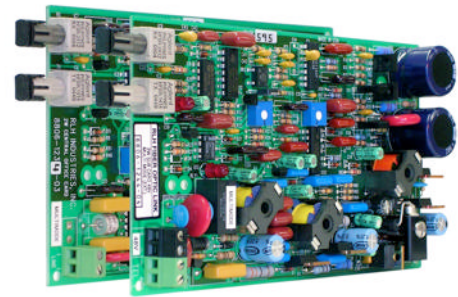


2-Wire POTS Interface Fiber Optic Link System

Specifications and Installation Information



Description

The Fiber Optic Link 2-wire POTS (Plain Old Telephone Service) system provides a transmission of standard analog POTS, telemetry, or PBX loop start signals over two optical fibers. The 2-wire POTS system transmits signals in the voice-frequency or audio range (300Hz-3.4KHz) while providing ringing, off-hook detection. Common applications include telephone, faxes, and dial-up modems.

Note: Special modifications are available for forward disconnect (SM07) and square wave ringing (SM10)

2-Wire POTS CO (Central Office) Side Card

The 2-Wire POTS CO Card provides the electrical-optical interface between a Central Office or PBX 2-wire copper line and two fiber strands. The CO card is typically line powered from normal 2-wire sealing current (18VDC 0.5mA on-hook/ 18mA off-hook minimum). If sealing current is not available the 2-wire POTS Power Coupler (p/n: 8806-1252-01, 8806-1252-02) must be used to simplex DC power onto the 2-wire line.

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Compliance Information

The RLH 2W POTS Fiber Optic Link System is compliant with the following industry standards:

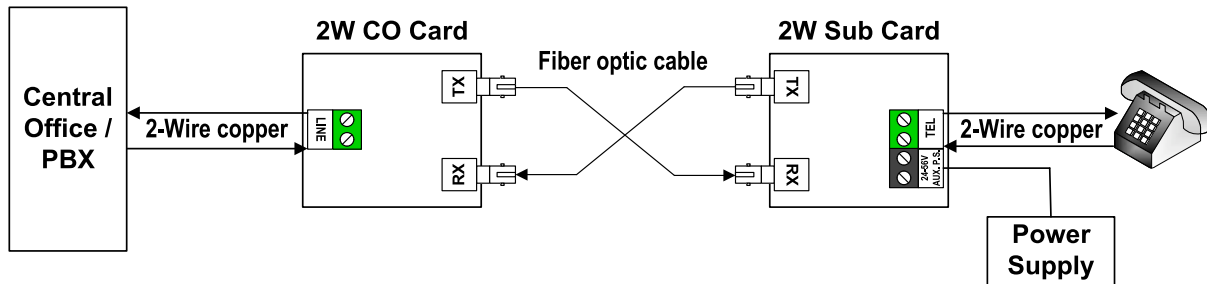
- **NEBS Level 3**
- **FCC PART-15**
- **FCC PART-68B**
- **IEEE-80 IEEE-367**
- **IEEE-487**
- **IEEE-1590**
- **IEEE-1615**
- **Motorola R56**
- **BR 876-310-100 BT (Telcordia)**
- **Bellcore SR-3966**
- **GR-1089**
- **GR-63**

Specifications subject to change without notice.

Note: In order to maintain high voltage isolation, Fiber Optic Link CO and Sub cards must be powered from separate power sources.

2-Wire POTS Sub (Subscriber) Side Card.

The 2-Wire POTS Sub Card provides the optical-electrical interface between the two fiber strands and a 2-wire copper line to a telephone, fax, or modem. The Sub card is local powered by a 24-56VDC source. The Sub Card provides 90VRMS sine wave ringing (REN 5.0 max 80VRMS). LED Indicators on the card display power, ringing and off-hook conditions.



2-Wire POTS System Diagram

General Safety Practices

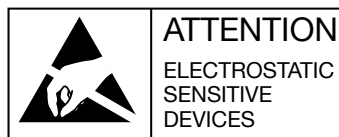
The equipment discussed in this document may require tools designed for the purpose being described. RLH recommends that service personnel be familiar with the correct handling and use of any installation equipment used, and follow all safety precautions including the use of protective personal equipment as required.

Caution - Severe Shock Hazard

- Never install during a lightning storm or where unsafe high voltages are present.
- Active phone lines may carry high DC voltages. Use caution when handling copper wiring.

