comnet
Communication Networks

QUICK START GUIDE

CNXE2GE2TX8MSPOE

INDUSTRIALLY HARDENED
HIGH SPEED 12-PORT MANAGED POE ETHERNET SWITCH
8 × GE PSE + 2 × 2.5GE SFP + 2 × 10GE SFP+ PORTS

This guide serves the following ComNet Model Numbers:

CNXE2GE2TX8MSPOE

The ComNet CNXE2GE2TX8MSPOE is a twelve-port Managed Ethernet Switch designed to reliably operate in harsh, environmentally challenging applications. It features eight 10/100/1000BASE-TX ports supporting IEEE 802.2af/at PSE with a total power budget of 240 watts with a maximum of thirty watts per port to provide power in a PoE application. It also provides two 100/1G/2.5GBASE-X ports and two 1G/10GBASE-X SFP+ ports. The SFP ports are configurable by the use of compatible ComNet SFP+ modules. These network-managed layer 2 switches are compatible with any IEEE802.3 compliant Ethernet device.

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Getting Started

1.1 About the CNXE2GE2TX8MSPOE

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1.2 Software Features

- » Supports C-Ring (recovery time < 30ms), and MSTP (RSTP/STP compatible) for Ethernet Redundancy
- » Supports IEEE 802.3az Energy-Efficient Ethernet technology
- » Supports latest Internet protocol version IPV6
- » Supports HTTPS/SSH protocols for high network security
- » Supports IP-based bandwidth management
- » Supports application-based QoS management
- » IGMP v2/v3 (IGMP snooping) support for filtering multicast traffic
- » Supports SNMP v1/v2c/v3 & RMON & 802.1Q VLAN network management
- » Supports ACL and 802.1x user authentication
- » Supports 10K bytes Jumbo frame
- » Multiple notifications during unexpected events
- » Configuration via Web-based, Telnet, Console (CLI), and Windows utility (eConsole)
- » Supports LLDP Protocol

