FX82012 Unmanaged Ethernet Switch

ONE 10BASE-T/100BASE-TX PORT AND TWO 100BASE-FX FIBER PORTS

Product Features

- Unmanaged Ethernet Switch for the Transport of Bidirectional Ethernet Data:
  - One 10BASE-T/100BASE-TX Port
  - Two 100BASE-FX Ports
- Integrated Wavelength Division Multiplexing (WDM) in a Single Fiber
- Designed for Point-to-Point Applications with Fiber Redundancy Option and for Drop-and-Repeat Applications
- User-Selectable 10BASE-T/100BASE-TX Networking Functions:
  - Autonegotiation Between 10 Mbps and 100 Mbps Data Rates and Between Full-Duplex and Half-Duplex Modes
  - 10 Mbps or 100 Mbps Selectable
  - Full-Duplex or Half-Duplex Mode Selectable
  - Enabling/Disabling of Flow Control
- Auto MDI/MDI-X (Medium Dependent Interface/Medium Dependent Interface Crossover) Operation
- Compliant with IEEE 802.3, 802.3u, and 802.3x Standards
- Multimode Fiber Support for Distances up to 2 km
- Single-Mode Fiber Support for Distances up to 46 km
- Laser Diode for Transmission of Optical Signals
- Environmentally Hardened

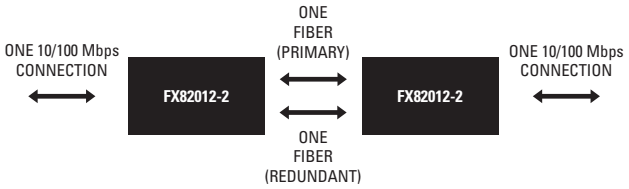
- Designed to Meet NEMA TS 2 and Caltrans Traffic Signal Control Equipment Environmental Standards
- No Performance Adjustments Required
- 12 VDC or 24 VAC Power Supply
- Stand-Alone and Rack-Mountable Modular Design
- LED Indicators for Monitoring of Fiber Redundancy Mode Status, Optic Signal/Laser Status, 100BASE-FX Port Status Including Far End Fault Indication (FEFI), 10BASE-T/100BASE-TX Port Status, and Operating Power

The **FX82012** unmanaged Ethernet switch provides one 10BASE-T/100BASE-TX port and two 100BASE-FX fiber ports for the transport of bidirectional Ethernet data. Available in multimode and single-mode versions, the fiber ports use wavelength division multiplexing (WDM), which allows bidirectional data to be transported in a single fiber.

The **FX82012** switch is designed for point-to-point and drop-and-repeat applications. In point-to-point applications, the second fiber port provides an optional redundant fiber link. Using the fiber redundancy option, the second fiber port (which is idle during regular operation) becomes operational if the primary fiber port fails. In drop-and-repeat applications, two fiber ports allow one or more Ethernet devices to be connected into a fiber optic daisy chain.

Fiber ports are forced to full-duplex 100 Mbps operation. Networking functions for the 10BASE-T/100BASE-TX port (RJ-45 twisted-pair copper port) are user-selectable by means of a rotary switch. Autonegotiation allows the 10BASE-T/100BASE-TX port to automatically negotiate between 10 Mbps and 100 Mbps data rates and between full-duplex and half-duplex modes. If autonegotiation is not desired, the port can be forced to specific modes of operation: 10 Mbps or 100 Mbps data rate, half-duplex or full-duplex mode, and the enabling/disabling of flow control. The auto MDI/MDI-X feature allows the RJ-45 port to connect to either a straight-through or cross-over RJ-45 cable.

Modular in design, the **FX82012** unit can be rack mounted or can be used as a stand-alone module. Rack mounting is accomplished using the RK5000 Series rack mount chassis. As a stand-alone module, the unit can be placed on a desktop or can be mounted to a wall.



POINT-TO-POINT APPLICATION WITH FIBER REDUNDANCY

TECHNICAL SPECIFICATIONS

MODELS

One 10BASE-T/100BASE-TX Ports and Two 100BASE-FX Fiber Ports, One Fiber per Port

Model Number	Fiber Optic Connector Type	Number of Fibers	Wavelength (Transmit/Receive)		Optical Power Budget	Maximum Transmission Distance
			Fiber Port A	Fiber Port B		
Multimode (62.5/125 µm)						
FX82012MSTR-2	ST	2 (1 per port)	1310/850 nm	850/1310 nm	26 dB*	2 km (1.2 mi)†
FX82012MSCR-2	SC	2 (1 per port)	1310/850 nm	850/1310 nm	26 dB*	2 km (1.2 mi)†
Single-Mode (9/125 µm)						
FX82012SSTR-2	ST	2 (1 per port)	1310/1550 nm	1550/1310 nm	28 dB	46 km (28.6 mi)‡
FX82012SSCR-2	SC	2 (1 per port)	1310/1550 nm	1550/1310 nm	28 dB	46 km (28.6 mi)‡

*When using 50/125 µm multimode fiber, subtract 3 dB from the optical power budget.

