EX76000 Series
16-port 10/100BASE PoE with 2 Gigabit combo ports Ethernet Switch
Hardened Managed Ethernet Switches

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 to16 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 " -ring" support for network redundancy; recovery time <15ms
- 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

Model	Description
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 Switch8-port
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 Fibre Options:

(X) = 1: Multi Mode (SC)
2: Multi Mode (ST)
6: Multi Mode (SC) WDM-TX: 1310nm/RX: 1550nm-2Km
7: Multi Mode (SC) WDM-TX: 1550nm/RX: 1310nm-2Km
8: Multi Mode (SC) WDM-TX: 1310nm/RX: 1550nm-5Km
9: Multi Mode (SC) WDM-TX: 1550nm/RX: 1310nm-5Km
A: Single Mode (SC) -20Km

B: Single Mode (SC) -40Km
F: Single Mode (FC) -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
R: Single Mode (SC) WDM -TX: 1310nm/RX: 1550nm -40Km
S: Single Mode (SC) WDM -TX: 1550nm/RX: 1310nm -40Km
*More 100FX Fibre options also available upon request.

Gigabit Options:

(Y) = 1: 10/100/1000BASE-TX (No Gigabit Fibre port supported)
3: Combo port: 10/100/1000BASE-TX with 1000BASE-SX (SC)
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

R: Combo port: 10/100/1000BASE-TX with 1000BASE-LX (SC) WDM -TX: 1310nm/RX: 1550nm -20Km
S: Combo port: 10/100/1000BASE-TX with 1000BASE-LX (SC) WDM -TX: 1550nm/RX: 1310nm -20Km

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:
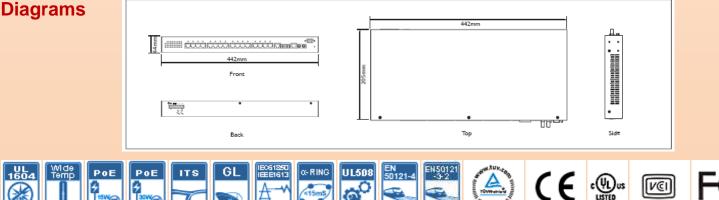- 5% to 95% (non-condensing)

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

Front
Back
Top
Side