

# EX9200 Series

## Managed Hardened 24-port 10/100BASE and 2 Gigabit ports Ethernet Switch



### Overview



Designed for rugged environments, the EX9200 Fiber Series comes with 8, 12, 16 or 24 100Mbps Fiber ports and up to 2 Gigabit ports. The EX9200 functions at temperatures ranging from -40°C to 75°C (-40°F to 167°F) and is tested for functional operation @ -40°C to 85°C (-40°F to 185°F). The EX9200 can be equipped with redundant power supplies that makes EX9200 more flexible for rugged environments. Fully manageable via SNMP, the EX9200 Series switches are designed to integrate 100BASE networks into fiber optic Gigabit backbones with flexible options. Users may choose among SNMP/RMON, Web browser, or Telnet for remote monitoring and configuration. It also supports rate control, which allows users to set the maximum bandwidth on each port individually. The EX9200 is fully compatible with EtherWAN's media converter and terminal server products to provide a total solution for connecting legacy serial devices (RS232, RS422 & RS485) to an Ethernet based network.

### Features

- ▶ Complies with NEMA TS1 & TS2 Environmental requirements for Traffic control equipment
- ▶ Complies with IEC61000-6-2 EMC Generic standard immunity for Industrial environment
- ▶ IEEE802.1w RSTP and IEEE802.1D STP compatible
- ▶ IP Multicast Filtering through IGMP Snooping
- ▶ Supports port-based VLAN and IEEE802.1Q VLAN Tagging and GVRP
- ▶ IEEE802.1p QoS classification based on: Port-based priority; VLAN priority field in VLAN tagged frame; DS/TOS field in IP packet; UDP/TCP logical ports
- ▶ Port-based trunking, up to three groups and maximum of four ports each group, load sharing based on source and destination MAC addresses
- ▶ RS-232 console, Telnet, SNMP V1 & V2c, RMON, Web Browser, and TFTP Management
- ▶ Bandwidth Rate Control
- ▶ Port Security by MAC addresses filtering, limit number of MAC addresses learned per port, static MAC addresses stay in the filtering table
- ▶ Port mirroring
- ▶ 1000Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- ▶ Full wire-speed forwarding rate
- ▶ 100 ~ 240VAC, 50 ~ 60Hz Internal Universal PSU
- ▶ Support Redundant power supplies for flexible application
- ▶ -40°C to 75°C (-40°F to 167°F) operating temperature range

### Ordering Information

EX9224SFT16-XX*	8-port 10/100BASE-TX + 16-port 100BASE-FX Multi Mode (ST) -2Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9224SFC16-XX*	8-port 10/100BASE-TX + 16-port 100BASE-FX Multi Mode (SC) -2Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9224SFC16-XX*	8-port 10/100BASE-TX + 16-port 100BASE-FX Single Mode (SC) -20Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9224SFCM16-XX*	8-port 10/100BASE-TX + 16-port 100BASE-FX Single Mode (SC) -40Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9224SFT18-XX*	6-port 10/100BASE-TX + 18-port 100BASE-FX Multi Mode (ST) -2Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9224SFC18-XX*	6-port 10/100BASE-TX + 18-port 100BASE-FX Multi Mode (SC) -2Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9224SFC18-XX*	6-port 10/100BASE-TX + 18-port 100BASE-FX Single Mode (SC) -20Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9224SFCM18-XX*	6-port 10/100BASE-TX + 18-port 100BASE-FX Single Mode (SC) -40Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9216SFT-XX*	16-port 100BASE-FX Multi Mode (ST) -2Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9216SFC-XX*	16-port 100BASE-FX Multi Mode (SC) -2Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9216SFC-XX*	16-port 100BASE-FX Single Mode (SC) -20Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9216SFCM-XX*	16-port 100BASE-FX Single Mode (SC) -40Km + 2-port Gigabit* Hardened Managed Ethernet Switch
EX9016SFT2	16-port 10/100BASE-TX + 2-port 100BASE-FX Multi Mode (ST) -2Km Hardened Managed Ethernet Switch
EX9016SFC2	16-port 10/100BASE-TX + 2-port 100BASE-FX Multi Mode (SC) -2Km Hardened Managed Ethernet Switch
EX9016SFC2	16-port 10/100BASE-TX + 2-port 100BASE-FX Single Mode (SC) -20Km Hardened Managed Ethernet Switch
EX9016SFCM2	16-port 10/100BASE-TX + 2-port 100BASE-FX Single Mode (SC) -40Km Hardened Managed Ethernet Switch

\*XX can be substituted by the following codes for Gigabit ports:

- GT: 10/100/1000BASE-TX
- SX: 1000BASE-SX (SC)
- L1: 1000BASE-LX (SC) -10Km
- L2: 1000BASE-LX (SC) -20Km
- L5: 1000BASE-LX (SC) -50Km

