HFB-FO-PRO-R4S

Profibus Self-healing Fiber Optic Converter(Modem)

User Manual

Table of Contents

1. Overview

1.1 Introduction

The HFB-FO-PRO series Multi-Drop Self-Healing Ring Fiber Optic Converter interlinks with Profibus interface devices over a pair of optical fiber cables. This product is intended for self-healing ring topologies. Our Multiple Self-Healing Ring Configuration offers maximum reliability as it can recover simultaneous faults or failures in two different locations. The Self-Healing Ring consists of two data paths, Ring A and Ring B, with each data path running in an opposite direction to the other. Under normal operation, only the primary data path (Ring A) is used, when there is a fault (cable or failed device), the data path will turn around before it reaches the fault or failed unit and use the secondary data path (Ring B) to complete the link. With this process, the data path remains intact. The data communication protocol is transparent and compatible with all the Profibus upper protocols.
The HFB-FO-PRO series Fiber Optic Modem can be widely used, such as Industrial Controls, Intelligent Transportation Systems (ITS), Industrial Networking, Supervisory Control and Data (SCADA) and so on.

1.2 Technical Specification

DATA	
Number of Channels	1
Interface	Profibus
Maximum Access Nodes Number	128
profibus Working Rate	50bps-~ 1.5Mbps
Profibus Distance	0 ~ 1200m
Connector Type	Terminal

OPTICAL	
Number of Fibers	4
Wavelength	MM:1310nm/850nm SM:1310/1550nm
Fiber Type	62.5/125 MM 9/125 SM
Distance	0-2km(MM) 0 ~ 20km(SM)
Connector Type	ST/PC, SC/PC

GENERAL	
Operating Temperature	-30 ~ 70˚C / -30 ~ +158ºF
Operating Humidity	0 ~ 95% non-condensing
Mean Time Between Failure (MTBF)	> 70,000hrs
Power Supply Adaptor	DC: 24V
Enclosure Color	Silver
Dimensions (Wall mount, L× W×H)	125mm×110mm×36mm

1.3 Warranty

- Repair
  - Please contact your local distributors when product is defective. Please apply RA in advance and prepay shipping cost when returning the defective product to us. We will pay the cost for sending it back to you.
  - Please attach a statement clearly describing the problem.
- We will repair defective product under warranty free of charge to our customer.
- 3 years warranty for product only.
- Any unauthorized modification of hardware and software voids the warranty.
- Warranty does not cover mishandling and/or abuse of the product.

Products comply with the following Safety Label for International Fiber Communication Equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful Interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at this own expense.

2 Installation

2.1 Package Contents

- Two HFB-FO-PRO Multi-Drop Self-Healing Ring Fiber Optic Modem
- One User Manual

Please contact dealer or distributor if part is missing or damaged.

2.2 Wall Mount Enclosure

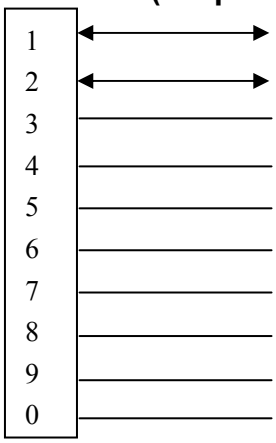
The Top View

LED Indicators:

POW:	Power Supply	On if power input is OK.
ACT :	Profibus Data transmit/receive.	Flashing if there is activity.
FTX1:	The secondary ring Transmit Fiber Link	Off if the fiber link is normal.
FRX1:	The secondary ring Receive Fiber Link	Off if the fiber link is normal.
FTX2:	The primary ring Transmit Fiber Link	Off if the fiber link is normal.
FRX2:	The primary ring Receive Fiber Link	Off if the fiber link is normal.

Connectors:

Terminal (10 pins) assignment:



1	V+	24VDC +
2	NC	Power Ground
3	V-	24VDC +
4	G+	Alarm node
5	G-	Alarm node
6	GND	The Secondary mode:(option)
7	ZM	The Secondary mode:(option)
8	GND	GND of Profibus
9	D(+)	Pro+
0	D(-)	Pro-

FTX1: Fiber Optical ST of the secondary ring (transmit)
FRX1: Fiber Optical ST of the secondary ring (receive)
FTX2: Fiber Optical ST of the primary ring (transmit)
FRX2: Fiber Optical ST of the primary ring (receive)

2.3 Caution

- Switch off all power supply before installation
- Ensure fiber is properly aligned to the receiving connector
- Do NOT stare at the fiber core
- When selecting the Point-to-Point (Trunk Line) / Point-to-Multipoint (Star topology), all the HFB-FO-PRO Fiber Optic Modem should be set in the primary mode.
- When selecting the Multi-Drop Self-healing Ring Mode, only one HFB-FO-PRO Fiber Optic Modem should be set in the primary mode, the others are set in the secondary mode.
- On the bottom of the product, there is a DIP Switch, the users should setup the DIP Switch according to the selecting mode.

