



Fiber Optic Data Transmission System

Installation Instructions

Part Numbers:

NT / NR-1L-x (one fiber)

(TTL Data Transmitter/Receiver)

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Table of Contents

1.0 Product Description	3
2.0 Installation	3
3.0 Product Part Numbers.....	3
4.0 Product Signal Format & Specifications	4
4.1 Optical Specifications	4
5.0 Data Connector Pin Assignment	5
5.1 LED Status Indicators.....	5
6.0 Troubleshooting	8

NT/NR-1L-x

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Installation Instructions

1.0 Product Description

Meridian's NT/NR-1L-x products are fiber optic modems that transmit one unidirectional channel of TTL data signal over one optical fiber using digital transmission technologies. The NT/NR-1L-x is the stand-alone model. This product is powered by internal switching power supply and will accept 12-24VAC or DC. (Part # WP-24A customer supplied)

Both ST and FC optical connectors are supported, depending on the part number. An ST optical interface is available for both multimode and singlemode fiber applications while the FC optical interface are available only on singlemode products. Optional conformal coating provides an additional level of protection from environments with high humidity.

2.0 Installation

The NT/NR-1L-x is a shelf mount module and can be mounted in either a horizontal or vertical configuration. There are two mounting holes for # 8 (maximum) hardware. A 2-pin plug-in connector is located on the side of the module for power. Meridian recommends the WP-24A transformer for proper operation of this module.

3.0 Product Part Number Description

The NT/NR-1L-x series products are available in one fiber version. In addition, both singlemode and multimode fiber are supported. The table below lists the various part numbers and their optical transmission characteristics:

Module Part #		# Fibers	Fiber Type	Optical Connector
NXA-1L-1	NR-1L-1	1	Multimode	ST
NXA-1G/1G-3	NXB-1G/1G-3	1	Singlemode	FC
NXA-1G/1G-3/ST	NXB-1G/1G-3/ST	1	Singlemode	ST

4.0 Product Signal Format & Specifications

The NT/NR-1L-x series products transmit or receive the following signal:

Signal Type	Channels	Transmit	Receive
TTL (Tx & Rx data)	1	Yes	Yes

The tables below identify the specifications for the various signals that these modems transmit/receive.

Data	
Formats	TTL
Date Rate	DC to 125 Kb/s
Bit Error Rate (BER)	Better than 10^{-9}

Connectors	
Data	5 pin terminal strip
Power	2 pin terminal strip
Optical	Singlemode – ST or FC Multimode - ST

4.1 Optical Specifications

The table below lists the optical specifications for both singlemode and multimode fiber applications.

Optical Specifications						
Fiber Type/Size (um)	Optical Output (dBm)	Rx Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical connector	Optical Dynamic Range (dB)
Multimode (FP Laser) 62.5 / 125	-5	-26	21	1300	ST	24
Singlemode (FP Laser) 9 / 125	-5	-26	21	1310	ST, FC	24

5.0 Data Connector Pin Assignment

The 5 pin terminal block connector on the front of the module are used for all data interfaces.

Data Connector Pinout Assignment		
Pin #	NT-1L-x	NR-1L-x
1	Ch 1 DATA INPUT	NA
2	NA	NA
3	NA	Ch 1 DATA OUTPUT
4	NA	NA
5	GND	GND

5.1 Operation LED Indicators

There are a number of indicator lights that provide visual operational status of the modules and link (see Figures 5.1 & 5.2)

The function of these LED indicators is as follows:

VID	-	N/A
SYN	-	N/A
RX C/E	- Rx Carrier present	- Green (OK), Red (Error)
TX C/L	- Tx Carrier present	- Green (OK), Red (Alarm)
DR1	- Data output	- Green
DT1	- Data input	- Green
PWR	- Power	- Green (ON)

