P31102 -Test Card

Description & Installation

Printed in USA 12/11 T0500 Rev. A

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1.0 SCOPE

This document describes the technical specifications, technical requirements and installation instructions for the P31102 SNC Lyte Lynx® Test Card. It provides an understanding of the basic functions and features available with this card.

2.0 PRODUCT OVERVIEW

P31102 Test Card

2.1 System Requirements

This Test Card is designed for use in an SNC Lyte Lynx® 3, 6 or 12-slot Card Shelf or a *Teleline Isolator® Card Shelf.

2.2 Intended Uses

The Test Card is designed for bringing the electrical connections of the back panel of a card shelf up to the front for the ease of measurement. The primary purpose of the test is to make sure the wiring configurations are properly wired. The other purpose of the card is for trouble shooting the high voltage isolation system when it is not working properly.

3.0 PRODUCT FEATURES AND SET UP

3.1 Test For Proper Powering Configurations

Before inserting a card to the card shelf, make sure that the card shelf is set up for a voltage level appropriate for powering the card being used. Failure to do so could damage the card. All isolation cards with fiber links require some sort of voltages to power. The operating voltage may be –24V, –48V, floated 48VDC (RUGEN), floated 130VDC, or 120VAC.

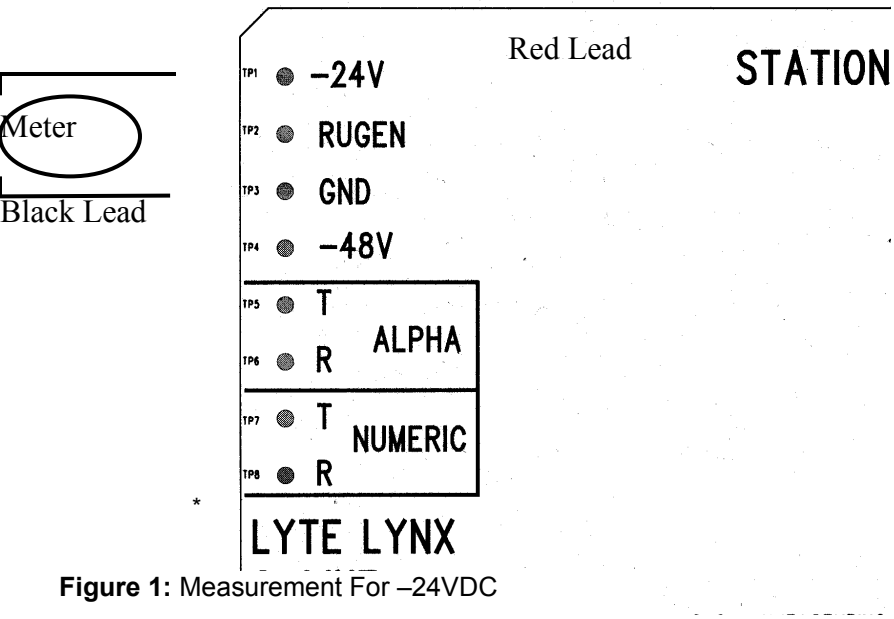

Figure 1: Measurement For –24VDC

Operating Voltage is –24VDC

If the card shelf is configured for a –24V operation, the isolation card being used should be compatible for –24V and be set for 24V mode. To ensure the card shelf is configured for –24V, the following measurement should be done.

With a DC voltmeter, connect the black lead to test point marked “GND” or TP3 and connect the red lead to test point marked “-24” or TP1. See Figure 1 on left. The reading should be somewhere between –22 to –27V.

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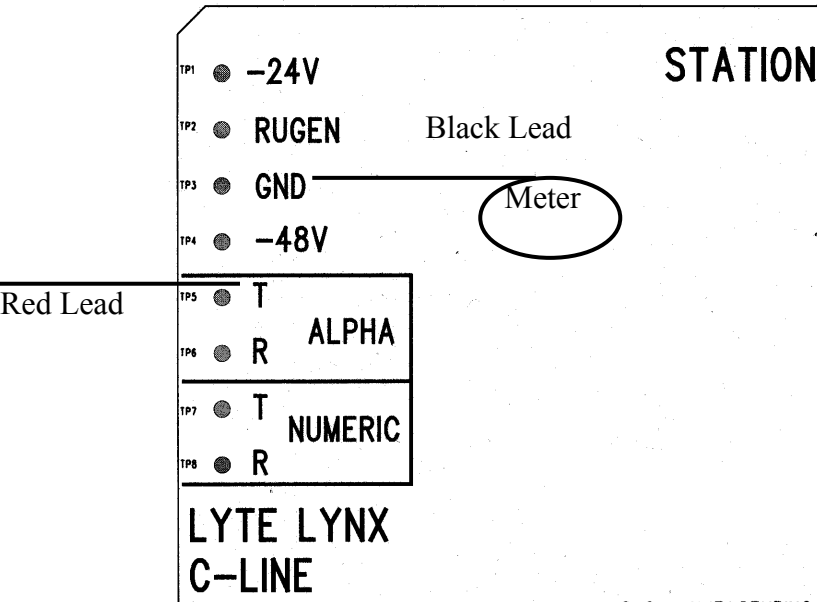
Operating Voltage is –48VDC



