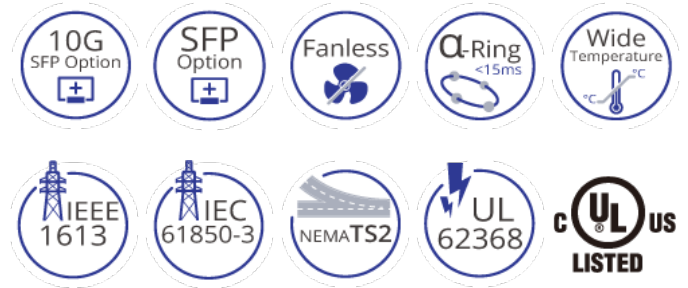


## EX77900 系列

IEC 61850-3/IEEE 1613 Lite L3 強固級網管型 24埠Gigabit +4埠1G/10G SFP+ 乙太網路交換器



## 產品亮點

### 強固等級設計

- » 寬溫操作(-40到75°C)
- » 無風扇設計
- » 抗高衝擊和抗電磁波干擾

### 10GbE 網路介面

- » 提供4埠10G SFP+介面，可上傳連接核心網路交換器

### Lite Layer 3 路由功能

- » 支援靜態路由、RIP v1/v2和OSPF
- » 最多可支援路由(硬體)數量: 64 entries
- » 支援虛擬路由備援協定(VRRP)

## 產品介紹

益網科技EX77900系列，為一款強固等級設計、full-Gigabit並結合Layer3路由協定功能之交換器。支援靜態路由、路由信息協議(RIP) V1/V2和虛擬路由備援協定(VRRP)，擁有高擴充性、高安全性並符合成本效益。

EX77900系列依需求挑選28個Gigabit埠，或24個網路埠搭配4個10G SFP+ 組合，支援上傳連接至核心網路。1U機架式安裝，內建益網科技獨家Alpha-Ring self-healing自癒技術，提供網路斷線回覆時間小於15毫秒，可完美應用於嚴苛的網路架構環境。

完整的管理功能: port security, IGMP snooping, port-based VLAN, GARP 協定, link aggregation 及 ACL, 網路瀏覽介面, telnet, SSH, SNMP, RMON, TFTP, 和RS-232 管理介面。強固等級設計，可於-40 到75°C之寬溫環境下穩定運作，並符合 IEC 61850 & IEEE 1613認證規範，可抗高電磁波環境之干擾。

EtherWAN — "When Connectivity is Crucial."

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

### Security

- » MAC address filtering
  - » Enable/Disable port
  - » Storm control (Broadcast and multicast types)
  - » IEEE 802.1x LAN access control
  - » Remote authentication through RADIUS and TACACS+
  - » 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 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
- IEEE 802.1Q Tag VLANs (128 groups, 4096 VID)
  - GVRP (GARP VLAN Registration Protocol)
  - GMRP (GARP Multicast Registration Protocol)
- » Link Aggregation
- Static Trunk (4 groups, support MAC base)
  - IEEE 802.3ad Link Aggregation Control Protocol
- » IGMP Snooping
- IGMP Snooping v1/v2/v3
- 

## Layer 3 Features

- » Routing Protocols
- Maximum number of routes in hardware:64 entries
  - Static routing
  - RIP v1/v2
  - OSPF v2
- » Routing Redundancy
- VRRP
-

## 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
- 14,881,000pps for 10Gbps

#### 緩衝記憶體封包

- 12M 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

- 16K MAC addresses
- 

### 電源

#### 輸入電壓

- Power input can be configured as:

1.  $\pm 48$ VDC (Terminal Block)
2. 88-300VDC or 100-240VAC (Terminal Block)
3. 100-240VAC (AC Inlet)
4.  $\pm 48$ VDC Redundant (Terminal Block)
5. 88-300VDC or 100-240VAC Redundant (Terminal Block)
6. 100-240VAC Redundant (AC Inlet)

### 電力功耗

- 31.08W
- 

### 機構

#### 機殼

- 金屬材質
- IP30

#### 尺寸

- 430 x 375 x 44.2mm (W x D x H)  
(16.9" x 14.7" x 1.74")

#### 重量

- 5.27kg

#### 安裝方式

- Rack mounting
- 

### 介面

#### 乙太網路埠

- 10/100/1000BASE-TX: 16 or 24 ports
- 100/1000BASE-SX/LX/BX/SFP: 8 ports
- 10G SFP+: 4 ports

#### Console Port

- One DB9 RS-232 port

#### USB Port

- One USB Port (Type A connector)

