INDUSTRIAL 10/100BASE-TX TO 100BASE-FX MEDIA CONVERTERS

21.13.1142AR (ST Model)
21.13.1143AR (SC Model)

Installation Guide

General

The industrial 10/100BASE-TX to 100BASE-FX media converter series provides industrial strength Ethernet copper-to-fiber media conversion, allowing for 10Base-T-100Base-FX or 100Base-TX-100Base-FX over multimode or optional single-mode fiber optical media.
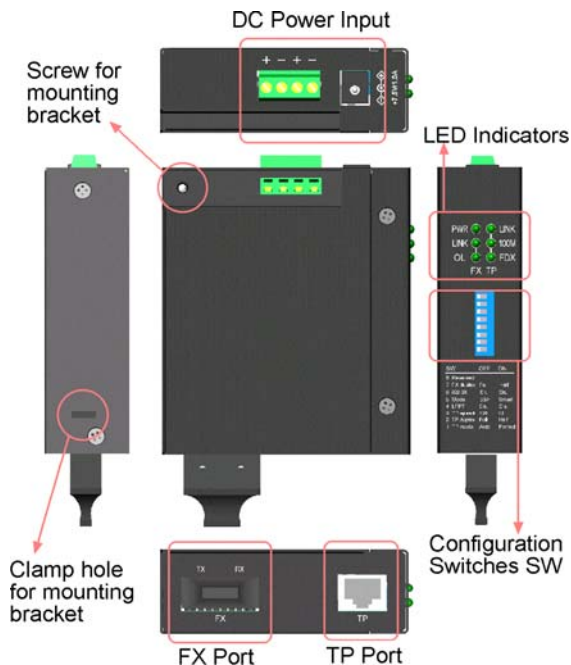
Features

- Conversion for 10Base-T-100Base-FX or 100Base-TX-100Base-FX over multimode or single-mode fiber
- Comprehensive configuration settings to increase the flexibility for more application needs
- Smart-Forward operating mode, which uses store-and-forward mechanism for packet forwarding normally when both media ends operate at different speed, but switch to direct conversion automatically to achieve the least latency when both media ends operate at the same speed.
- Link Fault Pass Through function which allows link fault status passes through from one end to another end transparently.

Enhanced Features for Industrial Environment

- Wide operating Temperature: -20ºC to +70ºC
- Wide operating power voltage: +7 ~ 30VDC
- Power interfaces: Terminal block and DC jack
- DIN rail mounting and panel mounting support for industrial enclosure
- Enhanced Emission and Immunity performance

Functions

- Convert speed and media type
- Support full wire speed conversion
- Support 10Mbps and 100Mbps speed on TP port
- Auto MDI/MDI-X detection function on the TP port

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- Auto-negotiation function on the TP port
- Link fault pass through function
- Transparent to 802.1Q VLAN tagged packets
- Far End Fault function on FX (fiber) port
- Support full duplex 802.3x flow control and half duplex back pressure flow control for store-and-forward mode
- Support wide range of fiber options on the FX port
- Low power consumption

Specifications

Twisted-Pair Interface (TP Port, Copper Port)

Connector	Shielded RJ-45
Pin Assignments	Auto MDI/MDI-X detection
Signal Compliance	10BASE-T, 802.3u 100BASE-TX
Data Speed	10Mbps or 100Mbps
Duplex Mode	Half-duplex or Full-duplex
Configuration	Auto-negotiation and forced
Cable Types	10Mbps - Category 3, 4, or 5 UTP
	100Mbps - Category 5 UTP
Link Distance	Up to 100 meters

Fiber Optic Interface (FX Port)

Signal Compliance	IEEE 802.3u 100BASE-FX
Connector	SC, ST (model dependent)
Data Speed	100Mbps
Duplex Mode	Full-duplex and optional half duplex
Cable Types	MMF - 50/125, 62.5/125
	SMF - 9/125
Link Distance	MMF up to 2km
	SMF -model dependent
Eye Safety compliance	IEC825 Class 1

DC Power Input

Interfaces	Screw terminal block , DC Jack
Operating Voltages	DC input +7V ~ +30V
Power consumption	max 2.6W @+30VDC input

Mechanical

Dimension (base)	W 28mm x D 82mm x H 95mm
Housing	Enclosed metal with no fan
Mounting Support	DIN-rail, plain surface mounting
Weight	252g

Configuration Setting Switches (SW)

SW1	TP Port mode	OFF	Auto-negotiation (default)
		ON	Forced mode
SW2	TP Port Duplex	OFF	Full duplex (default)
		ON	Half duplex
SW3	TP Port Speed	OFF	100Mbps (default)
		ON	10Mbps
SW4	LFPT	OFF	Enable (default)
		ON	Disable
SW5	Forwarding	OFF	Store-and-forward (default)
		ON	Smart-forward
SW6	802.3x function	OFF	Enable (default)
		ON	Disable
SW7	FX port duplex	OFF	Full duplex (default)
		ON	Half duplex

