EX87000 系列

IEC 61850-3/IEEE 1613 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

EX87000系列為1U機架式安裝設計，提供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)，確保各類應用的組合需求。EX87000系列符合IEC 61850 & IEEE 1613標準，工業等級設計，可耐受高EMI干擾環境並在-40 到 75°C環境下穩定運作，與週邊各種設備相互連接，是絕佳的電力網路管理專用機。

EX87000系列可搭配益網獨家技術α-Ring環狀網路備援機制，在網路發生斷線時迅速啟動備援，於15毫秒內便可快速恢復連線通。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

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

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

KEMA認證

通過KEMA、IEC 61850-3和IEEE 1613標準測試

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+

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: 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

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

One DB9 RS-232 port

Alarm Contact

One relay output with current 0.6A/30VDC

LED Indicators

Per Unit: Power 1, Power 2, Alarm

Per Port: Link/Activity (Green)

Per SFP Slot: Selected (Green)

Environment

Operating Temperature

-40 to 75°C (-40 to 167°F)

Tested @ -40 to 85°C (-40 to 185°F)

Storage Temperature

-45 to 85°C (-49 to 185°F)

Ambient Relative Humidity

5% to 95% (non-condensing)

Power

Input

Power input can be configured as:

• ±48VDC (Terminal Block)

• 88-300VDC or 100-240VAC (Terminal Block)

• 100–240VAC (AC Inlet)

Power Consumption

For models with all copper ports: EX87604 Series: 21.9W@230VAC

For models with all fiber ports: EX87064 Series: 40.6W@230VAC

Mechanical

Casing

Metal Case

IP30

Dimensions

442 x 375 x 44mm (W x D x H)
(17.4" x 14.7" x 1.73")

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

• IEC 60068-2-6 Fc (Vibration Resistance)

• IEC 60068-2-27 Ea (Shock)

