

## EX77000 系列

強固級網管型 24 埠10/100BASE + 4 埠 Gigabit 乙太網路交換器 (SFP 選擇組合)



### 產品介紹

EX77000系列配備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光纖插槽)，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毫秒內快速恢復連線通訊。本系列乙太網路交換器同時支援Redundant Pair協定，可將不同的備援環狀網路串接在一起，大幅延伸備援機制架構，最高可同時支援235個環狀網路，在50毫秒內回復網路連線。

EX77000系列具備完整管理功能，包含port security、IGMP snooping、VLANs、GARP 協定、LACP；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。EX77000系列專為嚴峻戶外環境設計打造，工業等級設計，可在高EMI環境及-40 到 75°C 寬溫環境下穩定運作。

EtherWAN — "When Connectivity is Crucial."

## 產品亮點

### + 多元彈性介面組合

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

### + KEMA認證

通過KEMA、IEC 61850-3和IEEE 1613標準測試

### + 強固等級適用於不通風的惡劣環境

-40 至 75°C (-40 至 167°F)的寬工作溫度範圍  
無風扇設計  
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  
高衝擊、耐熱和電氣干擾抵抗力

## 產品特色

### + Interface

CLI, Telnet and Web Browser  
SNMP v1/v2c/v3

### + Management

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  
System log (Remote/Local)  
Multi-level user account/password against unauthorized configuration

### + 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**  
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

### + Power

#### Input

Power input can be configured as:

- (T):  $\pm 48\text{VDC}$  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: EX77604 Series:

21.9W@230VAC

For models with all fiber ports: EX77064 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 250 x 44.2mm (W x D x H)  
 (17.4" x 9.8" 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

One DB9 RS-232 port

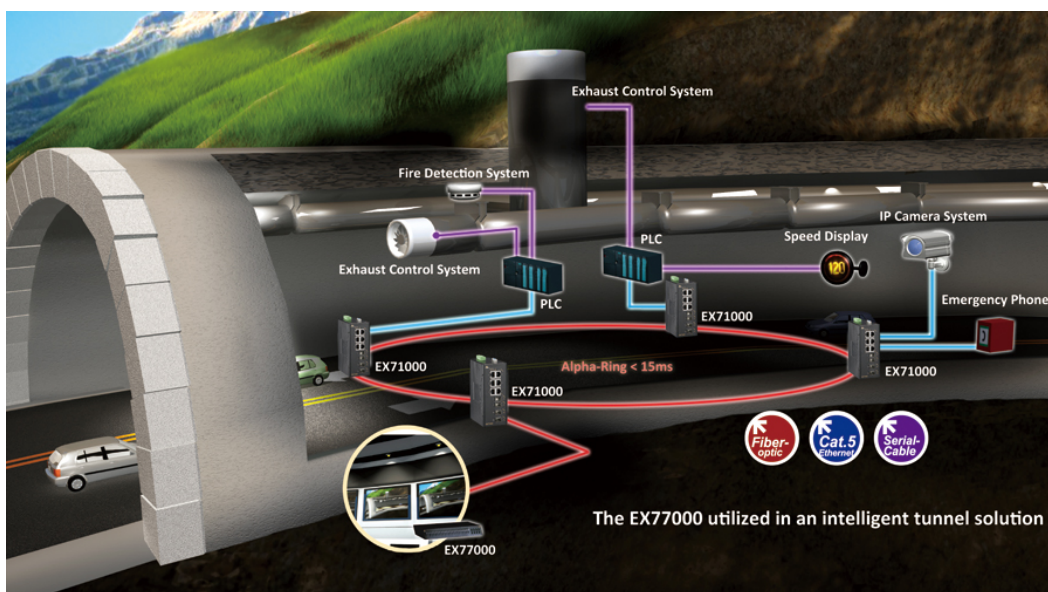
### Alarm Contact

One relay output with current 0.6A/30VDC

### LED Indicators

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

## 產品應用圖



F)  
 0 to 185°F)