LED Indicators

PWR	ON	Power on
	OFF	Power off
TP LINK	ON	TP port link up and blink for data traffic
	OFF	TP port link fault
TP 100M	ON	TP port 100Mbps
	OFF	TP port 10Mbps
TP FDX	ON	TP port full duplex
	OFF	TP port half duplex
	BLINK	TP port collisions on half duplex
FX LINK	ON	FX port link up and blink for data traffic
	OFF	FX port link fault
FX OL	ON	FX port optical signal detected
	OFF	FX port no optical signal

Environmental

Operating Temperature	model dependent
Storage Temperature	-40 ~ 85°C
Relative Humidity	5% ~ 90%

LFPT - Link Fault Pass Through function allows a link fault detected on one port will force a link down on another port at the same time.

Smart Forward Mode - the converter can change to direct conversion automatically when it detects same speed on both TP port and FX port. Direct conversion method converts the signal between TP port and FX port without storing the received packet on one port then forwarding to another port. The media converter operates with the minimum latency.

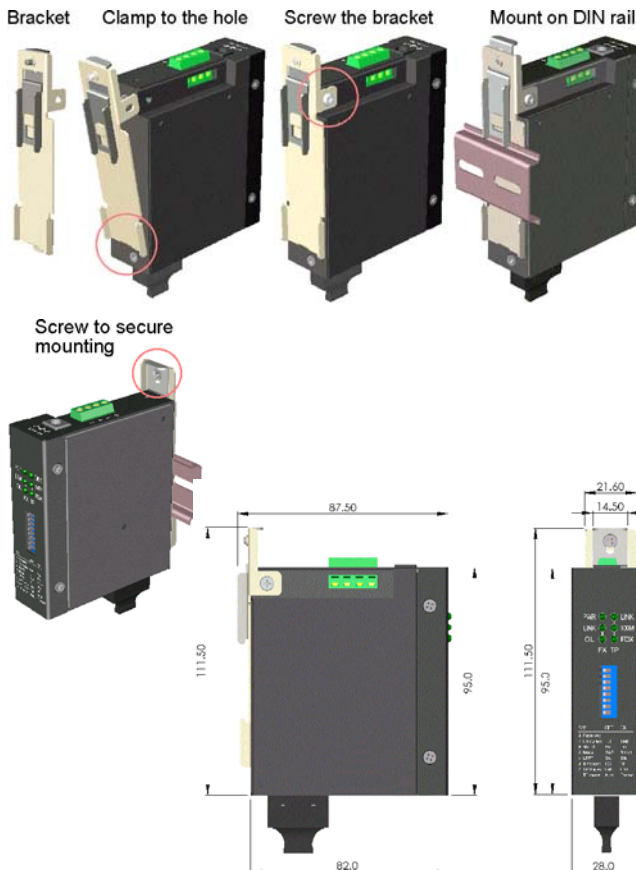## Models - Operating Temperature / Optical Specification

Model	FX Con.	Fiber Distance	Op. Temperature
ST model	ST	MMF 2km	-10°C ~ 70°C
SC model	SC	MMF 2km	-10°C ~ 70°C

Model	WL.	Tx Power	Rx Sensitivity	Max. Rx Power
ST model	1310	-20 ~ -14 dBm	-32 max.	-8 min.
SC model	1310	-20 ~ -14 dBm	-31 max.	0 min.

DIN Rail Mounting w/h DIN-rail Bracket

Panel Mounting w/h optional Bracket

A. Mounting bracket
B. Clamp to device
C. Screw on device
D. Screw on enclosure
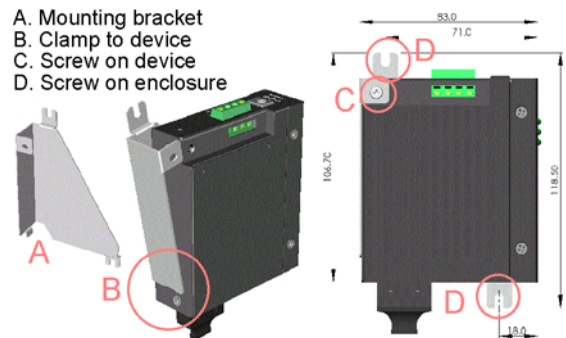
Applying Power

Terminal block (2 pairs of Positive+ / Negative- contacts)
1st pair : main power source wires
2nd pair : power wires for cascading to next converter unit
DC Jack (Input for external AC power adapter)
Jack specification : -D 6.3mm / + D 2.0mm

Terminal Block Installation   **DC Jack Installation**