



RLH Industries, Inc.

DATA SHEET

The leader in rugged fiber optic technology.

DS-094 2022-1026

Serial Data DIN Fiber Link System INDUSTRIAL, RUGGED, & COMPACT

The RLH Serial Data DIN Fiber Link system transports two active channels of copper serial data over fiber optic cable, allowing for both RS-232 and RS-485/422 to be used at the same time. Fiber optics not only provide long distance communication up to 74 mi. (120km), but also provide immunity to EM/RFI and transient surges. This is ideal for extending serial data communications over long distances, or near large electrical equipment where resistance to EMI is desired.

A comprehensive set of LED's on the front panel indicate power status, fiber status, RS-232 and RS-485/422 activity. Powering options include our standard 24-48VDC, or high range DC powering of 125VDC. This rugged system also features redundant power inputs with a system alarm contact, and comes standard with DIN clip and wall mount ears. These rugged systems are made in the U.S.A. and covered by our Limited Lifetime Warranty.



Serial Data DIN Fiber Link

Key Features

Environment

Hardened to operate in -25°C to +70°C environment
Critical, high voltage, remote or un-manned locations operating 24/7/365

Power

Redundant power capable, 24-56VDC or 125VDC depending on model

Application

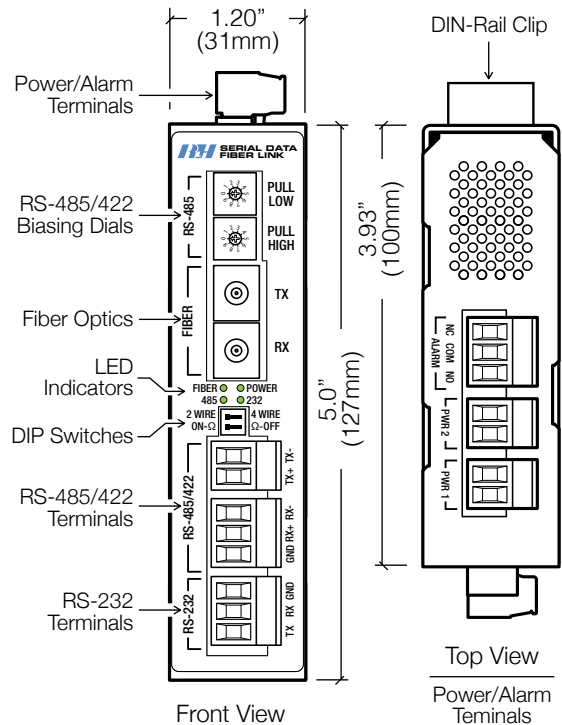
Available with ST or SC connectors for single or multi-mode fiber
Supports 2 active channels of serial data (RS-232 and RS-485/422)
Supports baud rates of 50 bps to 921.6 kbps
On/Off Termination Resistor Dip Switch for RS-485/422
Convenient rotary dials eliminate the need for external resistors
Transparent RS-232 & RS-485/422 extension over fiber

Compatibility

Protocols tested: DNP, Modbus, DF1, and Profibus

Quality

Made in the USA and covered by our Limited Lifetime Warranty



Feature & Dimensional Information



General Specifications

Power Input	24~48VDC or 125VDC nominal Redundant power inputs	
Power Consumption	150mA @ 24VDC or 3.6 Watt	
DC Input Isolation (In/Out)	1.5KV	
Voltage Reversal Protection	Will operate with V+ or V- in either power terminal	
Over Current Protection	1.0A (Automatic Recovery)	
LED	POWER	DC Power OK
	FIBER	Fiber Connection OK
	232	RS-232 Copper Receive
	485	RS-485/422 Copper Receive
Temperature	Storage	-40°C to +85°C (-40°F to +185°F)
	Operating	-25°C to +70°C (-13°F to +158°F)
Dimensions/ Mounting	H 4.93" x W 1.20" x D 3.93" (not including DIN clip, wall mount brackets)	
Warranty	Limited Lifetime	

Transmission Method	Frequency modulated light via two optical fibers	
	Multimod	1310nm
Maximum Fiber Attenuation / Distance*	Single-Mode	1310/1550nm
	Single-mode	(8~9/125µm)
Connector Type	Dual Fiber	Multimode (50/62.5/125µm)
	Single-mode	(8~9/125µm)
	<i>*Note: Distances equated using industry standard fiber and connector attenuation. Fiber condition, splices and connectors may affect actual range.</i>	
Power Margin	11dB(2Km, M/M), 12dB ~ 35dB (20 ~ 120Km, S/M)	
Protocols	RS-232 and RS-485/422	
Serial Signaling	RS-232	TX, RX, Ground
	RS-485/422	TX-, TX+, RX-, RX+, Ground [DIP Switch - 4 Wire Function]
	RS-485 (2 Wire)	TX+ (Data +), TX- (Data -), Ground [DIP Switch - 2 Wire Function]
Connectors	Terminal Block	
Dip Switches	(1) Specifies 2 Wire or 4 Wire RS-485/422 operation	
	(2) Provides 120 ohm termination resistance	
RS-485/422 Biasing	Use rotary dials for impedance adjustment. *Default position is 9	
Pull Low Rotary Dial	Ω	0 1 2 3 4* 5 6 7 8 9
	Ω	0.250M (OL) 9.67K 4.9K 3.29K 0.993K 0.903K 0.828K 0.769K 0.496K 0.473K
Pull High Rotary Dial	Ω	0 1 2 3 4* 5 6 7 8 9
	Ω	0.256M (OL) 10.56K 5.83K 4.22K 1.949K 1.861K 1.786K 1.723K 1.458K 1.435K
Signal Isolation	Optical Isolation 3.75 KV	
Baud Rates	50bps- 921.6kbps Automatic Detection	
Supports	DNP / DFI / Modbus / Profibus	

Ordering Information

Optics	Side	Distance	Wavelength	Fiber	Part Number
Dual Fiber Multimode SC	-	2 km/1.2 mi	1310nm	50/62.5 μm	SDD-03-2
Dual Fiber Multimode ST	-	2 km/1.2 mi	1310nm	50/62.5 μm	SDD-04-2
Single Fiber Single-mode SC	A	20km/12.4mi.	Tx 1310nm / Rx 1550nm	8~9 μm	SDD-10-2
	B	20km/12.4mi.	Tx 1550nm / Rx 1310nm	8~9 μm	SDD-11-2
	A	60km / 37mi.	Tx 1310nm / Rx 1550nm	8~9 μm	SDD-14-2
	B	60km / 37mi.	Tx 1550nm / Rx 1310nm	8~9 μm	SDD-15-2
Dual Fiber Single-mode SC	-	20km/12.4mi.	1310nm	8~9 μm	SDD-40-2
	-	60km / 37mi.	1310nm	8~9 μm	SDD-41-2
	-	120km / 74 mi.	1550nm	8~9 μm	SDD-45-2
Dual Fiber Single-mode ST	-	20km/12.4mi.	1310nm	8~9 μm	SDD-50-2
	-	60km / 37mi.	1310nm	8~9 μm	SDD-51-2
	-	120km / 74 mi.	1550nm	8~9 μm	SDD-55-2

- ▶ Add **-A** to the end of the part number for 125VDC input power option.
- ▶ Bidirectional single fiber models require an **A** Side and **B** Side unit for a complete system.
- ▶ RLH SDD-XX-2 models are fully backwards compatible with all SDD-XX-1 models.
- ▶ Please contact your RLH sales representative for pricing and delivery information.