

## EX27000 系列

IEC 61850-3/IEEE 1613 網管型 8 - 24 埠 10/100BASE + 4 埠 Gigabit 乙太網路交換器 (SFP選擇組合)



### 產品介紹

EX27000系列為1U機架式安裝設計，具備24個10/100BASE乙太網路連接埠及四個Gigabit光纖埠(可彈性搭配固定式光纖或SFP Combo光纖插槽)，符合EN 50121-4和IEC 61850-3標準，可應用於變電所自動化系統和軌旁應用。

支援益網獨家技術Alpha-Ring環狀網路備援機制，可在網路發生斷線時迅速啟動備援機制，小於15毫秒內便可快速恢復連線通訊。具備完整管理功能，包含port security、IGMP snooping、VLANs、GARP協定、LACP和GOOSE；使用者可透過網頁瀏覽telnet、SNMP、RMON、TFTP和RS-232 console管理介面，使複雜的專案規劃事半功倍。

EtherWAN — "When Connectivity is Crucial."

### 產品亮點

#### + 符合變電站和軌旁管理應用設計

符合IEC 61850-3、IEEE 1613和EN 50121-4認證標準

#### + 多元彈性介面組合

支援24個10/100base-TX/FX/BX/SFP加4埠Gigabit光纖埠-SX/LX/BX/SFP

#### + 備援電力輸入

支援AC&DC雙備援電源輸入

#### + 工業等級設計

無風扇和堅固的金屬外殼設計，操作溫度(-10到60°C)，可有效避免高溫及高濕度環境導致材質老化

## 產品特色

### + 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+

SSHv1/v2 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

## 產品規格

### + 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

### + 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)

## + 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

## + 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)

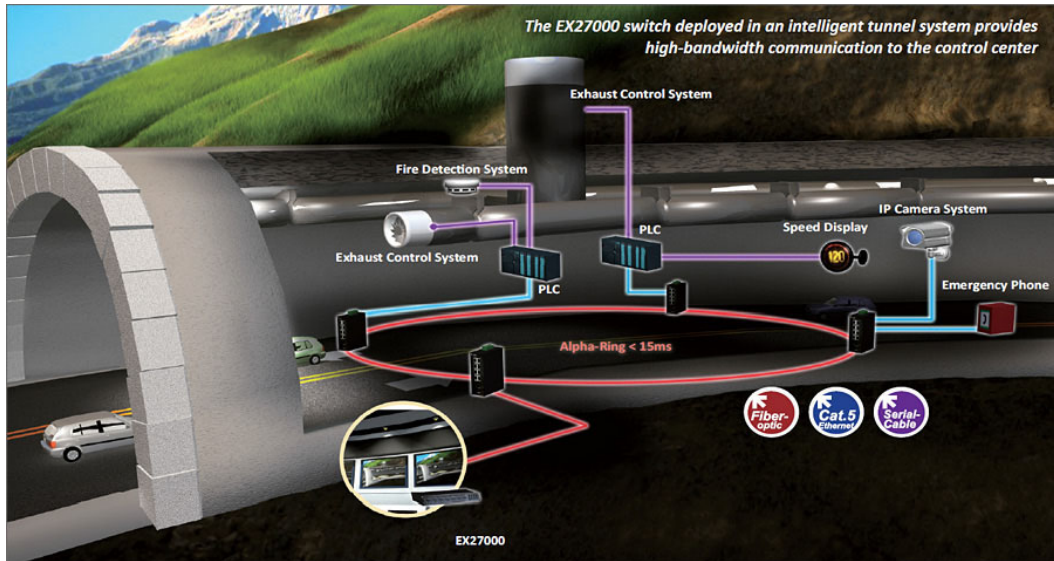
### Environmental Test Compliance

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

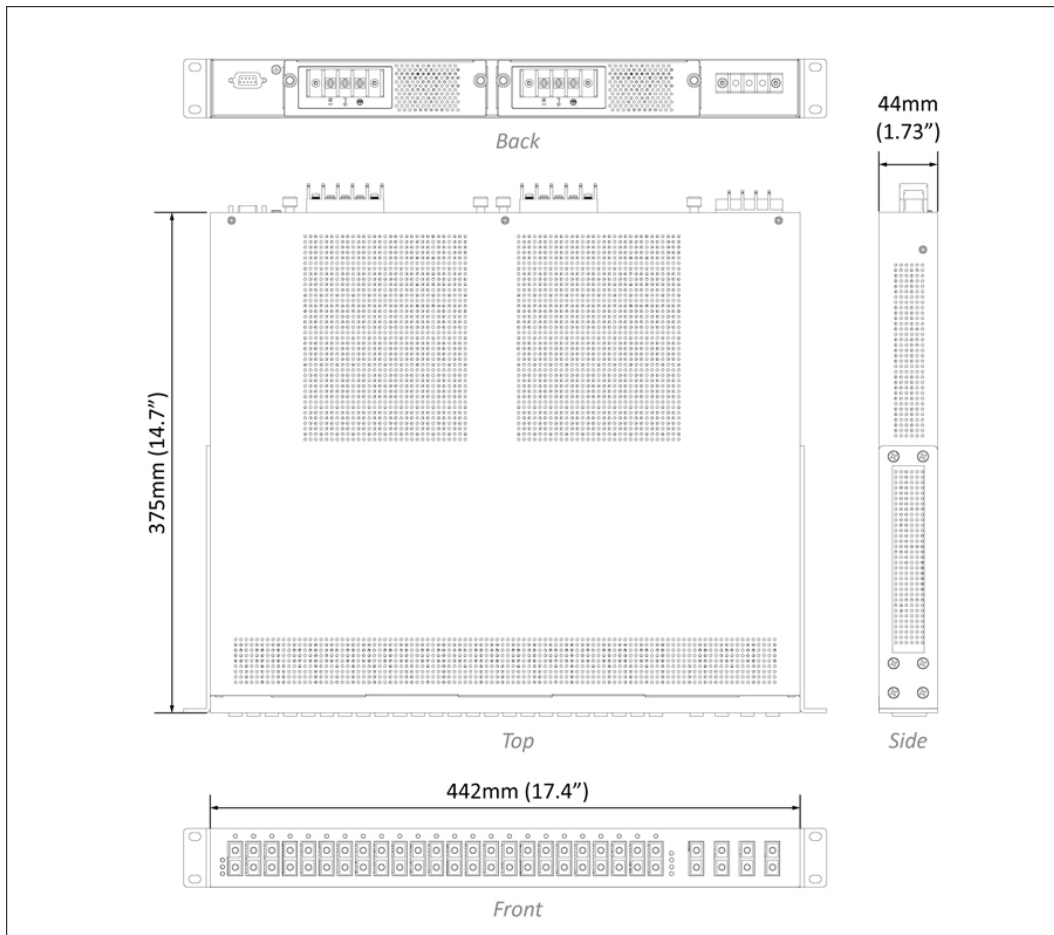
### Industrial Compliance

IEC 61850-3/IEEE 1613  
EN 50121-4

## 產品應用圖



## 產品尺寸圖



## 訂購型號

### + 型號

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)

<b>C</b>	100-240VAC (AC Inlet)
<b>TR</b>	±48VDC Redundant (Terminal Block)
<b>WR</b>	88-300VDC or 100-240VAC Redundant (Terminal Block)
<b>CR</b>	100-240VAC Redundant (AC Inlet)



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