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ls

9001 facility

### 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)

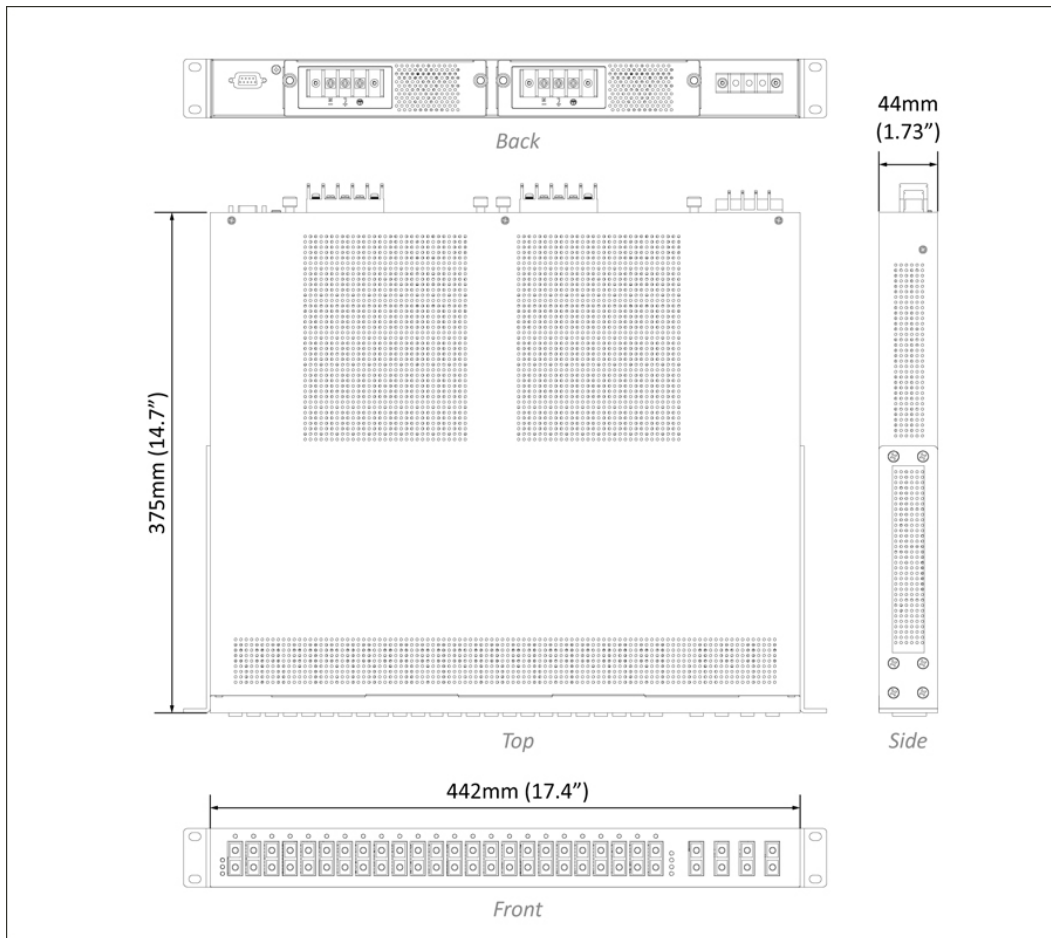
### Environmental Test Compliance

- 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

- NEMA TS2

# 產品尺寸圖



## 訂購型號

### 型號

EX77604-0XYZ	24-port 10/100BASE-TX +4-port Gigabit Managed Ethernet Switch
EX77424-WXYZ	16-port 10/100BASE-TX +8-port 100BASE-FX +4-port Gigabit Managed Ethernet Switch
EX77244-WXYZ	8-port 10/100BASE-TX +16-port 100BASE-FX +4-port Gigabit Managed Ethernet Switch
EX77064-WXYZ	24-port 100BASE-FX +4-port Gigabit Managed Ethernet Switch
EX77064-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
A	Single Mode (SC) - 20Km
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
V	SFP

### Numbers of fixed Gigabit Fiber (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

<b>R</b>	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 100/1000BASE SFP Combo with 10/100/1000BASE-TX

## 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)

