EX77900 Series

Hardened Managed 24-port Gigabit and 4-port 10G SFP+ Ethernet Switch



Overview

When should you use an Industrial Layer 3 switch?

EtherWAN's EX77900 Series provides a Hardened Full-Gigabit Managed 28-port switching platform that combines the advantages of Layer 3 routing protocols with robust management features and hardened specifications. With support for static routing, Routing Information Protocol (RIP) V1/V2, and Virtual Router Redundancy Protocol (VRRP), these switches deliver outstanding flexibility and security in a high performance and cost-effective package.

The EX77900 Series is equipped with twenty-eight gigabit ports, or a combination of twenty-four Gigabit copper ports and four10G SFP+ for connecting the switch to the core network. Mountable on a 1U rack, the switches are equipped with EtherWAN's Alpha-Ring self-healing technology, providing less than 15ms fault recovery time making it ideal for applications intolerant to interruption.

A broad range of management features and options includes port security, IGMP snooping, port-based VLAN, GARP protocols, link aggregation and ACL, via web browser, telnet, SSH, SNMP, RMON, TFTP, and RS-232 console interfaces. With the hardened specifications, the EX77900 Series is designed to operate at -40 to 75°C in harsh environments, and is IEC 61850 & IEEE 1613 compliant, capable of operating under high EMI environments, making it an ideal choice for mission-critical applications.

EtherWAN — "**When Connectivity is Crucial.**"

Spotlight

Hardened Grade

Wide operating temperature range for extreme environments

Fanless and ruggedized housing

High shock and electric noise immunity

10GbE Connectivity

Four 10G SFP+ for connecting the switch to the core network

L2/L3 Routing Features

Supports static route, RIP v1/v2 and OSPF

Maximum number of routes in hardware: 64 entries

Supports Virtual Router Redundancy Protocol (VRRP)

Features

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

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 (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

Specifications

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

14,880,952pps for 10Gbps

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

10/100/1000BASE-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 Indicators

Per Unit: Power 1, Power 2, Alarm

Per Port: Link/Activity (Green)

Environment

Operating Temperature

-40 to 75°C (-40 to 167°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)

• ±48VDC Redundant (Terminal Block)

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

• 100–240VAC Redundant (AC Inlet)

Power Consumption

31.08W

Mechanical

Casing

Metal Case

IP30

Dimensions

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

Weight

5.27kg

Installation

Rack mounting

Regulatory Approvals

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)

