

**Fiber Optic Link 2-Wire DID System
System Description and Installation**

Fiber Type	2W DID CO Card	2W DID Sub Card
Multimode ST	8806-1264-02	8806-1274-01
Multimode SC	8805-1264-02	8805-1274-01
Single-mode ST	8806-1262-02	8806-1272-01
Single-mode SC	8805-1262-02	8805-1272-01
Single-mode ST (Long Haul)	8806-1262-02LH	8806-1271-01LH
Single-mode SC (Long Haul)	8805-1262-02LH	8805-1271-01LH



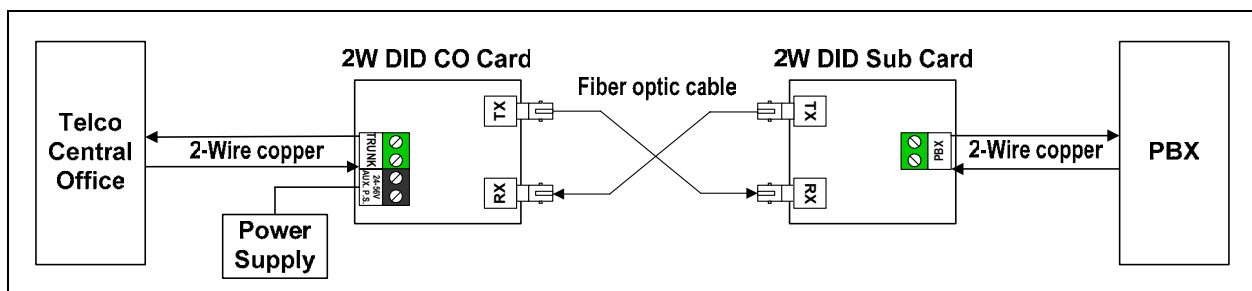
Description

The Fiber Optic Link 2-wire DID (Direct Inward Dialing) system provides a fiber optic transmission of a Telco DID TRUNK line to a PBX (loop start) over two optical fibers. The 2-wire DID system transmits signals in the voice-frequency or audio range (300Hz-3.4KHz) while providing reverse battery signaling to communicate call status.

2-Wire DID CO (TRUNK) Card. The 2-Wire DID CO Card provides the electrical-optical interface between a Central Office 2-wire copper line and two fiber strands. The CO card cannot be line powered, it must be powered by an isolated local DC power source. The CO Card has four LED status indicators, Sub off-hook (Green), CO off-hook (Orange), battery reversal (Yellow), and power (Blue).

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

2-Wire DID Sub (Subscriber) Side Card. The 2-Wire DID Sub Card provides the optical-electrical interface between the two fiber strands and a 2-wire copper line to a DID PBX. The DID Sub Card is line powered by the copper pair from the PBX. The Sub Card has three LED status indicators, Sub off-hook (Green), CO off-hook (Orange), battery reversal (Yellow).

