4-Port Ethernet to Fiber Industrial Media Converters

MC-4TX1FXMM-2Km
MC250-4T/1FM (wide-temp)

MC-4TX1FXSM-15Km
MC250-4T/1FS (wide-temp)

MC-4TX2FX

OVERVIEW

IFS Ethernet to Fiber Industrial Media Converters offer four 10/100Mbps Ethernet ports and 100Base-FX transmission on either multi-mode or single mode optical fiber for 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 of 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 repeat network topologies.

STANDARD FEATURES

RJ-45 Ports
- 4-Port 10/100Base-TX
- Auto MDI/MDI-X
- Auto-negotiation

Fiber Ports
- 1-Port 100Base-FX MM or SM Fiber
- 2-Port 100Base-FX MM Fiber (MC-4TX2FX only)

High Performance Architecture
- Complies with the IEEE 802.3, IEEE 802.3u, Fast Ethernet standard
- Store-and-Forward switching architecture 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 enclosure for protection
- Provides either DIN-rail or wall-mounting
- 12 ~ 48VDC, 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 up to -40°C ~ +75°C

Warranty
- 3-year limited warranty

Specifications

RJ45 Ports	MC-4TX1FXMM-2Km	MC250-4T/1FM	MC-4TX1FXSM-15Km	MC250-4T/1FS	MC-4TX2FX
10/100Base-TX Connectors	RJ-45 (4); Auto-negotiate and Auto MDI/MDI-X support				
Throughput (packet per second)	148,800pps				
Switch Architecture	Store-and-forward				
Max Packet Size	1522 Bytes				
Electro Static Discharge (ESD) Protection	6KVDC				
Fiber Ports					
100Base-FX SC Connectors	1	1	1	1	2
Optical Fiber Type	Multi-mode (62.5/125µm or 50/125um)	Multi-mode (62.5/125µm or 50/125um)	Single-mode (9/125µm)	Single-mode (9/125µm)	Multi-mode (62.5/125µm or 50/125µm)
Optical Distance	2km	2km	15km	15km	2km
Optical					
Optical Wavelength	1300nm	1300nm	1310nm	1310nm	1300nm
TX Launch Power (dBm)	Max: -14, Min: -19.0	Max: -14, Min: -20	Max:-7, Min: -20	Max:0, Min: -20	Max:-14, Min: -19.0
Receiver Sensitivity (dBm)	-34.5	32	-28	32	-34.5
Maximum Input Power (dBm)	-14	0	-8	0	-14
Switch Performance					
Switch Architecture	Store-and-Forward				
Switch Fabric	1Gbps / non-blocking	1Gbps / non-blocking	1Gbps / non-blocking	1Gbps / non-blocking	1.2Gbps / non-blocking
Throughput (Packet per second)	0.744Mpps@64bytes	0.744Mpps@64bytes	0.744Mpps@64bytes	0.744Mpps@64bytes	0.892Mpps@64bytes
Address Table	2K entries				
Shared Data Buffer	1Mbit on-chip frame buffer				
Maximum Frame Size	1522 Bytes packet				
Flow Control	Back pressure for Half-Duplex, IEEE 802.3x PAUSE Frame for Full-Duplex				
LED Indicators					
Power	Power input 1 – Green; Power input 2 – Green				
Power Fault	Proper Operation – Off; Fault – Green				
RJ-45 (10/100Mbps)	100Mbps Activity – Green; 10Mbps Activity – Off				
Fiber (100Base-FX)	Connected to network – Green				
Optical Link	Link established – Steady Green; TX/RX Activity – Blinking green				
Electrical & Mechanical					
Supply Voltage	12~48VDC, Redundant power with polarity-reverse protection function				
Power Consumption	9.1Watts / 31BTU max.	9.1Watts / 31BTU max.	9.1Watts / 31BTU max.	9.1Watts / 31BTU max.	11.6Watts / 40BTU max.
Electrical Fast Transient (EFT) Protection	6KVDC				
Power and Alarm Fault Connector	6-pin removable screw terminal				
Alarm Fault Relay	Provides one relay output for power failure notification; 24VDC – 1A max.				
Enclosure	IP-30 slim-type metal enclosure				
Mounting	DIN-rail kit and wall-mount ears				
Dimensions (in/cm) (W x D x H)	5.31 x 3.42 x 1.26 in. (13.5 x 8.7 x 3.2cm)				
Weight (lbs./kg)	0.965 lbs./.437kg	0.965 lbs./.437kg	0.965 lbs./.437kg	0.965 lbs./.437kg	0.977 lbs./.437kg
Environmental					
MTBF	> 100,000 Hrs @ 25°C				
Operating Temperature	-10°C ~ 60°C	-40°C ~ 75°C	-10°C ~ 60°C	-40°C ~ 75°C	-10°C ~ 60°C
Storage Temperature	-40°C ~ 85°C				
Relative Humidity	0% ~ 90% (non-condensing)				
Standards Compliance					
IEEE Standards	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX /100Base-FX IEEE 802.3x Flow Control and Back pressure				
IEC Standards	IEC60068-2-32(Free fall) IEC60068-2-27(Shock) IEC60068-2-6(Vibration)				
EIA/TIA-568 Standards	2-Pair UTP Cat. 3, 4, 5 (100meters, max.) EIA/TIA-568 100-ohm STP (100meters, max.)				
Regulation	FCC Part 15 Class A, CE				