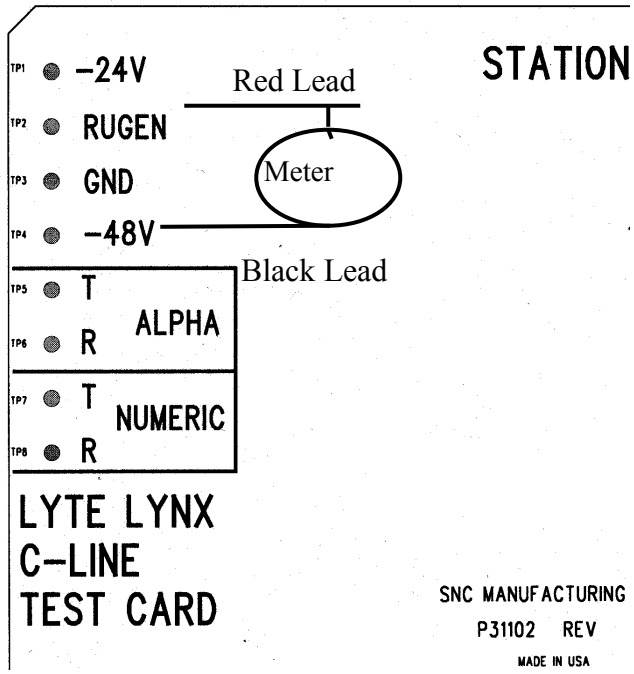
If the card shelf is configured for a –48V operation, the card being used should be compatible for –48V and be set to 48V mode. To ensure the card shelf is configured for –48V, the following measurement should be done.

With a DC voltmeter, connect the black lead to test point marked "GND" or TP3, and connect the red lead to test point marked "–48" or TP4. See Figure 2 on the left.

The reading should be somewhere between –45 to –51V.

Figure 2: Measurement For –48VDC

Operating Voltage is floated 48VDC, 130VDC or 120VAC



If the shelf is configured for floated 48V, 130V or 120VAC operation, the card being used should be compatible for floated 48V, 130V or 120VAC. To ensure the shelf is configured for one of these voltages, the following measurement should be done.

With a DC or AC voltmeter, connect the black lead to test point marked "–48V" or TP4, and connect the red lead to test point marked "RUGEN" or TP2. See Figure 3 on the left.

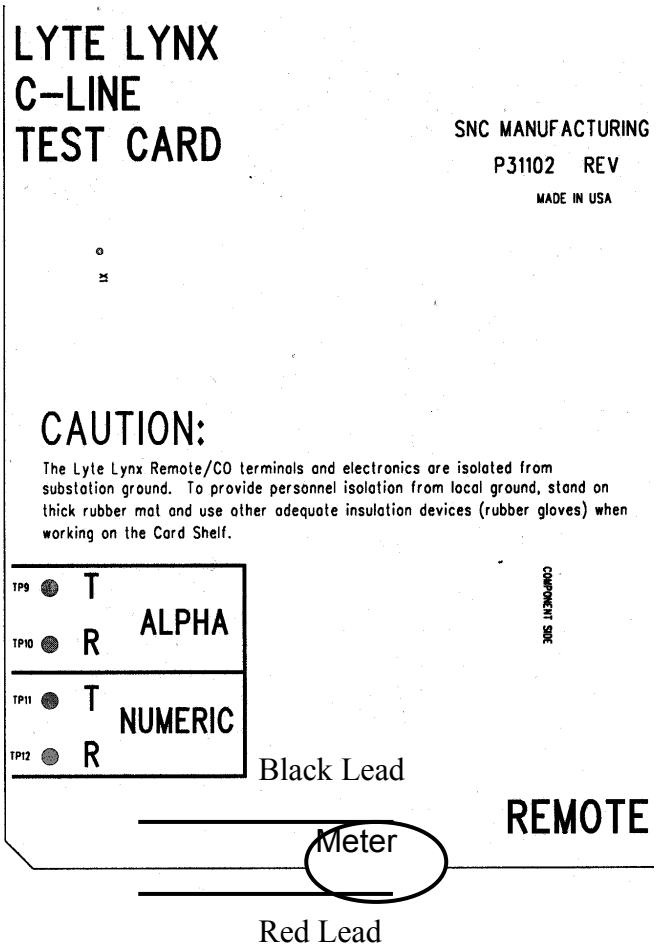
The reading should be somewhere about 48VDC, 130VDC or 120VAC.