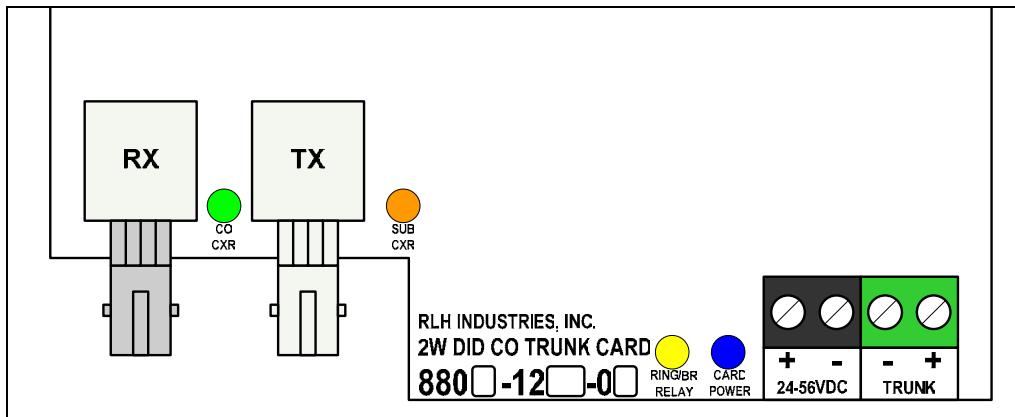


2-Wire DID System Diagram

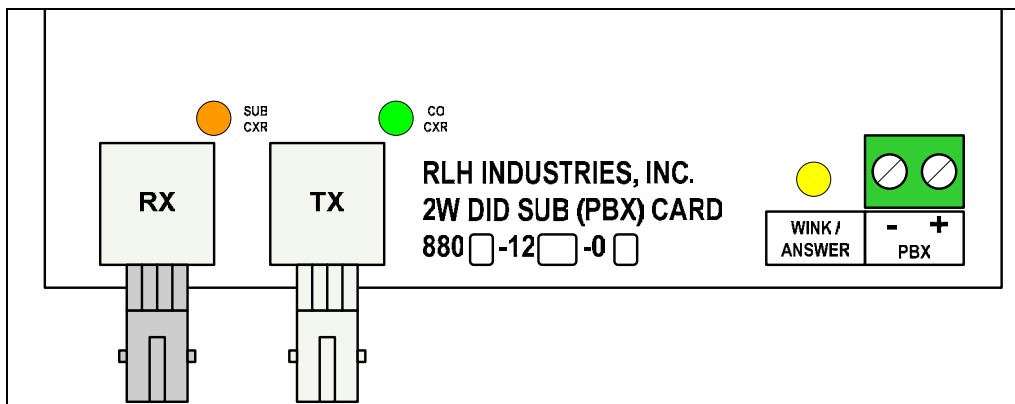
Installation

The Fiber Optic Link 2-wire DID Cards 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 DID CO (Trunk) Card Connectors



2-Wire DID Sub (PBX) Card Connectors

Connect 2-wire copper pair. The copper pair from the CO connects to the green “TRUNK” (+ and -) screw-down terminal on the CO Card. The copper pair from the PBX connects to the green “PBX” (+ and -) screw-down terminal on the Sub Card.

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

Testing

- 1) Measure the polarity of the PBX Tip and Ring to determine the positive lead and the negative lead before connecting to the 2-wire DID Sub Card
- 2) At the CO side use a telephone (butt-set) connected to the TRUNK terminal to go off-hook. When you go off hook, you should see the Orange LED come “On” followed by the Green LED and then the Yellow LED should wink “On” once.
- 3) If you go off-hook and Yellow LED comes on and winks off then back on steady (without dialing) you will need to reverse tip and ring on the PBX Sub side card.
- 4) You can dial a 4-digit extension to call in. When the call is answered the Yellow LED will be “On”
- 5) From a different line call the full 7 digit number for a DID extension. If the DID system does not function correctly, reverse Tip and Ring to the CO Trunk Card.

If trouble is encountered, verify all installer connections, signal and voltage levels. If trouble persists, replace the unit and retest. If technical assistance is required, contact RLH Industries, Inc. Technical support department: (714) 532-1672 (6 am to 6 pm- PST), or for after hours, weekends and holidays call (714) 366-2503 or (714) 457-5740.

Warranty Repair

RLH Industries, Inc. Fiber Optic Link 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. 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, a replacement unit can be obtained; however, a purchase order number will be required to ensure return of the replacement unit.

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 / 37 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
Frequency Response	300 Hz to 3.4 KHz +0.5dB to -2.0dB (Terminated 600 Ohms)
DID Signaling	Reverse battery from the PBX is reflected on the CO Trunk Card
DC resistance Limits	1600 Ohms loop (including CO DC feed)
Insertion Loss	0dB +/- 0.5dB each direction
Surge Protection	PTC thermistors, zeners, diodes, thyristors and varistors
Power Requirements	CO (Trunk) Card: 24-56VDC, On-hook 40mA maximum, off-hook 120mA maximum Sub (PBX) Card: 18-56VDC, 18-29mA (card will sink 30mA maximum from PBX)
Powering Method	CO (Trunk) Card: Local isolated DC power source Sub (PBX) Card: Line current from PBX
Operating Temperature	-40° to +158° F (-40° to +70° C), 95% non-condensing
Dimensions	7"x4"x1"