

5/8 ports 10/100Base Fast Ethernet Hardened Unmanaged Switches



Overview

The EX94000 series Ethernet switches are designed to operate in the harsh environments at the edge of the network. The EX94000 functions at temperatures ranging from -40°C to 75°C (-40°F to 167°F) and is tested for functional operation @ -40°C to 85°C (-40°F to 185°F). Whether on the factory floor or the street corner, the EX94000 will provide flawless communications when you most need it most. The EX94000 is a switch with the flexibility of five or eight Ethernet ports that may be configured in various combinations of copper and fiber optic interfaces. Flexibility is the main feature of the EX94000, it may be DIN rail, shelf or wall mounted, and comes with power options to match the applications that require a tough, environmentally hardened, Ethernet switch.

Features

- ▶ Complies with NEMA TS1 & TS2 Environmental requirements for Traffic control equipment
- ▶ Complies with IEC61000-6-2 EMC Generic standard immunity for Industrial environment
- ▶ UL 1604 Class 1, Division 2 Classified for use in hazardous locations (applicable to versions with terminal block power option)
- ▶ 2048 MAC addresses
- ▶ 768K bits buffer memory
- ▶ 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- ▶ Full wire-speed forwarding rate
- ▶ Alarms for power and port link failure by relay output
- ▶ Redundant 1.5A 24VDC Power inputs or 3A 12VDC Jack
- ▶ -40°C to 75°C (-40°F to 167°F) operating temperature range
- ▶ Hardened aluminum case
- ▶ Supports DIN-Rail, Panel, or Rack Mounting installation

Specifications

Technology

Standards:

- IEEE802.3 10Base-T, IEEE802.3u 100Base-TX/100Base-FX, IEEE802.3x

Forward and Filtering Rate:

- 14,880pps for 10Mbps
- 148,810pps for 100Mbps

Packet Buffer Memory:

- 768K bits

Processing Type:

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

Address Table Size:

- 2048 MAC addresses

Latency:

- Less than 7.1μs

Power

Input:

- Input Voltage: 12VDC (Power Jack); 10 to 48VDC (Terminal Block)
- Input Current: 3A Max. (Power Jack); 1.5A Max. (Terminal Block)

Power Consumption:

- 12VDC @ 0.99A, 24VDC @ 0.55A, 48VDC @ 0.39A, 18.72W Max.

Mechanical

Casing:

- Aluminum case

Dimensions:

- 50mm (W) x 110mm (D) x 136mm (H)
(1.97" (W) x 4.33" (D) x 5.35" (H))

Weight:

- 0.8Kg (1.76lbs.)

Installation:

- DIN-Rail, Panel, Rack Mounting

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:

- 10% to 95% (non-condensing)

Interface

LED Indicators:

- Per Unit: Power Status (Power 1, Power 2, Fault)
- Per Port: 10/100TX, 100FX: Link/Activity (Green), Speed (Yellow)

Alarm Contact:

- One relay output with current 1A @ 24VDC

Designation	Typical Distance*	Nominal Wavelength	Cable Type	Connector	Optical Budget
100Base-FX	2Km	1310 nm	62.5/125 MM	ST	15 dB
100Base-FX	2Km	1310 nm	62.5/125 MM	SC	15 dB
100Base-FX	20Km	1310 nm	10/125 SM	ST	19 dB
100Base-FX	20Km	1310 nm	10/125 SM	SC	19 dB
100Base-FX	40Km	1310 nm	10/125 SM	ST	30 dB
100Base-FX	40Km	1310 nm	10/125 SM	SC	30 dB
100Base-FX	60Km	1310 nm	10/125 SM	ST	33 dB
100Base-FX	70Km	1310 nm	10/125 SM	SC	34 dB
100Base-FX	80Km	1550 nm	10/125 SM	ST	29 dB
100Base-FX	90Km	1550 nm	10/125 SM	SC	32 dB
10Base-T	100m	N/A	Cat 5e	RJ-45	N/A
100Base-TX	100m	N/A	N/A	RJ-45	N/A

Regulatory Approvals:

ISO:

- Manufactured in an ISO9001 facility

Safety:

- UL 1604: Classified for ITE Equipment for use in hazardous locations: Class 1, Division 2 group A,B,C&D: Temp Code T4A; -25C < Tamb < 74C (applicable to versions with terminal block power option)
- UL 60950, EN 60950, IEC 60950, IEC 61000-6-2

Emission Compliance:

- FCC Part 15, Class A

CE Approve:

- EN61000-6-2
- EN61000-6-3

ESD Standards (IEC 61000-4-2):

- Enclosure Contact: + / - 4KV; Criteria B
- Enclosure Air: + / - 8KV; Criteria B

Radiated RFI Standards (IEC 61000-4-3):

- Enclosure Ports: 10V/m, 80 to 1000MHz; Criteria A

Burst Standards (IEC 61000-4-4):

- Enclosure Ports: + / - 4KV @ 2.5KHz; Criteria B
- D.C. Power Ports: + / - 4KV; Criteria B
- A.C. Power Ports: + / - 4KV; Criteria B

Surge Standards (IEC 61000-4-5):

- Signal Ports: + / - 1KV; Line-to-earth; Criteria B
- D.C. Power Ports: + / - 0.5KV; Line-to-earth; Criteria B
- A.C. Power Ports: + / - 2KV; Line-to-earth; Criteria B