\*100BASE-FX SC fiber also available in Single Mode WDM Type A and Type B, 20/40Km

\*1000BASE-LX SC fiber also available in WDM Type A and Type B, 10/20Km

\*Redundant power supply optional model also available upon request

\*\*All items include Rackmounting bracket (black)

#### Optional Accessories:

- KR-AE612-400: Rack mount kit (black)



## Specifications

### Technology

#### Standards:

- IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX/100BASE-FX, IEEE802.3ab 1000BASE-T, IEEE802.3z 1000BASE-SX/1000BASE-LX, IEEE802.3x, IEEE802.1Q, IEEE802.1p, IEEE802.1w

#### Protocols:

- IGMP, GVRP, SNMP V1/V2c, RMON, TFTP

#### Forward and Filtering Rate:

- 14,880pps for 10Mbps
- 148,810pps for 100Mbps
- 1,488,100pps for 1000Mbps

#### Packet Buffer Memory:

- 16M bits

#### Processing Type:

- Store-and-Forward
- Half-duplex back-pressure and IEEE802.3x full-duplex flow control

#### Address Table Size:

- 12288 MAC addresses

#### Latency:

- Less than 151.5μs

### Power

#### Input:

- AC : 100 ~ 240VAC, 50 ~ 60Hz Internal Universal PSU
- DC : + / -48VDC

#### Power Consumption:

- 34.8W Max.

#### Overload Current Protection:

- Present

### Mechanical

#### Casing:

- Metal case
- IP20

#### Dimensions:

- Single Power: 443.6mm (W) x 284.1mm (D) x 44mm (H)  
(17.47" (W) x 11.19" (D) x 1.73" (H))
- Redundant Power: 443.6mm (W) x 403mm (D) x 44mm (H)  
(17.47" (W) x 15.87" (D) x 1.73" (H))
- Standard 19" rack-mount size, one-unit-height

#### Weight:

- 3.4Kg (7.5lbs.)

#### Installation:

- Rack Mounting

### Interface

#### Ethernet Port:

- 10/100BASE-TX: 24, 16, 8, 6 or 0 ports
- 100BASE-FX: 0, 8, 16, 18 or 24 ports
- Gigabit: 0, 1 or 2 ports

#### Console Port:

- Port: One DB9 RS-232 port

#### LED Indicators:

- Per Unit: Power Status (Power)
- Per Port: 10/100TX, 100FX: Link/Activity, Full-duplex/Collision  
10/100/1000TX, 1000SX/LX: Link, Activity

### Environment

#### Operating Temperature:

- -40°C to 75°C (-40°F to 167°F)  
Tested @ -40°C to 85°C (-40°F to 185°F)

#### Storage Temperature:

- -40°C to 85°C (-40°F to 185°F)

#### Ambient Relative Humidity:

- 5% to 95% (non-condensing)

### Regulatory Approvals

#### ISO:

- Manufactured in an ISO9001 facility

#### Safety:

- UL60950-1, EN60950-1, IEC60950-1

#### EMI:

- FCC Part 15, Class A
- EN61000-6-4
  - EN55022
  - EN61000-3-2
  - EN61000-3-3

#### EMS:

- EN61000-6-2
  - EN61000-4-2 (ESD Standards)  
Contact: + / - 4KV; Criteria B  
Air: + / - 8KV; Criteria B
  - EN61000-4-3 (Radiated RFI Standards)  
10V/m, 80 to 1000MHz; 80% AM Criteria A
  - EN61000-4-4 (Burst Standards)  
Signal Ports: + / - 4KV; Criteria B  
D.C. Power Ports: + / - 4KV; Criteria B  
A.C. Power Ports: + / - 4KV; Criteria B
  - EN61000-4-5 (Surge Standards)  
Signal Ports: + / - 1KV; Line-to-Line; Criteria B  
D.C. Power Ports: + / - 0.5KV; Line-to-earth; Criteria B  
A.C. Power Ports: + / - 2KV; Line-to-earth; Criteria B
  - EN61000-4-6 (Induced RFI Standards)  
Signal Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A  
D.C. Power Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A  
A.C. Power Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
  - EN61000-4-8 (Magnetic Field Standards)  
30A/m @ 50, 60Hz; Criteria A
  - EN61000-4-11 (Voltage Dip Standards)  
A.C. Power Ports: 30% Reduction for 0.5 period; Criteria B

#### Environmental Test Compliance:

- IEC60068-2-6 Fc (Vibration Resistance)  
5g @ 10~150Hz, Amplitude 0.35mm (Operation/Storage/Transport)
- IEC60068-2-27 Ea (Shock)  
25g @ 11ms (Half-Sine Shock Pulse; Operation)  
50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)
- IEC60068-2-32 Ed (Free Fall)  
1M (3.281ft.)

## Diagrams