### Alarm Contact

- One relay output with current 0.6A/30VDC

### LED 指示燈號

- Per Unit: Power 1, Power 2, Alarm
  - Per Port: Link/Activity (Green)
- 

## 環境

### 工作溫度

- -40 to 75°C (-40 to 167°F)

### 儲存溫度

- -45 to 85°C (-49 to 185°F)

### 工作濕度

- 5% to 95% (無凝結)
- 

## 通過認證

### ISO

- Manufactured in an ISO 9001 facility

### Safety

UL 62368

### EMI

FCC Part 15B Class A

VCCI Class A

EN 61000-6-4

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)

### **Environmental Test Compliance**

IEC 60068-2-6 Fc (Vibration Resistance)

IEC 60068-2-27 Ea (Shock)

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

### **Industrial Compliance**

IEC 61850-3/IEEE 1613

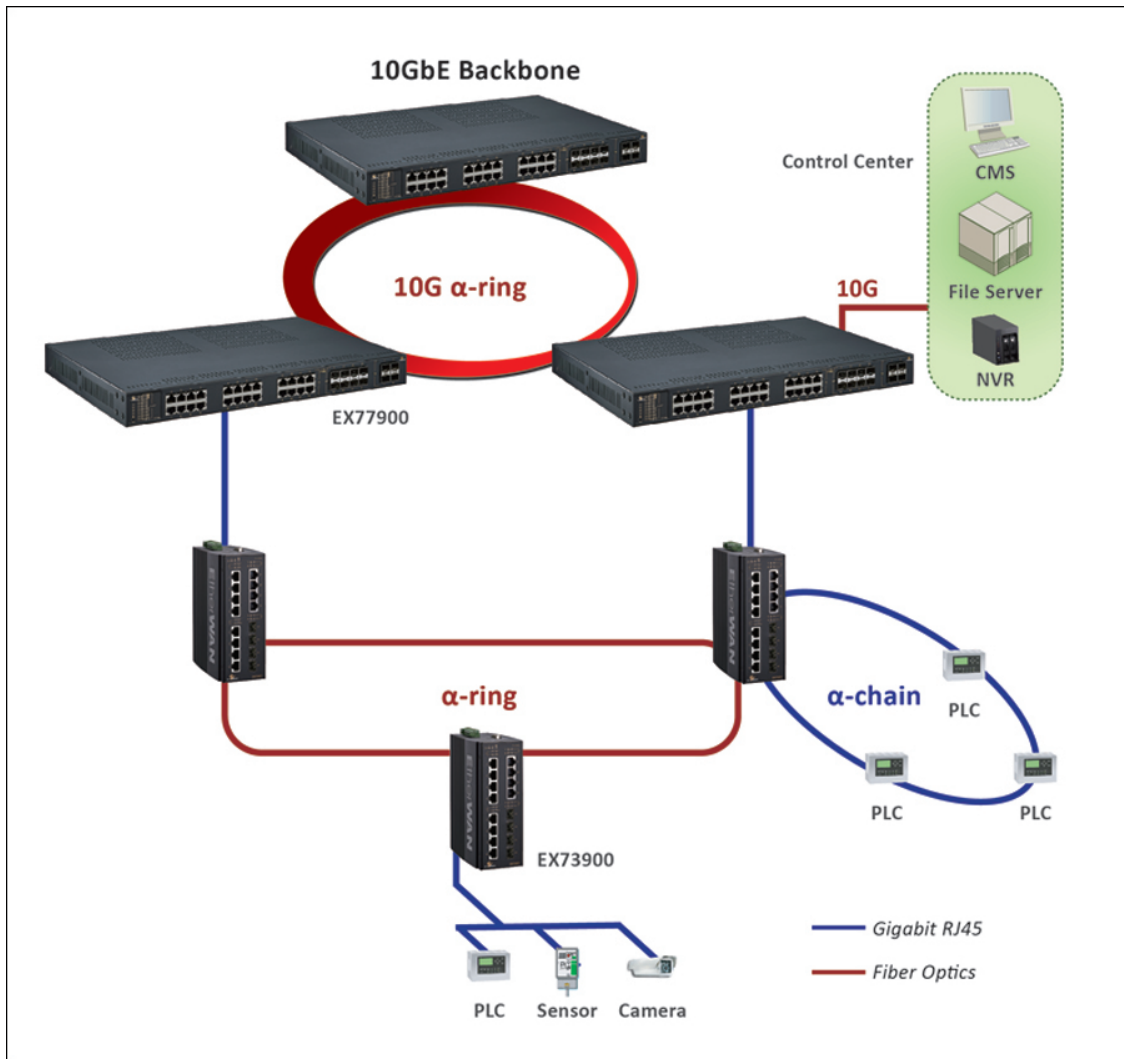
EN 50121-4

NEMA TS2

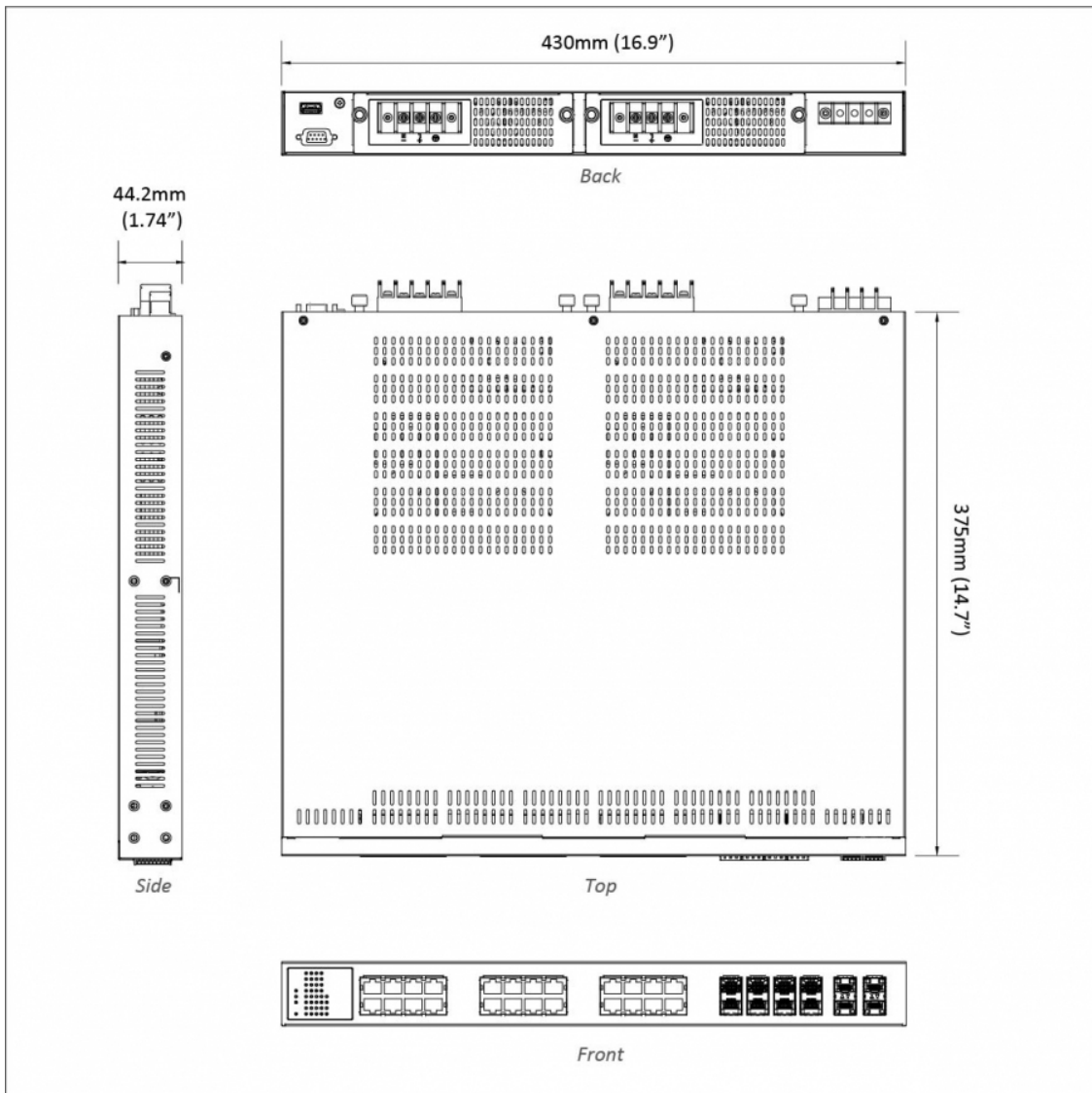
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# 產品應用圖



# 產品尺寸圖



## 訂購型號

### 型號

<b>EX77964-8VZ</b>	16-port 10/100/1000BASE-TX +8-port 100/1000BASE SFP Combo +4-port 1G/10G SFP+ Hardened Managed Ethernet Switch
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### Power Input Interface (Z)

<b>T</b>	±48VDC (Terminal Block)
<b>W</b>	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)

### Optional Accessory

<b>EB-232</b>	Configuration Backup and Restoration Tool for EtherWAN switch with firmware 2.01.1 or above
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