# comnet
## Communication Networks

**Managed Ethernet Switch with (8) 10/100 BASE-TX + (2) 10/100/1000 BASE-TX/FX Combo Ports and Power over Ethernet (PoE)**

### CNGE2FE8MSPOE2

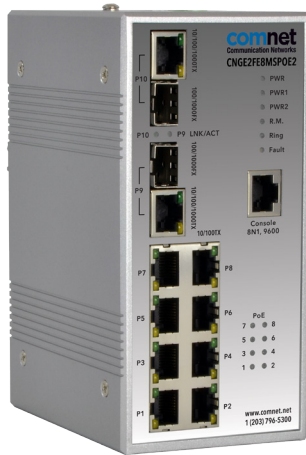| 75° -40° HARDENED | SFP FLEXIBILITY | 1G GIGABIT UPLINKS | PoE 15W POE | 10/100 ETHERNET 8 | GIGABIT ETHERNET 2 |
|---|---|---|---|---|---|

The ComNet™ CNGE2FE8MSPOE2 is a hardened Managed Ethernet Switch. It provides IEEE 802.3af (15W) PoE to eight 10/100BASE-T(X) ports and has two-gigabit combination SFP or RJ-45 ports. Up to 120 watts of PoE power is available for distribution across all 8 TX ports. All SFP ports utilize ComNet SFP* modules for fiber and connector type and distance. The CNGE2FE8MSPOE2 is a redundant switch offering multiple Ethernet redundancy protocols, C-Ring (recovery time <10ms over 250 units of connection), ComRing, and MSTP/RSTP/ STP (IEEE 802.1 s/w/D). This redundancy feature protects your applications from network interruptions or temporary malfunctions by redirecting transmission within the network. Network management is supported by eConsole, a powerful, easy-to-use Windows-based utility, as well as Web-based telnet, and Console (CLI) configurations. This environmentally hardened switch is designed for direct deployment in difficult out-of-plant or roadside operating environments.

## FEATURES

› 5.6 Gbps Switching bandwidth:  2 Combo Gigabit Ports 8 10/100T(X) Ports

› Fully compliant with IEEE 802.3af, up to 120 watts of PoE power is available for distribution across all 8 10/100BASE-TX ports

› IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic & Port Trunking for ease of bandwidth management

› STP/RSTP/MSTP supported

› Easy implementation of point-to-point, linear add-drop, drop-and-repeat, star, or true self-healing ring and mesh network system architectures

› Designed to meet 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 the Caltrans Specification for Traffic Signal Control Equipment.

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

› Exclusive ComNet C-Ring fast recovery technology protects mission-critical applications from network interruptions or temporary malfunctions. Recovery time <10 ms, with > 250 switches within the ring

› Redundant DC inputs for uninterrupted operation in the event of a loss of operating power or a power supply failure

› Centralized management via Windows utility, eConsole, configurable via browser, 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

› ITS Networks with Streaming Video

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

# Managed Ethernet Switch with (8) 10/100 BASE-TX + (2) 10/100/1000 BASE-TX/FX Combo Ports and Power over Ethernet (PoE)

## SOFTWARE SPECIFICATIONS

### Network Redundancy

| | |
|---|---|
| ComRing | C-Ring |
| Legacy Ring | C-RSTP |
| STP          RSTP | |
| MSTP | |

### Switch Properties

| | |
|---|---|
| Switching Latency | 7 µs |
| Switching Bandwidth | 5.6 Gbps |
| 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

### Software Features

STP/RSTP/MSTP (IEEE 802.1D/w/s)

C-Ring Redundant Ring: Recovery time <10ms, 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

Port Configuration, Status, Statistics, Monitoring & Security

DHCP Server / Client support

Port Trunk Support

MVR (Multicast VLAN Registration) support

### Ethernet Standards

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)

IEEE 802.3af for Power Sourcing Equipment (PSE) and PoE (up to 15.4 watts per port)

### Physical Ports

8 × 10/100BASE-TX Ports in RJ45 with Auto MDI/MDIX

Gigabit Combo Ports with 2 × 10/100/1000BASE-T(X)

2 × 100/1000BASE-FX SFP[1]

## HARDWARE SPECIFICATIONS

### Alarms & Monitoring Systems

| | |
|---|---|
| Relay Output | For fault event alarming |
| Syslog Server / Client | To record and view events |
| SMTP | For event warning notifications via email |
| Serial Console Port | RS-232 @ 9600bps in RJ45 connector with console cable |

### Indicating LEDs

| | |
|---|---|
| 3 × Power Indicators | Ring Master Indicator |
| C-Ring Indicator | Fault Indicator |
| 10/100BASE-TX RJ45 Port Indicator | |
| 100/1000BASE-FX SFP Port Indicator | |
| PSE Power Output Indicator | |

### PoE pin assignment

RJ45 port #1 - #8 support IEEE802.3af End-point Alternative A mode.

Positive (VCC+): RJ45 pin 1, 2

Negative (VCC-): RJ45 pin 3, 6

### Power

| | |
|---|---|
| Redundant Input Power | Dual 48 to 57 VDC input terminal block |
| Power Consumption (Typ) | 132 W max with PoE on all ports, 9 W without PoE |
| Overload Current Protection | Present |
| Polarity Protection | Not Present |

### Mechanical

| | |
|---|---|
| Size (W × D × H) | 2.93 × 4.3× 6.05 in (7.4 × 10.9 × 15.3 cm) |
| Weight | 2.4 lb / 1.1 kg |

### Environmental

| | |
|---|---|
| MTBF | >100,000 hours |
| Storage Temperature | –40 to 85ºC (–40 to 185ºF) |
| Operating Temperature | –40 to 75ºC (–40 to 167ºF) |
| Operating Humidity | 5% to 95% Non-condensing |
| Installation | DIN Rail and Wall Mount Design |

### Regulatory Compliance

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

Fully compliant with the environmental requirements (ambient operating temperature, storage temperature, mechanical shock, vibration, humidity with condensation, high-line/lowline voltage conditions, and voltage transient protection) of NEMA TS-1/TS-2 and the Caltrans specification for Traffic Signal Control Equipment.

[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

AGENCY COMPLIANCE

FC PART 15 COMPLIANT    CE    cULus E322911    RoHS COMPLIANT    C N24621

Low Power Consumption

## Order Part Number / Description

| Order Part Number | Description |
|---|---|
| CNGE2FE8MSPOE2 | (8) 10/100 BASE-TX + (2) 10/100/1000 BASE-TX/FX Combo Ports and Power over Ethernet (PoE) |
| Options | ComNet 48V Recommended Power Supply (Not Included) |

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