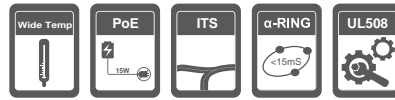


# EX76000 Series

Managed Hardened 16-port 10/100BASE PoE with 2 Gigabit combo ports Ethernet Switch



## Overview



The EX76000 hardened managed PoE Ethernet switch series functions at temperatures ranging from -40°C to 75°C (-40°F to 167°F). The EX76000 supports 8 to 16

IEEE802.3af Power over Ethernet (PoE) Power Sourcing Equipment (PSE). Using external 48VDC power inputs through terminal block, data and power can be transmitted to a Powered Device (PD) over the same twisted-pair Ethernet cable. The hardened EX76000 series supports advanced features such as 802.1Q VLAN, MAC-based Trunking, IP-Multicast IGMP Snooping, Rapid Spanning Tree for Redundancy, QoS for priority queuing, and port mirroring. Users may choose among SNMP/RMON, Web browser, or Telnet for remote monitoring and configuration. It also supports rate control, which allows users to set the maximum bandwidth on each port individually.

## Features

- ▶ Complies with NEMA TS1 & TS2 Environmental requirements for Traffic control equipment
- ▶ Complies with IEC61000-6-2 EMC Generic standard immunity for Industrial environment
- ▶ IEEE802.3af Power over Ethernet(PoE) support for 8, 12, or 16 10/100BASE-TX ports
- ▶ Supports PoE Power Sourcing Equipment (PSE)
- ▶ PoE control and Scheduling
- ▶ EtherWAN proprietary "α-ring" support for network redundancy; recovery time <math><15ms</math>
- ▶ IEEE802.1w RSTP, IEEE802.1S MSTP and IEEE802.1D STP compatible
- ▶ IP Multicast Filtering through IGMP Snooping V1, V2 & V3
- ▶ Supports port-based VLAN and IEEE802.1Q VLAN Tagging and GVRP
- ▶ IEEE802.1p QoS with four priority queues
- ▶ MAC-based trunking with automatic link fail-over
- ▶ RS-232 console, Telnet, SSL/SSH, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management
- ▶ Supports Command Line Interface in RS-232 Console
- ▶ Supports IEEE802.1x Security
- ▶ Bandwidth Rate Control
- ▶ Per-port programmable MAC address locking
- ▶ Up to 24 Static Secure MAC addresses per port
- ▶ Port mirroring
- ▶ 1000Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- ▶ Full wire-speed forwarding rate
- ▶ Redundant power inputs with Terminal Block and DC Jack
- ▶ -40°C to 75°C (-40°F to 167°F) operating temperature range
- ▶ Supports NTP
- ▶ Built in RTC

## Ordering Information

EX76400-00Z	16-port 10/100BASE-TX PoE Hardened Managed Ethernet Switch
EX76401-0YZ	16-port 10/100BASE-TX PoE + 1-port combo Gigabit Hardened Managed Ethernet Switch
EX76402-0YZ	16-port 10/100BASE-TX PoE + 2-port combo Gigabit Hardened Managed Ethernet Switch
EX76300-00Z	12-port 10/100BASE-TX PoE Hardened Managed Ethernet Switch
EX76301-0YZ	12-port 10/100BASE-TX PoE + 1-port combo Gigabit Hardened Managed Ethernet Switch
EX76302-0YZ	12-port 10/100BASE-TX PoE + 2-port combo Gigabit Hardened Managed Ethernet Switch
EX76320-X0Z	12-port 10/100BASE-TX PoE + 2-port 100BASE-FX Hardened Managed Ethernet Switch
EX76321-XYZ	12-port 10/100BASE-TX PoE + 2-port 100BASE-FX + 1-port combo Gigabit Hardened Managed Ethernet Switch
EX76322-XYZ	12-port 10/100BASE-TX PoE + 2-port 100BASE-FX + 2-port combo Gigabit Hardened Managed Ethernet Switch
EX76200-00Z	8-port 10/100BASE-TX PoE Hardened Managed Ethernet Switch
EX76201-0YZ	8-port 10/100BASE-TX PoE + 1-port combo Gigabit Hardened Managed Ethernet Switch
EX76202-0YZ	8-port 10/100BASE-TX PoE + 2-port combo Gigabit Hardened Managed Ethernet Switch
EX76220-X0Z	8-port 10/100BASE-TX PoE + 2-port 100BASE-FX Hardened Managed Ethernet Switch
EX76221-XYZ	8-port 10/100BASE-TX PoE + 2-port 100BASE-FX + 1-port combo Gigabit Hardened Managed Ethernet Switch
EX76222-XYZ	8-port 10/100BASE-TX PoE + 2-port 100BASE-FX + 2-port combo Gigabit Hardened Managed Ethernet Switch
EX76240-X0Z	8-port 10/100BASE-TX PoE + 4-port 100BASE-FX Hardened Managed Ethernet Switch
EX76241-XYZ	8-port 10/100BASE-TX PoE + 4-port 100BASE-FX + 1-port combo Gigabit Hardened Managed Ethernet Switch
EX76242-XYZ	8-port 10/100BASE-TX PoE + 4-port 100BASE-FX + 2-port combo Gigabit Hardened Managed Ethernet Switch