Special handling requirements

Be careful when handling electronic components



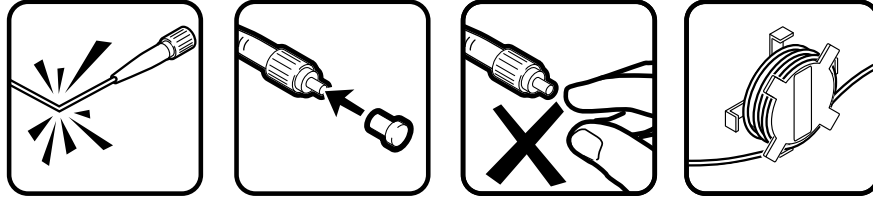
- This product contains static sensitive components.
- Handle Fiber Optic Link cards at their edges only.
- Follow proper electrostatic discharge procedures.

This card utilizes circuitry that can be damaged by static electricity. When transporting the card, carry it in an ESD safe container such as the antistatic bag provided with the card. Before handling cards, discharge yourself of static electricity by physical bodily contact with earth ground. When handling cards, hold by outer edges and avoid touching circuitry. Failure to follow ESD precautions may cause serious damage to the card and prevent proper operation.

Warning

The intra-building port(s) of the equipment or subassembly is suitable for connection to intrabuilding or unexposed wiring or cabling only. The intra-building port(s) of the equipment **MUST NOT** be metallically connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 4 ports as described in GR-1089-CORE, Issue 4) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallically to OSP wiring.

Guidelines for handling terminated fiber cable



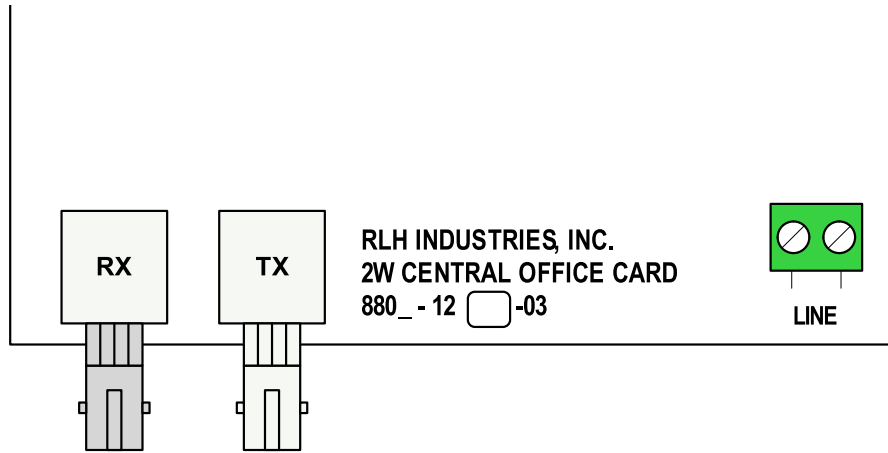
- Do not bend fiber cable sharply. Use gradual and smooth bends to avoid damaging glass fiber.
- Keep dust caps on fiber optic connectors at all times when disconnected.
- Do not remove dust caps from unused fiber.
- Keep fiber ends and fiber connectors clean and free from dust, dirt and debris. Contamination will cause signal loss.
- Do not touch fiber ends.
- Store excess fiber on housing spools or fiber spools at site

Installation

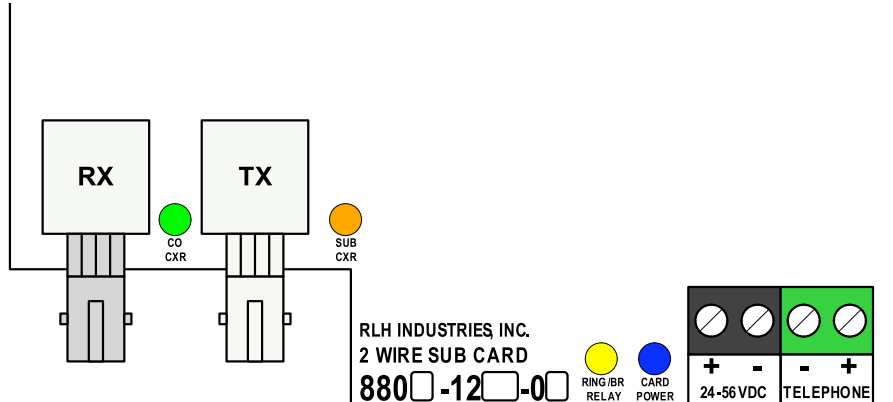
The Fiber Optic Link 2-wire POTS card can be installed into any RLH card housing. All electrical and fiber optic connection are made directly onto the card.

