

## EX29000 系列

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



## 產品介紹

**本產品自 2020年5月26日起停產。請點選 [此處](#) 尋找替代產品。**

EX29000系列為1U機架式、模組化設計，具備28個10/100BASE乙太網路連接埠或模組式介面，可搭配傳輸速率10/100Mbit及最高可達四個Gigabit埠(可彈性搭配固定式光纖或SFP光纖插槽)。產品符合IEC 61850-3 & IEEE 1613標準，能有效抗電磁波干擾。

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。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，於小於15毫秒內便可快速恢復連線通訊。

EtherWAN — "When Connectivity is Crucial."

## 產品亮點

### 多元彈性介面組合

- » 支援模組式24個10/100base-TX/FX/BX/SFP加4埠Gigabit TX/SX/LX/BX/SFP

### 通過IEC 61850-3 & IEEE 1613標準

- » 符合電廠認證標準
- » 抗震動及抗電磁波干擾
- » 無風扇和堅固的金屬外殼設計，可有效避免高溫及高濕度環境導致材質老化
- » 寬溫操作(-10到60°C)

## 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
  - » SFP transceivers support Digital Diagnostics Monitoring (DDM)
  - » NTP (Network Time Protocol) time synchronization
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### Security

- » MAC Address by port security
  - » Enable/disable port
  - » Storm control (broadcast and multicast types)
  - » IEEE802.1x LAN access control
  - » Remote authentication through RADIUS
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### 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)
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### 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
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## Performance

- » Switching Capability: 12.8Gbps
  - » Packet Buffer Size: 3Mbits
  - » MAC Address Table: 8K
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## 產品規格

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

#### Address Table Size

- 8192 MAC addresses

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### 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.

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## Mechanical

### Casing

Metal Case

IP30

### Dimensions

Single Power:

442mm (W) x343mm (D) x 44.2mm (H)

17.4" (W) x 13.5" (D) x 1.74" (H)

Redundant Power:

442mm (W) x404mm (D) x 44.2mm (H)

(17.4" (W) x 15.9"(D) x 1.74" (H))

### Weight

Single Power: 4.4Kg (9.68lbs.)

Redundant Power: 4.6 kg (10.1 lbs.)

### Installation

Rack mounting

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## Interface

### Ethernet Port

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

### Console Port

- Port: One DB9 RS-232 port

### Alarm Contact

- One relay output with current 1A@24VDC

### LED Indicators

- Per Unit: Power

- Per Port: Link/Act (Green)
  - Per SFP Slot: Selected/Unselected (Green)
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## 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)
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## Regulatory Approvals

### ISO

- Manufactured in an ISO 9001 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 (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)

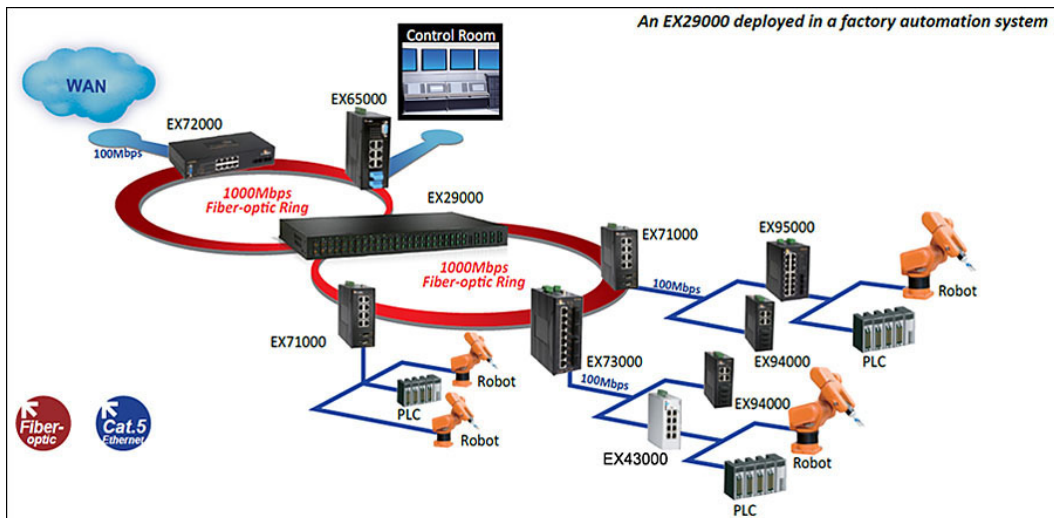
### Environmental Test Compliance

IEC60068-2-6 Fc (Vibration Resistance)

