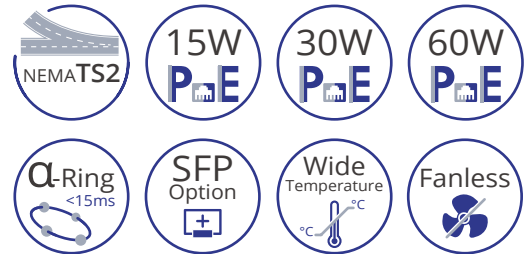


# EX78000 Series

Hardened Managed 4 to 10-port 10/100BASE (8 x PoE) and 2-port Gigabit Ethernet Switch



## Product Highlights

### ➔ Hardened-Grade for Non-Ventilated & Harsh Environments

- Wide operating temperature range -40 to 75°C (-40 to 167°F)
- Fanless operation
- High impact, thermal shock, and electrical noise resistance

### ➔ PoE Features

- Up to 60W/port with 240W total power budget
- Long distance PoE up to 250m (820ft)
- PoE watchdog monitors status of connected PoE devices

### ➔ Management/Security Features

- Port control
- 802.1x port-based network access control and remote authentication through RADIUS
- Configure and monitor with eVue™ and eLite™

### ➔ Support

- Complimentary Technical Support
- Free Firmware Upgrades
- Limited Lifetime Warranty

## Overview

EtherWAN's EX78000 Series is a hardened DIN-rail mounted managed PoE Ethernet switch platform. Equipped with 8 10/100BASE-TX PoE ports along with 60W power and 2 gigabit fiber ports, the EX78000 Series provides flexibility, speed, and reliability for networks in urban infrastructure, transportation, security, and other areas where connectivity is crucial.

## Ordering Information

### Model

EX78402-0YBT	4-port 10/100BASE-TX PoE + 2-port Gigabit
EX78802-0YBT	8-port 10/100BASE-TX PoE + 2-port Gigabit
EX78822-XZBT	8-port 10/100BASE-TX PoE + 2-port 100BASE-FX +2-port Gigabit
EX78822-VVBT	8-port 10/100BASE-TX PoE + 2-port 100BASE-SFP +2-port 100/1000BASE-SFP

\* DIN-Rail mounting kit included.

### 100FX Fiber Options (X)

1	Multi Mode (SC) - 2Km
2	Multi Mode (ST) - 2Km
A	Single Mode (SC) - 20Km

\* More 100FX Fiber options also available upon request.

# Ordering Information

## Gigabit Port Options (Y)

1	10/100/1000BASE-TX
3	1000BASE-SX (SC) - 550m
4	1000BASE-SX (SC) - 2Km
5	1000BASE-SX (ST) - 550m
A	1000BASE-LX (SC) - 10Km
R	1000BASE-BX (SC) WDM-TX: 1310nm/RX: 1550nm-20Km
S	1000BASE-BX (SC) WDM-TX: 1550nm/RX: 1310nm-20Km
V	Support 2-port 100/1000BASE SFP (DDM)

\* More Gigabit options also available upon request.

## Gigabit Port Options (Z)

1	10/100/1000BASE-TX
3	1000BASE-SX (SC) - 550m
4	1000BASE-SX (SC) - 2Km
5	1000BASE-SX (ST) - 550m
A	1000BASE-LX (SC) - 10Km
R	1000BASE-BX (SC) WDM-TX: 1310nm/RX: 1550nm-20Km
S	1000BASE-BX (SC) WDM-TX: 1550nm/RX: 1310nm-20Km

\* More Gigabit options also available upon request.

## Software Features

<b>Interface</b>	+
CLI, Telnet, Web Browser	
SNMP v1/v2c/v3	
<b>Management</b>	+
Firmware and configuration upgrade and backup via TFTP	
Supports DHCP Server/Client	
RMON (Remote Monitoring): group 1, 2, 3, 9	
Port mirroring: TX/RX and both	
NTP (Network Time Protocol) time synchronization	
IEEE 802.1ab LLDP (Link Layer Discovery Protocol)	
IPv4/IPv6	
<b>Security</b>	+
MAC Address filtering	
Enable/Disable port	
Storm control (Broadcast and multicast types)	
IEEE 802.1x LAN Access control	
Remote authentication through RADIUS and TACACS+	
Multi-user login and privileged access management	
SSH for CLI and Telnet security	
SSL for web security	
System log (Remote/Local)	
ACL	

