# **FUMS-F Series Unmanaged Ethernet Switches**

# 4- OR 8-PORT, 10/100 MBPS, WITH AND WITHOUT FSFP MODULES

## **Product Features**

- 10/100 Mbps Ethernet
  - 10Base-T/100Base-TX Electrical Port
  - 100Base-FX Optical Port
- Electrical Port Supports Autonegotiation for 10 Mbps or 100 Mbps, Full-Duplex or Half-Duplex Data
- Optical Port Supports 100 Mbps Full-Duplex Data
- Automatic Medium Dependent Interface/Medium Dependent Interface Crossover (MDI/MDI-X) Operation
- Designed to Meet NEMA TS 1/TS 2 and Caltrans Traffic Signal Control Equipment Environmental Standards
- Uses Interchangeable Small Form-Factor Pluggable (FSFP) Modules for Specific Fiber Type, Distance, and Connector (Must Be Ordered Separately)
- Voltage Transient Protection on All Power and Signal Input/Output Lines Provides Protection from Power Surges and Other Voltage Transient Events
- LED Status Indicators for Monitoring All Critical and Normal Operating Parameters
- Hot-Swappable Rack Modules
- · Stand-Alone or Rack-Mountable Modular Design
- Compliant with IEEE 802.3 Standards



The **FUMS-F Series** Ethernet 4- and 8-port unmanaged switches are designed to transmit and receive 10/100 Mbps data over optical fiber through user-selectable small form-factor pluggable (FSFP) options; or 10 Mbps or 100 Mbps data over Cat5e or Cat6 electrical cable. The electrical interface autonegotiates between 10 Mbps or 100 Mbps Ethernet rates without any adjustments. The optical interface operates at a 100 Mbps Ethernet rate.

These units integrate four or eight independent 10/100 Mbps channels in a single package. The FUMS-FFX4TX4, FUMS-FFX2TX2, FUMS-FTX4, and FUMS-FFX8 require interchangeable FSFP modules (ordered separately) for specific fiber type, distance, and connectors.

Modular in design, these models may be either wall- or rack-mounted. LED indicators display operating status and critical operating parameters. These models are designed to operate in extreme environments. External power is required for the **FUMS-F Series** units. The units can be powered with the recommended FEXTPS fiber external power supply.

The optical transmission of Ethernet-compatible IP camera surveillance video makes the **FUMS-F Series** ideal for transportation, airport, and college campus applications.



# **TECHNICAL SPECIFICATIONS**

#### **MODELS\***

FUMS-FFX8 Ethernet unmanaged switch, requires FSFP

modules<sup>†</sup>, 100 Mbps, 8 FX optical ports

FUMS-FFX4TX4 Ethernet unmanaged switch, requires FSFP

modules<sup>†</sup>, 10/100 Mbps, 4 TX electrical and

4 FX optical ports

FUMS-FTX8 Ethernet unmanaged switch, 10/100 Mbps,

8 TX electrical ports

FUMS-FFX4 Ethernet unmanaged switch, 100 Mbps,

4 FX optical ports

FUMS-FFX2TX2 Ethernet unmanaged switch, requires FSFP

modules<sup>†</sup>, 10/100 Mbps, 2 TX electrical and

2 FX optical ports

FUMS-FTX4 Ethernet unmanaged switch, requires FSFP

modules<sup>†</sup>, 10/100 Mbps, 4 TX electrical ports

#### **ELECTRICAL**

Power Input 9 to 24 VDC

Power Consumption

FUMS-FFX4, FUMS-FFX2TX2,

FUMS-FTX4 12 W

FUMS-FFX8,

FUMS-FFX4TX4, FUMS-FTX8

FUMS-FTX8 17 W
Cable Cat5e or Cat6
MTBF >100,000 hours
LED Indicators Optical link, data;

Electrical link, data;

Power

#### **DATA**

Data Interface Ethernet

Data Rate 10/100 Mbps, IEEE 802.3 compliant
Operating Mode Electrical port, full-duplex or half-duplex

Optical port, full-duplex

#### **OPTICAL**

 Data Rate
 100 Mbps

 Wavelength
 FSFP dependent<sup>†</sup>

 Number of Fibers
 FSFP dependent<sup>†</sup>

## **MECHANICAL**

Connectors

Optical FSFP dependent<sup>†</sup>
Power Terminal block
Electrical RJ-45

Number of Rack Slots FUMS-FFX4,

FUMS-FFX2TX2, FUMS-FTX4 1 FUMS-FFX8.

FUMS-FFX4TX4, FUMS-FTX8 2

#### **GENERAL**

Dimensions

FUMS-FFX4, FUMS-FFX2TX2,

FUMS-FTX4  $15.5 \times 13.5 \times 2.8 \text{ cm}$ 

(6.1" D × 5.3" W × 1.1" H)

FUMS-FFX8, FUMS-FFX4TX4,

FUMS-FTX8  $15.5 \times 13.5 \times 5.6 \text{ cm}$ 

(6.1" D × 5.3" W × 2.2" H)

Operating Temperature -40° to 75°C (-40° to 167°F)
Storage Temperature -40° to 85°C (-40° to 185°F)
Relative Humidity 0 to 95%, noncondensing

Weight

Unit <0.45 kg (1.00 lb) Shipping 0.90 kg (2.00 lb)

#### **CERTIFICATIONS/RATINGS**

CE, Class E

• FCC, Part 15

UL ListedC-Tick

• IEEE 802.3

 Designed to meet NEMA TS 1/TS 2 and Caltrans traffic signal control equipment environmental standards

## **RECOMMENDED ACCESSORIES**

EURACK Rack-mount chassis for up to 14 fiber optic

modules, internal power supply, European

power cord

USRACK Rack-mount chassis for up to 14 fiber optic

modules, internal power supply, North

American power cord

FEXTPS Fiber external power supply with multiple

plug adaptors (North American, Australian, United Kingdom, and European); 100 to 240 VAC, 50 to 60 Hz input, 9 VDC output

<sup>†</sup>Requires selection of interchangeable FSFP modules (must be ordered separately) for specific fiber type, distance, and connector. Refer to FSFP Series Transceivers specification sheet for model number and description of FSFP modules. Multimode fiber must meet or exceed fiber standard ITU-T G.651. Single-mode fiber must meet or exceed fiber standard ITU-T G.652.

<sup>\*</sup>These switches do not support Internet Group Management Protocol (IGMP) and should not be used as a core switch.