1.3 Hardware Specifications

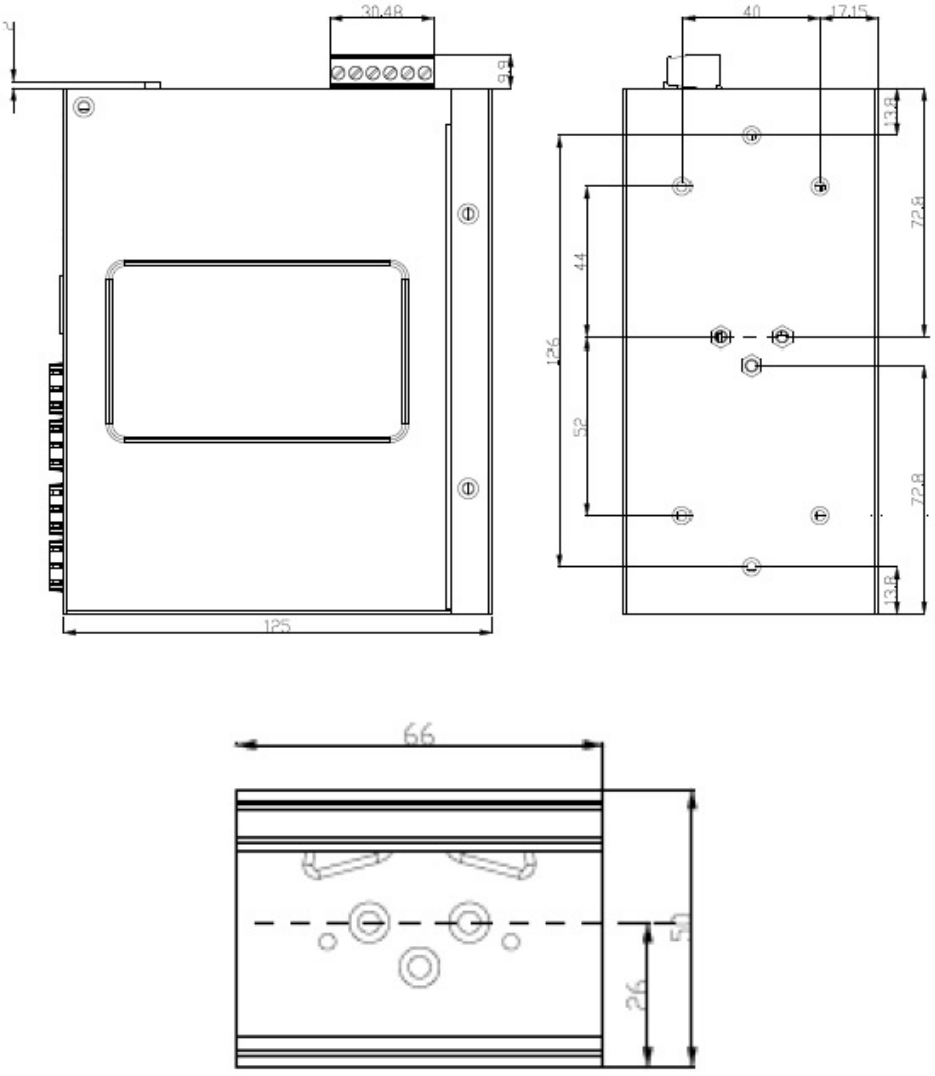
» Redundant 12~48VDC power inputs
» 8 x 10/100/1000Base-T(X) ports, POE 30W
» 2 x 1G/10GBase-X SFP+ sockets
» 2 x 100/1G/2.5GBase-X SFP+ sockets
» 1 x console port
» Operating temperature: -20 to +60˚ C @ 2.5G/10G SFP or -40 to +75° C @ 1G
» Storage temperature: -40 to +85°C
» Operating humidity: 5% to 95%, non-condensing
» Casing: IP-30
» DIN-Rail and wall mounting enabled
» Dimensions: 74.3 (W) x 125 (D) x 153.6 (H) mm

Hardware Overview

2.1 Installing Switch on DIN-Rail

Each switch has a DIN-Rail kit pre-installed on rear panel.