Figure 3: Measurement For Floated Voltage

3.2 Test For Proper Sealing Voltage

Sealing voltage is also known as span powering voltage. There are several different sealing voltage levels used in the telecommunication system. Before inserting an isolation card into a slot of the card shelf, make sure the slot is set up for the isolation card being used. Failure to do so could damage the card. For example, if slot 1 is set up for a 2 wire data circuit whose sealing (span powering) voltage is 190V, a POTS card if inserted into this slot could be damaged because it only expects to see 48V, not 190V.

The following test point should be measured to determine the correct sealing voltage before inserting the isolation card. If you are not sure what voltage you expect to see when measure, ask your telecom provider.



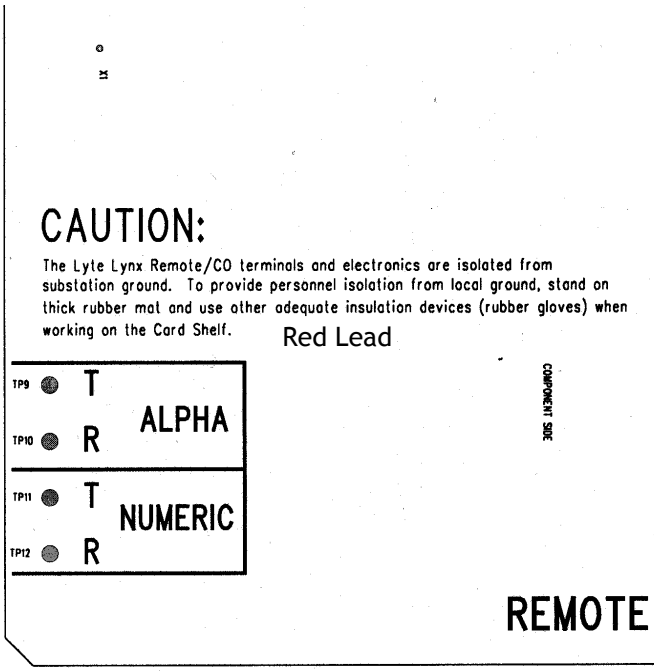
Each slot of the card shelf consists of two pairs, the Numeric pair and the Alpha pair. The Numeric and Alpha pairs sometimes are called the Odd and Even pairs.

2-Wire Circuit

Most of the time, a 2-wire isolation card is set for Numeric or Odd pair by the manufacturer. To measure for proper sealing voltage, connect a DC voltmeter between T and R in Numeric pair as shown in Figure 4 on the left. See the list below for the possible sealing voltage for a 2-wire circuit.

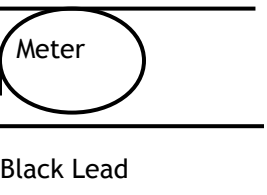
2-Wire POTS:	48V
2-Wire Data:	0V
2-Wire Data:	48V
2-Wire Data:	130V
2-Wire Data:	190V

Figure 4: Sealing Voltage of a 2-Wire Circuit



4-Wire Circuit

The sealing voltage of a 4-wire circuit can be measured between Numeric (incoming) pair and Alpha (outgoing) pair. To measure for proper sealing voltage of a 4-wire circuit, connect a DC voltmeter between T or R of Numeric pair and T or R of Alpha pair as shown in figure 5 on the left. See the list below for the possible sealing voltage of a 4-wire circuit.



4-Wire Data: 0V
4-Wire Data: 48V
4-Wire Data: 130V
4-Wire Dat4-Wire Data: 4-Wire Data: 48V
4-Wire Data: 190V

Figure 5: Sealing Voltage of a 4-Wire Circuit

3.3 Trouble Shooting A Failure Circuit

If a circuit is not working properly, it could be one of the following reasons:

-The correct powering voltage is not present
-The incoming or outgoing wire pair connections are incorrect
-The isolation card is wrong or bad

To find out whether the correct powering voltage is present, perform the tests as described in section 3.1 above to find out (see page 3 & 4).

