



ROCKET **LINX** MC7001

Industrial Ethernet to Fiber Media Converter

Quick Installation Guide



Introduction

The RocketLinx MC7001 industrial Ethernet to fiber media converter conforms to IEEE 802.3 and IEEE 802.3u standards with one 10/100BASE-TX and one 100BASE-FX Fast Ethernet fiber port. The MC7001 features a slim and compact industrial design to save DIN rail space for compact installations. In order to perform under harsh environments, the MC7001 is housed in an industrial-grade aluminum case with IP31 standard protection.

The 4-Pin DIP switch configures the MC7001 to operate in switch mode or pure converter mode.

Package Checklist

- ▶ MC7001 industrial media converter
- ▶ Quick Installation Guide

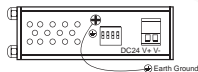
Mounting the RocketLinx MC7001

Mount the DIN rail clip on the rear of the MC7001 to the DIN rail.



Grounding the RocketLinx MC7001

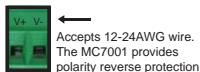
There is a grounding screw on the bottom side of the MC7001. As shown in the picture, connect the ground screw of the MC7001 to a grounding surface to ensure safety and prevent noise.



Wiring the Power Inputs

The power input provides polarity reverse protection to avoid system damage.

1. Insert the positive and negative wires into the V+ and V- contact on the terminal block connector.
2. Tighten the wire-clamp screws to prevent the power wires from being loosened.



Note: The recommended working voltage is 24VDC (18-32VDC) or 18VAC (18-27VAC)

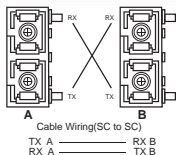
Connecting to the Network

- 1. Connecting the Ethernet Port:** Connect one end of an Ethernet cable into the RJ45 port of the MC7001, and the other end is attached to a networking device. The RJ45 port supports Auto MDI/MDIX functionality. The TP LED will turn on and flash to indicate RJ45 port's link and activity.
- 2. Connecting the Fiber Port:** Connect the fiber port on your MC7001 to another fiber Ethernet device, by following the figure below. Wrong connection or fiber cable type will cause the fiber port to not function properly.

ATTENTION



This is a Class 1 Laser/LED product.
Don't stare into the Laser/LED Beam.



- 3. For different link distances, the MC7001 provides Multi-Mode fiber and Single-Mode fiber models. The table below illustrates fiber transceiver specifications. The fiber connector is a standard connector or square connector (SC). To ensure your fiber converter can transmit/receive data between the 2 nodes, the attenuation of the optical fiber cable should not exceed the fiber converter's Link Budget.**

Mode	Cable Type	Wavelength	Transmit Power (min.)	Transmit Power (max.)	Receive Sensitivity (max.)	Receive Sensitivity (min.)	Min. Launch Power – Max. Receive Sensitivity	Distance(km)
Multi	50/125um 62.5/125um	1310nm	-20dBm	-14dBm	-31dBm	0dBm	11dBm	2km Note (below)
Single	8-10/125um	1310nm	-15dBm	-8dBm	-34dBm	-8dBm	19dBm	30km

Note: In the IEEE standard, it suggests the available transmission distance is 2KM for 62.5/125um fiber optical cable in 1310nm wave length. Actually, the attenuation of Multi-Mode 62.5/125um optical fiber cable is 1.5dBm/km and the maximum link distance can up to 4 to 5km.

IEEE organization recommends maximum optical fiber cable distances as defined in the following table:

Standard	Data Rate (Mbps)	Cable Type	IEEE Standard Distance
100Base-FX	100	1310nm, 50/125um or 62.5/125um Multi-Mode optical fiber cable	2km
100Base-SX	100	850nm, 50/125um or 62.5/125um Multi-Mode optical fiber cable	300m
1000Base-SX	1000	850nm, 50/125um Multi-Mode optical fiber cable	550m
		850nm, 62.5/125um Multi-Mode optical fiber cable	220m
1000Base-LX	1000	1310nm, 50/125um or 62.5/125um Multi-Mode optical fiber cable	550m
		1310nm, 9/125um Single-Mode optical fiber cable	5km
1000Base-LH	1000	1550nm,9/125um Single-Mode optical fiber cable	70km

The following table provides information about optical fiber cable attenuation:


Fiber Type	Wavelength	Attenuation /km *1	Attenuation /km *2	Connector Loss	Splice Loss
Multi-Mode 50/125um	850nm 1310nm	3.5dBm 1.5dBm	2.5dBm 0.8dBm	0.75dBm	0.1dBm
Multi-Mode 62.5/125um	850nm 1310nm	3.5dBm 1.5dBm	3.0dBm 0.7dBm	0.75dBm	0.1dBm
Single-Mode 9/125um	1310nm	0.4dBm	0.35dBm	0.75dBm	0.1dBm
Single-Mode 9/125um	1550nm	0.3dBm	0.22dBm	0.75dBm	0.1dBm

*1. These values are per TIA/EIA and other industrial specifications.

*2. These values are an example of the performance that can be obtained with a new fiber installation.

DIP Switch Setting

Pin Nr. #	Status	Description
DIP 1	ON	Enable Link Loss Forwarding function.
	Off	Disable Link Loss Forwarding function. (Default)
DIP 2	ON	Set RJ45 in 100Mbps Full-duplex mode.
	Off	Set RJ45 in Auto-Negotiation mode. (Default)
DIP 3	ON	Set Fiber port in Half-duplex mode.
	Off	Set Fiber port in Full-duplex mode. (Default)
DIP 4	ON	Set pure converter mode.
	Off	Set Switch converter mode. (Default)



Note: After adjusting the DIP-switch, reboot the MC7001 to activate the new settings.

LED Functions

LED	Function
PW	Lit when the MC7001 has proper input power and is operational.
TP	Lit when the Ethernet connection is established on the RJ45 port. Blinks when data is transmitted or received on the RJ45 port.
FX	Lit when the fiber Ethernet connection is established on the fiber port. Blinks when data is transmitted or received on the fiber port.

Control Customer Service

Contact Method	Web Address or Phone Number
Support	http://www.control.com/pub/en/support
Downloads	ftp://ftp.control.com/html/default.htm
Web Site	http://www.control.com
Phone	763.957.6000

