



DIN RAIL



INCLUDED



HARDENED



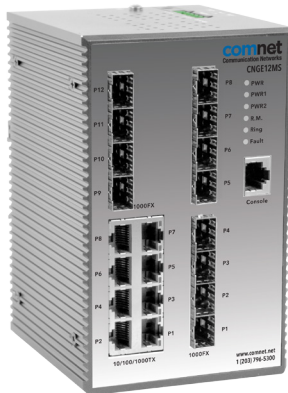
FLEXIBILITY



ALL GIGABIT



12



The ComNet™ CNGE12MS is a 12-port Managed Ethernet Switch designed to reliably operate in harsh, environmentally challenging applications. It features four (4) 1000BASE-X and eight (8) gigabit combo ports. The eight 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*. 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. These network-managed layer 2 switches are optically and electrically compatible with any IEEE802.3 compliant Ethernet device.

FEATURES

- › Twelve Gigabit Ports
8 Gigabit combo ports & 4 Gigabit SFP ports
- › Electrical ports support 10/100/1000 Mbps Ethernet IEEE802.3 protocol
- › IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- › Supports Jumbo Frame up to 9K Bytes for streaming video applications
- › MSTP/RSTP/STP
- › Fully compliant with the environmental requirements of NEMA TS-1/TS-2 and 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)
- › Fastest Redundant Ethernet Ring: ComNet C-Ring. Recovery time <30ms, with > 250 switches within the ring
- › IP-Based Bandwidth Management & Application-Based QoS Management
- › Device-Binding Security Function & DOS/DDS Auto-Prevention
- › SNMP v1/v2c/v3, RMON & IEEE 802.1Q VLAN for secure network management
- › Supports ACL, IEEE 802.1x, SSH v2 & TACACS+ for user security authentication
- › RMON for traffic monitoring
- › Supports LLDP (Link Layer Discovery Protocol)
- › Automatic MDI/MDI-X crossover
- › Multiple Notifications for warning of unexpected events, including relay fault alarm
- › Port lock to prevent access from unauthorized MAC address
- › Windows utility, eConsole, supports centralized management, and is web-based configurable, or byTelnet and console (CLI) ports
- › Rigid aluminum housing design provides for DIN-Rail or wall mounting
- › Lifetime Warranty

APPLICATIONS

- › Field Hub or Aggregation Switch
- › ITS Streaming Video Networks
- › 10/100/1000 Mbps Ethernet

* Small Form-Factor Pluggable Module. Sold separately.

SPECIFICATIONS

Ethernet Ports

SFP Ports	(4) 1000BASE-FX ¹
Combo Ports	(8) 10/100/1000BASE-T(X), with Auto MDI/MDIX and (8) 100/1000BASE-FX 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	24 Gbps
Max. VLANs Available	256
IGMP Multicast Groups	128 for each VLAN
Port Rate Limiting	User Defined
MAC Table	8000 MAC addresses available
Priority Queues	4
Processing	Store-and-Forward

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 Centralized Password Management
SNMPv3 Encrypted Authentication and Access Security
SSH v2
TACACS+

Software Features

STP/RSTP/MSTP (IEEE 802.1D/w/s)
C-Ring Redundant Ring: Recovery time < 30ms, with over 250 units
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
IP-Based Bandwidth Management
Application-Based QoS Management
DOS/DDOS Auto-Prevention
Port Configuration, Status, Statistics, Monitoring & Security
DHCP Server / Client support

[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

Network Redundancy

C-Ring	Legacy Ring
STP	RSTP
MSTP	

Alarms & Monitoring Systems

Relay Output	For fault event alarming. Relay contacts rated at 1 A @ 24VDC
Serial Console RJ-45 Port	RS-232 @ 115,200 bps with console cable (included)

LED Status Indicators

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

Regulatory Approvals

EMI	FCC Part 15, CISPR (EN55022) Class A
ESD	EN61000-4-3
RS	EN61000-4-3
EFT	EN61000-4-4
Electrical Surge	EN61000-4-5
CS	EN61000-4-6, 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	24 VDC @ 1 A
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Power

Input Power	Redundant Dual DC Inputs
Operating Voltage Range	12 to 48 VDC
Power Consumption, Typical	22W
Current Protection	Overload Current Protected
Polarity Protection	Reverse Polarity Protected
Power Connector	Terminal Block

Electrical & Mechanical

Size	3.8 × 4.27 × 6.06 in (9.64 × 10.85 × 15.4 cm)
Shipping Weight	3.13 lbs./1.42 kg

Installation

DIN Rail (35 mm Track) or Wall Mount

Environmental

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

AGENCY COMPLIANCE



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.

ORDERING INFORMATION

Part Number	Description
CNGE12MS	(4) 1000 BASE-FX + (8) 10/100/1000BASE-T(X) + (8) 100/1000BASE-FX SFP Ports
Included Accessories	DC Plug-in Power Supply