

# EX71000 Series

株式会社 サイバネット

Managed Hardened 8-port 10/100BASE and 2-port Gigabit Ethernet Switch with SFP options



## Value

- › Provides flexibility of 8-port 10/100BASE-TX/FX/BX/SFP plus 2-port Gigabit-TX/SX/LX/BX/SFP
- › Complies with EN50121-4 Environmental requirement for Railway applications
- › Wide temp range for extreme environments



## Features

- › Certified by NEMA TS2 Environmental requirements for Traffic control equipment
- › Supports α-ring and RSTP/MSTP/STP for Ethernet redundancy
- › 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 and LACP
- › IEEE802.1x Security
- › Bandwidth Rate Control
- › Per-port programmable MAC address locking
- › Up to 24 Static Secure MAC addresses per port
- › Port mirroring
- › NTP synchronization
- › DHCP Client/Server
- › RS-232 console, Telnet, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management
- › 1000Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex, Auto-negotiation, Auto-MDI/MDIX
- › Full wire-speed forwarding rate
- › -40°C to 75°C (-40°F to 167°F) operating temperature range, tested for functional operation @ -40°C to 85°C (-40°F to 185°F)

## Ordering Information

EX71800-00Z	8-port 10/100BASE-TX Hardened Managed Ethernet Switch
EX71801-0YZ	8-port 10/100BASE-TX + 1-port Gigabit Hardened Managed Ethernet Switch
EX71802-0YZ	8-port 10/100BASE-TX + 2-port Gigabit Hardened Managed Ethernet Switch
EX71802-02Z	8-port 10/100BASE-TX + 2-port 10/100/1000BASE-TX LAN Bypass
EX71610-X0Z	6-port 10/100BASE-TX + 1-port 100BASE-FX Hardened Managed Ethernet Switch
EX71620-X0Z	6-port 10/100BASE-TX + 2-port 100BASE-FX Hardened Managed Ethernet Switch
EX71621-XYZ	6-port 10/100BASE-TX + 2-port 100BASE-FX + 1-port Gigabit Hardened Managed Ethernet Switch
EX71622-XYZ	6-port 10/100BASE-TX + 2-port 100BASE-FX + 2-port Gigabit Hardened Managed Ethernet Switch
EX71420-X0Z	4-port 10/100BASE-TX + 2-port 100BASE-FX Hardened Managed Ethernet Switch
EX71422-XYZ	4-port 10/100BASE-TX + 2-port 100BASE-FX + 2-port Gigabit Hardened Managed Ethernet Switch
EX71440-X0Z	4-port 10/100BASE-TX + 4-port 100BASE-FX Hardened Managed Ethernet Switch

### 100FX Fiber Options :

- (X) = 1 : Multi Mode (SC) - 2Km  
 2 : Multi Mode (ST) - 2Km  
 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  
 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  
 V : SFP Mode

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

### Gigabit Port Options :

\*More Gigabit options also available upon request.

- (Y) = 1 : 10/100/1000BASE-TX  
 2 : 10/100/1000base-TX LAN Bypass  
 3 : 1000BASE-SX (SC) - 550m  
 4 : 1000 BASE-SX(SC) - 2Km  
 5 : 1000 BASE-SX(ST) - 550m

- A : 1000BASE-LX (SC) - 10Km  
 B : 1000BASE-LX (SC) - 20Km  
 R : 1000BASE-BX (SC) WDM-TX:1310nm/RX:1550nm - 20Km  
 S : 1000BASE-BX (SC) WDM-TX:1550nm/RX:1310nm - 20Km  
 V : 1000BASE-SFP Mode

### Power Input Interface :

(Z) = B : DC Jack & Terminal Block

### Power Supply : (Optional)

\*Option A - Terminal Block power supply(s), part numbers: DR-30-24, DR-60-24, DR-75-24, DR-120-24 or 41-136046-X (X)=1: US, 2: EU, 3: UK, 4: AU, 5: JP

\*\*Option B - DC Jack power supplies kit(s), part numbers: 41-136044-X (X)=1: US, 2: EU, 3: UK, 4: AU, 5: JP

**Installation Type** : DIN Rail (mounting kit is included), Optional Rack Mount kits (KR-BK71000) and Panel Mount kits (KP-AA96-480) are available for ordering.