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

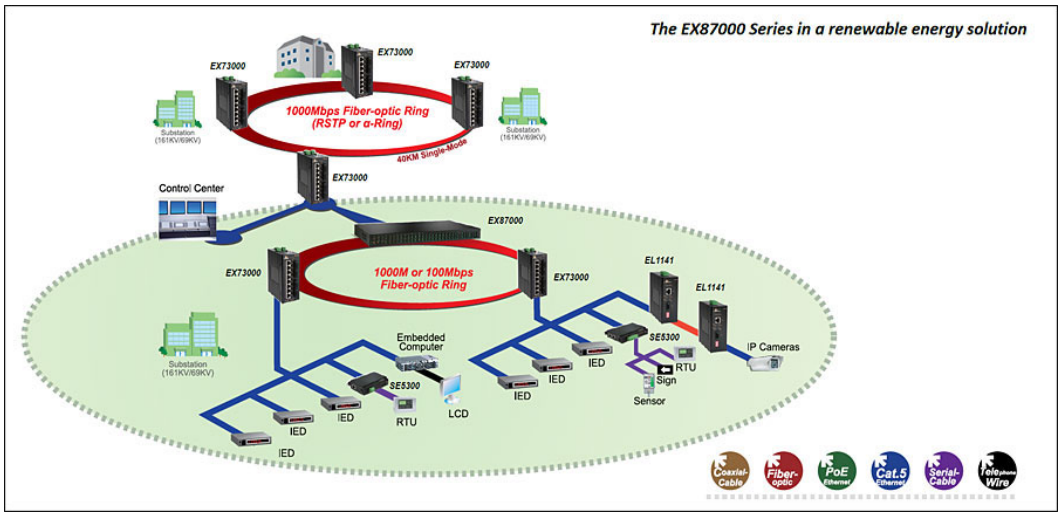
Industrial Compliance

• IEC 61850-3/IEEE 1613/IEC 60255-27

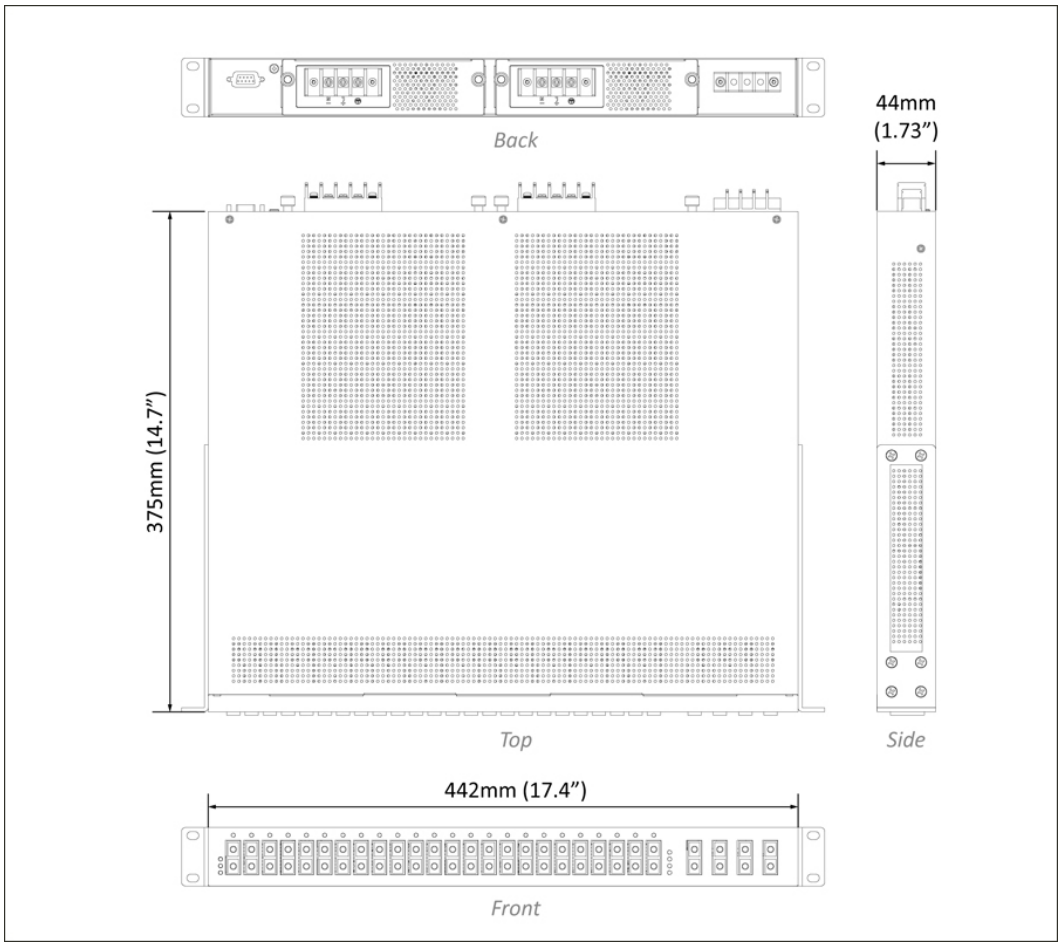
• EN 50121-4

• NEMA TS2

產品應用圖


The EX87000 Series in a renewable energy solution
EX73000
EX73000
EX73000
1000Mbps Fiber-optic Ring
(RSTP or α-Ring)
40KM Single-Mode
Substation
(161KV/69KV)
Substation
(161KV/69KV)
EX73000
Control Center
EX87000
EX73000
1000M or 100Mbps
Fiber-optic Ring
EX73000
EL1141
EL1141
SE5300
IP Cameras
RTU
Sign
Sensor
Embedded
Computer
IED
IED
IED
SE5300
LCD
IED
IED
RTU
IED
Coaxial-Cable
Fiber-optic
PoE Ethernet
Cat.5 Ethernet
Serial-Cable
Telephone Wire

產品尺寸圖


Back
44mm
(1.73")
375mm (14.7")
Top
Side
442mm (17.4")
Front

訂購型號

Model

				
	EX87604-0XYZ	**EX87424-WXYZ**	**EX87244-WXYZ**	**EX87064-WXYZ**
10/100BASE-TX	24	16	8	-
100BASE-FX	-	8	16	24
Gigabit Ports	4	4	4	4
Gigabit SFP Combo	-	-	-	-
	訂購諮詢	訂購諮詢	訂購諮詢	訂購諮詢

* 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	100BASE SFP

* More 100FX Fiber options also available upon request.

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
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)

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

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