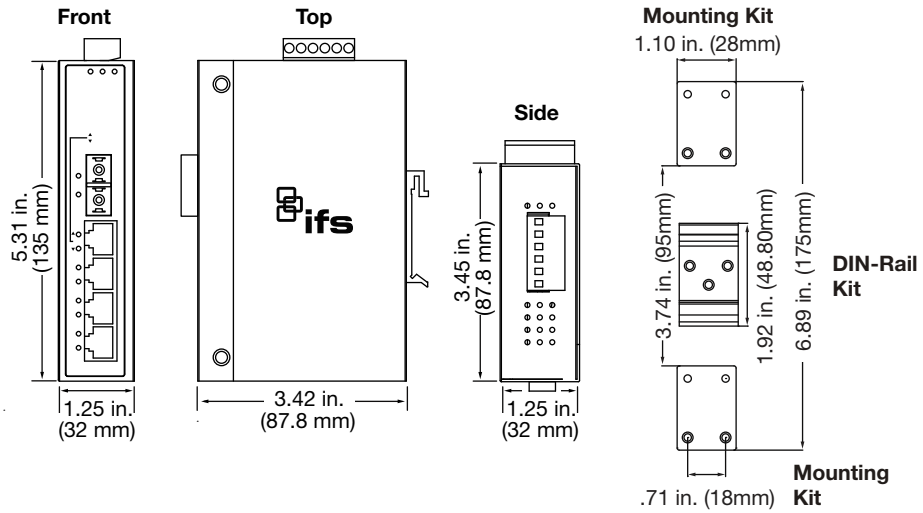
Dimensional Diagrams

MC-4TX1FXMM-2KM

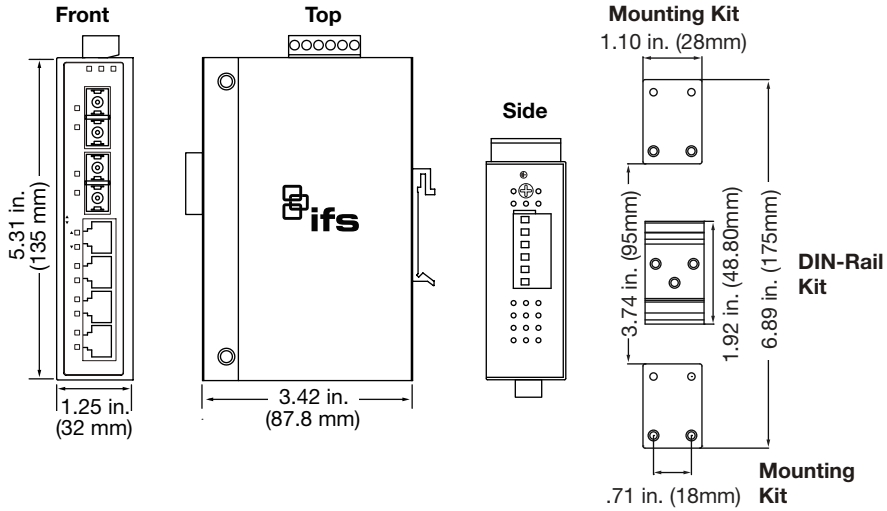
MC-4TX1FXSM-15KM

MC-250-4T/1FM

MC-250-4T/1FS



MC250-4TX2FX



4-Port Ethernet to Fiber Industrial Media Converters

North America T 855-286-8889
Asia T 852-2907-8108
Australia T 61-3-9239-1200
Europe T 32-2-725-11-20
Latin America T 561-998-6114