Mount CNXE2GE2TX8MSPOE on DIN-Rail

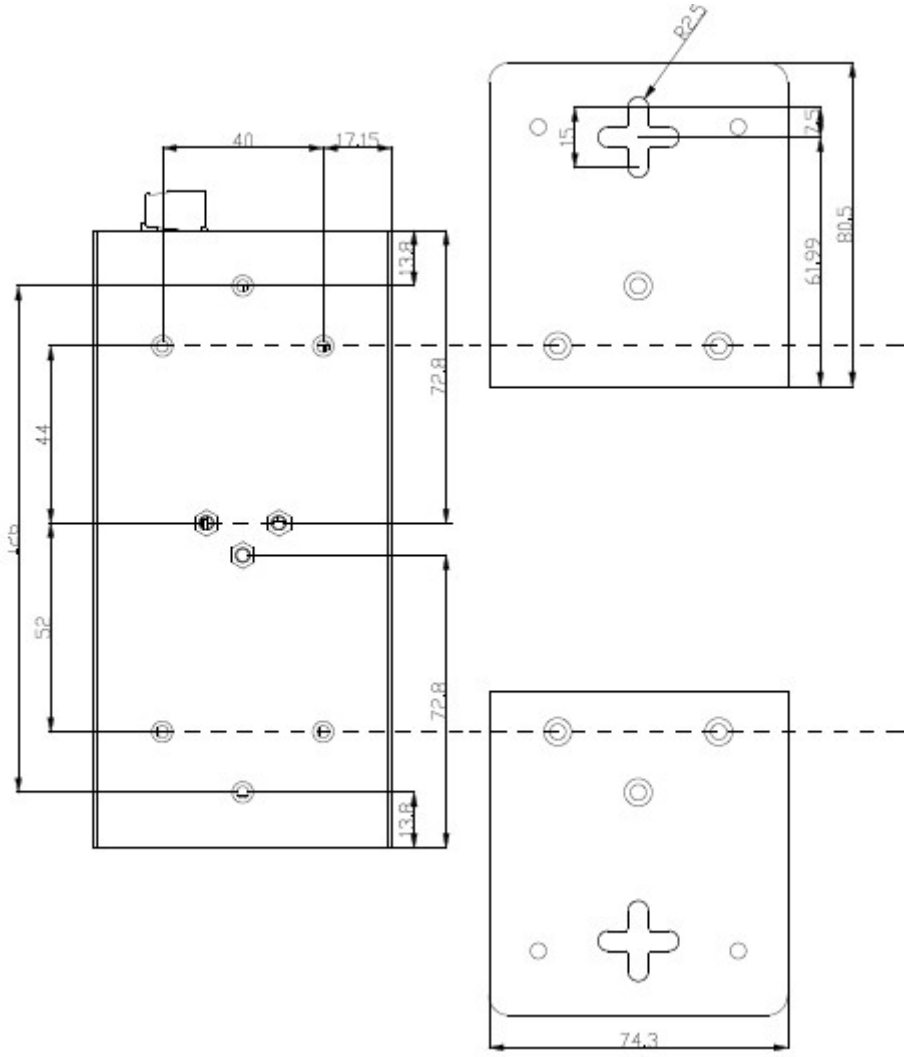


DIN-Rail Mount Kit

2.2 Wall Mounting Installation

Each switch includes an optional wall mount panel.

Install wall mount panel CNXE2GE2TX8MSPOE



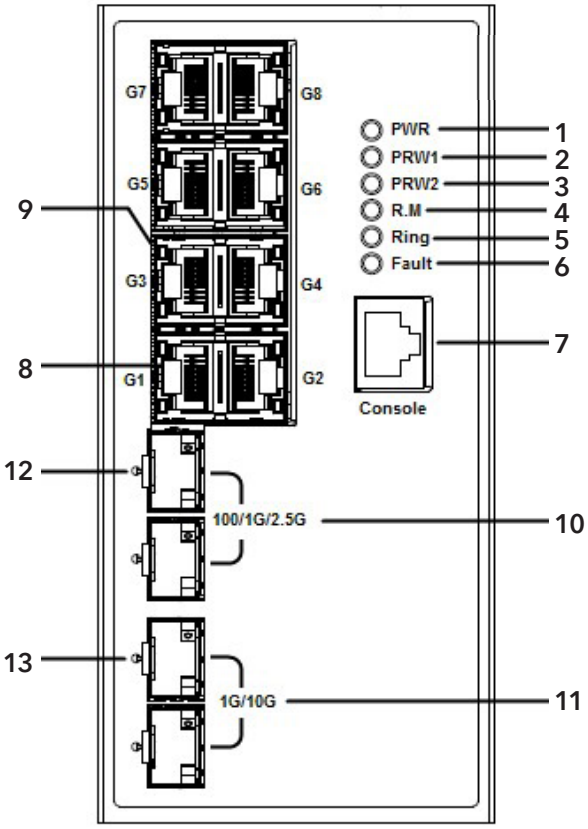
Wall-Mount Kit

Hardware Overview

3.1 Front Panel

The following table describes the labeling on the front panel of the CNXE2GE2TX8MSPOE.