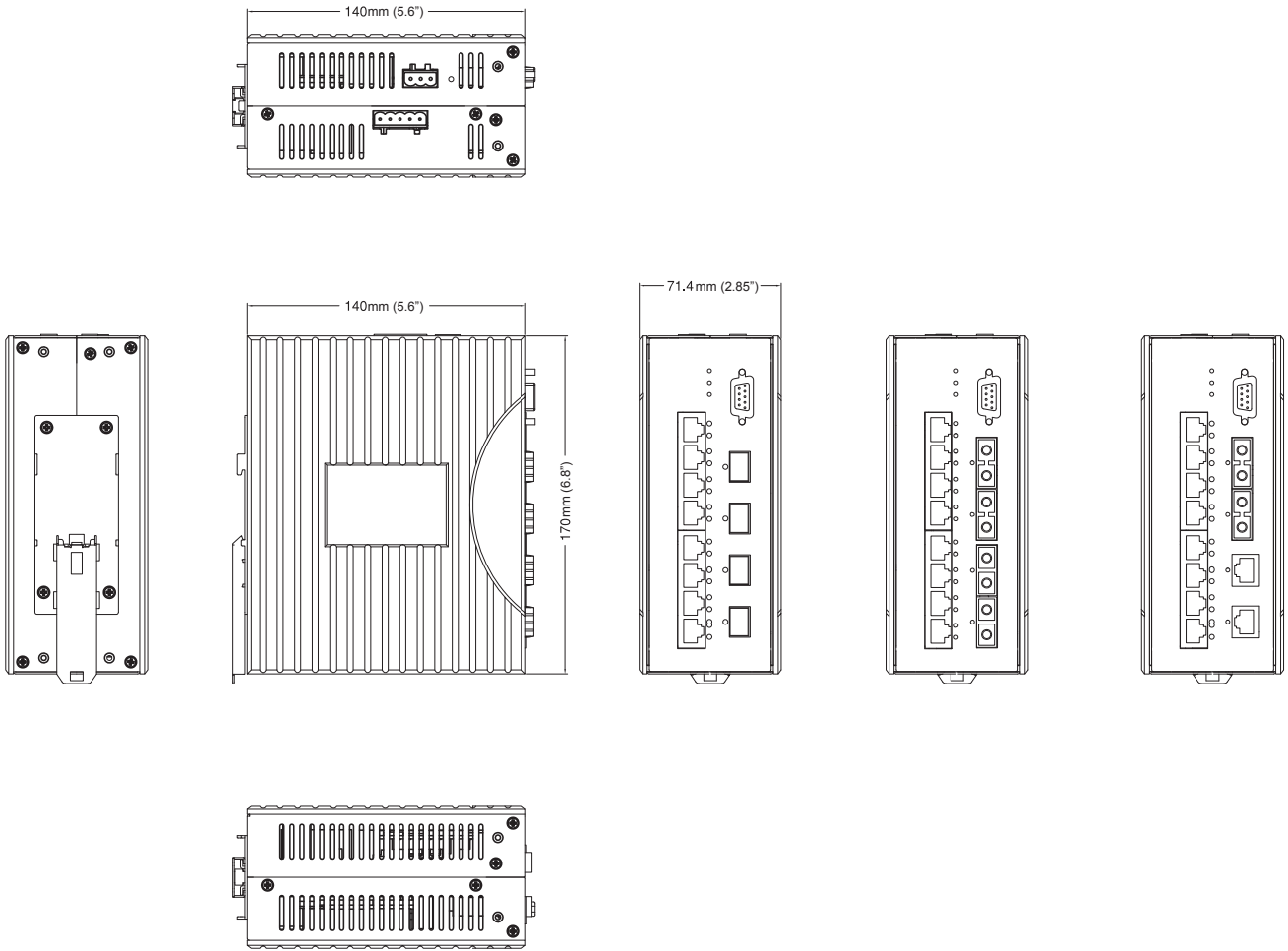
<b>Quality of Service (QoS)</b>	+
Priority Queues: 4 queues per port	
Traffic classification based on IEEE 802.1p CoS, DSCP, WRR and strict mode	
Rate Limiting (Ingress/Egress)	
<b>Layer 2 Features</b>	+
Auto-negotiation for port speed and duplex mode	Flow Control IEEE 802.3x Full duplex mode Back-Pressure half duplex mode
Redundant Protocols	IEEE 802.1D STP IEEE 802.1w RSTP IEEE 802.1s MSTP EtherWAN's Alpha-Ring network fault recovery (<15ms)
VLANs	IEEE 802.1Q Tag VLANs (128 groups, 4096 VID) GVRP GMRP
Link Aggregation	Static Trunk (2 groups, support MAC base) IEEE 802.3ad LACP
IGMP Snooping v1/v2/v3	

