential Rise (GPR) that may occur during power system fault.



**P31042 2-Wire 56kbs
Data Isolation**



**P31035 4-Wire 56kbs Data
Isolation in Fiberglass Enclosure**

3.0 PRODUCT FEATURES

3.1 Transformer Isolation

The Lyte Lynx® data isolation interface models are passive, magnetic-coupled devices. Primary to secondary isolation is rated at 65kV BIL. In a 4-wire data circuit, the center tap of the transmit and receive transformers can be connected to one another to provide sealing current or span line powering current loopback at the remote side of the interface.

DO NOT connect center taps of CO/Remote and Station sides together. Doing so would disable the isolation interface and create a hazardous situation.

4.0 INSTALLATION



WARNING: 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 isolation system.



CAUTION: The incoming telephone pairs 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.



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.

Sealing Current or Powering Current Termination/Drainage

All models provide the option of terminating simplex sealing or span line powering current from 0-160mA of current. This is done by connecting the center taps of the individual transformers in a 4-wire installation.

P31035 FIBERGLASS ENCLOSURE

The P31035 model consists of two P31042 2-wire transformers mounted inside a fiberglass enclosure. The enclosure should be mounted to a wall or backboard (non-metallic) with (4) ¼” lag screws. Use a flat washer under the head of each screw.

Connections - Station Cable

Loosen the pigtail cord grip on top of the fiberglass enclosure. Insert a 4-conductor, 22 AWG jacketed cable through the cord grip and retighten. Connect the tip and ring conductors to the proper terminals. Make sure the two center screw terminals are connected with a jumper (See Figure 1).

Connections - CO/Remote Cable

Add an extension of ½" PVC non-metallic conduit to the 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 appropriate terminals. Make sure the two center screw terminals are connected with a jumper. Do not leave any slack cable inside the Lyte Lynx® enclosure. With the cover secure, the enclosure is safe to personnel contact.

P31042 Transformer Only

Secure the transformer to a wall or backboard (non-metallic). Use a flat washer under the head of each screw.

Connect the tip and ring station conductors to the station side tip and ring connector on the transformer and the remote tip and ring conductors to the remote side tip and ring connector on the transformer.

Note: The two center taps on the remote and station connectors on the transformer are connected with a shorting conductor to provide continuity through the transformer. DO NOT remove this shorting conductor.

If simplex wiring is required for a 4-wire application, a jumper can be placed between the two center taps on one transformer to the two center taps on a second transformer. This can be done from remote to remote, station to station, or both, depending on the application.



WARNING: DO NOT place a jumper between the remote side and station side of two transformers. This will disable the isolation and create a hazardous situation.

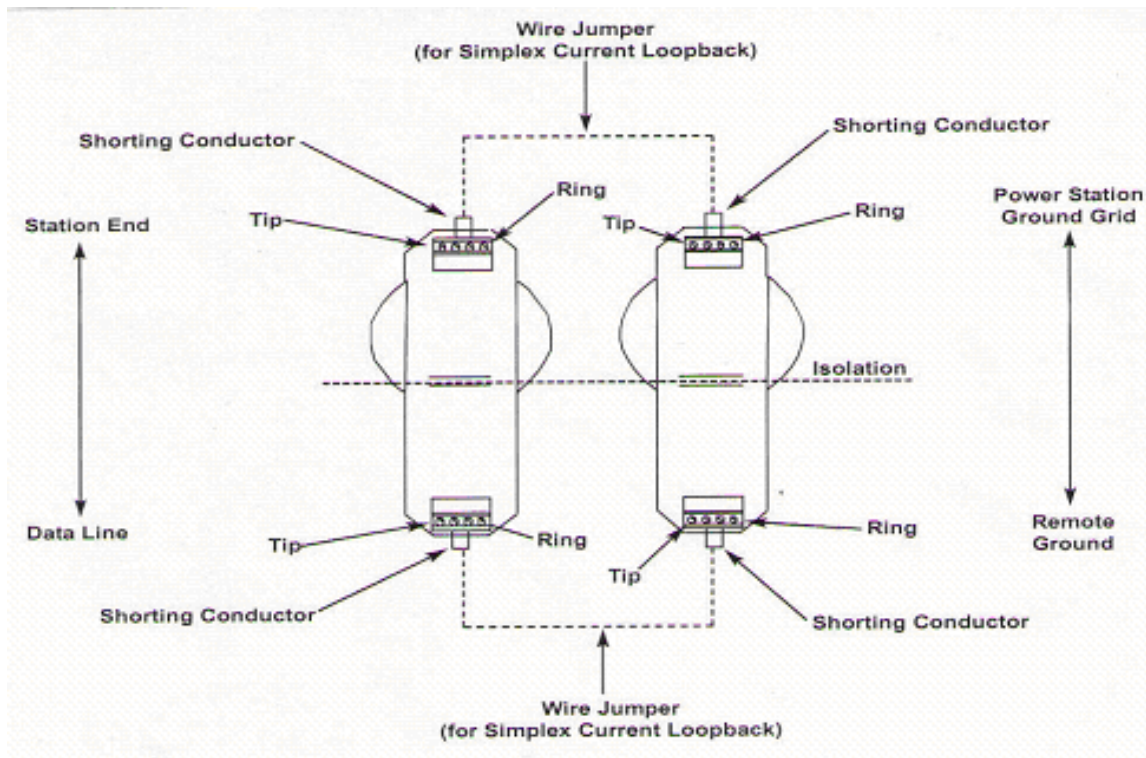


Figure 1: Sealing Current Termination - (P31035, P31042)