Port	Description
DG SFP Port	2 x 100 / 1G / 2.5G
TG SFP Port	2 x 1G / 10G
Copper Port	8 x 10/100/1000Base-T(X)
Console	RJ-45 connecter to manage switch via RS-232



1. LED for PWR. When lit, indicates PWR UP.
2. LED for PWR1.
3. LED for PWR2.
4. LED for R.M (Ring master). When lit, indicates the switch is functioning as ring master.
5. LED for Ring. When lit, indicates the Redundant-Ring is activated.
6. LED for Fault. When lit, indicates a Power failure or Port down/fail.
7. Console port (RJ-45)

8. 10/100/1000Base-T(X) ports
9. LED for Ethernet ports link/act/speed status (right port indicator) (see table below)
10. SFP Port support 100 / 1G / 2.5G SFP+ Port support 1G / 10G
11. 10/100/1000Base-T(X) ports
12. LED for SFP Ports (see table below)
13. LED for SFP Ports (see table below)

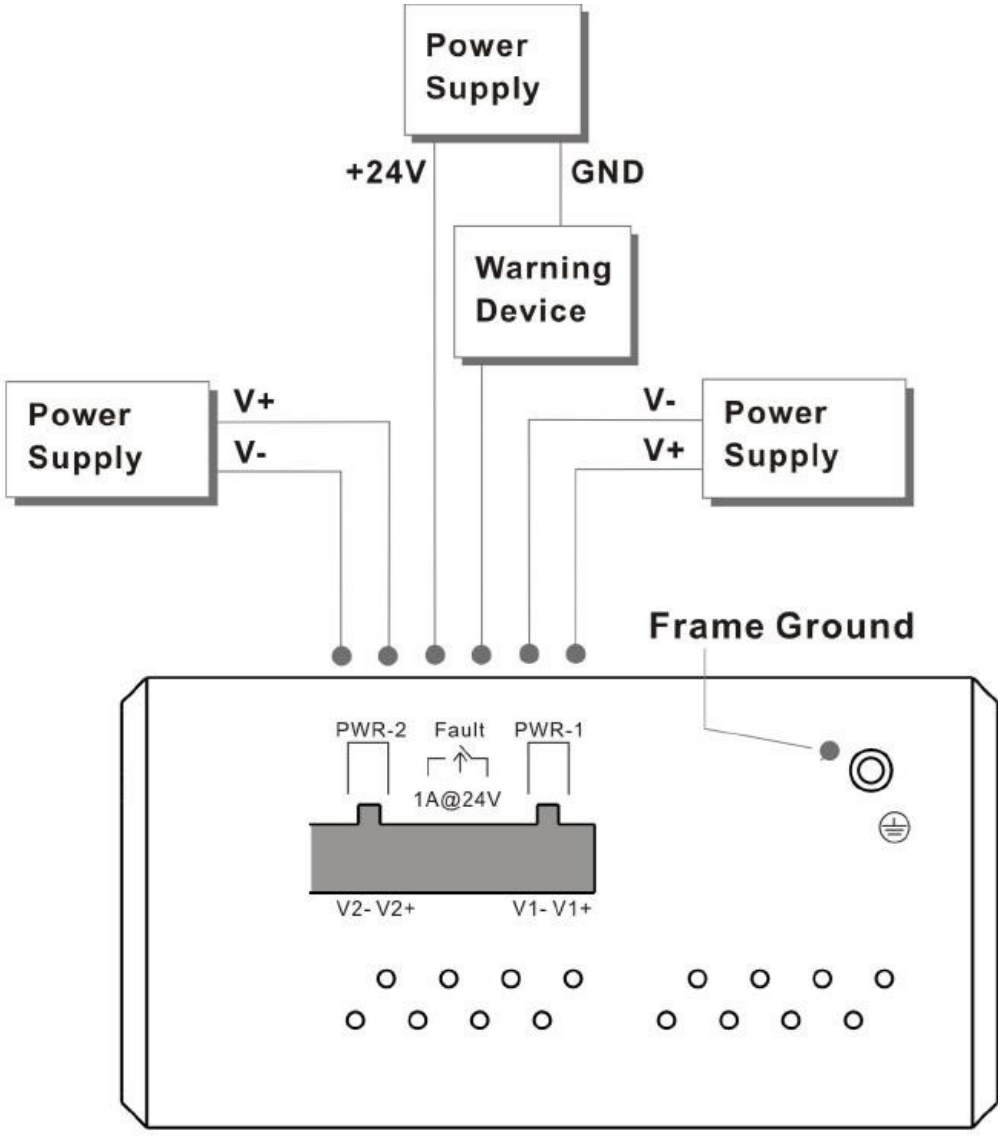
3.2 Front Panel LEDs

LED	Color	Status	Description
PWR	Green	On	DC power module up
PW1	Green	On	DC power module 1 activated.
PW2	Green	On	DC Power module 2 activated.
R.M.	Green	On	Ring Master
Ring	Green	On	Ring enabled
		Slow blink	Ring has only one link (cannot build a ring)
		Fast blink	Ring is working normally.
Fault	Amber	On	Fault relay. Power failure or Port down/fail.
Gigabit Ethernet ports			
ACT/LNK/SPEED (Dual color)	Green/Amber	Green	Port link up on 1000Mbps Link/Act at 1000Mbps
		Amber	Link/Act at 100Mbps
		OFF	Link/Act at 10Mbps
PoE	Amber	On	PoE enabled
SFP ports			
LNK/LNK	Green	On	Port link up.
		Blink	Data transmitted.

3.3 Top View Panel

The bottom panel components of CNXE2GE2TX8MSPOE are as shown below:

1. Terminal block includes: PWR1, PWR2 (50-57V DC)
2. Ground wire



Hardware Installation

4.1 Wiring

⚠ *ATTENTION*

1. Be sure to disconnect the power cord before installing and/or wiring your switches.
2. Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size.
3. If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.
4. Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
