



# Network Transmission 4-port Industrial Ethernet to Fiber Media Converters

## Overview

GE's 4-port Industrial Ethernet to Fiber Media Converters are now IFS. Industrial Ethernet to Fiber Media Converters offer four 10/100Mbps Ethernet ports and 100BaseFX transmission on either multi-mode or single mode optical fiber provides optimum bandwidth usage. Specifically designed for stable and reliable operation in electrically harsh and climatically demanding environments, the module's slim, IP-30 standard metal case accommodates DIN rail or wall mounting for efficient installation in multiple applications.

These converters are engineered with a high-performance switch architecture capable of providing a non-blocking switch fabric and wire-speed throughput as high as 1Gbps or 1.2Gbps. With its 2K MAC address table, these media converters offer wire-speed packet transfer performance without the risk of packet loss. The Flow Control function allows these modules to deliver fast and reliable data transfer.

Available in multi-mode or single-mode configurations, the converters deliver distances up to 2km or 15km respectively. Providing extended distance Ethernet transmission, these units are well suited for remotely deployed edge devices such as IP cameras, access control, VoIP and wireless access points. IFS also provides a multi-mode dual-fiber version for drop and insert network topologies.

## MC-4TX Series 4-port Industrial Ethernet to Fiber Media Converters

## Standard Features

### RJ-45 Ports

- 4-Port 10/100Base-TX
- Auto MDI/MDI-X
- Auto-negotiation

### Fiber Ports

- 1-Port 100Base-FX multi-mode fiber (MC-4TX1FXMM-2Km)
- 1-Port 100Base-FX single-mode fiber (MC-4TX1FXSM-15Km)
- 2-Port 100Base-FX multi-mode fiber (MC-4TX2FX)

### High Performance Architecture

- Complies with the IEEE 802.3, IEEE 802.3u, Fast Ethernet standard
- Store-and-Forward switching architecture and mode with wire-speed filtering and forwarding rates
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x PAUSE frame-flow control (full-duplex)
- Integrated address-lookup engine supports 2K absolute MAC addresses
- CSMA/CD Protocol
- Automatic source-address learning and aging
- Support to handle up to 1522 bytes packet size

### Robust Hardened Design

- Slim IP-30 metal case for protection
- Provides either DIN-rail or wall-mounting
- Operating temperature from -10°~60°
- 12 to 48 VDC, redundant power with reverse-polarity protection
- Removable terminal block for master and slave power
- Alarm relay output for power-failure alert
- Voltage/surge-suppression
  - EFT 6000VDC protection for power lines
  - ESD 6000VDC protection for Ethernet
- Complies with IEC60068-2-xx standards for free-fall, shock and vibration
- Wide operating temperature range of -10° C ~ +60° C

### Warranty

- 3-year limited warranty






MC-4TX1FXMM-2Km




MC-4TX1FXSM-15Km

MC-4TX2FX

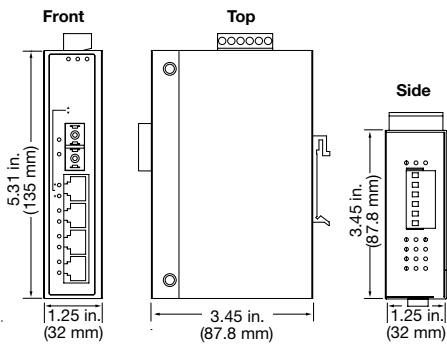
## 4-port Industrial Ethernet to Fiber Media Converter Specifications

