



RLH Industries, Inc.

DATA SHEET

*The leader in
rugged fiber optic
technology.*

DS-153 2025A-0116

4~20mA with Contact Closure IO Industrial Media Converter

Description

This Fiber Optic Media converter transmits 4 channels of 4-20mA analog signals and 16 bi-directional contact closure signals over fiber cable. Premium features include 60,000 samples a second, 16 bit signal resolution, and less than 0.2% source signal variance.

Compatible with most PLC's, Sensors (2, 3, or 4 wire), and other types of equipment where precise current or voltage measurements must be taken and transmitted over fiber. The high density contact closure allows for bidirectional alarm transportation. Each device is enclosed in a compact DIN and wall mountable housing.

Engineered to operate over an extreme temperature range that provides reliability in harsh environments, this system provides convenient and easy to read LEDs, supports both single-mode and multimode fiber applications, and includes an alarm on either side for monitoring system power and fiber health. It is designed and is made in the U.S.A. and is covered by our Limited Lifetime Warranty.

4~20mA System

Extends up to 4 separate analog 4-20mA current signals. 4-20mA signals are less susceptible to noise interference, can easily detect an open circuit, and current measurement remains the same in any point of the signal path.

Contact Closure System

Extends up to 16 bi-directional contact closure alarms over fiber to the paired device. A solid state relay output at the receiver device provides ultra fast response times.