5. Do not run signal or communications wiring and power wiring through the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.
6. You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring sharing similar electrical characteristics can be bundled together.
7. You should separate input wiring from output wiring.
8. It is advised to label the wiring to all devices in the system.

4.1.1 Fault Relay

The three-pin fault relay terminal on the front panel is used to detect user-configured events. The two wires attached to the fault contacts form an open circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains closed.

4.1.2 Redundant Power Inputs

The switch has two sets of power inputs, power input 1 and power input 2. Follow the steps below to wire redundant power inputs.

Step 1: Insert the negative/positive wires into the V-/V+ terminals, respectively.

Step 2: Secure the DC wires by using a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

4.2 Connection

4.2.1 Cables

1000/100BASE-TX/10BASE-T Pin Assignments

The device has standard Ethernet ports. According to the link type, the switch uses CAT 3, 4, 5, or 5e UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications:

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45
1000BASE-T	Cat. 5/Cat. 5e 100-ohm UTP	100 m (328ft)	RJ-45

With 10/100/1000Base-T(X) cables, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data.

10/100Base-T(X) RJ-45 Port Pin Assignments:

Pin Number	Assignment
1	TD+
2	TD-
3	RD+
6	RD-

1000Base-T RJ-45 Port Pin Assignments:

Pin Number	Assignment
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

The device supports auto MDI/MDI-X operation. You can use a cable to connect the switch to a PC. The table below shows the 10/100Base-T(X) MDI and MDI-X port pin outs.

10/100Base-T(X) MDI/MDI-X Pin Assignments:

Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	Not used
5	Not used	Not used
6	RD-(receive)	TD-(transmit)
7	Not used	Not used
8	Not used	Not used

1000Base-T MDI/MDI-X Pin Assignments:

