

APPEARANCE



DESCRIPTION

The ComNet™ CNGE8MS is an 8-port Managed Ethernet Switch designed to reliably operate in harsh, environmentally challenging applications. It features four (4) 1000BASE-TX and four (4) gigabit combo ports. The four combo ports are 10/100/1000Mbps configurable for either Cat5-e copper, or multimode or single-mode optical fiber by the use of optional ComNet SFPs* for connector type and distance. Exclusive to ComNet is C-Ring, a feature that protects the network from interruptions or temporary malfunctions with fast recovery technology. Legacy ring allows the switch to be used in an existing ring of ComNet X-Ring enabled switches. Redundant DC inputs are included for uninterrupted operation in the event of a power supply failure. The electrical ports support the 10/100/1000Mbps Ethernet IEEE802.3 protocol, and auto-negotiating and auto-MDi/MDiX features are provided. These network-managed layer 2 switches are optically and electrically compatible with any IEEE802.3 compliant Ethernet device. The CNGE8MS is DIN-rail or wall-mountable.

* SFP = Small Form-Factor Pluggable Module

Multimode fiber needs to meet or exceed fiber standard ITU-T G.651.

Single mode fiber needs to meet or exceed fiber standard ITU-T G.652

APPLICATIONS

- › 10/100/1000Mbps Ethernet
- › ITS Networks with Streaming Video

FEATURES

- › 16Gbps Switching bandwidth:
 - 4 Combo Gigabit Ports & 4 10/100/1000T(X) Ports
- › IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic & Port Trunking for ease of bandwidth management
- › STP/RSTP/MSTP supported
- › Fully Compliant with the Environmental Requirements of NEMA TS-1/TS-2 & the Caltrans Specification for Traffic Signal Control Equipment
- › Operating Temperature: -40° C to +75° C (-40° F to +167° F). Functional to +85° C (185° F)
- › Lifetime Warranty
- › Fastest Redundant Ethernet Ring: ComNet C-Ring. Recovery time <30ms, with > 250 switches within the ring
- › Windows utility, eConsole, supports centralized management, and is web-based configurable, or by Telnet and console (CLI) ports
- › Supports LLDP (Link Layer Discovery Protocol)
- › Event notification through Syslog, E-mail, SNMP trap, and Relay Output
- › Port lock to prevent access from unauthorized MAC address
- › SNMP v1/v2c/v3 for secure network management
- › PTP Client (Precision Time Protocol) for clock synchronization
- › C-RSTP supports network applications with complex topology
- › Rigid aluminum housing design provides for DIN-Rail or wall mounting

SPECIFICATIONS

Ethernet Ports

RJ-45 Ports: (4) 10/100/1000BASE-T(X), with Auto MDI/MDIX
 Combo Ports: (4) 10/100/1000BASE-T(X) and (4) 100/1000BASE-X SFP Ports

Ethernet Standards Supported

IEEE 802.3 for 10BASE-T
 IEEE 802.3u for 100BASE-TX and 100BASE-FX
 IEEE 802.3z for 1000BASE-X
 IEEE 802.3ab for 1000BASE-T
 IEEE 802.3x for Flow control
 IEEE 802.3ad for LACP (Link Aggregation Control Protocol)
 IEEE 802.1D for STP (Spanning Tree Protocol)
 IEEE 802.1p for COS (Class of Service)
 IEEE 802.1Q for VLAN Tagging
 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)

Switch Properties

Switching Latency: 7 μs
 Switching Bandwidth: 16Gbps
 Max. Number of VLANs Available: 4096
 IGMP Multicast Groups: 1024
 Port Rate Limiting: User Defined
 MAC Table: 8192 MAC addresses available
 Priority Queues: 4
 Processing: Store-and-Forward

Security Features

Enable/Disable Ports, MAC based port security
 Port-Based Network Access Control: 802.1x
 VLAN (802.1Q): To segregate and secure network traffic
 Supports Q-in-Q VLAN for performance & security to expand the VLAN space
 Radius Centralized Password Management
 SNMPv3 Encrypted Authentication and Access Security
 TACACS

Software Features

STP/RSTP/MSTP (IEEE 802.1D/w/s)
 C-Ring Redundant Ring: Recovery time <30ms, with over 250 switches within ring network
 TOS/Diffserv Supported
 Quality of Service (802.1p) for Real-Time Traffic
 VLAN (802.1Q) with VLAN Tagging and GVRP Supported
 IGMP Snooping for Multicast Filtering
 Port Configuration, Status, Statistics, Monitoring & Security
 DHCP Server / Client support
 Port Trunk Support
 MVR (Multicast VLAN Registration) support

Network Redundancy

C-Ring
 Legacy Ring
 C-RSTP
 STP
 RSTP
 MSTP

Alarms & Monitoring Systems

Relay Output: For fault event alarming
 Syslog Server / Client: To record and view events
 SMTP: For event warning notifications via email
 Event Selection Support
 RS-232 Serial Console RJ-45 Port: RS-232 @ 9600 bps, with console cable.

LED Status Indicators

Power Indicators: 3
 Ring Master Indicator: Indicates switch is operating in C-Ring Master mode
 ComRing Indicator (Ring): Indicates switch is operating in C-Ring mode
 Fault Indicator: Indicates a fault/failure event has occurred within the switch and/or network
 10/100/1000BASE-T(X) RJ-45 Port Indicator: For port/link activity & 100Mbps indication
 100/1000BASE-X SFP Port Indicator: For port/link activity

SPECIFICATIONS

Regulatory Approvals

EMI:	CC Part 15, CISPR (EN55022) Class A
EMS:	EN61000-4-2
ESD:	EN61000-4-3
RS:	EN61000-4-4
(EFT):	EN61000-4-5
Electrical Surge:	EN61000-4-6
CS:	EN61000-4-8, EN61000-4-11
Mechanical Shock:	IEC60068-2-27
Free Fall:	IEC60068-2-32
Vibration:	IEC60068-2-6
Safety:	EN60950-1

Fault Alarm Relay

Relay Contact Rating:	24VDC @ 1 A
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Electrical & Mechanical

Redundant Input Power, Dual DC Inputs:	12 – 48 VDC
Power Consumption, Typical:	25W
Current Protection:	Overload Current Protected
Polarity Protection:	Reverse Polarity Protected
Power Connector:	Terminal Block
Size (in./cm) (L×W×H)	2.93 × 4.3 × 6.05 in. (7.43 × 10.92 × 15.36 cm)
Shipping Weight:	<3 lbs./1.1 kg

Environmental

MTBF:	>100,000 hours
Operating Temperature:	-40° C to +75° C (-40° to +167° F) Functional to +85° C (185° F)
Storage Temp:	-40° C to +85° C (-40° to 185°F)
Relative Humidity:	5% to 95% (non-condensing)*
Compliance:	Fully compliant with the environmental requirements (ambient operating temperature, storage temperature, mechanical shock, vibration, humidity with condensation, high-line/low-line voltage conditions, and voltage transient protection) of NEMA TS-1/TS-2 and the Caltrans specification for Traffic Signal Control Equipment.

* May be extended to humidity with condensation conditions by adding suffix '/C'



ORDERING INFORMATION

Part Number	Description
CNGE8MS	(4) 10/100/1000BASE-T(X) + (4) gigabit combo ports
Options/Accessories	Add suffix '/C' for Conformally Coated Circuit Boards (Extra charge, consult factory) DC Power Supply (Included).

NOTE: This product requires a fiber installation with a minimum 30 dB connector return loss. The use of Super Polish Connectors is recommended. Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J. In a continuing effort to improve and advance technology, product specifications are subject to change without notice.



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