# Hardware Specifications

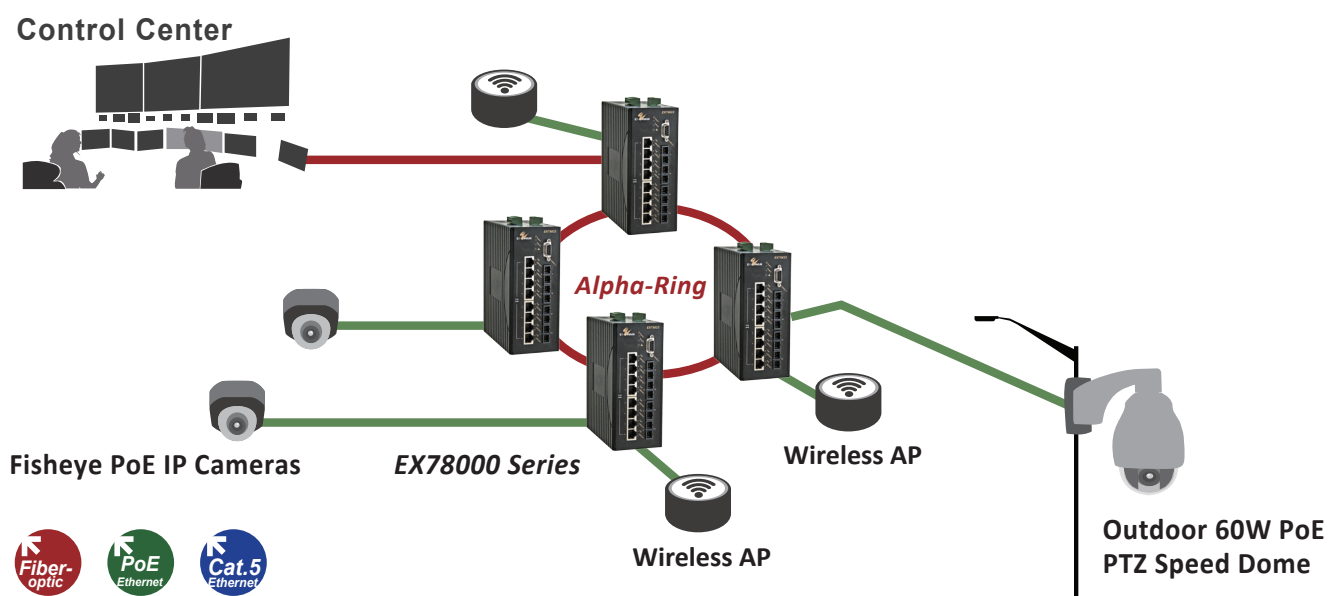
Interface		+
<b>Ethernet</b>	4 or 8 x 10/100BASE-T(X) (PoE) 0, 2 or 4 x 100BASE FX 2 x 100/1000BASE SFP Slot 2 x Gigabit	
<b>Console</b>	1 x DB9 RS-232	
<b>Alarm Contact</b>	1 x Relay output, current capacity 0.5A/48VDC	
<b>LED Indicators</b>	Per Unit: Power 1, Power 2, Alarm Per Port: Link/Activity (Green) Per PoE Port: (Orange)	
Technology		+
<b>Standards</b>	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 PNAC IEEE 802.3af/at Power over Ethernet	
<b>Forward/Filtering Rate</b>	14,880pps for 10Mbps 148,810pps for 100Mbps 1,488,100pps for 1000Mbps	
<b>Packet Buffer Memory</b>	12M bits	
<b>Processing Type</b>	Store-and-Forward Auto-negotiation Half-duplex back-pressure and IEEE 802.3x Full-duplex flow control Auto MDI/MDIX	
<b>Address Table Size</b>	16K MAC Addresses	
Power		+
<b>Input</b>	52-57VDC Redundant (Terminal block)	
<b>Power Consumption</b>	10.4W Max (without PoE)	
<b>PoE Power Budget</b>	240W Max.	
<b>PoE Technology</b>	Alternative A & B Pins 1/2(+), 3/6(-), Pins 7/8(-), 4/5(+)	
<b>PoE Power Output</b>	Port 1 to 8 support PoE+ (15.4W/30W/60W) IEEE 802.3af: up to 15.4W/port, 47- 57VDC IEEE 802.3at: up to 30W/port, 52-57VDC 60W/port, 52-57VDC	
<b>Protection</b>	Reverse Polarity Protection	

