

EX27000 Series

IEC61850-3/IEEE1613 Managed 24-port 10/100BASE and 4-port Gigabit Ethernet Switch with SFP options



Overview

EtherWAN's EX27000 Series provides an Industrial Fully Managed 28-port switching platform combining high performance switching backbone with robust and secure management features required for mission critical and industrial environments where sustained connectivity is crucial.

The EX27000 Series is equipped with twenty-four 10/100BASE Fast Ethernet ports, in combination with up to four Gigabit, Fixed Fiber, or SFP Combo port options. Mountable on a 1U rack, the EX27000 Series is equipped with EtherWAN's Alpha-Ring self-healing technology, providing less than 15ms fault recovery time making it ideal for applications intolerant to interruption.

Users are able to access management features such as; port security, IGMP snooping, VLANs, GARP protocols, LACP to name a few, via web browser, Telnet, SNMP, RMON, TFTP, and RS-232 console interfaces.

EtherWAN – "When Connectivity is Crucial."

Spotlight

- **Certified for applications in electric power substations and railway managements**
 - Compliant with IEC61850-3 & IEEE1613, and EN50121-4 standards
- **Redundant power inputs**
 - Supports AC Inlet and DC Terminal Block
- **SFP Options**
 - Supports a list of SFP modules, and the user can flexibly configure each port via SFP module management
- **Fan-less Metal Casing**
 - For easy maintenance with -10°C to 60°C wide operating temperature

Software Features

Management

- Interface
 - CLI, Telnet and Web Browser
 - SNMP v1/v2c/v3
- Firmware and configuration upgrade and backup via TFTP
- Supports DHCP Server/Client
- RMON (Remote monitoring): group 1, 2, 3, 9
- Port mirroring: TX/RX and both
- NTP (Network Time Protocol) time synchronization
- IEEE802.1ab LLDP (Link Layer Discovery Protocol)

Security

- MAC Address by port security
- Enable/disable port
- Storm control (broadcast and multicast types)
- IEEE802.1x LAN access control
- Remote authentication through RADIUS
- SSH for CLI and Telnet security
- SSL for web security
- ACL

Quality of Service (QoS)

- Priority Queues: 4 queues per port
- Traffic classification based on IEEE802.1p CoS, DSCP, WRR (Weighted round robin) and strict mode
- Rate Limiting (Ingress/Egress)

Layer 2 Features

- Auto-negotiation for port speed and duplex mode
- Flow Control
 - IEEE802.3x full duplex mode
 - Back-Pressure half duplex mode
- Redundant Protocol
 - IEEE802.1D Spanning Tree Protocol (STP)
 - IEEE802.1w Rapid Spanning Tree Protocol (RSTP)
 - IEEE802.1s Multiple Spanning Tree Protocol (MSTP)
 - EtherWAN's Alpha-Ring network fault recovery (<15ms) and Alpha-Chain
- VLANs
 - Port-based VLANs
 - IEEE802.1Q Tag VLANs (128 groups, 4096 VID)
 - GVRP (GARP VLAN Registration Protocol)
 - GMRP (GARP Multicast Registration Protocol)
- Link Aggregation
 - Static Trunk (8 groups, support MAC base)
 - IEEE802.3ad Link Aggregation Control Protocol
- IGMP Snooping
 - IGMP snooping v1/v2/v3

Performance

- Switching Capability: 12.8Gbps
- Packet Buffer Size: 3Mbits
- MAC Address Table: 8192

Hardware 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 Full duplex and flow control
- IEEE802.1p QoS
- IEEE802.1Q Tag VLANs
- IEEE802.1w RSTP
- IEEE802.1x Port-based Network Access Control

Forward and Filtering Rate

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

Packet Buffer Memory

- 3M bits

Processing Type

- Store-and-Forward
- Auto Negotiation
- Half-duplex back-pressure and IEEE802.3x full-duplex flow control
- Auto MDI/MDIX

Address Table Size

- 8192 MAC addresses

Power

Input

- (T) : + / - 48VDC (36 - 75VDC) Internal Universal PSU
- (W) : 88 - 370VDC and 90 - 264VAC Internal Universal PSU
- (C) : 90 - 264VAC, 50 - 60Hz Internal Universal PSU

Power Consumption

- 42.7W Max.