## Industrial Compliance

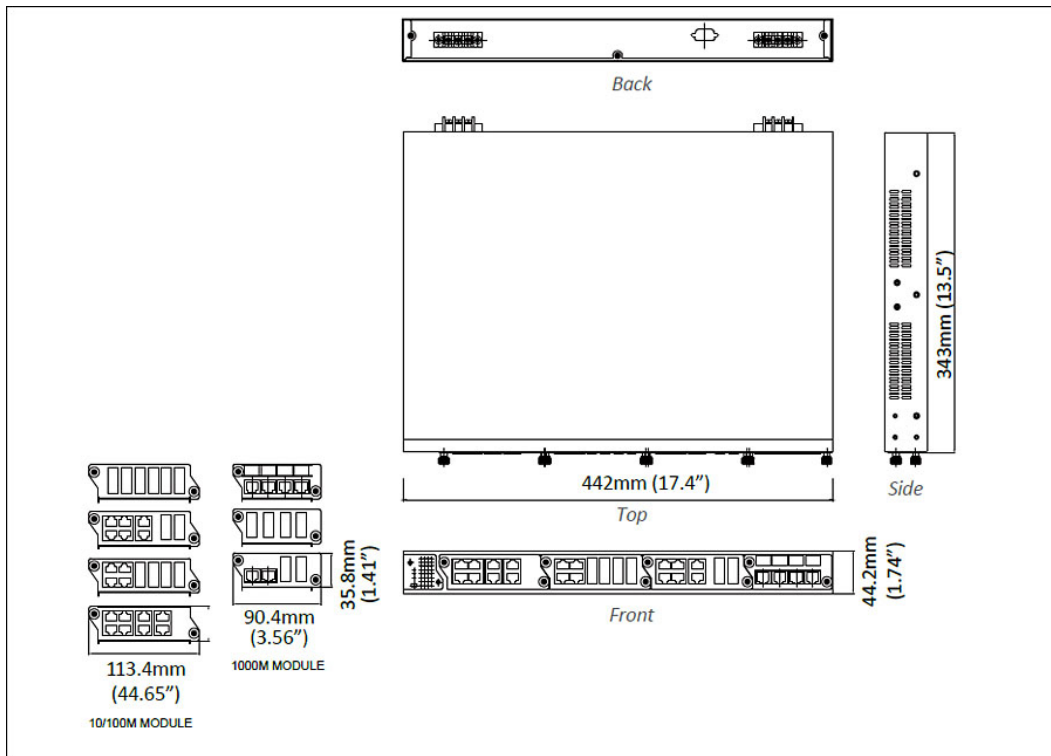
IEC61850-3 / IEEE1613

## 產品應用圖





# 產品尺寸圖



## 訂購型號

### Model

<b>EX29000-00Z</b>	IEC61850-3/IEEE1613 Modularized Managed 24-port 10/100BASE and 4-port Gigabit Ethernet Switch with SFP options
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\* Rack mounting kit included

### Modules for EX29000 Series

Model	Description	Slot 1	Slot 2	Slot 3	Slot 4
<b>M29800-000</b>	8-Port 10/100BASE TX	YES	YES	YES	
<b>M29620-W00</b>	6-Port 10/100BASE TX + 2-Port 100BASE FX	YES	YES	YES	
<b>M29420-W00</b>	4-Port 10/100BASE TX + 2-Port 100BASE FX	YES	YES	YES	
<b>M29060-W00</b>	6-Port 10/100BASE FX	YES	YES	YES	
<b>M29240-W00</b>	2-Port 10/100BASE TX + 4-Port 100BASE FX	YES	YES	YES	
<b>M29440-W00</b>	4-Port 10/100BASE TX + 4-Port 100BASE FX	YES	YES	YES	
<b>M29004-0XY</b>	4-Port Gigabit				YES

### 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
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
4	Four Gigabit fiber ports

\* More Gigabit options also available upon request.

### Gigabit Port Options (Y)

1	10/100/1000BASE-TX
3	1000BASE-SX (SC) - 550m
4	1000BASE-SX (SC) - 2Km
5	1000BASE-SX (ST) - 550m
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

<b>V</b>	4-port 1000BASE SFP Combo with 10/100/1000BASE-TX
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## Power Input Interface (Z)

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