DIP Switch setup table:

The Primary mode:

DIP	D1	D2	D3	D4	D5
STATE	Terminal Resistance	Reserved	Reserved	OFF	Reserved

The Secondary mode:

DIP	D1	D2	D3	D4	D5
STATE	Terminal Resistance	Reserved	Reserved	ON	Reserved

2.4 Install Application

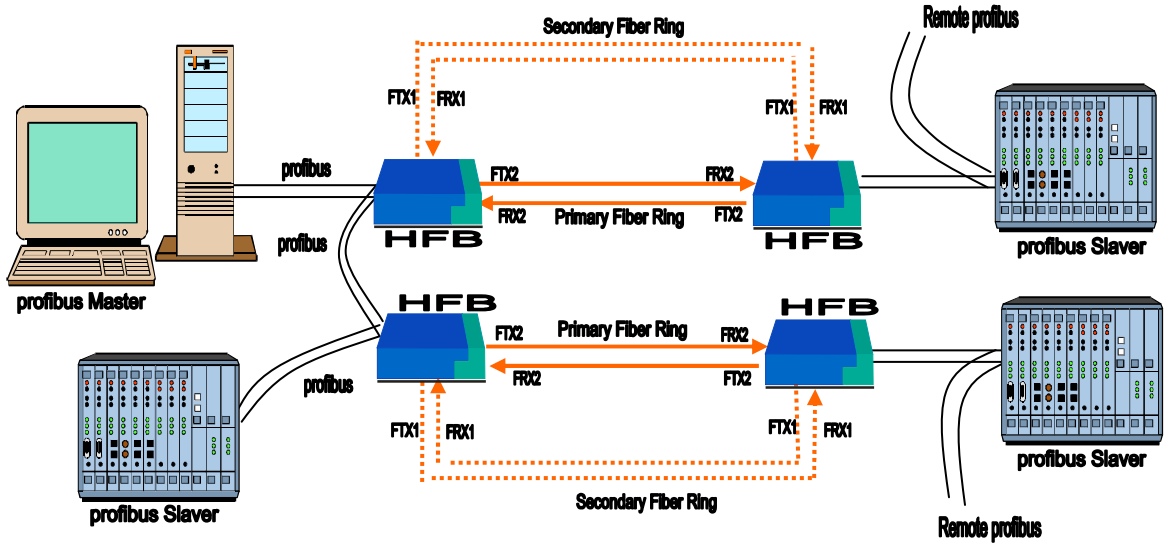


Figure 1. Point-to-Point (Trunk Line) / Point-to-Multipoint (Star topology)

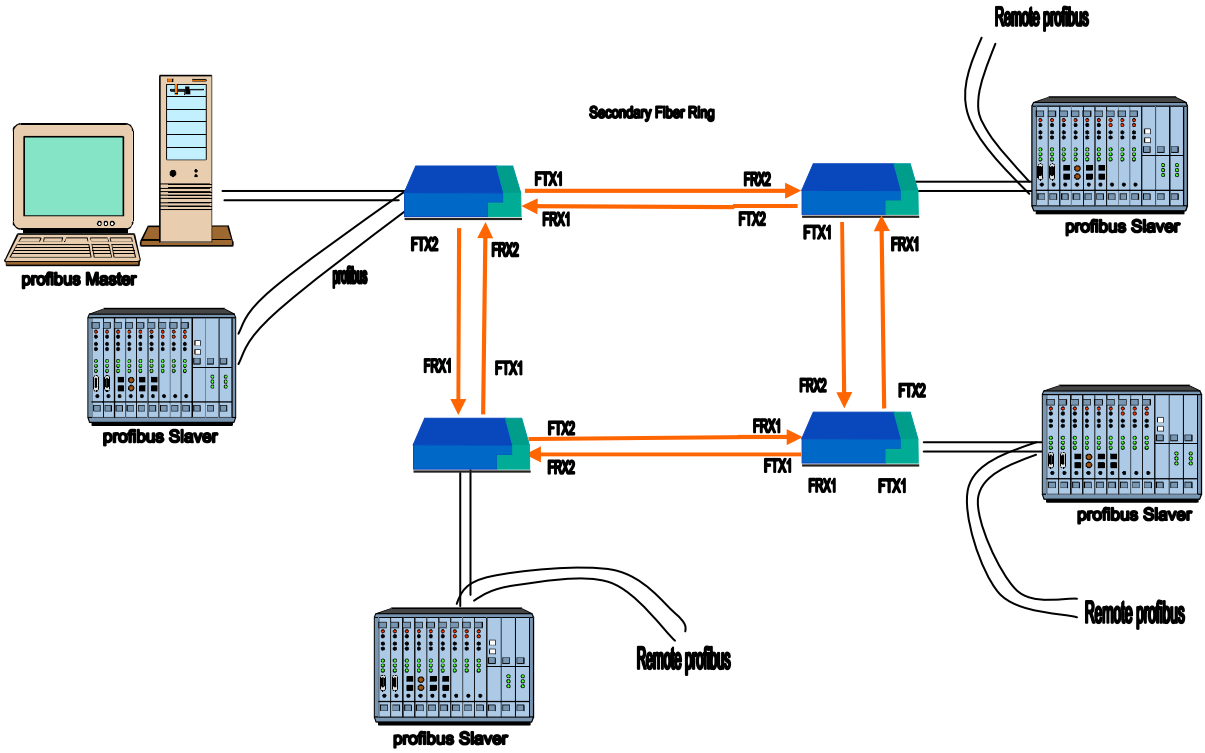


Figure 2. Multi-Drop Self-healing Ring Mode

3 Dimensions (mm)

Wall Mount: