RLH Industries, Inc., The Leader in Fiber Optic Telecom Isolation Technology

RLH Fiber Optic Link
Data Sheet No.31
2 Wire Data

Fiber Type	2 Wire Data CO Card (Line Powered)	2 Wire Data CO Card (Line or Local Power)	2 Wire Data Sub Card
Multimode ST	8806-1236-02	8806-1236-02LP	8806-1246-02
Multimode SC	8805-1236-02	8805-1236-02LP	8805-1246-02
Single-mode ST	8806-1363-01	8806-1363-01LP	8806-1373-01
Single-mode SC	8805-1363-01	8805-1363-01LP	8805-1373-01
Short Haul	8806-1239-02	8806-1239-02LP	8806-1249-02

2 Wire Data system Description

The Fiber Optic Link 2 Wire Data system provides 2-wire analog data service up to 9600 bps for AC data transmission services that do not require ringing. Such service may include 2-wire: On-line modems, SCADA systems, and Audio-tone protective relaying systems. The 2 Wire Data System provides a constant transmission path in the VF range. A copper signal is converted to optical, transmitted over fiber optic cable, and converted back into the original copper signal.

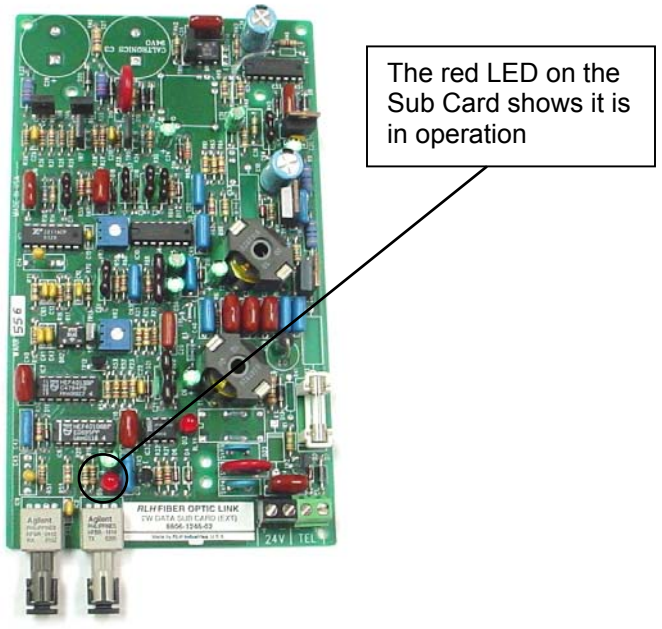
RLH 2 Wire Data CO Card

The 2 Wire Data CO Card is line powered by a minimum of 18V DC and 18mA. The CO Card is not polarity sensitive to simplexed power. It can transmit a maximum of 2 miles on multimode fiber optic cable and 12 miles on single-mode fiber.

RLH 2 Wire Data Sub Card

The Fiber Optic Link Sub Card is powered by a 20-30V DC, 45mA source. The Sub Card has a red LED that shows it is in operation.

2 Wire Data CO Card



2 Wire Data Sub Card

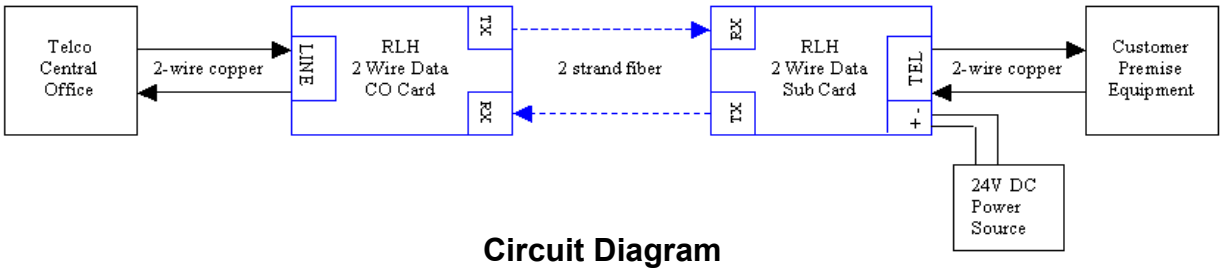
Installer Connections

2 Wire Data CO and Sub Cards can be mounted in any RLH Card Housing. Copper telephone wires are connected via green screw done terminal marked **TEL** or **LINE**. The TEL / LINE terminals on the RLH 2 Wire Data CO and Sub Cards are not polarity sensitive)

DC Power (Sub side only) is connected via black screw done terminal marked **24V** with positive and negative indications.

Fiber is connected via transmit (TX) and receive (RX) optical connectors on the RLH 2 Wire Card. Be sure to route fiber loosely to avoid excessive optical loss. Be sure the TX optical is connected to the RX optical on the opposite end of fiber, i.e., if the #1 fiber is connected to the TX optical on the CO Card then the #1 fiber must be connected to the RX optical on the Sub Card.

Short Haul systems have color-coded optical connectors, transmit is gray and receive is blue. The connectors on the plastic duplex jumper are also color-coded (gray/blue).



Circuit Diagram

2 Wire Data System Specifications:

Frequency Response:	Terminated with 600 Ohms at 1000 Hz: 300-3400 Hz +0.5 to –2.0 dB
Insertion Loss	0.0 dB +/- 0.5 db
Overload Level	+5 dBm into 600 Ohms
Channel Noise	Less than 20 dBmC (10 dBmC typical)
Maximum Data Rate	9600 bps Analog
DC Resistance Limits	1600 Ohm loop (including CO DC feed)
Drop Voltage:	48V DC
Drop Current:	30mA into 300 ohms plus phone; 23mA minimum into 700 ohms plus phone
Power Requirements and Method:	CO Card: Line powered from CO 18-54V DC, 18mA minimum Sub Card: Local power 20-30V DC, 45mA
Transmission method:	Frequency modulated light via two optical fibers Short Haul: 650nm, Multimode: 820nm, Single-mode: 1310nm
Maximum Fiber length:	Short Haul: 66 feet; Multimode: 2 miles (10,560 feet); Single-mode: 12 miles
Optical Loss Budget:	Multimode: Single-mode:
Temperature limits	-40F to +170F
Humidity	95% non condensing