### 100FX Fiber Options:

- |   |  |
|---|--|
| (X) = 1 : Multi Mode (SC)                       | B: Single Mode (SC) -40Km                          |
| 2 : Multi Mode (ST)                             | F: Single Mode (FC) -20Km                          |
| 6 : Multi Mode (SC) WDM-TX:1310nm/RX:1550nm-2Km | H: Single Mode (ST) -20Km                          |
| 7 : Multi Mode (SC) WDM-TX:1550nm/RX:1310nm-2Km | P: Single Mode (SC) WDM -TX:1310nm/RX:1550nm -20Km |
| 8 : Multi Mode (SC) WDM-TX:1310nm/RX:1550nm-5Km | Q: Single Mode (SC) WDM -TX:1550nm/RX:1310nm -20Km |
| 9 : Multi Mode (SC) WDM-TX:1550nm/RX:1310nm-5Km | R: Single Mode (SC) WDM -TX:1310nm/RX:1550nm -40Km |
| A : Single Mode (SC) -20Km                      | S: Single Mode (SC) WDM -TX:1550nm/RX:1310nm -40Km |

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

### Gigabit Options:

- |  |  |
|--|--|
| (Y) = 1 : 10/100/1000BASE-TX (No Gigabit Fiber port supported) | R : Combo port : 10/100/1000BASE-TX with 1000BASE-LX (SC) WDM -TX:1310nm/RX:1550nm -20Km |
| 3 : Combo port : 10/100/1000BASE-TX with 1000BASE-SX (SC)      | S : Combo port : 10/100/1000BASE-TX with 1000BASE-LX (SC) WDM -TX:1550nm/RX:1310nm -20Km |
| A : Combo port : 10/100/1000BASE-TX with 1000BASE-LX (SC)-10Km |  |
| B : Combo port : 10/100/1000BASE-TX with 1000BASE-LX (SC)-20Km |  |

\*More Gigabit options also available upon request.

**Power Input Interface:** (Z) = T : Terminal Block

## Specifications

### Technology

#### Standards:

- IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX/100BASE-FX, IEEE802.3ab 1000BASE-T, IEEE802.3z 1000BASE-SX/1000BASE-LX, IEEE802.3x, IEEE802.1p, IEEE802.1Q, IEEE802.1w, IEEE802.1x, IEEE802.3af

#### Forward and Filtering Rate:

- 14,880pps for 10Mbps
- 148,810pps for 100Mbps
- 1,488,100pps for 1000Mbps

#### Packet Buffer Memory:

- 2M bits

#### Processing Type:

- Store-and-Forward
- Half-duplex back-pressure and IEEE802.3x full-duplex flow control

#### Address Table Size:

- 8192 MAC addresses

### Power

#### Input:

- Input Voltage: 48VDC (47 to 55VDC) (Terminal Block)

#### Power Consumption:

- 12W Max.

#### Overload Current Protection:

- Present

#### Reverse Polarity Protection:

- Present

### Mechanical

#### Casing:

- Metal case
- IP 30

#### Dimensions:

- 442mm (W) x 205mm (D) x 44mm (H)  
(17.40" (W) x 8.07" (D) x 1.73" (H))

#### Weight:

- 3.5Kg (7.7lbs.)

#### Installation:

- Rack Mounting

### Interface

#### Ethernet Port:

- 10/100BASE-TX: 16, 12 or 8 ports
- 100BASE-FX: 0, 2 or 4 ports
- Gigabit: 0, 1 or 2 ports

#### Console Port:

- Port: One DB9 RS-232 port

#### LED Indicators:

- Per Unit: Power Status (Power 1, Power 2)
- Per Port: PoE (Amber) for 10/100TX, 10/100TX, 100FX: Link/Activity (Green), Speed (Green), Gigabit: Link/Activity (Green), Speed (Green/Amber)

### Environment

#### Operating Temperature:

- -40°C to 75°C (-40°F to 167°F)  
Tested @ -40°C to 85°C (-40°F to 185°F)

#### Storage Temperature:

- -40°C to 85°C (-40°F to 185°F)

#### Ambient Relative Humidity:

- 5% to 95% (non-condensing)

### Regulatory Approvals:

#### ISO:

- Manufactured in an ISO9001 facility

#### Safety:

- UL508

#### EMI:

- FCC Part 15, Class A
- EN61000-6-4
  - EN55022
  - EN61000-3-2
  - EN61000-3-3

#### EMS:

- EN61000-6-2
  - EN61000-4-2 (ESD Standards)  
Contact: + / - 6KV; Criteria B  
Air: + / - 8KV; Criteria B
  - EN61000-4-3 (Radiated RFI Standards)  
10V/m, 80 to 1000MHz; 80% AM Criteria A
  - EN61000-4-4 (Burst Standards)  
Signal Ports: + / - 4KV; Criteria B  
D.C. Power Ports: + / - 4KV; Criteria B
  - EN61000-4-5 (Surge Standards)  
Signal Ports: + / - 1KV; Line-to-Line; Criteria B  
D.C. Power Ports: + / - 0.5KV; Line-to-earth; Criteria B
  - EN61000-4-6 (Induced RFI Standards)  
Signal Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A  
D.C. Power Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
  - EN61000-4-8 (Magnetic Field Standards)  
30A/m @ 50, 60Hz; Criteria A

#### Environmental Test Compliance:

- IEC60068-2-6 Fc (Vibration Resistance)  
5g @ 10~150Hz, Amplitude 0.35mm (Operation/Storage/Transport)
- IEC60068-2-27 Ea (Shock)  
25g @ 11ms (Half-Sine Shock Pulse; Operation)  
50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)
- IEC60068-2-32 Ed (Free Fall)  
1M (3.281ft.)

## Diagrams