† Maximum transmission distance is limited by fiber bandwidth.

‡ Maximum transmission distance is based on attenuation of 0.5 dB/km plus a 5 dB buffer for connector and splice losses.

Notes:

- Single-mode FC connectors are available upon request. Contact the factory for additional information.
- For conformal coated models, replace the first letter *F* in the model number with the letter *C*. The conformal coated version of FX82012MSTR-2, for example, is CX82012MSTR-2.
- For models with higher optical power budgets, contact the factory.

Supplied Accessories

Regulated switching power supply with multiple plug adapters (North American, Australian, United Kingdom, and European); 100-240 VAC, 50-60 Hz input, 12 VDC output

Note: In extreme temperature conditions, it is recommended that an industrial-rated outdoor power supply be used.

Wall clip for attachment of single module to wall

PERFORMANCE

Switch Type	Unmanaged Layer 2
Switch Method	Store and forward
Switch Fabric	Non-head-of-line blocking
Data Rate	10/100 Mbps
Compliance	IEEE 802.3, 802.3u, 802.3x
Interface	Auto MDI/MDI-X
Operating Mode	Half-duplex or full-duplex
Address Table Size	1,024 MAC address entries with automatic learning and aging
Quality of Service	IEEE 802.1p priority, tag-based, 4 queues per port, weighted fair queuing scheduling
Maximum Frame Size	Untagged Ethernet frames up to 1,518 bytes Tagged Ethernet frames up to 1,522 bytes

GENERAL

Operating Temperature	-40° to 167°F (-40° to 75°C)
Input Power Requirements	12 VDC or 24 VAC, 0.50 A
LED Indicators	Power Fiber Redundancy Mode Status 100BASE-FX Port Status (link/activity, FEFI per fiber port) Optic Fault (optic signal/laser status per fiber port) 10BASE-T/100BASE-TX Port Status (2 LEDs: link/activity and speed, duplex/collision and speed)
Dimensions	8.75" D x 1.08" W x 4.81" H (22.23 x 2.74 x 12.22 cm)
Unit Weight	1.6 lb (0.73 kg)
Shipping Weight	3.0 lb (1.36 kg)

MECHANICAL

Connectors	
Rack Power/Alarm	1, 4-pin connector
Stand-Alone Power	1, 2-pin connector, screw terminal
Electrical	1, RJ-45, 10BASE-T/100BASE-TX
Fiber Optic	2, single-fiber ST or SC

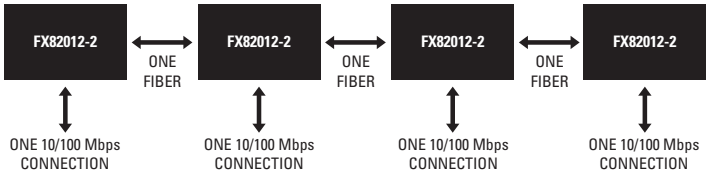
CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Complies with FDA requirements for Class 1 laser products
- Designed to meet NEMA TS 2 and Caltrans traffic signal control equipment standards for ambient operating temperature, mechanical shock and vibration, humidity with condensation, high-line/low-line voltage conditions, and transient voltage protection (certification pending)

  Note: Conformal coating is required for operation in environments with relative humidity above 95% (condensing).

OPTIONAL ACCESSORIES

WM5001-3U	Wall mount base kit for single-width module
WM5001-3UEXP	Wall mount expansion kit for single-width module
RK5000-3U	19-inch rack mount chassis for 14 slots, no power (3 RUs)
RK5000PS-3U	19-inch rack mount chassis for 12 slots with power (3 RUs)
EPS5000-120	External rack power supply, 1 RU, dual 120 W power outputs
RK5001B-3U	Blank filler panel, single width
RK5002B-3U	Blank filler panel, double width
RK5001-1UEXP	Adapter kit that allows a 3 RU single-width fiber module to be used in RK5100PS-5U rack mount chassis



SAMPLE DROP-AND-REPEAT APPLICATION

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