Connect fiber optic cable

Fiber Optic Link Cards are equipped with two optical connectors. Connect fibers to the transmitter and receiver marked “TX” and “RX”. For example, if fiber #1 is connected to “TX” on the CO Card, fiber #1 must be connected to “RX” on the Sub Card. Fiber cable should always be routed loosely avoiding tight bends.



2-Wire POTS CO Card Connectors



2-Wire POTS Sub Card Connectors

Connect 2-wire copper pair

The copper pair from the CO or PBX connects to the green “LINE” screw-down terminal on the CO Card. The copper pair from the telephone connects to the green “TEL” and screw-down terminals on the Sub Card.

Connect Power

Connect a 24-56VDC (200mA minimum) power source to the black “AUX. P.S.” screw-down terminal on the Sub card. The power input is polarity sensitive and marked with positive and negative.

Troubleshooting

If trouble is encountered, verify all copper and fiber connections and settings. If trouble persists, replace the unit and retest. If technical assistance is required, contact RLH Industries, Inc. technical support department:

Warranty and Repair

All RLH Industries, Inc. products have an unconditional lifetime warranty. If a unit needs repair, call the RLH Customer Service department for a Return Material Authorization (RMA) number and return the defective unit with the RMA number, freight prepaid, along with a brief description of the problem:

RLH Industries, Inc.
936 N. Main St.
Orange, CA 92867
Attn: Repair & Return Dept.

Phone: 1-800-877-1672 or 1-866-DO-FIBER

Email: info@fiberopticlink.com

Web: www.fiberopticlink.com

As specified in our warranty RLH will repair and return the unit at no charge to the customer. If an out-of-service condition exists, an advance replacement unit can be obtained; however, a credit card or valid purchase order number will be required to ensure return of the replacement unit.

Ordering

RLH Fiber Optic Link products are available directly through RLH Industries, Inc. or its distributors nationwide. Please call RLH customer service for ordering assistance.

Each 2W POTS card is identified with the part number.

Fiber Type	2W POTS CO Card		2W POTS Sub Card	
	Part Number	CLEI Code	Part Number	CLEI Code
Multimode ST	8806-1234-03	NPIFA301AA	8806-1244-05	NPIFAB401AA
Multimode SC	8805-1234-03	–	8805-1244-05	–
Single-mode ST	8806-1261-01	NPIFCB01AA	8806-1271-03	NPIFDB01AA
Single-mode ST (Long Haul)	8806-1261-01LH	–	8806-1271-03LH	–
Single-mode SC	8805-1261-01	NPIFKD01AA	8805-1271-03	NPIFLD01AA
Single-mode SC (Long Haul)	8805-1261-01LH	–	8805-1271-03LH	–

- ▶ Add "RJ" to part number for installed RJ45 adapter

Specifications

Transmission method	Frequency modulated light via two optical fibers Multimode: 850nm Single-mode: 1310nm SM Long Haul: 1310nm
Maximum Fiber Loss / Distance*	Multimode: 14dB / 2 miles (3.4km) Single-mode: 8dB / 9 miles (15km) SM Long Haul: 26dB / 36 miles (60km) ; 8dB minimum *Distance is equated using industry standard fiber and connector attenuation.
Fiber Type	Multimode: 62.5/125 μ m, 50/125 μ m ; Single-mode: 8-9/125 μ m
Fiber Connector Types	ST or SC
Wire Connector	Screw clamp, 12-26 AWG
Bandwidth	300 Hz to 3.4 KHz
Dialing Protocol	Pulse or tone dialing
Ringng	Sine wave matched to input frequency, REN 5.0
Drop Voltage / Current	Source voltage selectable between 48V and 14V (power saving) 22 \pm 1mA
Insertion Loss	0dB +/- 0.5dB each direction
Surge Protection	PTC thermistors, zener diodes and varistors
Power Requirements	CO Card: 18-56VDC, On-hook 0.5mA maximum, off-hook 18mA minimum (card will sink up to 30mA line seizure). Sub Card: 24-56VDC, 200mA maximum
Powering Method	CO Card: Line Sub Card: Local
Operating Temperature	-40° to +158° F (-40° to +70° C), 95% non-condensing
Dimensions	7"x4"x1"



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web: www.fiberopticlink.com

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Please contact your RLH sales representative for pricing and delivery information.

Specifications subject to change without notice.