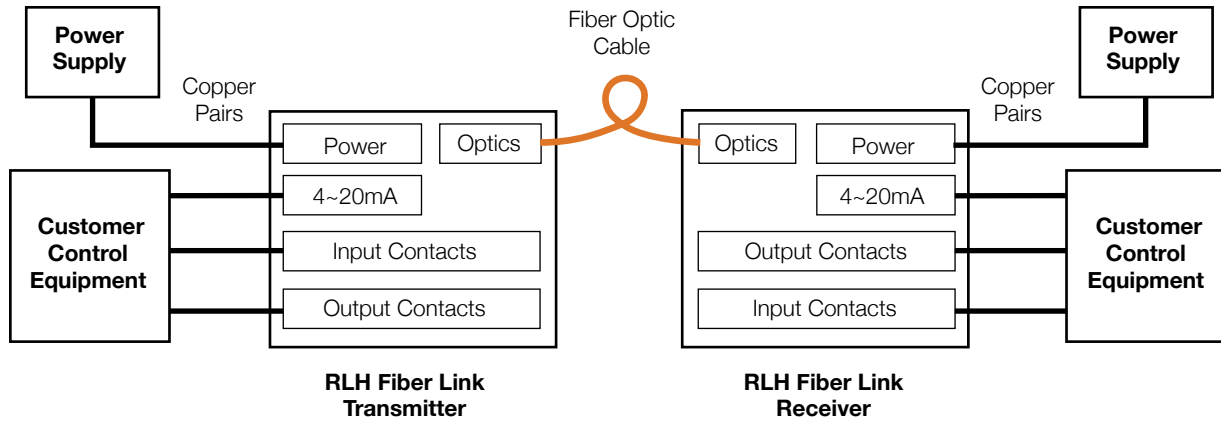
4~20mA & Contact Closure IO System

Standard Features

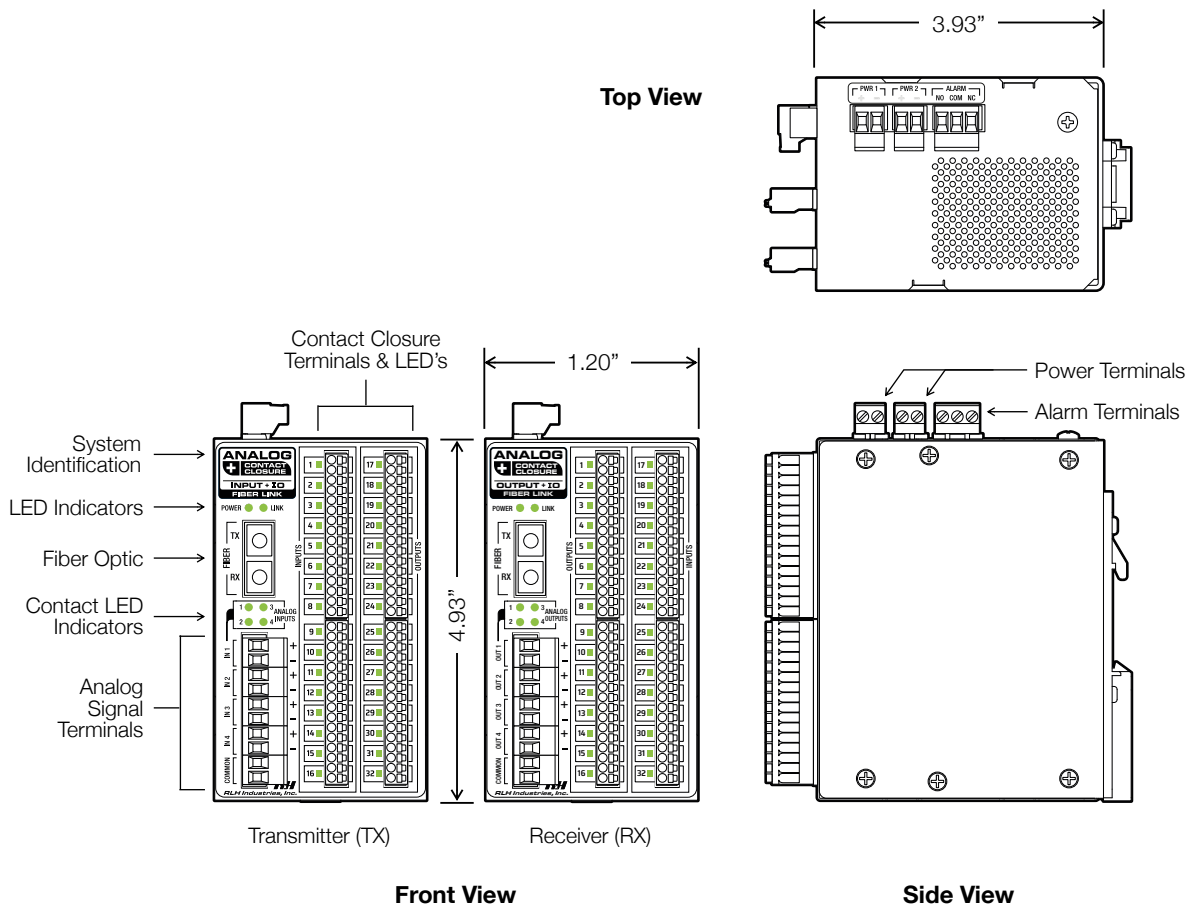
- Convenient LED status indicators
- Single and dual fiber models available
- Available with ST or SC connectors, single or multi-mode fiber
- Transmit 0-10VDC or 4-20mA signals over Fiber
- 78,000 Samples a Second, 12.8µs Update Rate
- 16 Bit Signal Resolution
- 99.8% Accuracy or Better
- Bi-directional Contact Closure Transmission
- Pluggable terminal blocks
- Alarm contact for status monitoring
- Environmentally rugged with wide operating temp. -40°F to +158°F (-40°C to +70°C)
- Standard T35 DIN rail or wall mount applications
- Limited Lifetime Warranty

Designed and Made in the U.S.A.