Physical		+
<b>Casing Material</b>	Metal	
<b>IP Rating</b>	IP30	
<b>Dimensions</b>	71.4 x 140 x 170mm (W x D x H) 2.85" x 5.6" x 6.8"	
<b>Weight</b>	1.7kg (3.74lbs)	
<b>Installation Type</b>	DIN-rail mounting	
Environmental		+
<b>Operating Temp.</b>	-40 to 75°C (-40 to 167°F) Tested @ -40 to 85°C (-40 to 185°F)	
<b>Storage Temp.</b>	-45 to 85°C (-49 to 185°F)	
<b>Relative Humidity</b>	5% to 95% (non-condensing)	
Regulatory		+
<b>ISO</b>	Manufactured in ISO-9001 facility	
<b>EMI</b>	FCC Part 15B Class A VCCI Class A EN 61000-6-4	
<b>EMS</b>	EN 61000-6-2 EN 61000-4-2 (ESD) EN 61000-4-3 (Radiated RFI) EN 61000-4-4 (Burst) EN 61000-4-5 (Surge) EN 61000-4-6 (Induced RFI) EN 61000-4-8 (Magnetic Field)	
<b>Safety</b>	UL 61010	
<b>Vibration</b>	IEC 60068-2-6 Fc	
<b>Shock</b>	IEC 60068-2-27 Ea	
<b>Free Fall</b>	FED STD 101C Method 5007.1	
<b>Industrial Compliance</b>	NEMA TS2	
Warranty		+
<b>Length</b>	Limited Lifetime	
<b>Details</b>	<a href="http://www.etherwan.com/support/warranty-policy">www.etherwan.com/support/warranty-policy</a>	
What's Included		+
<b>Device</b>	Ethernet Switch	
<b>Cables</b>	1 Console Cable	
<b>Documentation</b>	Quick Install Guide	

# Dimensions



# Application



# Software

**Network Management** eVue™ Network Configuration and Monitoring Tool

**Network Discovery** eLite™ Network Discovery and IP Configuration Tool

**EtherWAN** Home Devices Batch Group Events Settings Screen Zoom Logout

**Device List**

IP	System Name	Group
192.168.50.12	EG99-5012	
192.168.50.62	EX709-5062	
192.168.50.254	R50	
192.168.50.11	EG99-5011	
192.168.50.63	EX74-5063	
192.168.50.14	EX779-5014	
192.168.50.61	EX71v2-5061	
192.168.50.44	EX71-5044	
192.168.50.64	EX73-5064	
192.168.50.34	EX739-5034	

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**Topology**

Online Offline Event

**Latest Events** 0 0 0

Acknowledged	ID	Severity	Time	Service	Node	Message
✓	5107	Normal	6/28/2019, 9:50:35 AM	login	server	User 'admin' logged in.
✓	5106	Normal	6/27/2019, 10:00:50 AM	login	server	User 'admin' logged in.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Web 192.168.1.19 is down.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Telnet 192.168.1.19 is down.
✓	5104	Normal	6/24/2019, 1:12:34 PM	login	server	User 'admin' logged in.

**eLite** List Server Firmware Configuration Help

Search Refresh Add Remove Update Monitor

IP Address	MAC Address
192.168.50.22	00:e0:b3:50:22:00
192.168.50.31	00:e0:b3:50:31:00
192.168.50.72	00:e0:b3:50:72:00
192.168.50.55	00:e0:b3:50:55:00
192.168.50.23	00:e0:b3:50:23:00
192.168.50.73	00:e0:b3:50:73:00
192.168.50.44	00:e0:b3:50:44:00
192.168.50.64	00:e0:b3:50:64:00
192.168.50.43	00:e0:b3:50:43:00
192.168.50.62	00:e0:b3:50:62:00
192.168.50.71	00:e0:b3:50:71:00
192.168.50.24	00:e0:b3:50:24:00

## Accessories

Hardened Gigabit SFP Modules	+
<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>	
DIN-Rail Power Supplies	+
<a href="http://www.etherwan.com/products/din-rail-power-supply">www.etherwan.com/products/din-rail-power-supply</a> (*)	
*Recommended Power Supply	+
NDR-480-48 480W 48VDC DIN-Rail Power Supply	
EB-232	+
Configuration Backup and Restoration Tool	