NT-1L-X

PINOUT DIAGRAM

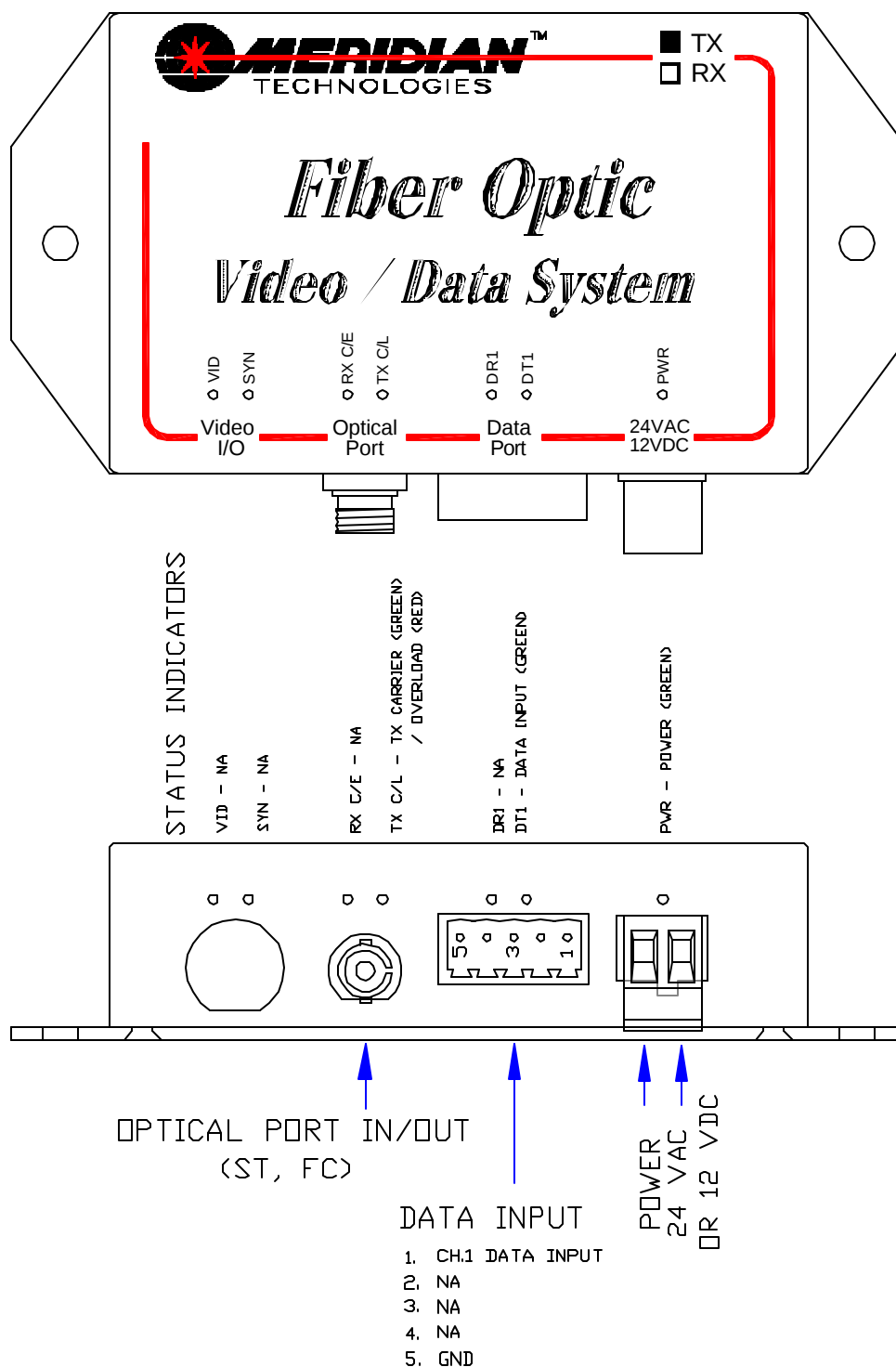


Figure 5.1
NT-1L-x Front Layout Diagram

NR-1L-X

PINOUT DIAGRAM

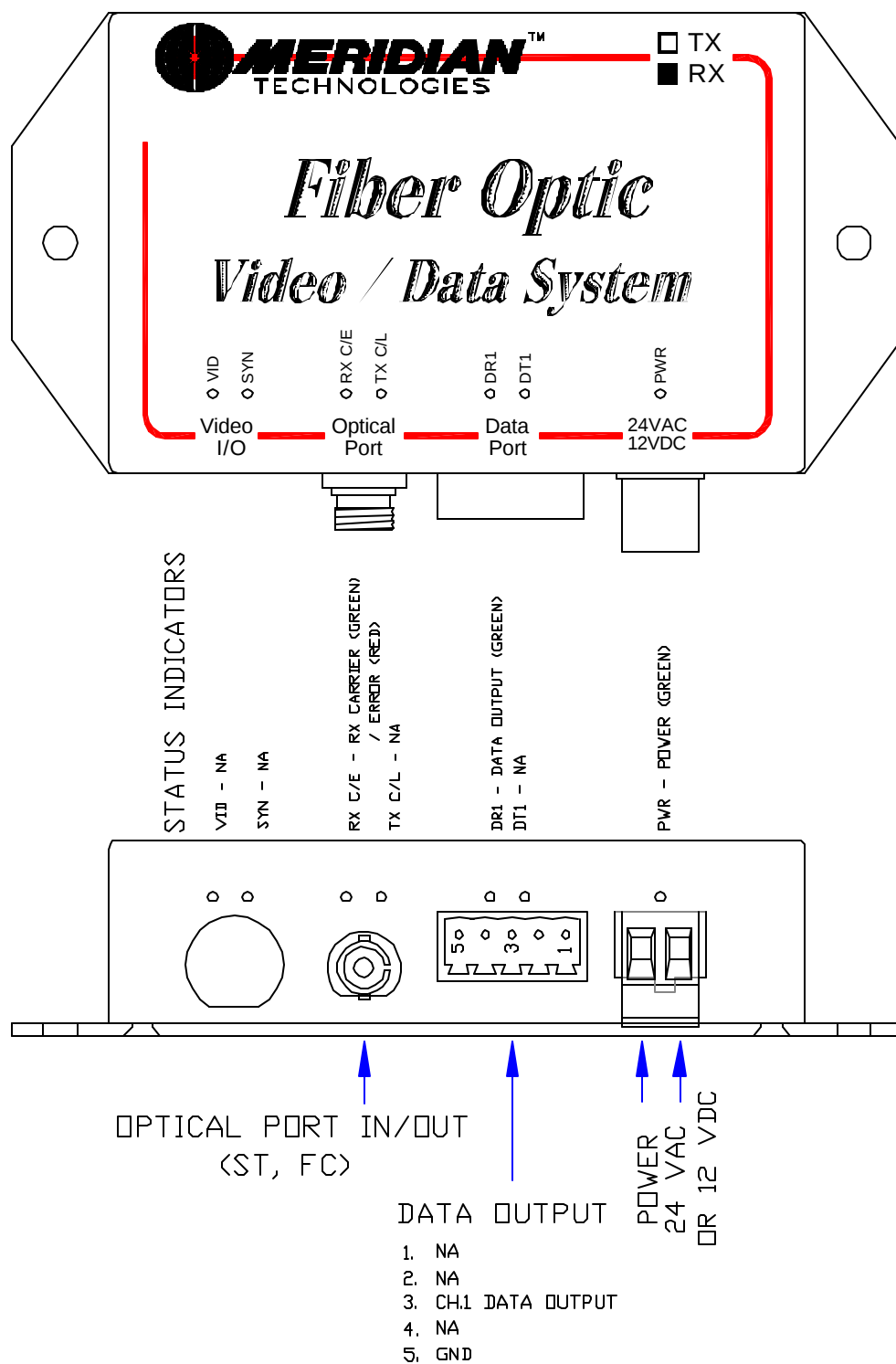


Figure 5.2
NR-1L-x Front Layout Diagram

6.0 Troubleshooting

Below is a listing of several problems that may arise during the installation & operation of the modules. If you are having difficulty installing or operating the modules please refer to this list below.

Problem: *Card power LED does not light when power to the module is applied or power indicator turns on and off*

Action: Check power supply to ensure that it is plugged in and turned on.

Problem: *No Data*

Action: Check to ensure that an NT unit is optically connected to an NR unit. An NT or an NR will not communicate with a module of the same type NT or NR.
Check that both of the modules have the same data connections.

If the problem still persists after reviewing the above items, please contact Meridian technical support (516-285-1000).

Physical dimensions

Length3.6“ (9.2 cm) or 4.6“(11.7 cm) with flanges
Width 2.4“ (6 cm)
Depth..... 1“ (2.5 cm)
Weight0.34 lb (150 gm)

Notes:

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