System Diagram



Physical layout



General Specifications

Connector Types	ST or SC		
Transmission method	Multimode:	1310nm	
	Single-mode:	1310nm/1550nm	
Maximum Fiber Attenuation /Distance	Dual Fiber	Multimode (50µm & 62.5/125µm):	1.25mi./2 km range
		Single-mode (9/125µm):	12.4 mi./20km range
			37 mi./60km range
			74 mi./120km range
	Single Fiber, Bi-directional	Single-mode (9/125µm):	12.4 mi./20km range
			37 mi./60km range
<i>Note: Distances equated using industry standard fiber and connector attenuation. Fiber condition, splices, and connectors may affect actual range.</i>			
System Accuracy	4~20mA	99.8	
	<i>Note: Accuracy for Complete Fiber Link System, Both Transmitter & Receiver at 25C° and powered by 24VDC</i>		
	Ambient Temp Effect:	Approximately 0.4% over operational range	
	Update Rate:	12.8µs (78,000 updates per second)	
	Signal Resolution:	16 Bits	
	Sensitivity:	2^16 (65,536) Steps	
Analog Input 1~4	Differential Inputs		
	Operating Range:	0mA - 22mA (DC)	
	Impedance:	250 Ohms	
	Protection:	+/- 50mA	
Analog Output 1~4	Single-ended (unipolar)		
	Loop Voltage:	23.7VDC	
	Maximum Loop Resistance:	1000 Ohms	
	Protection:	+/- 32mA	
Alarm Contact IO	16 channels Bi-directional contact closure		
	Inputs:	Dry Contact Sensing	
	Output:	Normally Open Relay	
Power Requirements	24 - 48VDC	Transmitter - 8 Watts Max.	
	Dual redundant power inputs	Receiver - 10 Watts Max.	
Wire Connector	Screw clamp terminal blocks, 16 ~ 26 AWG		
DC Input Isolation	1.5KV		
Surge Protection	PTC thermistors, zener diodes and varistors		
Over Current Protection	0.5A (Automatic Recovery)		
Operating Temperature	-40° to +158° F (-40° to +70° C), 95% non-condensing		
Dimensions	H4.93" x W1.2" x D3.5" (100mm x 31mm x 89mm) - Not including connectors		
Warranty	Limited Lifetime	Visit www.fiberopticlink.com for warranty details	

Ordering Information

Each 4 Channel 4~20mA Analog Signal,16 Channel Contact IO unit is identified with a part number.

Mode	Connector	Distance	Fibers	Description	System Part Numbers 4~20mA
Multimode	SC	2km / 1.2 mi	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-03-1
				Receiver	ADIO-420RX-DR-NO-03-1
	ST	2km / 1.2 mi	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-04-1
				Receiver	ADIO-420RX-DR-NO-04-1
Single-mode	SC	20km / 12.4 mi.	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-40-1
				Receiver	ADIO-420RX-DR-NO-40-1
		60km / 37 mi.	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-41-1
				Receiver	ADIO-420RX-DR-NO-41-1
		120km / 74 mi.	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-45-1
				Receiver	ADIO-420RX-DR-NO-45-1
	ST	20km / 12.4 mi.	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-50-1
				Receiver	ADIO-420RX-DR-NO-50-1
		60km / 37 mi.	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-51-1
				Receiver	ADIO-420RX-DR-NO-51-1
		120km / 74 mi.	Dual Fiber	Transmitter	ADIO-420TX-DR-NO-55-1
				Receiver	ADIO-420RX-DR-NO-55-1
	SC	20km / 12.4 mi.	Single Fiber	Side A	ADIO-420TX-DR-NO-10-1
				Side B	ADIO-420RX-DR-NO-11-1
		60km / 37 mi.	Single Fiber	Side A	ADIO-420TX-DR-NO-14-1
				Side B	ADIO-420RX-DR-NO-15-1

- ▶ A complete system requires a **Transmitter** and a **Receiver**
- ▶ Single Fiber Systems: The transmitter is always **Side A** (T-1310/R-1550), the receiver is always **Side B** (T-1550/R-1310)
- ▶ Multimode systems are compatible with both 62.5µm & 50µm fiber cable
- ▶ Digital Inputs can be ordered as 5-12 VDC voltage sensing with replacing **DR** with **12**, Contact us for availability and pricing
- ▶ Digital Inputs can be ordered as 24-48 VDC voltage sensing with replacing **DR** with **48**, Contact us for availability and pricing
- ▶ Relay Outputs can be ordered normally by replacing **NO** with **NC**, Contact Sales for availability and pricing



RLH Industries, Inc.
936 N. Main Street, Orange, CA 92867 USA
T: (714) 532-1672
F: (714) 532-1885

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

Specifications subject to change without notice.