EX87000 シリーズ

IEC 61850-3/IEEE 1613 準拠 広範囲動作温度対応産業用/管理型 24ポート 10/100BASE ＋4ポート ギガビット 光オプション イーサネット スイッチ



概要

EtherWAN の EX87000 シリーズは広範囲動作温度対応 管理型 最大28ポート運用が可能なイーサネットロ スイッチです。通信の安定性が必要不可欠な過酷な環境に対応する堅牢な管理機能を備えたハイパフォーマンスな製品です。

EX87000シリーズは 10/100BASE ファストイーサネット24ポートを標準装備し、ギガビット SX/LX/BX/WDM 光ポートと SFP コンボ ポート 4個を選択できます。1U ラックに対応した EX87000 シリーズは リング構成の1ルートが遮断されても 15ms 以内で自動復帰する Alpha-Ring という独自リングプロトコルを搭載していて、高度な接続信頼性が必要な環境に柔軟に対 応します。

ポート セキュリティや IGMP、VLAN、GARP プロトコル、LACP、及び Goose Message などの管理機能はブラウザ経由で設定可能です。Telnet、SNMP、RMON、TFTP、RS-232 コンソール接続などにも対応します。産業用 IEC 61850 & IEEE 1613 準拠の EX87000 シリーズは高い EMI の環境でも -40～75°C の広範囲動作温度に対応し、過酷な環境でのご使用に最適です。

EtherWAN — "When Connectivity is Crucial."

特長

多様な接続の応用に適合

24ポート 10/100BASE-TX/FX/BX/SFP +ギガビット-TX/SX/LX/BX/SFP 4ポートを装備でき、組み合わせの柔軟性を提供します。

安全なリモートアクセス

IEEE 802.1x, ACL (Access Control List) と RADIUS をサポートします。

広範囲動作温度対応

-40～75°C (-40～167°F) までの過酷な環境に問題なく、動作します。

ファンレス＆堅牢な筐体。

ハイショックと電磁ノイズの耐性。

機能

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

仕様

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)

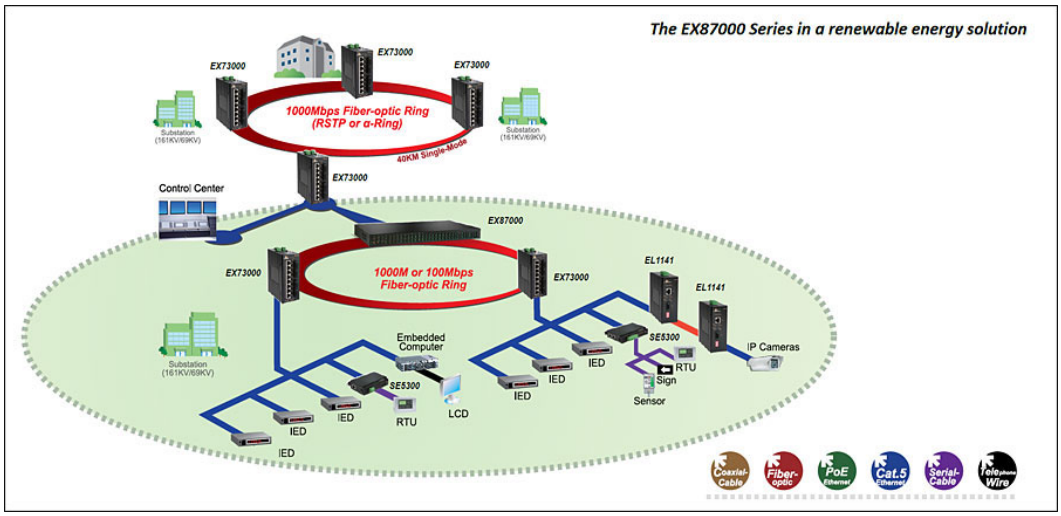
Industrial Compliance

• IEC 61850-3/IEEE 1613/IEC 60255-27

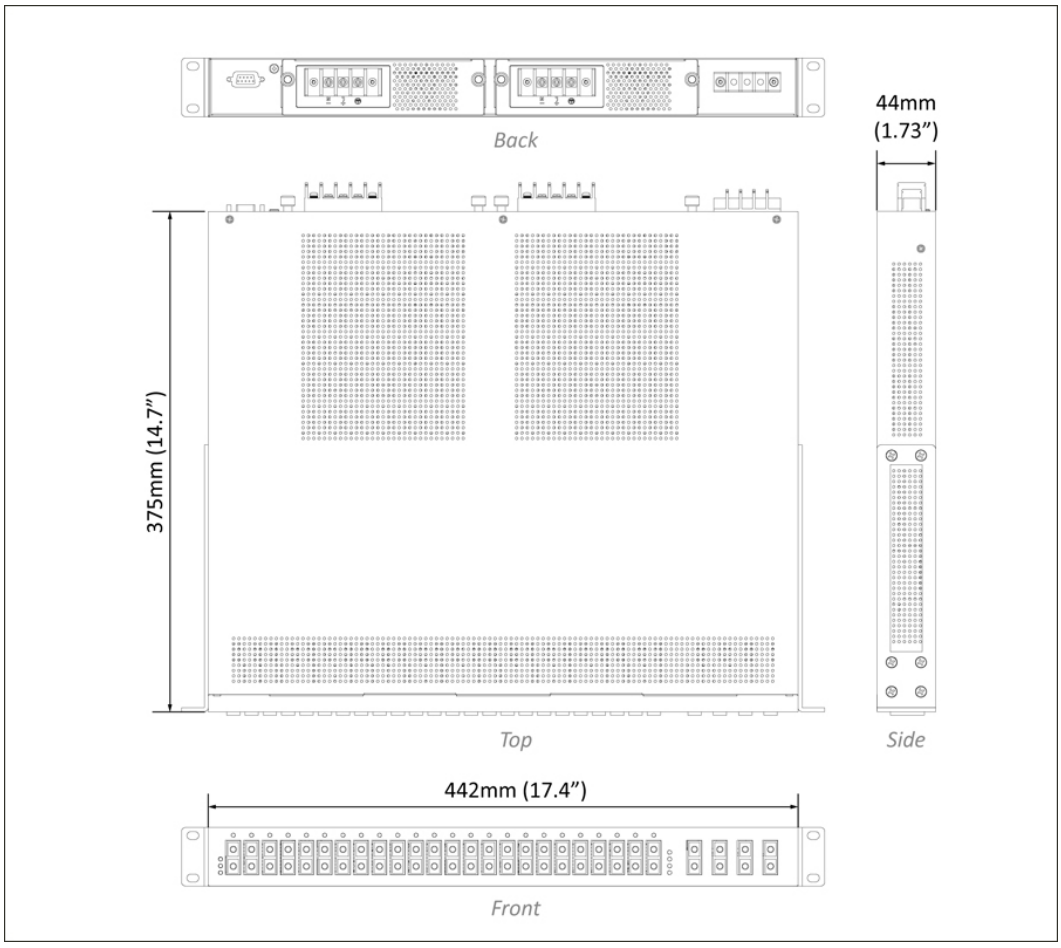
• EN 50121-4

• NEMA TS2

応用例


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

寸法図


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

製品型番

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	-	-	-	-
	Quote	Quote	Quote	Quote

* 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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