EX27000 Series

IEC 61850-3/IEEE 1613 Managed 24-port 10/100BASE and 4-port Gigabit Ethernet Switch with SFP options

Overview

EtherWAN's EX27000 series provides an industrial-grade 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 24 fast Ethernet ports and 4 gigabit uplink ports with fixed fiber or SFP options. Industrial-grade allows for fan-less operation in high EMI and vibration environments with a temperature range from -10 to 60°C (14 to 140°F).

Users are able to access EX27000 management features such as port security, IGMP snooping, VLANs, GARP protocols, and LACP via web browser, Telnet, SNMP, RMON, TFTP, and RS-232 console interfaces.

EX27000 is also comply with IEC 61850-3 and IEEE 1613 certified for power substations and EN 50121-4 certified for railway applications, it can be mountable on a 1U rack, and 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.

EtherWAN — "**When Connectivity is Crucial.**"

Highlights

Certified for applications in electric power substations and railway managements

Compliant with IEC 61850-3 & IEEE 1613, and EN 50121-4 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 to 60°C (14 to 140°F) wide operating temperature

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
IEEE 802.1ab LLDP (Link Layer Discovery Protocol)
IPv4/IPv6

Security

MAC Address by port security
Enable/Disable port
Storm control (Broadcast and multicast types)
IEEE 802.1x LAN access control
Remote authentication through RADIUS and TACAS+
SSH for CLI and Telnet security
SSL for web security
ACL
Multi-level user account/password against unauthorized configuration

Quality of Service (QoS)

Priority Queues: 8 queues per port
Traffic classification based on IEEE 802.1p 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
IEEE 802.3x full duplex mode
Back-Pressure half duplex mode

Redundant Protocol
IEEE 802.1D Spanning Tree Protocol (STP)
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
EtherWAN's Alpha-Ring network fault recovery (<15ms) and Alpha-Chain

VLANs
Port-based VLANs
IEEE 802.1Q 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)
IEEE 802.3ad Link Aggregation Control Protocol

IGMP Snooping
IGMP Snooping v1/v2/v3

Performance

Switching Capability: 12.8Gbps
Jumbo Frame: 9K bytes

Specifications

Technology

Standards
IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX/100BASE-FX
IEEE 802.3ab 1000BASE-T
IEEE 802.3z 1000BASE-SX/1000BASE-LX
IEEE 802.3x Full duplex and flow control
IEEE 802.1p QoS
IEEE 802.1Q Tag VLANs
IEEE 802.1w RSTP
IEEE 802.1x 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
12M bits

Processing Type
Store-and-Forward
Auto Negotiation
Half-duplex back-pressure and IEEE 802.3x full-duplex flow control
Auto MDI/MDIX

Address Table Size
16K MAC addresses

Power

Input
(T): ±48VDC Internal Universal PSU
(W): 88-300VDC or 100-240VAC Internal Universal PSU
(C): 100-240VAC, 50-60Hz Internal Universal PSU

Power Consumption
For models with all copper ports: EX27604 Series: 21.9W@230VAC
For models with all fiber ports: EX27064 Series: 40.6W@230VAC

Mechanical

Casing
Metal Case
IP30

Dimensions
Redundant Power:
442 x 375 x 44mm (W x D x H)
(17.4" x 14.7" x 1.73")
Single Power:
- 442 x 284 x 44.2mm (W x D x H)

- (17.4" x 11.1" x 1.74")

Weight
5Kg (11lbs)

Installation
Rack mounting

Interface

Ethernet Port
10/100BASE-TX: 0, 8, 16 or 24 ports
100BASE-FX: 0, 8, 16 or 24 ports
Gigabit: 4 ports

Console Port
Port: One DB9 RS-232 port

Alarm Contact
One relay output with current 0.6A/30VDC

LED Indicators
Per Unit: Power, Alarm
Per Port: Link/Activity (Green)
Per SFP Port: Selected (Green)

Environment

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

Storage Temperature
-40 to 85°C (-40 to 185°F)

Ambient Relative Humidity
5% to 95% (non-condensing)