# Specifications

Technology	
Standards	<ul style="list-style-type: none"> <li>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</li> </ul>
Forward and Filtering Rate	<ul style="list-style-type: none"> <li>14,880pps for 10Mbps</li> <li>148,810pps for 100Mbps</li> <li>1,488,100pps for 1000Mbps</li> </ul>
Packet Buffer Memory	<ul style="list-style-type: none"> <li>2M bits</li> </ul>
Processing Type	<ul style="list-style-type: none"> <li>Store-and-Forward</li> <li>Half-duplex back-pressure and IEEE802.3x full-duplex flow control</li> </ul>
Address Table Size	<ul style="list-style-type: none"> <li>8192 MAC addresses</li> </ul>

Power	
Input	<ul style="list-style-type: none"> <li>Input Voltage: 12 to 48VDC (Terminal Block); 12VDC (DC Jack)</li> </ul>
Power Consumption	<ul style="list-style-type: none"> <li>11W Max. 0.92A @ 12VDC, 0.46A @ 24VDC</li> </ul>
Overload Current Protection	<ul style="list-style-type: none"> <li>Present</li> </ul>
Reverse Polarity Protection	<ul style="list-style-type: none"> <li>Present</li> </ul>

Mechanical	
Casing	<ul style="list-style-type: none"> <li>Aluminum case</li> <li>IP30</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>60mm (W) x 125mm (D) x 145mm (H)</li> <li>(2.36" (W) x 4.92" (D) x 5.7" (H))</li> </ul>
Weight	<ul style="list-style-type: none"> <li>1.1Kg (2.42lbs.)</li> </ul>
Installation	<ul style="list-style-type: none"> <li>DIN-Rail (Top hat type35mm), Rack Mount, Wall Mount</li> </ul>

Interface	
Ethernet Port	<ul style="list-style-type: none"> <li>10/100BASE-TX: 8, 6 or 4 port</li> <li>100BASE-FX: 0 to 4 ports</li> <li>Gigabit: 0, 1 or 2 ports</li> </ul>
Console Port	<ul style="list-style-type: none"> <li>Port: One DB9 RS-232 port</li> </ul>
LED Indicators	<ul style="list-style-type: none"> <li>Per Unit: Power Status (Power 1, Power 2, Power 3)</li> <li>Per Port: 10/100TX, 100FX/ SFP: Link/Activity, Speed</li> <li>10/100/1000TX, 1000SX/LX/ SFP: Link/Activity, Speed</li> </ul>
Alarm Contact	<ul style="list-style-type: none"> <li>one relay output with current 1A @ 24VDC</li> </ul>

Environment	
Operating Temperature	<ul style="list-style-type: none"> <li>-40°C to 75°C (-40°F to 167°F)</li> <li>Tested @ -40°C to 85°C (-40°F to 185°F)</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>-40°C to 85°C (-40°F to 185°F)</li> </ul>
Ambient Relative Humidity	<ul style="list-style-type: none"> <li>5% to 95% (non-condensing)</li> </ul>

Regulatory Approvals	
ISO	<ul style="list-style-type: none"> <li>Manufactured in an ISO9001 facility</li> </ul>
Safety	<ul style="list-style-type: none"> <li>UL508</li> </ul>
EMI	<ul style="list-style-type: none"> <li>FCC Part 15, Class A</li> <li>EN61000-6-4                             <ul style="list-style-type: none"> <li>EN55022</li> <li>EN61000-3-2</li> <li>EN61000-3-3</li> </ul> </li> </ul>
EMS	<ul style="list-style-type: none"> <li>EN61000-6-2                             <ul style="list-style-type: none"> <li>EN61000-4-2 (ESD Standards)                                     <ul style="list-style-type: none"> <li>Contact: +/- 6KV</li> <li>Air: +/- 8KV</li> </ul> </li> <li>EN61000-4-3 (Radiated RFI Standards)                                     <ul style="list-style-type: none"> <li>10V/m, 80 to 1000MHz; 80% AM</li> </ul> </li> <li>EN61000-4-4 (Burst Standards)                                     <ul style="list-style-type: none"> <li>Signal Ports: +/- 4KV</li> <li>D.C. Power Ports: +/- 4KV</li> </ul> </li> <li>EN61000-4-5 (Surge Standards)                                     <ul style="list-style-type: none"> <li>Signal Ports: +/- 2KV; Line-to-Earth</li> <li>D.C. Power Ports: +/- 2KV; Line-to-Earth</li> </ul> </li> <li>EN61000-4-6 (Induced RFI Standards)                                     <ul style="list-style-type: none"> <li>Signal Ports: 10Vrms @ 0.15 - 80MHz; 80% AM</li> <li>D.C. Power Ports: 10Vrms @ 0.15 - 80MHz; 80% AM</li> </ul> </li> <li>EN61000-4-8 (Magnetic Field Standards)                                     <ul style="list-style-type: none"> <li>30A/m @ 50, 60Hz</li> </ul> </li> </ul> </li> </ul>
Environmental Test Compliance	<ul style="list-style-type: none"> <li>IEC60068-2-6 Fc (Vibration Resistance)                             <ul style="list-style-type: none"> <li>5g @ 10 - 150Hz, Amplitude 0.35mm (Operation/Storage/Transport)</li> </ul> </li> <li>IEC60068-2-27 Ea (Shock)                             <ul style="list-style-type: none"> <li>25g @ 11ms (Half-Sine Shock Pulse; Operation)</li> <li>50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)</li> </ul> </li> <li>FED STD 101C Method 5007.1 (Free fall w/ package)                             <ul style="list-style-type: none"> <li>-Tested with Cross Weight and Drop High standard table</li> </ul> </li> </ul>

# Diagrams

Unit: mm

