comnet
Communication Networks

POWER SUPPLY **INCLUDED**

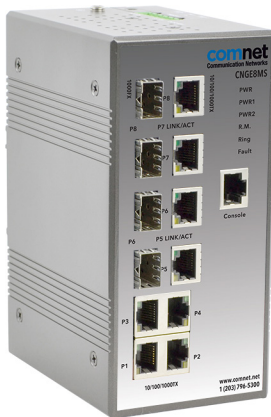75° -40° **HARDENED**

SFP **FLEXIBILITY**

1G GIGABIT **ALL GIGABIT**

ETHERNET **8 CH**

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.

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

› Tested and certified by an independent laboratory for full compliance with the environmental requirements (ambient operating temperature, mechanical shock, vibration, humidity with condensation, high-line/low-line voltage conditions and transient voltage protection) of NEMA TS-1/TS-2 and CALTRANS Traffic Signal Control Equipment Specifications.

› Compatible and fully functional when used in a Moxa® Turbo ring topology

› Operating Temperature: -40˚ C to +75˚ C (-40˚ F to +167˚ F). Functional to +85˚ C (185° F)

› 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

› Lifetime Warranty

APPLICATIONS

› 10/100/1000 Mbps Ethernet Media Converter

› High Speed Computer Links

Small Form-Factor Pluggable Module. Sold separately.

SPECIFICATIONS

Ethernet Ports

RJ-45 Ports	(4) 10/100/1000BASE-T(X), with Auto MDI/MDIX
Combo Ports	(4) 10/100/1000BASE-T(X),
	(4) 100/1000BASE-X SFP Ports[1]

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. 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

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.

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

Moxa® Turbo Ring

C-RSTP

STP

RSTP

MSTP

LED Status Indicators

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

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

[1] 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.

SPECIFICATIONS

Fault Alarm Relay

Relay Contact Rating	24VDC @ 1 A

Power

Operating Voltage Range	Dual DC Inputs: 12 – 48 VDC
Power Consumption, Typical	25W

Electrical & Mechanical

Current Protection	Overload Current Protected
Polarity Protection	Reverse Polarity Protected
Power Connector	Terminal Block
Size (L×W×H)	2.93 × 4.3 × 6.05 in (7.43 × 10.92 × 15.36 cm)
Shipping Weight:	<3 lbs./1.1 kg

AGENCY COMPLIANCE

FC PART 15 COMPLIANT   CE   cULus E322911   RoHS COMPLIANT   C N24621   [WEEE]   Low Power Consumption

Environmental

MTBF	>100,000 hours
Operating Temperature	-40˚ C to +75˚ C (-40˚ to +167˚ F)
	Functional to +85˚ C (185º F)
Storage Temp	-40˚ C to +85˚ C (-40˚ to 185°F)
Relative Humidity	5% to 95% (non-condensing)[2]

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.

NOTE: In a continuing effort to improve and advance technology, product specifications are subject to change without notice.

ORDERING INFORMATION

Part Number	Description
CNGE8MS	(4) 10/100/1000BASE-T(X) + (4) gigabit combo ports
Options/Accessories	[2] Add suffix '/C' for Conformally Coated Circuit Boards to extend to condensation conditions (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.

Low Power Consumption