Mechanical

Casing

- Metal Case
- IP30

Dimensions

- Single Power:
442mm (W) x 284mm (D) x 44.2mm (H)
(17.4" (W) x 11.1" (D) x 1.74" (H))
- Redundant Power:
442mm (W) x 360mm (D) x 44.2mm (H)
(17.4" (W) x 14.1" (D) x 1.74" (H))

Weight

- 6.2Kg (13.7lbs)

Installation

- Rack mounting

Interface

Ethernet Port

- 10/100BASE-TX: 24, 20, 16, 12, 8, 4 or 0 port
- 100BASE-FX: 0, 4, 8, 12, 16, 20 or 24 ports
- 100BASE-SFP:0 or 24 ports
- Gigabit: 0, 2 or 4 ports
- Gigabit-SFP Combo: 0 or 4 ports

Console Port

- Port: One DB9 RS-232 port LED Indicators
- Per Unit: Power Status
- Per port 10/100TX and 100FX: Link/Activity (Green)
- Per port 10/100/1000TX, 1000SX/LX: Link/Activity (Green)

LED Indicators

- Port Unit: Power
- Per Port: Link/Act (Green)

Environment

Operating Temperature

- -10°C to 60°C (14°F to 140°F)
Tested @ -20°C to 70°C (-4°F to 158°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

EMI

FCC Part 15B, Class A

EN61000-6-4

EN55022

EN61000-3-2

EN61000-3-3

EMS

EN61000-6-2

- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)
- IEC61000-4-10 (Oscillatory wave magnetic field test)
- IEC61000-4-16 (Power frequency immunity test)
- IEC61000-4-18 (Oscillatory wave immunity test)

Environmental Test Compliance

IEC60068-2-6 Fc (Vibration)

IEC60068-2-27 Ea (Shock)

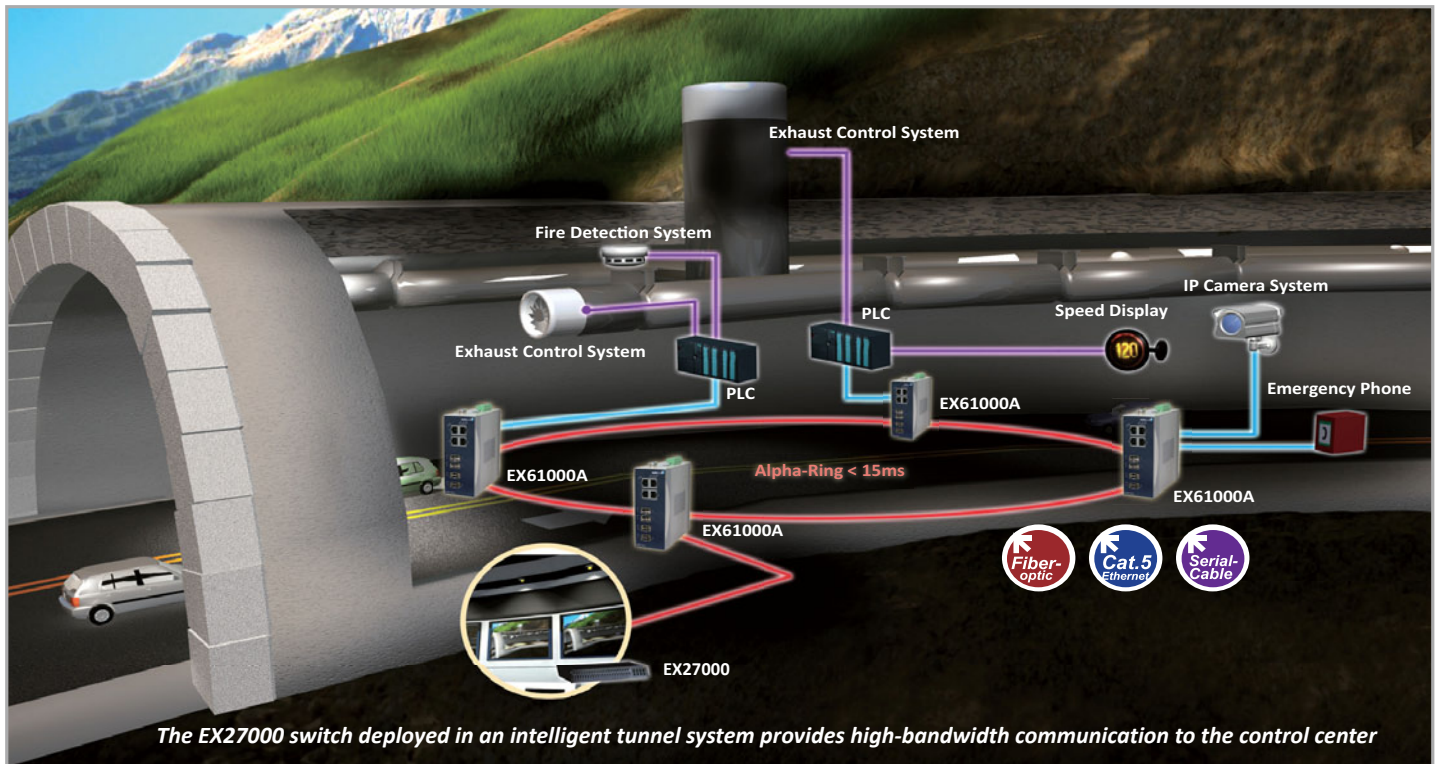
FED STD 101C Method 5007.1 (Free fall w/ package)

