comnet
Communication Networks

**Environmentally Hardened Managed Ethernet Switch with
(7) 10/100TX + (3) configurable 10/100/1000TX / 100/1000FX Ports**

CNGE3FE7MS3

DIN RAIL	POWER SUPPLY INCLUDED	75° -40° HARDENED	SFP FLEXIBILITY	GIGABIT ETHERNET 3	10/100 ETHERNET 7

The ComNet™ CNGE3FE7MS3 Managed Ethernet Switch provides robust transmission of seven (7) 10/100BASE-T(X) and three (3) 10/100/1000T(X) or 100/1000FX combo ports, of gigabit Ethernet data. It is available for use with either conventional CAT-5e copper or optical transmission media. The 7 electrical ports support the 10/100Mbps Ethernet IEEE 802.3 protocol, and auto-negotiating and auto-MDI/MDIX features are provided for simplicity and ease of installation. Three ports are 10/100/1000 configurable for copper or fiber media for use with multimode or single mode optical fiber, selected by optional SFP* modules. These network managed layer 2 switches are optically (100/1000BASE-FX) and electrically compatible with any IEEE 802.3 compliant Ethernet devices. The CNGE3FE7MS3 incorporates LED indicators for monitoring the operating status of the managed switch and network. These units are DIN-rail or wall mountable.

FEATURES

› 7 10/100BASE-T(X) Ports
  3 Gigabit combo ports

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

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

› Fastest Redundant Ethernet Ring: ComNet C-Ring. Recovery time <10ms, with > 250 switches within the ring

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

› PTP Client (Precision Time Protocol) for clock synchronization

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

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

› RMON for traffic monitoring

› 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

› ITS Traffic Signalization & Surveillance/Incident Detection Networks

› Industrial and Factory Automation

› Integrated IP-Video and Data Transmission Networks

* Small Form-Factor Pluggable Module. Sold separately.

Environmentally Hardened Managed Ethernet Switch with (7) 10/100TX + (3) configurable 10/100/1000TX / 100/1000FX Ports

SPECIFICATIONS

Ethernet Ports

RJ-45 Ports	(7) 10/100BASE-T(X)
Combo Ports	(3) 10/100/1000BASE-T(X), with Auto MDI/MDIX and (3) 100/1000BASE-FX SFP[1] 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	7.4 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

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
TACACS+

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 v2/v3 Snooping for Multicast Filtering
IP-Based Bandwidth Management
SNTP for synchronizing of clocks over network
PTP Client (Precision Time Protocol) clock synchronization
Port Configuration, Status, Statistics, Monitoring & Security
DHCP Server / Client support

Network Redundancy

C-Ring
Com-Ring
Legacy Ring
C-RSTP
STP
RSTP
MSTP

Alarms & Monitoring Systems

Relay Output	For fault event alarming. Relay contacts rated at 1 amp @ 24VDC
Serial Console RJ-45 Port	RS-232 @ 9,600 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.

[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

Regulatory Approvals

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

Fault Alarm Relay

Relay Contact Rating	24VDC @ 1 A

Power

Input	Redundant Input Power, Dual DC Inputs
Operating Voltage Range	12 – 48 VDC
Power Consumption, Typical	12W

Electrical & Mechanical

Current Protection	Overload Current Protected
Polarity Protection	Reverse Polarity Protected
Power Connector	Terminal Block
Size	2.93 × 4.3 × 6.05 in. (7.43 × 10.92 × 15.36 cm)
Shipping Weight	2.29 lbs./1.04 kg

Environmental

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

AGENCY COMPLIANCE

FC PART 15 COMPLIANT   CE   c(UL)us E322911   RoHS COMPLIANT   N24621

ORDERING INFORMATION

Part Number	Description
CNGE3FE7MS3	(7) 10/100BASE-T(X) / (3) 10/100/1000BASE-T(X) or 100/1000BASE-FX SFP Ports
Accessories	24VDC Plug in Power Supply (12VDC in some regions), 90-264VAC, 50/60Hz (Included) PS24-1A – 24VDC DIN Rail Power supply (sold separately)

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.

 Low Power Consumption