



RLH Industries, Inc.

## DATA SHEET

The leader in rugged fiber optic technology.

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# 4 Wire Data E&M Fiber Link Card System

The 4 Wire Data E&M Fiber Link Card system provides simultaneous transmission of 4 wire data E&M over two optical fibers. The 4 wire data is full duplex and supports constant transmission up to 9600bps (9.6Kbps) in voice frequency range (300Hz-3.4KHz).

The card also interfaces with an E&M input and provides a output on the far end. The system includes convenient E&M input and output status LED indicators.

The CO (Central Office) Side Card provides the electrical-optical interface between a Central Office or PBX 4-wire copper line and two fiber strands, and the Sub (Subscriber) Side Card provides the optical-electrical interface between the fiber and a 4-wire copper line to a RTU, PBX, modem or other customer supplied equipment.

This industrial hardened system may be installed into any RLH card housings, and is covered by our **Limited Lifetime Warranty**.

## Key Features

### Environment

Hardened to operate in -40°F to +158°F (-40°C to +70°C)

### Power

Dual power capable, line or local 24/48VDC

### Application

Available with ST or SC connectors for single or multi-mode fiber  
Full duplex, constant transmission  
Critical, high voltage, remote or un-manned locations operating 24/7/365

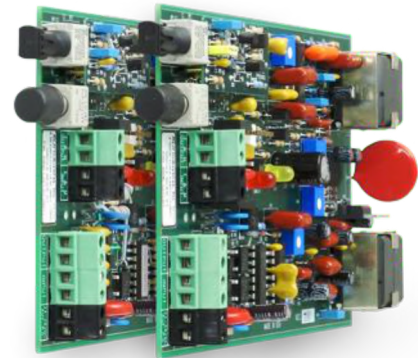
### Compatibility

4 wire data E&M systems

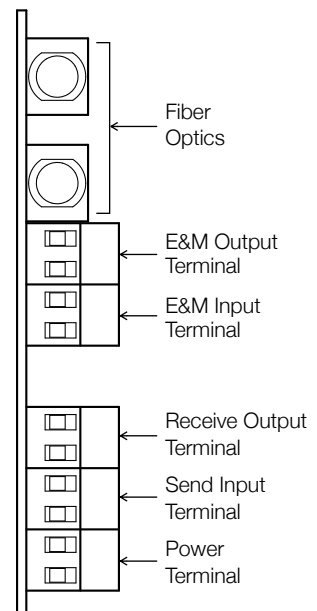
### Quality

#### Made in the USA

Covered by our **Limited Lifetime Warranty**



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CO/Sub Card

Front Panel Features

## Ordering Information

Optics	Distance	Fiber	Description	Part Number
Multimode ST	2km / 1.25 mi.	62.5 $\mu$ m	CO Card	<b>8806-1238-02</b>
			Sub Card	<b>8806-1248-02</b>
Single-mode ST	15km / 9 mi.	8-9 $\mu$ m	CO Card	<b>8806-1277-01</b>
			Sub Card	<b>8806-1287-01</b>
Single-mode SC	15km / 9 mi.	8-9 $\mu$ m	CO Card	<b>8805-1277-01</b>
			Sub Card	<b>8805-1287-01</b>
Long Haul Single-mode ST	50km / 31 mi.	8-9 $\mu$ m	CO Card	<b>8806-1277-01-LH</b>
			Sub Card	<b>8806-1287-01-LH</b>
Long Haul Single-mode SC	50km / 31 mi.	8-9 $\mu$ m	CO Card	<b>8805-1277-01-LH</b>
			Sub Card	<b>8805-1287-01-LH</b>

- ▶ 62.5 $\mu$ m multimode fiber compatibility is standard, add **-50** to part number for 50 $\mu$ m
- ▶ A complete system requires one CO card and one Sub card

## General Specifications

<b>Transmission method</b>	Frequency modulated light via two optical fibers	
	Multimode:	850nm
	Single-mode:	1310nm
<b>Maximum Fiber Loss / Distance*</b>	Multimode:	8dB / 1.2 miles (2km)
	Single-mode:	8dB / 9 miles (15km)
	SM Long Haul:	26dB / 31 miles (50km); min. 8dB
		*Note: Distances equated using industry standard fiber and connector attenuation. (Multimode: 3.5dB/km, Single-mode: 0.4dB/km, + 0.5dB per connector, + 0.3dB per splice)
<b>Fiber Type</b>	Multimode: 62.5/125 $\mu$ m, 50/125 $\mu$ m ; Single-mode: 9/125 $\mu$ m	
<b>Fiber Connector Types</b>	ST or SC	
<b>Analog Bandwidth</b>	300 Hz to 3.4 KHz	
<b>Maximum Analog Data Rate</b>	9600 bps (9.6Kbps)	
<b>DDS Data Rate</b>	2.4Kbps and 4.8Kbps	
<b>E&amp;M Input</b>	5mA-200mA @ 6VDC, 48V Max.	
<b>E&amp;M Output</b>	2500VRMS isolation by solid state relay: Closed resistance 15 Ohms (220VAC or 330VDC @ 150mA max.) Open resistance >1M Ohms	
<b>Response Time</b>	On: 1.4 $\mu$ s / Off: 1.9 msec (Dry Contact Only)	
<b>LED Indicators</b>	Yellow Contact Output Status (LD1)	ON: Closed, OFF: Open
	Red Contact Input Status (LD2)	ON: Closed, OFF: Open
<b>Channel Noise</b>	< 20dBmC (15dBmC typical)	
<b>DC Resistance Limits</b>	2000 Ohms typical for 50V DC CO battery	
<b>Nominal Impedance</b>	600 Ohm input and output	
<b>Insertion Loss</b>	0dB +/- 0.5dB each direction	
<b>Overload Level</b>	8dBm into 600 Ohms	
<b>Surge Protection</b>	PTC thermistors, zener diodes and varistors	
<b>Power Requirements</b>	Line: 15mA ; Local: 24-56VDC, card current limits at 18mA	
<b>Power Connector</b>	Screw type connector terminal, 12-26 AWG	
<b>Powering Method</b>	Simplex line power or local DC power supply connected to AUX. P.S.	
<b>Operating Temperature</b>	-40° to +158° F (-40° to +70° C), 95% non-condensing	
<b>Dimensions</b>	7 "x 4" x 1" Standard RLH Fiber Link Card form factor	
<b>Warranty</b>	Limited Lifetime	Visit <a href="http://www.fiberopticlink.com">www.fiberopticlink.com</a> for warranty details