# comnet
## Communication Networks

**DIN RAIL** | **INCLUDED** | **-40º TO +75º** | **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

› Supports Jumbo Frame up to 9KB for streaming video applications

› MSTP/RSTP/STP

› 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.

› Operating Temperature: -40˚ C to +75˚ C. Functional to +85˚ C

› 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

› 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

## SOFTWARE FEATURES

› STP/RSTP/MSTP (IEEE 802.1D/w/s)

› C-Ring Redundant Ring: Recovery time <30ms, with over 250 switches within the ring

› TOS/Diffserv Supported

› Quality of Service (802.1p) for Real-Time Traffic

› VLAN (802.1Q) with VLAN Tagging and GVRP Supported

› IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic

› IP-Based Bandwidth Management

› Application-Based QoS Management

› Device-Binding Security Function & DOS/DDS Auto-Prevention

› Port Configuration, Status, Statistics, Monitoring & Security

› DHCP Server / Client support

*Small Form-Factor Pluggable Module. Sold separately.*

## SPECIFICATIONS

### Connectors

| | |
|---|---|
| 1000BASE-FX | 4 × SFP Ports[1] |
| 10/100/1000BASE-T(X) | 8 × RJ-45 Combo Ports, with Auto MDI/MDIX |
| 100/1000BASE-FX | 8 × SFP Combo Ports[1] |
| Power | Terminal Block |
| Serial Console | RS-232 RJ-45 Port @ 115,200 bps with console cable (included) |

### 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+

### 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 |

### Fault Alarm Relay

| | |
|---|---|
| Relay Contact Rating | 24 VDC @ 1 A |

### 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 |

### Electrical & Mechanical

| | |
|---|---|
| Indicating LEDs | Power   R.M. Indicator   Ring   Fault RJ-45 link/activity/speed     SFP Port link/activity |
| Size | 3.8 × 4.27 × 6.06 in (9.64 × 10.85 × 15.4 cm) |
| Shipping Weight | 3.13 lb /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) |

### 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)

### 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 |

AGENCY COMPLIANCE

FC PART 15 COMPLIANT    CE    cULus E322911    RoHS COMPLIANT    N24621

Low Power Consumption

## ORDERING INFORMATION

| Part Number | Description |
|---|---|
| CNGE12MS | (4) 1000 BASE-FX + (8) 10/100/1000BASE-T(X)  + (8) 100/1000BASE-FX SFP Ports |
| Accessories | DC Plug-in Power Supply (Included, for benign 0 to 50°C applications only. Hardened power supply available, consult factory) |

*[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. 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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