Industrial Compliance

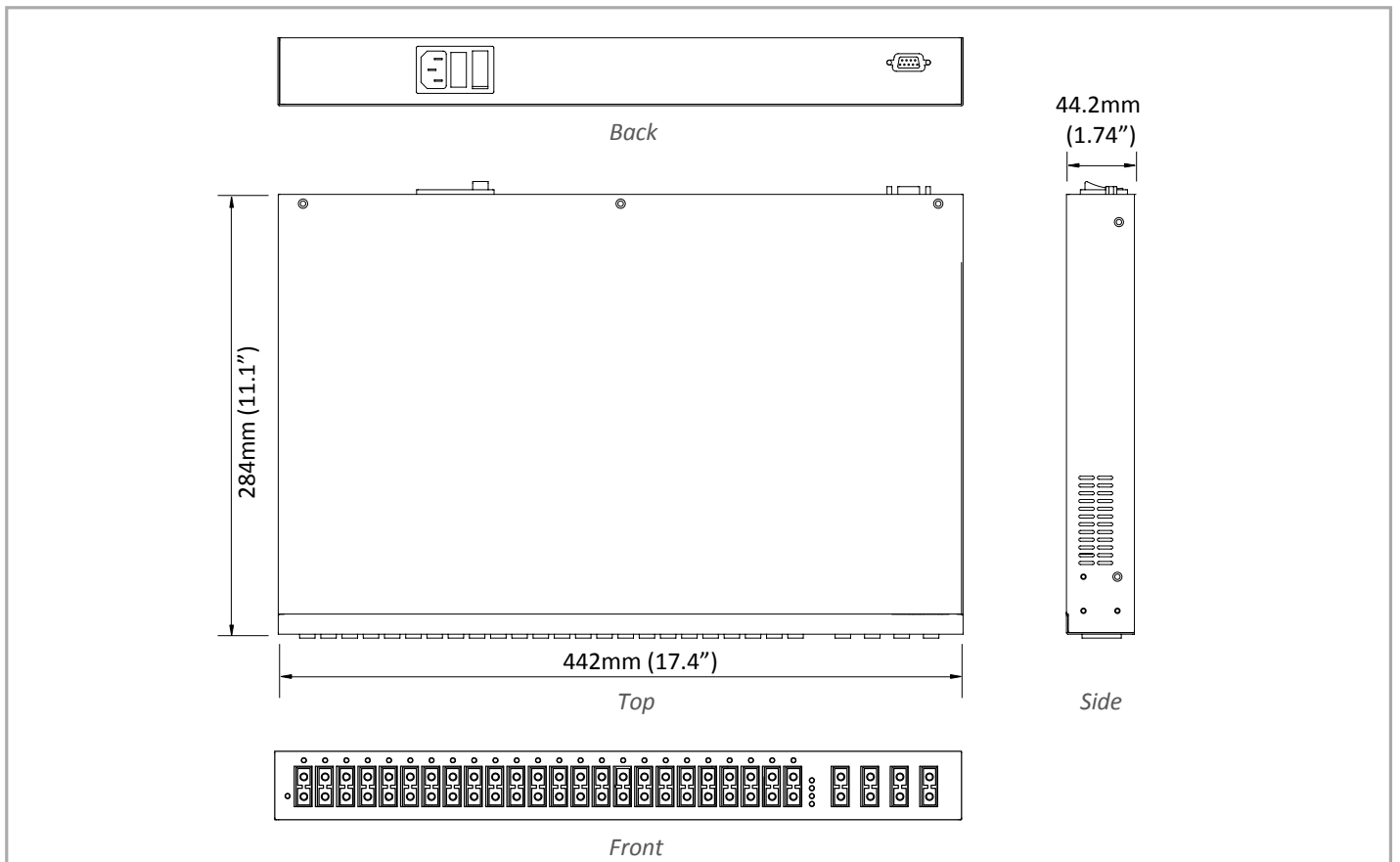
IEC61850-3 / IEEE1613

EN50121-4

Application Diagram



Dimensions



Ordering Information

Model

EX27604-0XYZ	24-port 10/100BASE-TX + 4-port Gigabit Managed Ethernet Switch
EX27424-WXYZ	16-port 10/100BASE-TX + 8-port 100BASE-FX + 4-port Gigabit Managed Ethernet Switch
EX27244-WXYZ	8-port 10/100BASE-TX + 16-port 100BASE-FX + 4-port Gigabit Managed Ethernet Switch
EX27064-WXYZ	24-port 100BASE-FX + 4-port Gigabit Managed Ethernet Switch
EX27064-V0VZ	24-port 100BASE-SFP + 4-port Gigabit SFP Combo Managed Ethernet Switch

* Rack mounting kit included

100FX Fiber Options (W)

1	Multi Mode (SC) - 2Km
2	Multi Mode (ST) - 2Km
6	Multi Mode (SC) WDM-TX:1310nm/RX:1550nm - 2Km
7	Multi Mode (SC) WDM-TX:1550nm/RX:1310nm - 2Km
8	Multi Mode (SC) WDM-TX:1310nm/RX:1550nm - 5Km
9	Multi Mode (SC) WDM-TX:1550nm/RX:1310nm - 5Km
A	Single Mode (SC) - 20Km
B	Single Mode (SC) - 40Km
F	Single Mode (FC) - 20Km
H	Single Mode (ST) - 20Km