Regulatory Approvals

ISO
Manufactured in an ISO 9001 facility

Safety
UL 62368

EMI
FCC Part 15B Class A
EN 61000-6-4

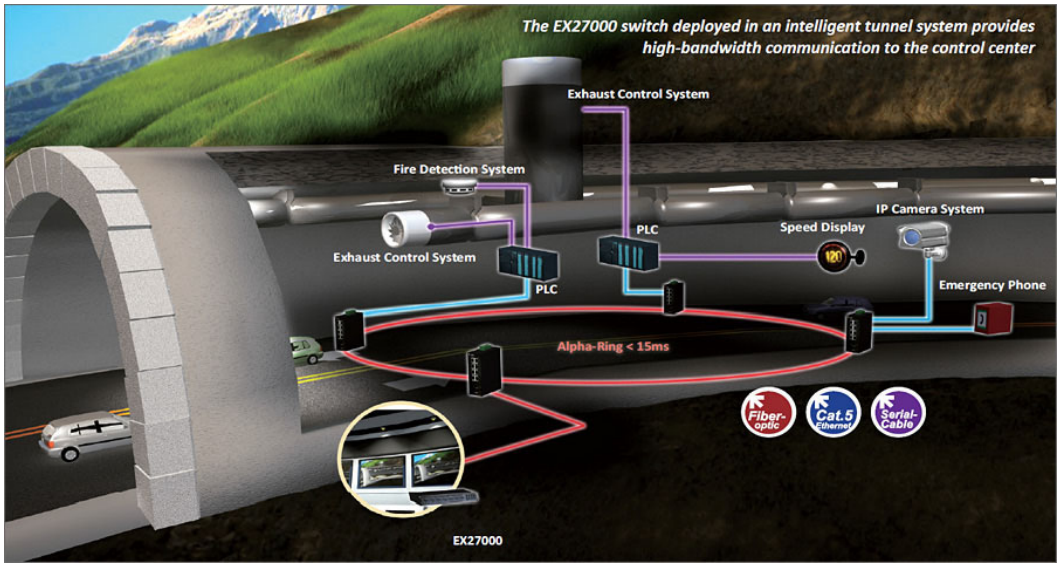
EMS
EN 61000-6-2
- EN 61000-4-2 (ESD Standards)
- EN 61000-4-3 (Radiated RFI Standards)
- EN 61000-4-4 (Burst Standards)
- EN 61000-4-5 (Surge Standards)
- EN 61000-4-6 (Induced RFI Standards)
- EN 61000-4-8 (Magnetic Field Standards)

- IEC 61000-4-10 (Oscillatory wave magnetic field test)
- IEC 61000-4-16 (Power frequency immunity test)

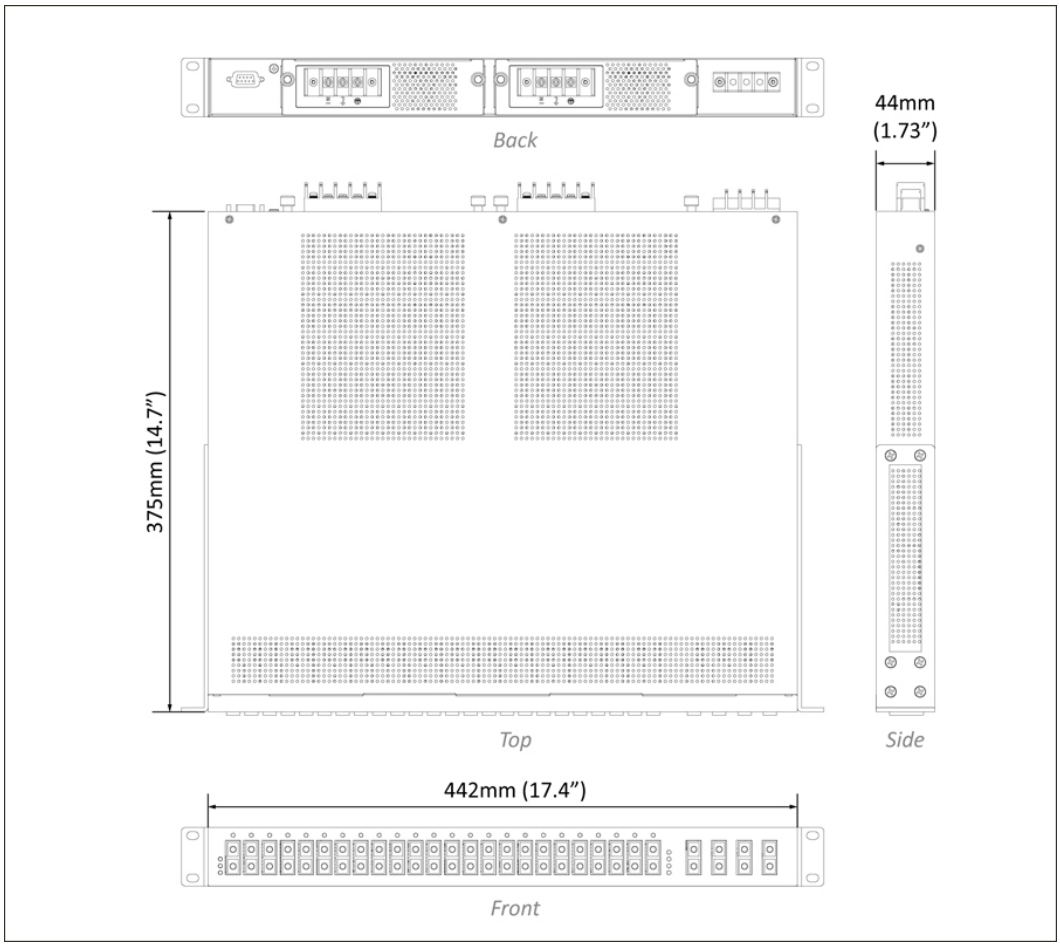
Environmental Test Compliance
FED STD 101C Method 5007.1 (Free fall w/package)
IEC 60068-2-6 Fc (Vibration Resistance)
IEC 60068-2-27 Ea (Shock)