Ordering Information

MC-4TX1FXMM-2KM	4-Port Fast Ethernet to 1 MM Fiber Port
MC250-4T/1FM	4-Port Fast Ethernet to 1 MM Fiber Port (wide-temp)
MC-4TX1FXSM-15KM	4-Port Fast Ethernet to 1 SM Fiber Port
MC250-4T/1FS	4-Port Fast Ethernet to 1 SM Fiber Port (wide-temp)
MC-4TX2FX	4-Port Fast Ethernet Drop-and-Repeat 2 MM Fiber Ports
Included Accessories	User's Manual, DIN Rail Kit, Wall Mount Kit

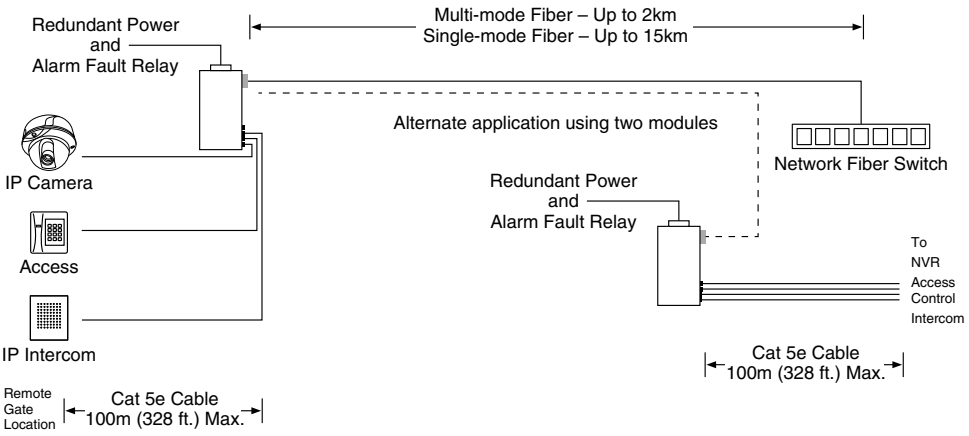
Note: External power supply must be ordered separately.

Accessories

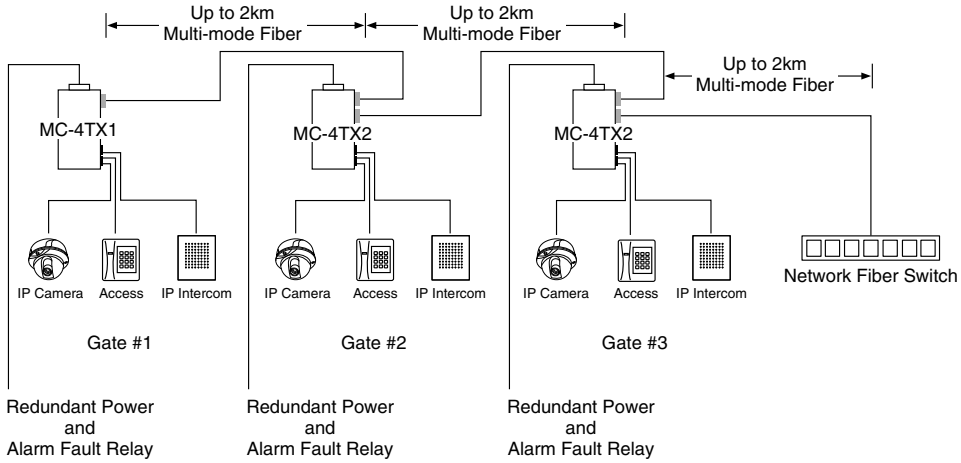
PS12VDC1.5A-U	12VDC@1.5A External Power Supply
HLG-240-48	48VDC High Temperature Industrial Power Supply
PS48VDC100W-DIN	48VDC@2A (100W) DIN-Rail Mount Hardened Power Supply (100~240VAC)

Typical Applications

Point-to-Point Application



Drop-and-Repeat Application



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Specifications subject to change without notice.

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