Part No.	MC-4TX1FXMM-2Km	MC-4TX1FXSM-15Km	MC-4TX2FX	
<b>Description</b>				
<b>RJ45 Ports</b>	<b>10/100Base-TX Connectors</b>	RJ-45 (4)		
	<b>Port Configuration</b>	Auto MDI/MDI-X		
	<b>Port Speed</b>	Auto-negotiate		
	<b>Electro Static Discharge (ESD) Protection</b>	6KV DC		
<b>Fiber Ports</b>	<b>100Base-FX SC Connectors</b>	1	1	2
	<b>Optical Fiber Type</b>	Multi-mode (62.5/125µm or 50/125µm)	Single-mode (9/125µm)	Multi-mode (62.5/125µm or 50/125µm)
	<b>Optical Distance</b>	2km	15km	2km
<b>Optical</b>	<b>Optical Wavelength</b>	1300nm	1310nm	1300nm
	<b>TX Launch Power (dBm)</b>	Max:-14 Min: -19.0	Max:-7 Min: -20	Max:-14 Min: -19.0
	<b>Receiver Sensitivity (dBm)</b>	-34.5	-28	-34.5
	<b>Maximum Input Power (dBm)</b>	-14	-8	-14
<b>Switch Performance</b>	<b>Switch Architecture</b>	Store-and-Forward		
	<b>Switch Fabric</b>	1Gbps / non-blocking	1Gbps / non-blocking	1.2Gbps / non-blocking
	<b>Throughput (Packet per second)</b>	0.744Mpps@64bytes	0.744Mpps@64bytes	0.892Mpps@64bytes
	<b>Address Table</b>	2K entries		
	<b>Shared Data Buffer</b>	1Mbit on-chip frame buffer		
	<b>Maximum Frame Size</b>	1522 Bytes packet		
	<b>Flow Control</b>	Back pressure for Half-Duplex IEEE 802.3x PAUSE Frame for Full-Duplex		
<b>LED Indicators</b>	<b>Power</b>	Power input 1 – Green; Power input 2 – Green		
	<b>Power Fault</b>	Proper Operation –Off; Fault –Green		
	<b>RJ-45 (10/100Mbps)</b>	100Mbps Activity –Green; 10Mbps Activity –Off		
	<b>Fiber (100Base-FX)</b>	Connected to network –Green		
	<b>Optical Link</b>	Link established –Steady Green; TX/RX Activity – blinking Green		
<b>Electrical &amp; Mechanical</b>	<b>Supply Voltage</b>	12~48 VDC, Redundant power with polarity-reverse protection function		
	<b>Power Consumption</b>	9.1Watts / 31BTU max.	9.1Watts / 31BTU max.	11.6Watts / 40BTU max.
	<b>Electrical Fast Transient (EFT) Protection</b>	6KV DC		
	<b>Power and Alarm Fault Connector</b>	6-pin removable screw terminal		
	<b>Alarm Fault Relay</b>	24VDC – 1A max.		
	<b>Enclosure</b>	IP-30 slim-type metal case		
	<b>Mounting</b>	DIN-rail kit and wall-mount ear		
	<b>Dimensions (in/cm) (W x D x H)</b>	5.31 x 3.42 x 1.26 inch / 13.5 x 8.7 x 3.2cm		
<b>Weight (lbs./kg)</b>	0.965 lbs./.437kg	0.965 lbs./.437kg	0.977 lbs./.437kg	

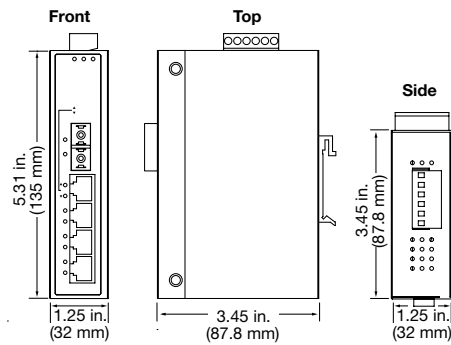
## 4-port Industrial Ethernet to Fiber Media Converter Specifications cont.

Part No.	MC-4TX1FXMM-2Km	MC-4TX1FXSM-15Km	MC-4TX2FX	
<b>Description</b>				
<b>Environmental</b>	<b>MTBF</b>	> 100,000 Hrs @ 25°C		
	<b>Operating Temperature</b>	-10°C~60°C	-10°C~60°C	-10°C~60°C
	<b>Storage Temperature</b>	-40°C~85°C	-40°C~85°C	-40°C~85°C
	<b>Relative Humidity</b>	5%~95% (non-condensing)		
<b>Standards Compliance</b>	<b>IEEE Standards</b>	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX /100Base-FX IEEE 802.3x Flow Control and Back pressure		
	<b>IEC Standards</b>	IEC60068-2-32(Free fall) IEC60068-2-27(Shock) IEC60068-2-6(Vibration)		
	<b>EIA/TIA-568 Standards</b>	2-Pair UTP Cat. 3, 4, 5 (100meters, max.) EIA/TIA-568 100-ohm STP (100meters, max.)		
	<b>Regulation</b>	FCC Part 15 Class A, CE		
	<b>Safety</b>	UL, cUL		