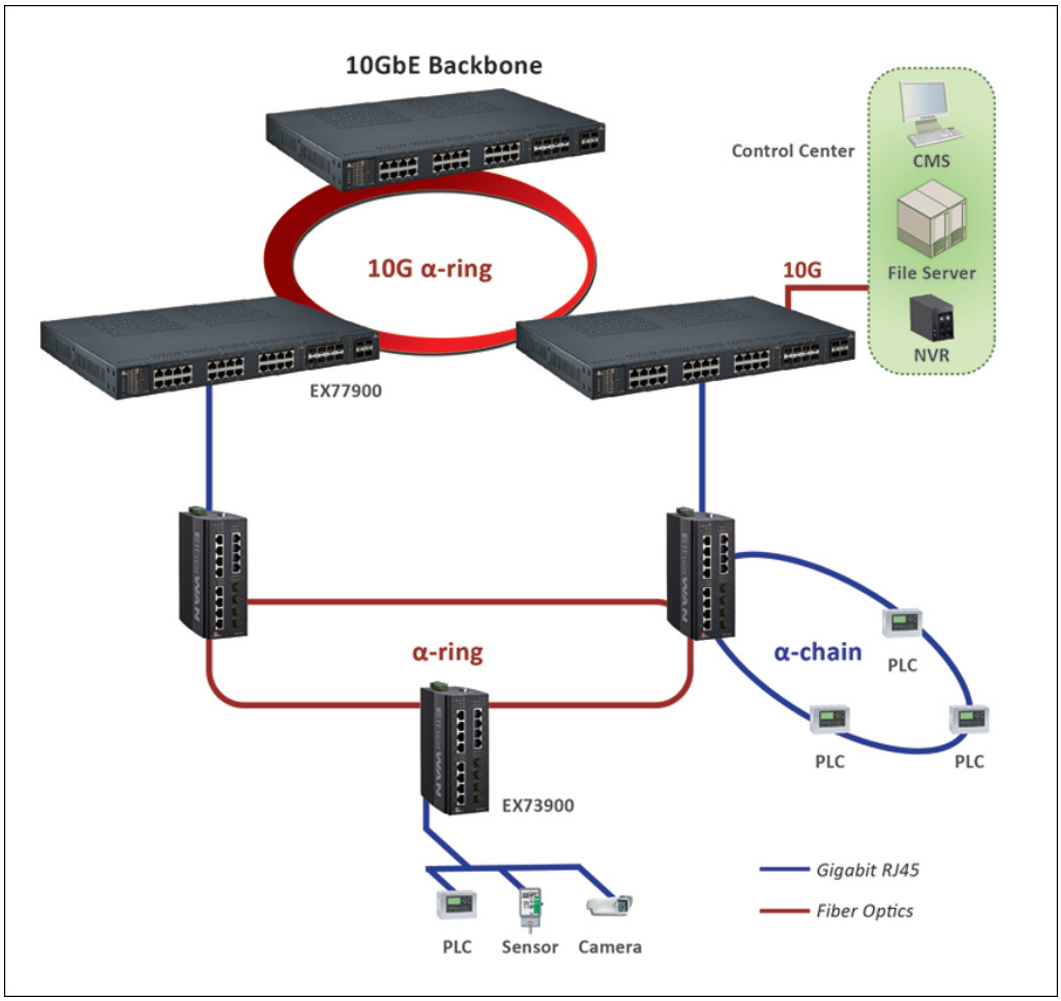
Industrial Compliance

• IEC 61850-3/IEEE 1613/IEC 60255-27

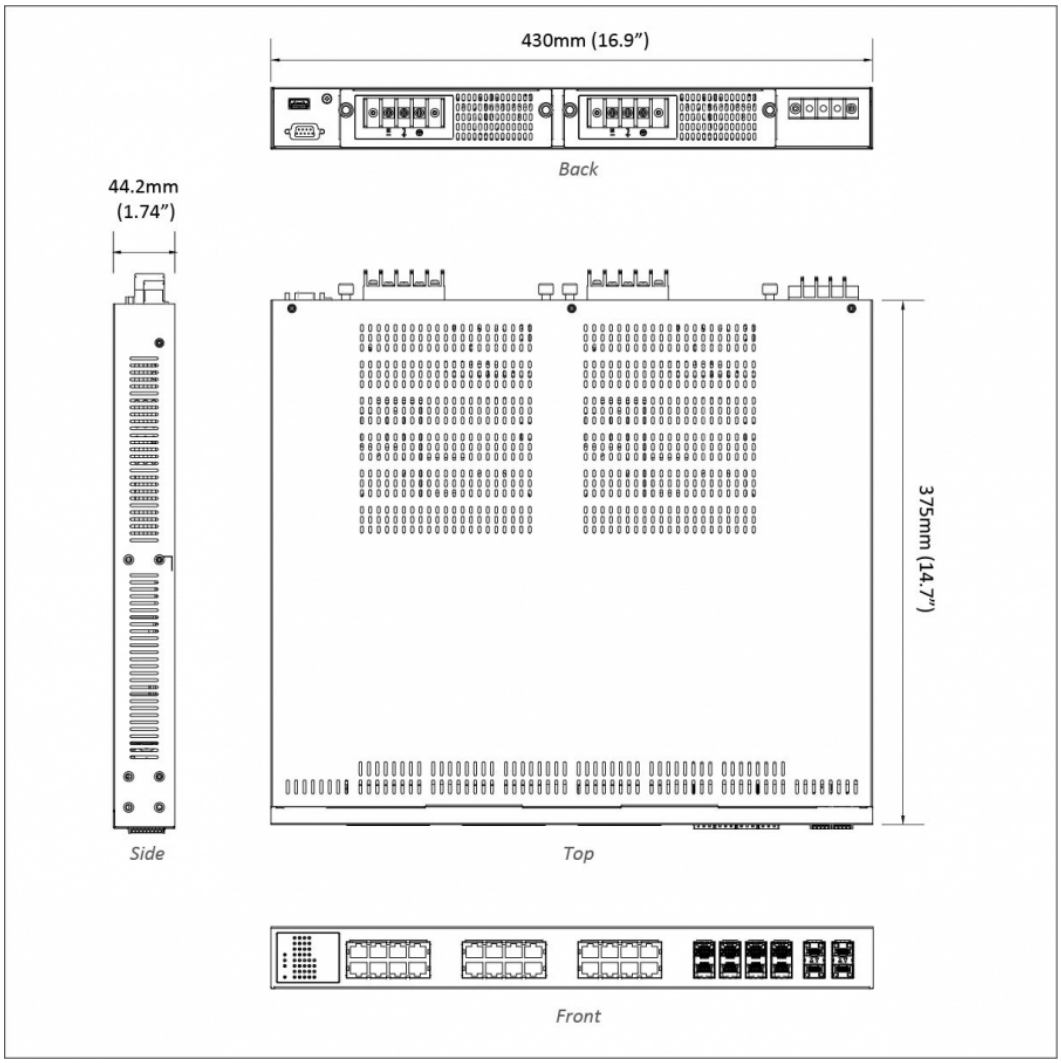
• EN 50121-4

• NEMA TS2

Application



Dimensions



Ordering Info

Model

EX77964-8VZ	16-port 10/100/1000BASE-TX +8-port 100/1000BASE SFP Combo +4-port 1G/10G SFP+ Hardened Managed Ethernet Switch

Power Input Interface (Z)

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

Optional Accessory

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

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