Induced RFI Standards (IEC 61000-4-6):

- Signal Ports: 10V @ 0.15 - 80MHz; Criteria A
- D.C. Power Ports: 10V @ 0.15 - 80MHz; Criteria A
- A.C. Power Ports: 10V @ 0.15 - 80MHz; Criteria A
- Earth Ground Ports: 10V @ 0.15 - 80MHz; Criteria A

Magnetic Field Standards (IEC 61000-4-8):

- Enclosure Ports: 30A/m @ 50, 60Hz; Criteria A

Voltage Dip Standards (IEC 61000-4-11):

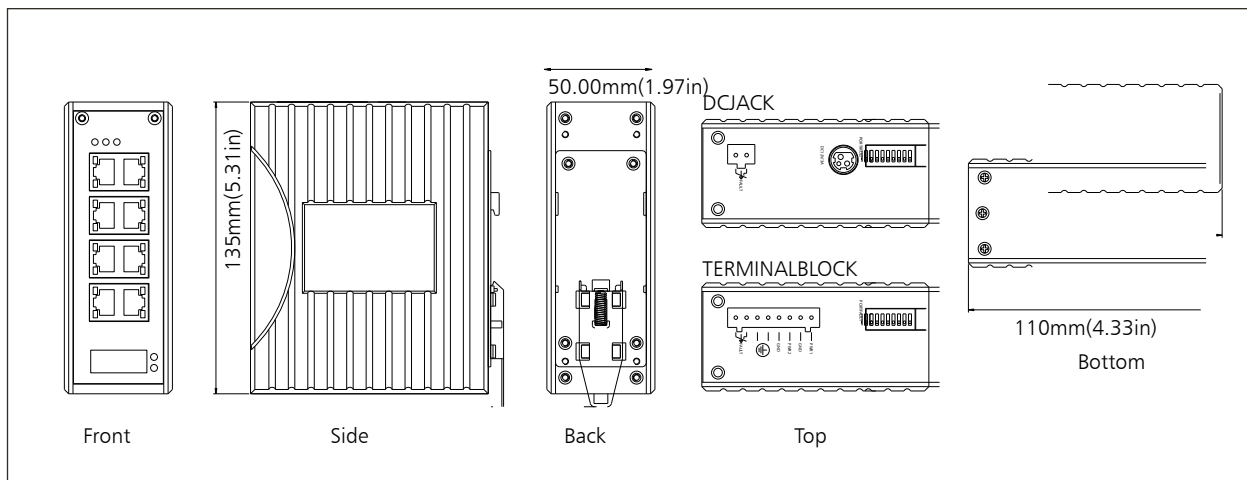
- A.C. Power Ports: 30% Reduction for 0.5 period; Criteria B

Environmental Test Compliance:

- (IEC 60068-2-6) Vibration Resistance: 5G @ 150Hz; Criterion 3 (Operation/Storage/Transport)
- (IEC 60068-2-27) Shock: 25G @ 11ms (Half-Sine Shock Pulse; Operation) 50G @ 11ms (Half-Sine Shock Pulse; Storage/Transport)
- (IEC 60068-2-32) Free Fall: 1M (3.281ft.)

NEMA TS1/2 Environmental requirements for Traffic control equipment

Diagrams



Ordering Information

EX94008-00-I-P	Hardened Unmanaged Switch with 8-port 10/100Base-TX
EX94018-XY-I-P	Hardened Unmanaged Switch with 8-port 10/100Base-TX + 1-port 100Base-FX
EX94026-XY-I-P	Hardened Unmanaged Switch with 6-port 10/100Base-TX + 2-port 100Base-FX
EX94044-XY-I-P	Hardened Unmanaged Switch with 4-port 10/100Base-TX + 4-port 100Base-FX
EX94005-00-I-P	Hardened Unmanaged Switch with 5-port 10/100Base-TX
EX94014-XY-I-P	Hardened Unmanaged Switch with 4-port 10/100Base-TX + 1-port 100Base-FX
EX94024-XY-I-P	Hardened Unmanaged Switch with 4-port 10/100Base-TX + 2-port 100Base-FX

100FX Fiber Options :

(XY) = 1A : Multi Mode (SC)

1B : Multi Mode (ST)

2A : Single Mode (SC) -20Km

2B : Single Mode (SC) -40Km

2D : Single Mode (ST) -20Km

2E : Single Mode (SC) WDM -TX:1310nm/RX:1550nm -20Km

2F : Single Mode (SC) WDM -TX:1310nm/RX:1550nm -40Km

2G : Single Mode (SC) WDM -TX:1550nm/RX:1310nm -20Km

2H : Single Mode (SC) WDM -TX:1550nm/RX:1310nm -40Km

*More 100FX Fiber options also available upon request.

Installation Type : (I) = 1 : DIN Rail (mounting kit is included)

Optional Panel mount kit, ordered separately,

part number: **KP-AA96-480**



Power Connector Options : (P) = A : Terminal Block* / B : DC Jack**

*Options A -The Terminal Block option does not include an external Power supply. Please order the following part numbers, as required: **DR-30-24, DR-60-24, DR-75-24, or DR-120-24, 41-136046-1~5**

Options B -The external power adapter and power cord are not included with the switch. Please order the following part numbers, as required: **41-136044-1~5

*See page 4-5 to 4-8 for more detailed information about optional accessories (Din-Rail Power supply, Power adapter)