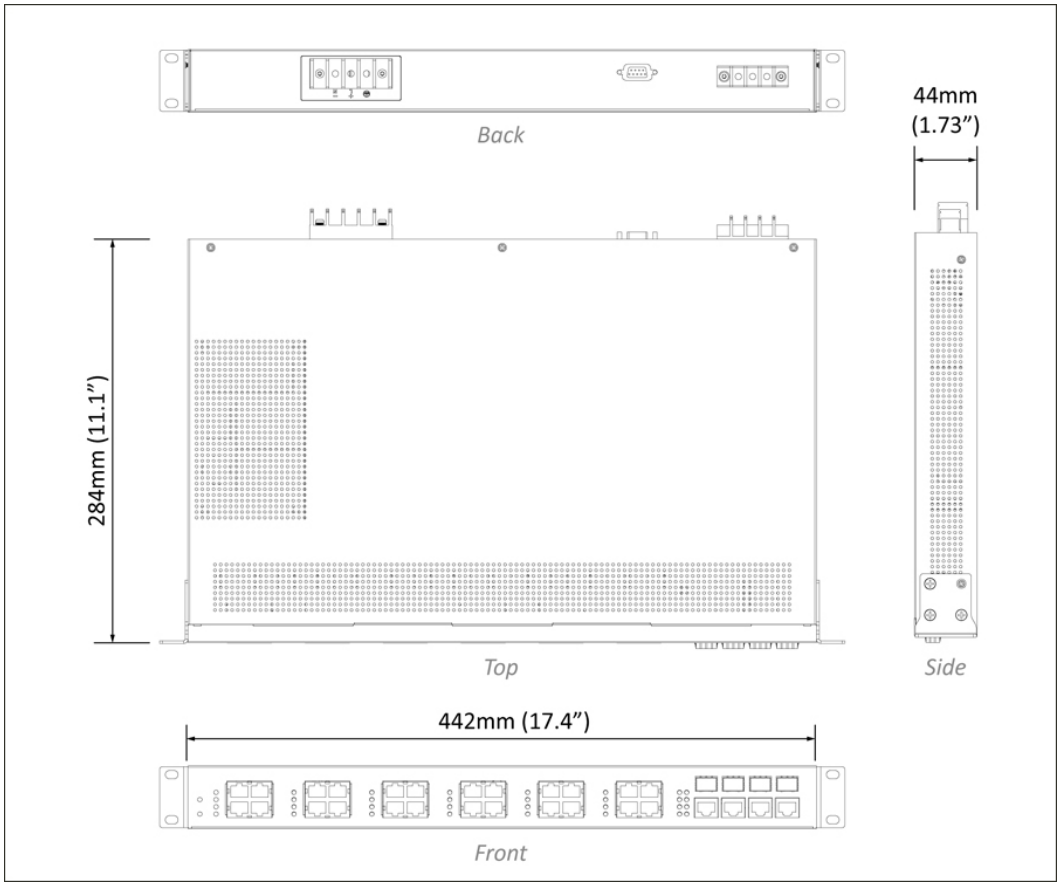
Industrial Compliance
IEC 61850-3/IEEE 1613
EN 50121-4

Application



Dimensions




Back
44mm
(1.73")
284mm (11.1")
Top
Side
442mm (17.4")
Front

Ordering Info

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
P	Single Mode (SC) WDM-TX: 1310nm/RX: 1550nm-20Km
Q	Single Mode (SC) WDM-TX: 1550nm/RX: 1310nm-20Km
V	SFP

Number of Fixed Gigabit Fibers (X)

0	None
4	Four Gigabit Fiber Ports

Gigabit Port Options (Y)

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 100/1000BASE SFP Combo with 10/100/1000BASE-TX

* More Gigabit options also available upon request.

Power Input Interface (Z)

T	±48VDC (Terminal Block)
W	88-300VDC or 100-240VAC (Terminal Block)
C	100-240VAC (AC Inlet)
TR	±48VDC Redundant (Terminal Block)
WR	88-300VDC or 100-240VAC Redundant (Terminal Block)
CR	100-240VAC Redundant (AC Inlet)