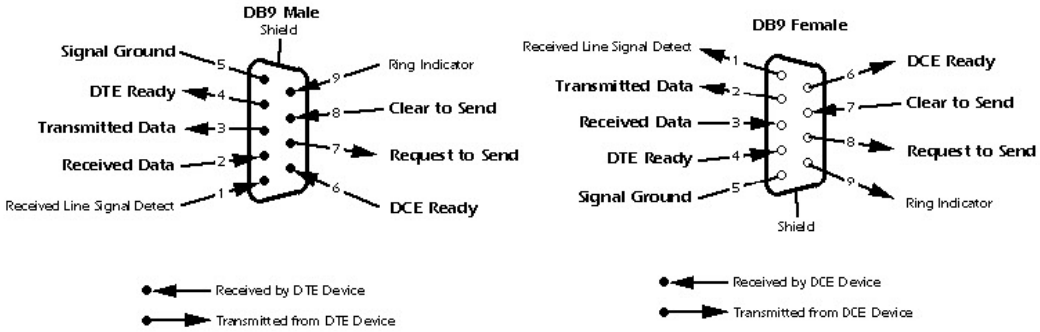
Pin Number	MDI port	MDI-X port
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

Note: “+” and “-” signs represent the polarity of the wires that make up each wire pair.

RS-232 console port wiring

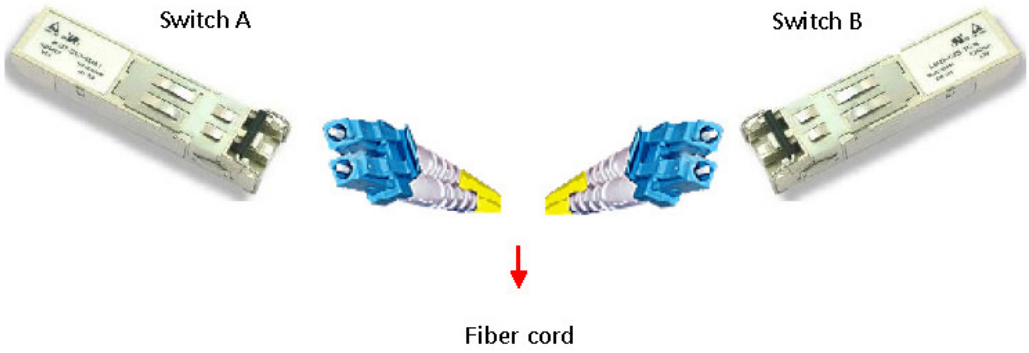
The device can be managed via console ports using the included RS-232 cable. You can connect the port to a PC via the RS-232 cable with a DB-9 female connector. The DB-9 female connector of the RS-232 cable should be connected the PC while the other end of the cable (RJ-45 connector) should be connected to the console port of the switch.

PC pin out (male) assignment	RS-232 with DB9 female connector	DB9 to RJ 45
Pin #2 RD	Pin #2 TD	Pin #2
Pin #3 TD	Pin #3 RD	Pin #3
Pin #5 GD	Pin #5 GD	Pin #5



4.2.2 SFP

The switch comes with fiber optical ports that can connect to other devices using SFP modules. The fiber optical ports are in multi-mode and single-mode with LC connectors. Please remember that the TX port of Switch A should be connected to the RX port of Switch B.



Management

The switch can be controlled via a built-in web server which supports Internet Explorer (version 5.0 or newer) and other web browsers such as Chrome. Manage, configure and upgrade firmware remotely via a web browser. The Web management function not only reduces network bandwidth consumption, but also enhances access speed and provides a user-friendly viewing screen.

⚠ ***ATTENTION:*** By default, IE5.0 or later version does not allow Java applets to open sockets. You need to modify the browser settings in order to enable Java applets for network ports.

Preparing for Web Management

You can access the management page of the switch via the following default values:

IP Address: 192.168.10.1

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.10.254

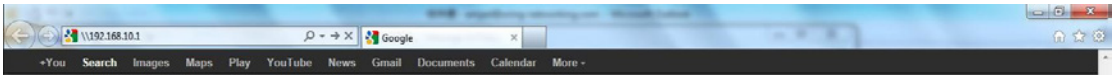
User Name: admin

Password: admin

System Login

Launch the Internet Explorer.