5.0 PHYSICAL CHARACTERISTICS

5.1 Mechanical Configuration

Table 1: Physical Dimensions

PART NUMBER	HEIGHT	WIDTH	DEPTH
P31035	13.375" (29.25 cm)	11.25" (23 cm)	5.25" (10.75 cm)
P31042	8.75" (22.2 cm)	3" (7.6 cm)	2" (5.1 cm)

6.0 SPECIFICATIONS

TABLE 2: ISOLATION SPECIFICATIONS

LONGITUDINAL SURGE	65 kV
CONTINUOUS RATING	20 kV

TABLE 3: EXTERNAL SYSTEM INPUT REQUIREMENTS

INPUT SPECIFICATION	REQUIREMENT
SIGNAL SOURCE & TERMINATION IMPEDANCES	100, 135, 600 or 900 Ohm
LOOP ATTENUATION (Sum of remote side and station side loops)	34dB Maximum
SIGNAL LEVEL 1000 - 1200Hz @ 600 Ohms 32kHz @ 135 Ohms	+10dBm Maximum +19dBm Maximum

TABLE 4: PERFORMANCE SPECIFICATIONS

PARAMETER	SPECIFICATIONS
LONGITUDINAL BALANCE 1.2 - 300 kHz	>60Db
RETURN LOSS 600 Ohm Source Impedance 1200 - 4000 Hz	>14dB
RETURN LOSS 135 Ohm Source Impedance 2.4 kHz 32 kHz	>14dB >18dB
MESSAGE CIRCUIT NOISE (Idle Channel Noise) 1.2k - 4000 Hz @ 600 Ohms	<0 dBnC
PHASE JITTER	<0.5 degree

TABLE 4: PERFORMANCE SPECIFICATIONS - (Continued)

PARAMETER	SPECIFICATIONS
SIGNAL TO NOISE RATIO	>50db
INSERTION LOSS Relative to 1.2 kHz @ 600 Ohms Relative to 32 kHz @ 135 Ohms	<0.3 dBm <0.1 dBm
FREQUENCY RESPONSE Relative to 1.2 kHz @ 600 Ohms; -3.0 dB Relative to 32 kHz @ 135 Ohms; -3.0 dB	240 Hz -300 kHz 1.4 - 325 kHz
CROSSTALK (to adjacent channel)	< -65dB
SINGLE FREQUENCY DISTORTION	<2% THD
TEMPERATURE RANGE	-40 to +100° C (-40 to 212° F)
HUMIDITY RANGE	0 to 99% Relative Humidity

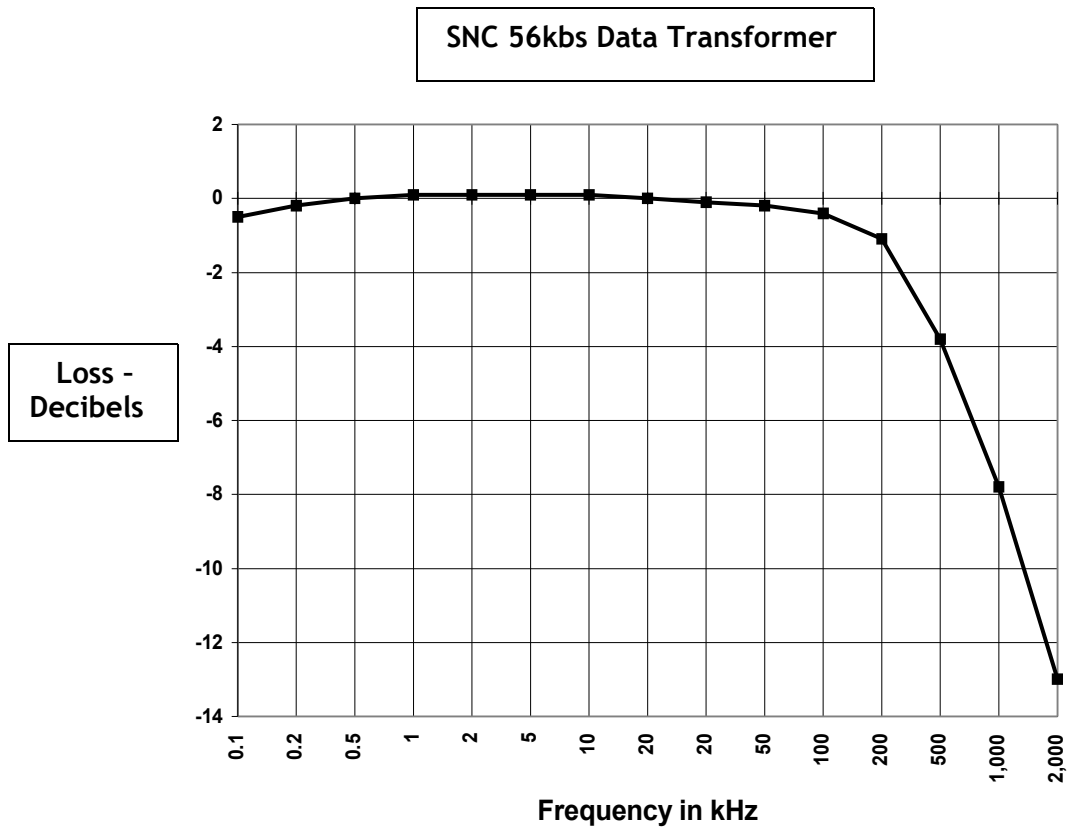


Figure 2: SNC Data Transformer (P31042)

For further information or for technical support - call 800-558-3325
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