To find out whether the incoming signals reach the card shelf, perform the tests as described in section 3.2 on page 4 & 5. If the sealing voltage is turned off at the central office, the measurement will be meaningless; see next paragraph.

If the signals reach the card shelf, but the circuit does not work, the incorrect connections might be on the equipment side of the isolation system. You may temporarily bypass the isolation system by connecting a pair of lead wires from T and R of Numeric pair in Station side to T and R of Numeric pair in Remote side (See Figure 6). If the in/out wire pair connections are correct, the circuit should work when by passing the isolation system.

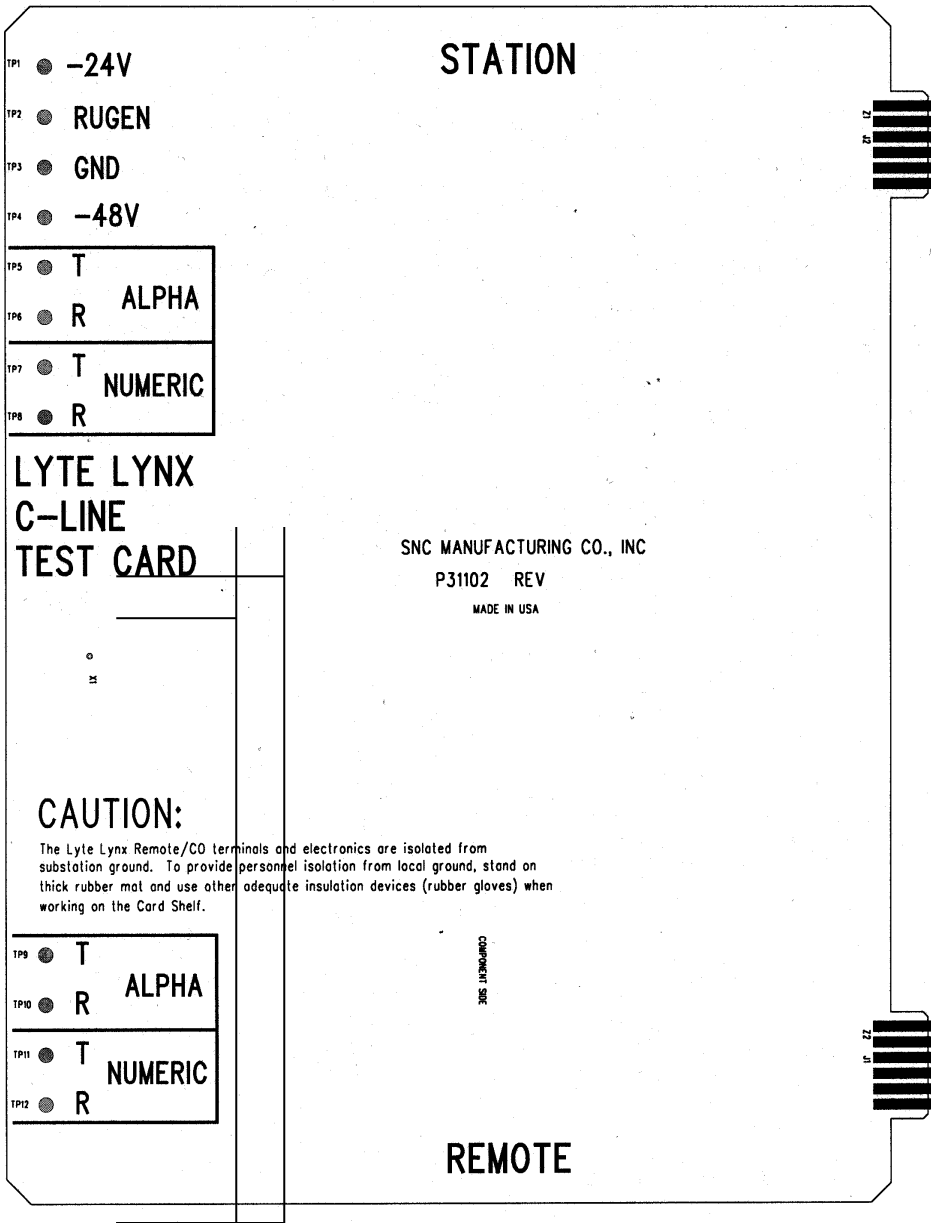


Figure 6:
Sealing Voltage
Of A
4-Wire Circuit

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