

## EX89000 系列

IEC 61850-3/IEEE 1613強固級網管型模組式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。**

EX89000系列為機架式模組化設計的網管型乙太網路交換器，使用者可視需求透過24埠10/100BASE乙太網路連接埠及4個Gigabit埠(可彈性搭配固定式光纖或SFP光纖插槽)，組合出不同合適的傳輸解決方案。

EX89000系列具備完整管理功能，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，透過益網獨家技術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15毫秒內便可快速恢復連線通訊。

EX89000系列專為嚴峻戶外環境設計打造，採工業等級設計且符合IEC 61850 & IEEE 1613標準，可在高EMI環境及-40 到 75°C 寬溫環境下穩定運作，是您在各類專案規劃中傳輸首選。

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

### 強固等級設計

- » 寬溫操作(-40 到75°C)
- » 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
- » 抗震動及抗電磁波干擾

### 通過IEC 61850-3 & IEEE 1613標準

- » 符合電廠認證標準

## 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)
  - » Port mirroring: TX/RX and both
  - » 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)
  - » IEEE 802.1x 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 IEEE 802.1p 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
  - 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)
  - Supports EtherWAN's Alpha-Ring topology for less than 15ms fault recovery time
- » 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
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## Performance

- » Switching Capability: 12.8Gbps
  - » Packet Buffer Size: 3M bits
  - » MAC Address Table: 8192
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## 產品規格

### 技術

#### 標準

- 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

#### 緩衝記憶體封包

- 3M bits

#### 傳輸型式

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

#### MAC地址表

- 8192 MAC addresses
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### 電源

#### 輸入電壓

- (T):  $\pm 48\text{VDC}$  (36–75VDC) Internal Universal PSU
- (W): 88–370VDC and 90–264VAC Internal Universal PSU
- (C): 90–264VAC, 50–60Hz Internal Universal PSU

- (TR):  $\pm 48$ VDC Redundant (Terminal Block)
- (WR): 88–370VDC and 90-264VAC Redundant (Terminal Block)
- (CR): 90–264VAC Redundant (AC Inlet)

## 電力功耗

- 42.7W Max.
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## 機構

### 機殼

- 金屬材質
- IP30

### 尺寸

- Single Power:  
442 x 343 x 44.2mm (W x D x H)  
(17.4" x 13.5" x 1.74")
- Redundant Power:  
442 x 404 x 44.2mm (W x D x H)  
(17.4" x 15.9" x 1.74")

### 重量

- Single Power: 4.5Kg (9.9lbs.)
- Redundant Power: 4.6 kg (10.1 lbs.)

### 安裝方式

- Rack mounting
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## 介面

### 乙太網路埠

- 10/100BASE-TX: 24, 16, 8 or 0 port
- 100BASE-FX: 0 to 18 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 指示燈號

- Per Unit: Power
  - Per Port: Link/Activity (Green)
  - Per SFP slot: Selected/Unselected (Green)
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## 環境

### 工作溫度

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

### 儲存溫度

- -45 to 85°C (-49 to 185°F)

### 工作濕度

- 5% to 95% (無凝結)
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## 通過認證

### ISO

- Manufactured in an ISO 9001 facility

### EMI

FCC Part 15B Class A

EN 61000-6-4

EN 55022

EN 61000-3-2

EN 61000-3-3

### 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

IEC 60068-2-6 Fc (Vibration Resistance)

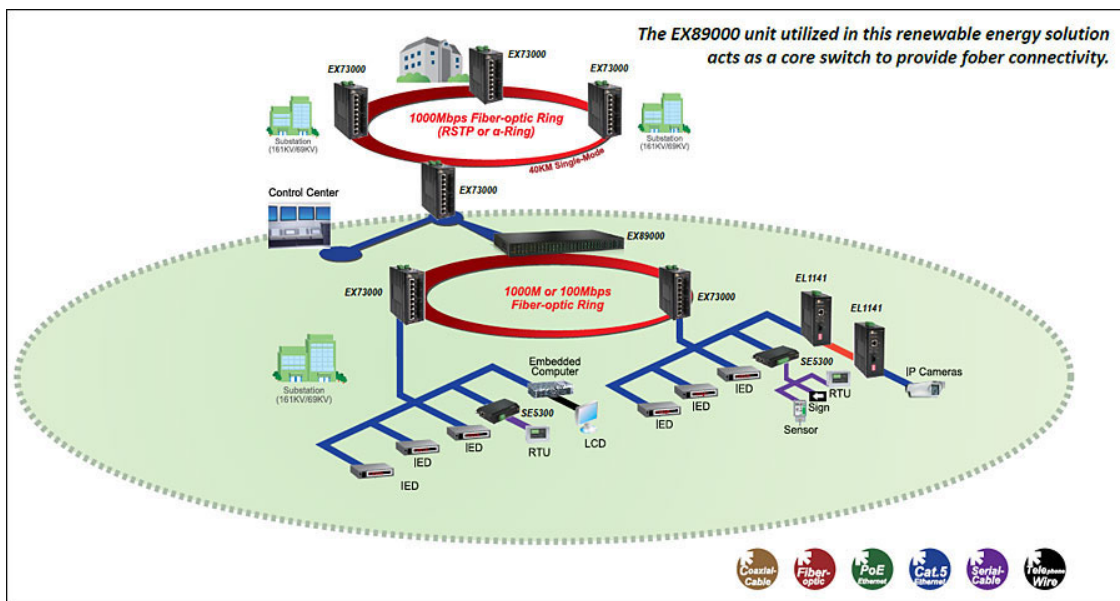
FED STD 101C Method 5007.1 (Free fall w/package)

