



PT/PR-200(i)R-V/x-X Series

Fiber Optic Video & RS-232, RS-422 Data Transmission System

Installation Instructions

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1.0 Product Description

Meridian's product PT/PR-200iR-V/x-X series products are fiber optic modems that transmit one channel of uni-directional composite video and one channel of uni-directional RS-232 or rs-422 data over either one or two optical fibers using FM transmission technologies. This product series uses Meridian's standard 1-slot wide chassis mount card assembly and plugs into the following Meridian chassis: SR-500/S, SR-1000, SR-1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

2.0 Installation

Series PT-200iR-V/x-X and PR-300iR-V/x-X products are one-slot wide cards and, as such, occupy only one slot in Meridian's standard chassis (SR-500/S, SR-1000, SR-1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis). To install in the chassis, orient the card with the Meridian logo at the top of the module and slide onto the top and bottom card guides in the chassis. Press securely on the top and bottom of the module to ensure that it is fully seated in the chassis so that the electrical connector mates with the chassis-mounted motherboard. Once installed, manually tighten the two thumbscrews located at the top and bottom of the card. Do not use tools to secure these and do not over tighten.

Note: A fully loaded subrack should have forced-air cooling to avoid excessive heat generation inside the chassis. A fan assembly tray (P/N FA-2000) with three (3) fans is available and should be installed under the 19" SR-2000/1 whenever possible.

Front Panel Indicators – There is a front panel power indicator on the PT/PR-200iR-Vx-X series modems.

Product Part Numbers

These modems are available in either one or two fibers and with 3-pin terminal connectors. The table below identifies these various products and their associated part numbers.

PT/PR-200R/iR Part Numbers					
Transmitter (Side A)	Receiver (Side B)	# Fibers & Type	Transmit Wavelength	Receive Wavelength	Data Connector
PT-200R-V/3-0	PR-200R-V/3-0	2 – MM	850 nm	850 nm	3-pin block
PT-200R-V/3-1	PR-200R-V/3-1	2 – MM	1300 nm	1300 nm	3-pin block
PT-200R-V/3-2	PR-200R-V/3-2	2 – SM	1310 nm	1310 nm	3-pin block
PT-200iR-V/3-0	PR-200iR-V/3-0	1 – MM	850/1300 nm	1300/850 nm	3-pin block
PT-200iR-V/3-1	PR-200iR-V/3-1	1 – SM	1310/1 550 nm	1550/1310 nm	3-pin block
PT-200R-V/4-0	PR-200R-V/4-0	2 – MM	850 nm	850 nm	3-pin block
PT-200R-V/4-1	PR-200R-V/4-1	2 – MM	1300 nm	1300 nm	3-pin block
PT-200R-V/4-2	PR-200R-V/4-2	2 – SM	1310 nm	1310 nm	3-pin block
PT-200iR-V/4-0	PR-200iR-V/4-0	1 – MM	850/1300 nm	1300/850 nm	3-pin block
PT-200iR-V/4-1	PR-200iR-V/4-1	1 – SM	1310/1 550 nm	1550/1310 nm	3-pin block

3.0 Modem Optical Connection

The PT/PR-300iR 1-fiber data modems are single fiber modems and, as such, must be connected in 'pairs'. In other words, a PT unit must be optically connected to the corresponding PR unit at the other side. A PT unit will not communicate with another PT unit. Likewise, a PR unit will not communicate with another PR module. The 2-fiber modules (PT/PR-200R) are identical and will communicate with each other. These 2-fiber units (PT/PR-200R) will not work with the 1-fiber units (PT/PR-200iR).

3.1 Product Signal Format & Specifications

The PT & PR-300R/iR series products transmit and receive the following signals:

Signal Type	Channels	Transmit	Receive
NTSC/PAL video	1	Yes	Yes
RS-232 (Tx & Rx data)	1	PT-200R/iR-V/3	PR-200R/iR-V/3
RS-422 (Tx & Rx data)	1	PT-200R/iR-V/4	PR-200R/iR-V/4

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

Video	
Format	NTSC, PAL, SECAM
Voltage/Impedance	1Vp-p, 75Ω, 1.5Vp-p (max)
Differential Gain	<1%
Differential Phase	<0.7°
SNR	>67dB (weighted)
Return Loss	>30dB
Field Tilt	<0.5%

Data	
Formats	RS-232
Date Rate (RS-232)	DC to 125Kb/s
Data Rate (RS-422)	DC to 300Kb/s
Bit Error Rate (BER)	Better than 10 ⁻⁹

Connectors	
Video	75Ω BNC w/gold center pin
Data	One, 3-pin terminal blocks (see front-panel diagrams for input/output connections)
Optical	Singlemode – ST or FC Multimode - ST

The data input/output connectors are identified on the attached front-panel diagrams.

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	-3	-24	21	1300/850	ST	24
Singlemode (FP Laser) 9/125	-3	-24	21	1310/1 550	ST, FC	24
Singlemode (DFB Laser) 9/125	+3	-24	27	1310/1 550	ST, FC	24

4.0 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: *Module does not fit in chassis slots*

Action: Check module orientation. Meridian “Globe” must be oriented on the top left hand side of the module
Make sure the card guides in the chassis are aligned with the extrusion on the module

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

Action: Check power supply to ensure that it is plugged in and turned on. If flashing continues, move module to another chassis or location in the same chassis, if available.

Problem: *No video at output of module*

Action: Check to ensure that the video channel-specific LEDs are on (Green). Also, check to ensure that the optical LEDs are ON. If no video is still present, check to ensure that the monitor is ON and the video cable is connected to the correct video port on the Rx module.

Problem: *Video image is dark*

Action: Check the iris control on the camera to ensure that it is open to the proper amount for the conditions

Problem: *Video image is too bright and appears overexposed*

Action: Check the Video overload indicator on the Rx module. If it is Red, the video signal level is too high and the CCTV iris should be checked to ensure that it is open properly for the conditions.

Problem: *No data*

Action: 1) Check to ensure fibers properly connected on the 2-fiber units
2) Check to ensure that the electrical pins are properly connected

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