P	Single Mode (SC) WDM-TX:1310nm/RX:1550nm - 20Km
Q	Single Mode (SC) WDM-TX:1550nm/RX:1310nm - 20Km
R	Single Mode (SC) WDM-TX:1310nm/RX:1550nm - 40Km
S	Single Mode (SC) WDM-TX:1550nm/RX:1310nm - 40Km

Number of Fixed Gigabit Fibers (X)

0	None
1	One Gigabit fiber port
2	Two Gigabit fiber ports
3	Three Gigabit fiber ports
4	Four Gigabit fiber ports

Gigabit Port Options (Y)

1	10/100/1000BASE-TX
3	1000BASE-SX(SC) - 550m
4	1000BASE-SX (SC) - 2Km
A	1000BASE-LX (SC) - 10Km
B	1000BASE-LX (SC) - 20Km
R	1000BASE-BX (SC) WDM-TX:1310nm/RX:1550nm - 20Km
S	1000BASE-BX (SC) WDM-TX:1550nm/RX:1310nm - 20Km
V	4-port 1000BASE SFP Combo with 10/100/1000BASE-TX

*More Gigabit options also available upon request.

Ordering Information - continued

Power Input Interface (Z)

T	± 48VDC (Terminal Block)
W	88 - 370VDC and 90 - 264VAC (Terminal Block)
C	90 - 264VAC (AC Inlet)
TR	± 48VDC Redundant (Terminal Block)
WR	88 - 370VDC and 90 - 264VAC Redundant (Terminal Block)
CR	90 - 264VAC Redundant (AC Inlet)