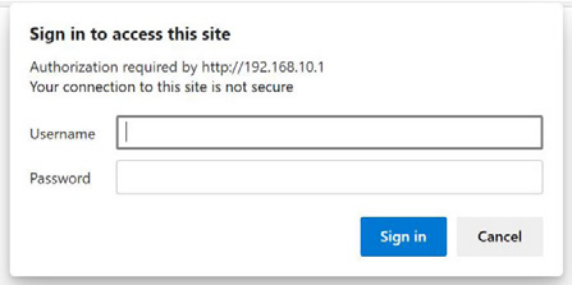
Type http:// and the IP address of the switch. Press Enter.



A login screen appears.

Type in the username and password. The default username and password is admin.

Click Enter or OK button to proceed to the management Web page.



Technical Specifications

Physical Ports	
10/100/1000Base-T(X) with Ports in RJ45 Auto MDI/MDIX	8
100/1G/2.5GBase-X with SFP port	2
1G/10GBase-X with SFP port	2
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1d for STP (Spanning Tree Protocol) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) IEEE 802.3af/at PoE specification
MAC Table	32K
Priority Queues	8
Processing	Store-and-Forward
Packet Buffer	32Mbits
Switch Properties	Switching latency: 7 us Switching bandwidth: 66Gbps Throughput (packet per second) : 49.1Mpps@64Bytes packet Max. Number of Available VLANs: 4096 VLAN ID Range : VID 0 to 4095 IGMP multicast groups: 64 for each VLAN Port rate limiting: User Define
Jumbo frame	Up to 10K Bytes

Security Features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic RADIUS/TACACS+ centralized password management SNMPv3 encrypted authentication and access security HTTPS / SSH / SSL enhance network security DOS/DDOS auto prevention IP Source Guard
Software Features	Redundant Ring (C-Ring) with recovery time less than 30ms Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging IGMP Snooping IP-based bandwidth management Application-based QoS management Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client Modbus TCP NTP server/client UPnP
QoS	TOS/Diffserv supported CoS Application based QoS IP based bandwidth management
Network Redundancy	C-Ring O-Chain MRP*NOTE STP/RSTP/MSTP (IEEE 802.1 d/w/s)
PoE management	PoE configuration PoE Status PoE Scheduling(turn on/off the PoE device) Auto-Ping check(Reboot PDs if there is no responses)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1
LED indicators	
Power Indicator (PWR)	Green : Power LED x 3
Ring Master Indicator (R.M.)	Green : Indicates that the system is operating in C-Ring Master mode
C-Ring Indicator (Ring)	Green : Indicates that the system operating in C-Ring mode Green Blinking : Indicates that the Ring is broken.
Fault Indicator (Fault)	Amber : Indicate unexpected event occurred
10/100/1000Base-T(X) RJ45 Port Indicator (Upper)	Dual color LED: Green for 1000Mbps Link/Act indicator. Amber for 10/100Mbps Link/Act indicator, OFF for 10Mbps Link/Act
PoE Indicator RJ45 Port (Lower)	Amber : PoE enable

1G/2.5GBase-X SFP Port Indicator	Green LED for Link/Act
1G/10Gbase-X SFP Port Indicator	Green LED for Link/Act
Fault contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Power	
Redundant Input power	Dual DC inputs 50~57VDC on 6-pin terminal block
Power consumption (Typ.)	19 Watts
Total PoE power budget	240W max, 30W per port
Overload current protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	74.3 (W) x 125 (D) x 153.6 (H) mm (2.93 x 4.92 x 6.05 inches)
Weight (g)	1078 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-20˚ C to +60˚ C @ 2.5G/10G SFP -40° C to +75° C @ 1G
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
EMC	CE EMC (EN 55024, EN 55032), FCC Part 15 B
EMI	EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A
EMS	EN 55024 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS),IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8(PFMF), IEC/EN 61000-4-11 (DIP)
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31
Vibration	IEC60068-2-6
Safety	EN60950-1
MTBF	>495,000 hours
Warranty	Lifetime

ComNet Customer Service
Customer Care is ComNet Technology's global service center, where our professional staff is ready to answer your questions at any time.
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