

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スイッチです。通信の安定性が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)

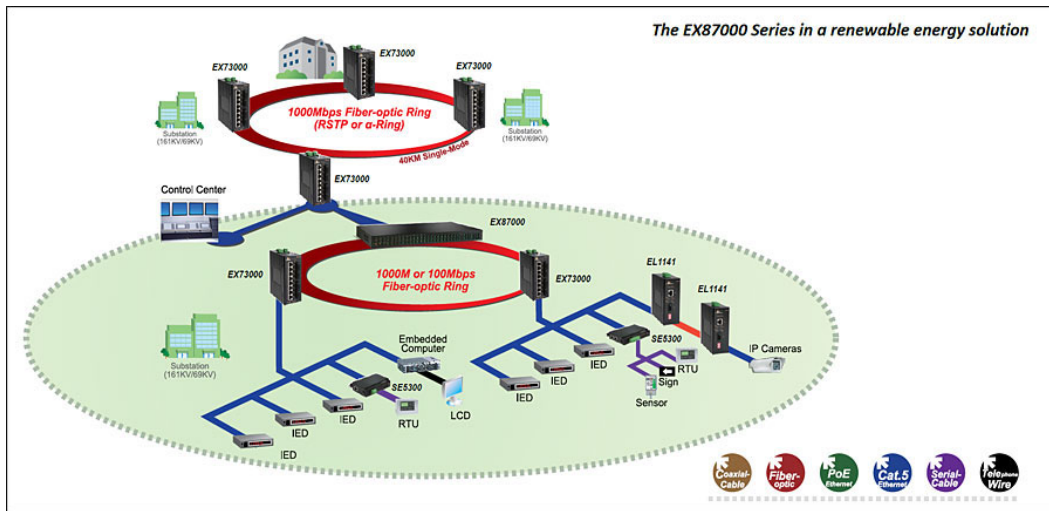
Environmental Test Compliance

- IEC 60068-2-6 Fc (Vibration Resistance)
- IEC 60068-2-27 Ea (Shock)
- FED STD 101C Method 5007.1 (Free fall w/package)

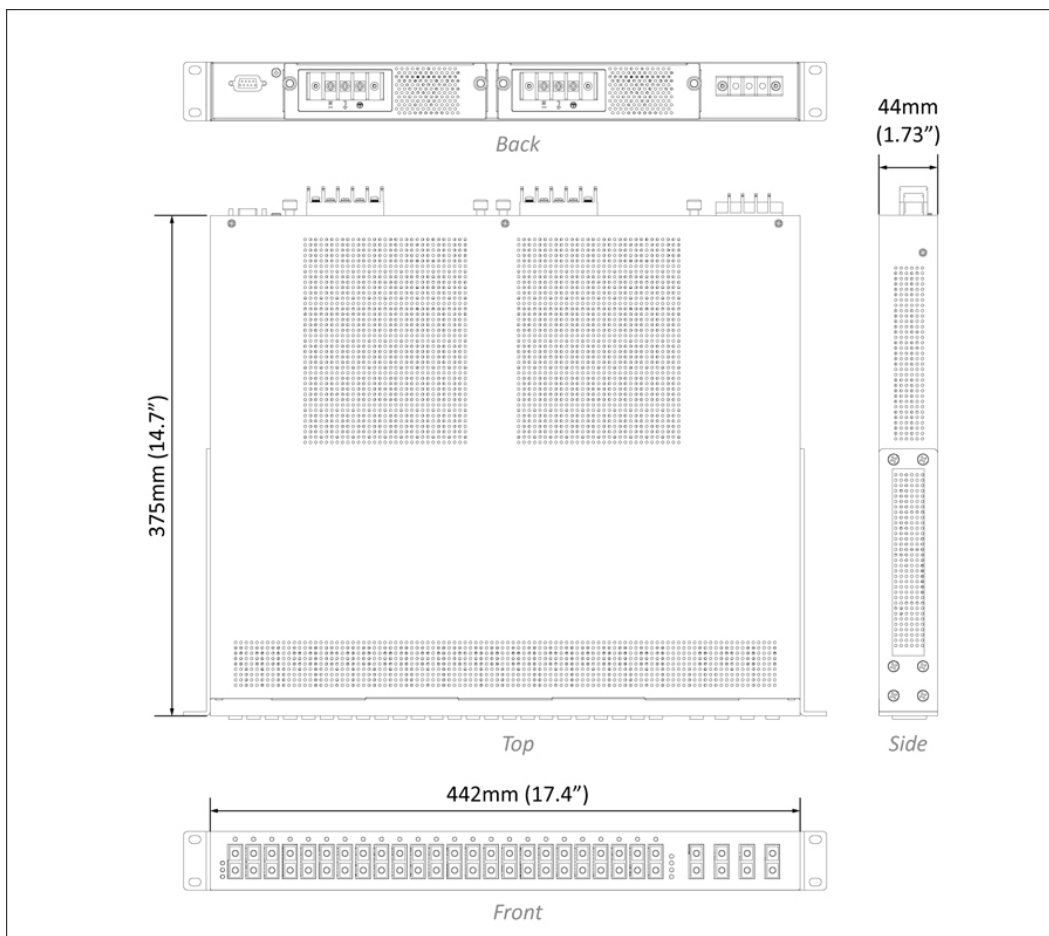
Industrial Compliance

- IEC 61850-3/IEEE 1613
- EN 50121-4
- NEMA TS2

応用例



寸法図



製品型番

+ Model

EX87604-0XYZ	24-port 10/100BASE-TX +4-port Gigabit Hardened Managed Ethernet Switch
EX87424-WXYZ	16-port 10/100BASE-TX +8-port 100BASE-FX +4-port Gigabit Hardened Managed Ethernet Switch
EX87244-WXYZ	8-port 10/100BASE-TX +16-port 100BASE-FX +4-port Gigabit Hardened Managed Ethernet Switch
EX87064-WXYZ	24-port 100BASE-FX +4-port Gigabit Hardened Managed Ethernet Switch
EX87064-V0VZ	24-port 100BASE-SFP +4-port Gigabit SFP Combo Hardened 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	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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