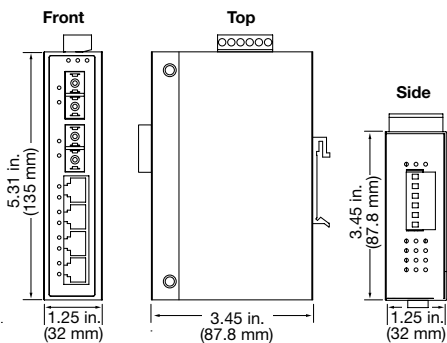
## Dimensional Diagrams



MC-4TX1FXMM-2Km



MC-4TX1FXSM-15Km



MC-4TX2FX

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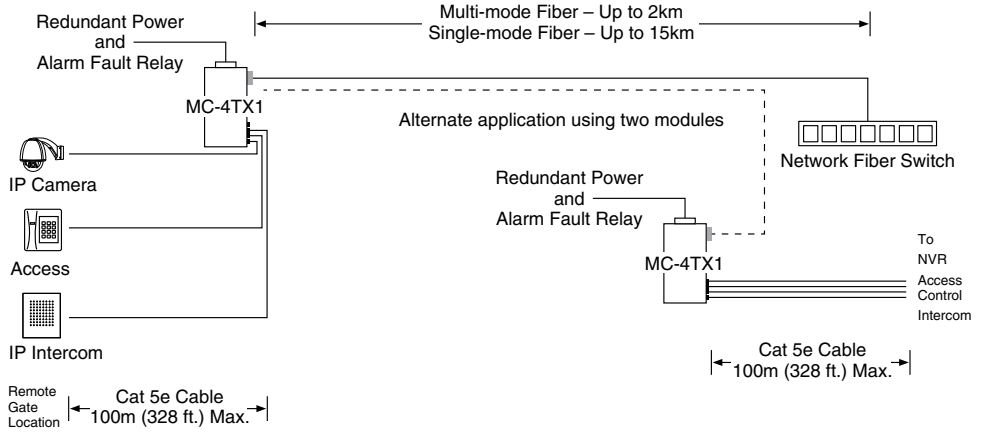
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## Ordering Information

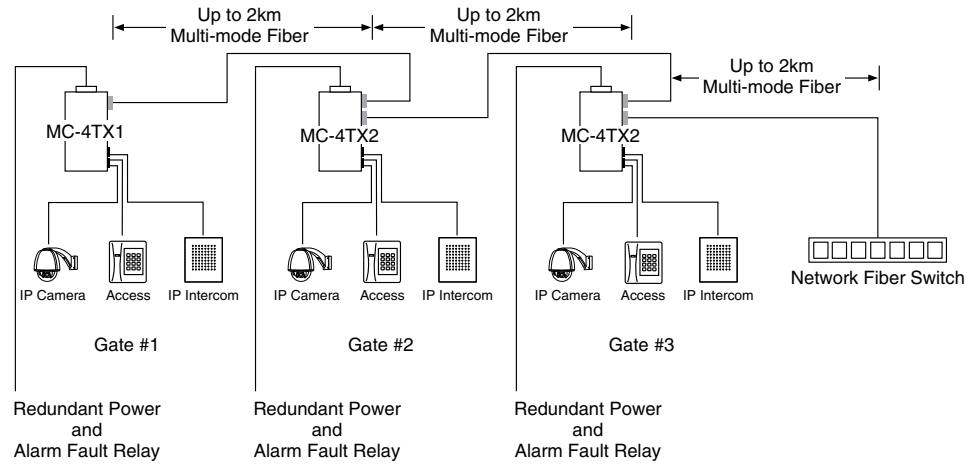
MC-4TX1FXMM-2Km	4-port Fast Ethernet to 1 Fiber Port
MC-4TX1FXSM-15Km	4-port Fast Ethernet to 1 Fiber Port
MC-4TX2FX	4-port Fast Ethernet Drop-and-Repeat 2 Fiber Ports

## Typical Applications

### Point-to-Point Application



### Drop-and-Repeat Application



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