## Industrial Compliance

IEEE 61850-3/IEEE 1613

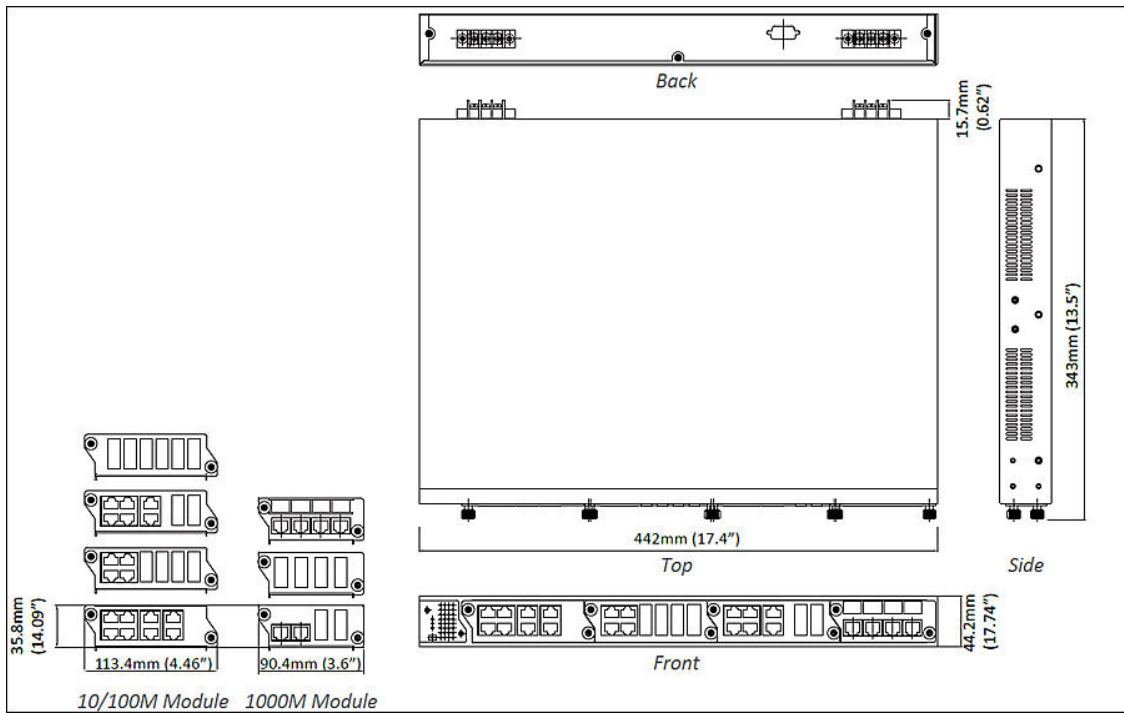
EN 50121-4

## 產品應用圖





# 產品尺寸圖



## 訂購型號

### 型號

<b>EX89000-00Z</b>	Rack mount chassis with integrated power supply for four M89000 modules
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\* Rack mounting kit included.

### Modules for EX89000 Series

Model	Description	Slot 1	Slot 2	Slot 3	Slot 4
<b>M89800-000</b>	8-Port 10/100BASE TX	YES	YES	YES	
<b>M89620-W00</b>	6-Port 10/100BASE TX + 2-Port 100BASE FX	YES	YES	YES	
<b>M89420-W00</b>	4-Port 10/100BASE TX + 2-Port 100BASE FX	YES	YES	YES	
<b>M89060-W00</b>	6-Port 10/100BASE FX	YES	YES	YES	
<b>M89240-W00</b>	2-Port 10/100BASE TX + 4-Port 100BASE FX	YES	YES	YES	
<b>M89440-W00</b>	4-Port 10/100BASE TX + 4-Port 100BASE FX	YES	YES	YES	
<b>M89004-0XY</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

\* More 100FX Fiber options also available upon request.

## Number of Fixed Gigabit Fibers (X)

0	None
4	Four Gigabit fibrt 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

<b>S</b>	1000BASE-BX (SC) WDM-TX:1550nm/RX: 1310nm - 20Km
<b>V</b>	4-port 1000BASE SFP Combo with 10/100/1000BASE-TX

\* More Gigabit options also available upon request.

## 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)

