comnet
Communication Networks

CNGE12FX4TX8MSPOE

DIN RAIL | **INCLUDED** | **-40° TO 75° C** | **FLEXIBILITY** | **IEEE802.3af/at** | **ALL GIGABIT** | **8 + 4**

The ComNet CNGE12FX4TX8MSPOE is a twelve port Managed Ethernet Switch designed to reliably operate in harsh, environmentally challenging applications. It features eight 10/100/1000BASE-TX and four 100/1000BASE-FX SFP* ports. The SFP ports are 100/1000Mbps configurable for either 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. 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

› Four (4) SFP ports support 100/1000 Mbps SFP modules

› Eight (8) electrical ports support 10/100/1000 Mbps Ethernet IEEE802.3 protocol featuring 30 W PoE

› IEEE 802.3af/at compliant, up to 30 W of PoE+ power available per port. 120 W total PoE power available.

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

› Supports Jumbo Frame up to 9.6K Bytes for streaming video applications

› X-Ring Pro/RSTP/STP

› Designed to meet full compliance with the environmental requirements (ambient operating temperature, mechanical shock, vibration, humidity with condensation, high-line/lowline voltage conditions and transient voltage protection) 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: X-Ring+. Recovery time <15ms, with > 250 switches within the ring

› IP-Based Bandwidth Management & Application-Based QoS Management

› Port IP-Binding

› SNMP v1/v2c/v3, RMON & IEEE 802.1Q VLAN for secure network management

› Supports IPV6 new Internet protocol version

› Supports ACL, IEEE 802.1x, & TACACS+ for user security authentication

› Provides HTTPS/SSH protocol enhances network security

› Supports LLDP (Link Layer Discovery Protocol)

› 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 by Telnet 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.

All-Gigabit Industrially Managed Ethernet Switch with 30 W PoE
4 × 10/100/1000BASE-T(X) Ports + 4 × 100/1000BASE-FX SFP Ports

SPECIFICATIONS

Connectors

100/1000BASE-X	4 × SFP Ports[1]
10/100/1000BASE-T(X)	8 × RJ-45 Ports, with Auto MDI/MDIX
Serial Console	RS-232 @ 115,200 bps 8,N,1 w/ console cable (incl.)
Power	6 pin Terminal Block (including relay)

Ethernet Standards Supported

IEEE 802.3 for 10Base-T
IEEE 802.3u for 100Base-TX and 100Base-FX
IEEE 802.3ab for 1000Base-T
IEEE 802.z for 1000Base-X
IEEE 802.3x for Flow control
IEEE 802.3ad for LACP (Link Aggregation Control Protocol)
IEEE 802.3az for Energy Saving
IEEE 802.1p for COS (Class of Service) Real-Time Traffic
IEEE 802.1d for STP (Spanning Tree Protocol)
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

L2 MAC Address	8K
Jumbo Frame	9216 Bytes
VLAN Group	256 (VLAN ID 1~4094)
VLAN Arrange	Port based VLAN, Q-in-Q (VLAN Stacking), GVRP
Port Mirroring	Per port, Multi-source port
IP Multicast	IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
Storm Control	Broadcast, Multicast, Unknown unicast
Redundancy	IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro, with ultra high-speed recovery time less than 20 ms

Management

DHCP	Client, Server, Option66/67/82
Access	SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
Security Access	SSH2.0, SSL
Software Upgrade	TFTP, HTTP, Dual Image
NTP	SNTP client

Switching Features

802.1Q (tagged 4K)
GVRP
Port-based VLAN
Q-in-Q (VLAN Stacking)
STP/MSTP/RSTP
X-Ring + (< 15 ms)
Dual Homing
Couple Ring
Multi Couple Ring
Port Security
MAC Violation
LACP
Static Ethernet Channel
Rate Limiting
Port Mirror
Traffic Statistics
MAC Address Table
DDMI for SFP
10KB Jumbo Frame
802.3 flow control
BPDU forwarding

Multicast Features

IGMP v1, v2, v3
Reverse IGMP
IGMP MLD snooping
IGMP/MLD querier
Multicast Filtering
256 static or dynamic L2 multicast group

Security Features

Port Security	Static, Dynamic
Authentication	802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption)

QoS

Priority Queue Scheduling	WRR (Weighted Round Robin), SP (Strict Scheduling Priority) Hybrid Priority
Class of Service	IEEE 802.1p Based CoS, IP TOS, DSCP based CoS
Rate Limiting	Ingress Rate limit, Egress Rate limit
Link Aggregation	IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking

Additional Features

Embedded watchdog
TFTP loadable startup-configuration
Configuration Backup

Network Redundancy

X-Ring	X-Ring +
Legacy Ring	MSTP (RSTP/STP Compatible)

Alarms & Monitoring Systems

Relay Output	For fault event alarming. Relay contacts rated at 1 A @ 24 VDC

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All-Gigabit Industrially Managed Ethernet Switch with 30 W PoE
4 × 10/100/1000BASE-T(X) Ports + 4 × 100/1000BASE-FX SFP Ports

SPECIFICATIONS

Power

Input Power	Redundant Dual 48 VDC Inputs
Operating Voltage Range	12 to 48 VDC
Power Consumption	12 W, Typical (without PoE)
PoE Power Budget	120 W, Max. 30 W per port
Current Protection	Overload Current Protected
Polarity Protection	Reverse Polarity Protected
PoE pin assignment	RJ45 port #1 - #24 support IEEE802.3at End-point Alternative A mode. Positive (VCC+): RJ45 pin 1, 2 Negative (VCC-): RJ45 pin 3, 6

Electrical & Mechanical

LED Status Indicators	System: PWR1, PWR2, SYS, Alarm, R.M. Port: Link, Speed, Activity
Size	2.94 × 4.13 × 8.00 in (7.4 × 10.5 × 15.2 cm)
Enclosure	IP-30 Aluminum
Installation	DIN Rail (35 mm Track) or Wall Mount
Shipping Weight	2.67 lb / 1.21 kg

AGENCY COMPLIANCE

FC PART 15 COMPLIANT   CE   c(UL)us   RoHS

Low Power Consumption

Environmental

MTBF	>100,000 hours
Operating Temperature	-40° C to +75° C, Functional to +85° C
Storage Temperature	-40° C to +85° C
Relative Humidity	10% to 95% (non-condensing)
Ambient Relative Humidity	10% to 95% (non-condensing)

Regulatory Approvals

EMI	FCC Part 15 Subpart B Class A
CE	EN 55011/55022 Class A
ESD	EN61000-4-2
RS	EN61000-4-3
EFT	EN61000-4-4
Electrical Surge	EN61000-4-5
CS	EN61000-4-6, EN61000-4-8
Mechanical Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN61010, UL 60950-1
Traffic Control	NEMA TS2
Railway	EN50121-4
Substation	IEC61850-3
Hazardous Environment	Class 1 Division 2 (C1D2)

ORDERING INFORMATION

Part Number	Description
CNGE12FX4TX8MSPOE	8 × 10/100/1000BASE-T(X) + 4 × 100/1000BASE-FX SFP Ports with 8 Ports PoE
Included Accessories	DC Plug-in Power Supply, 90-264 VAC, 50/60 Hz (Included, for benign 0 to 50ºC applications only. Hardened power supply available, consult factory) DIN-Rail Kit, Wall Mount Kit, Console cable, Product Support CD

[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.