9208-ETM-4x Series

Managed Ethernet Switches

- Four 100Mbps fibre optic ports for noise immune links up to 120km

- Slim packaging fits on your DIN rail

- High performance and value

- Truly industrial hardened design

- Advanced features and security

- Monitor port and ring status using Modbus

- Plug and Play Ethernet/IP™ and video surveilance

The 9208-ETM-4x is an 8 port industrial Ethernet managed switch featuring four noise-immune fibre optic ports. It is designed to be rugged, reliable, real-time and secure to keep your system going even in the toughest conditions.

PRODUCT HIGHLIGHTS

- Four 100Mbps fibre optic ports for noise immune links up to 120km
- Slim packaging fits on your DIN rail
- High performance and value
- Truly industrial hardened design
- Advanced features and security

TROUBLE FREE OPERATION

- UL/CSA (CUL), CE, Hazardous Locations (Zone 2)
- -40 to +75°C operating temperature
- Dual (redundant) power inputs with spike protection
- Self-test and alarm output contact
- Rugged corrosion-resistant aluminum packaging
- DIN rail or direct panel mounting in multiple positions

REAL-TIME SECURE PERFORMANCE

- Redundant Ring andRapid Spanning Tree (RSTP) for fast redundant ring and Mesh networks
- SNMPv1 and v2 network management
- SNMPv3 authentication & encryption for security
- SNMP notifications (traps) for report on event
- Priority Queuing (QoS/CoS) for real-time operation
- IGMP for Multicast filtering (snooping & querying)
- VLAN for convenient traffic segregation
- Broadcast & multicast storm protection
- RMON & port mirroring for advanced diagnostics
- Security with HTTPS, SSL, SSH, SNMPv3 & more
- Easy configuration via Web, Telnet or CLI
- Free field-installable firmware upgrades forever

COOPER Crouse-Hinds

SPECIFICATION

ETHERNET PERFORMANCE

- 8 Ethernet ports including 4 fibre ports
- Ethernet switch type managed
- Store and forward wire speed switching
- Ethernet protocols supported by all IEEE 802.3
- RJ45 ports (shielded) 10/100BaseTX
- RJ45 speed (10 or 100Mbps) Auto-negotiation
- RJ45 MDI/MDIX Auto-crossover
- RJ45 TD and RD polarity Auto-polarity
- Fibre optic port speed 100BaseFX (100Mbps)
- Fibre optic port wavelength 1300nm center
- Fibre multimode (mm) typical 50 or 62.5/125µm (SC or ST)
- Fibre singlemode (sm) typical 9 or 10/125µm (SC or ST)
- Fibre max. distance (full duplex) up to 120km
- See separate datasheet for fibre transceiver details.
- Typical latency (varies on load & settings):
  - 10M ports 16µs + frame time
  - 100M ports 5µs + frame time
- Full or half duplex operation Configurable
- MAC addresses supported: 2048
- Memory bandwidth: 3.2Gbps
- Ethernet isolation: 1500VRMS 1 minute

ETHERNET COMPLIANCE

- IEEE 802.3 (10Mbps Ethernet supports legacy devices)
- IEEE 802.3u (Fast Ethernet 100Mbps for newer devices)
- IEEE 802.3x (Full-Duplex with Flow Control)
- IEEE 802.1D/w (Rapid Spanning Tree for redundant rings and Spanning Tree for interoperability)
- IEEE 802.1p (Priority Queuing – QoS, CoS, ToS/DS)
- IEEE 802.1Q (VLAN for traffic segregation)

"OK" OUTPUT

- Indicates power and operational status
- Voltage same as switch input voltage
- Maximum current output 0.5A

POWER INPUT

- Redundant input terminals
- Input power (with all ports active) 9.0W typical
- Input voltage (all models) 10-30VDC (continuous)
- Transient protection 15,000 watts peak
- Spike protection 5,000 watts (10 times for 10µS)

ENVIRONMENTAL

- Operating temperature range -40 to +75°C
- Cold startup at -40°C
- Storage temperature range -40 to +85°C
- Humidity (non-condensing) 5 to 95% RH (conformal coating optional)
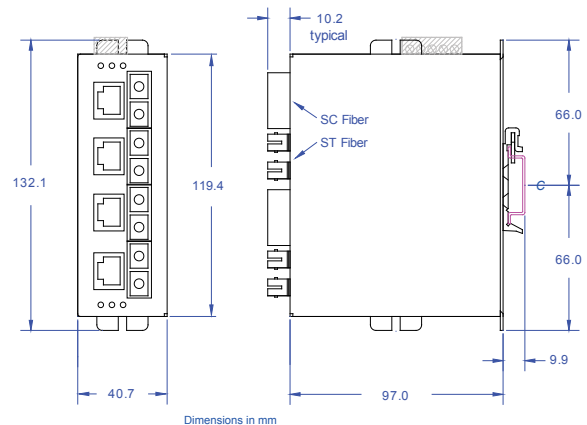- Vibration IEC60068-2

STANDARDS COMPLIANCE

- Electrical safety UL508/CSA C22.2/14; EN61010-1,CE
- EMI emissions FCC part 15, ICES-003; EN6100-6-4, CE
- EMC immunity IEC61000-6-2, CE
- Hazardous locations UL1604, CSA C22.2/213 (Class 1, Div. 2); EN60079-15 (Zone 2; Category 3), CE (ATEX)
- Eye safety (fibre models) IEC60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11

PHYSICAL

- DIN rail or direct panel mounting
- Packaging - Aluminium with IP30 protection
- Weight 0.31kg (11oz)
- Dimensions - see mechanical drawing

MECHANICAL

Dimensions in mm

ORDERING INFORMATION

9208-ETM-4M-SC **9208-ETM-4M-ST**	4 RJ45 ports & 4 multimode fibre optic port with SC or ST style connector, 4Km
9208-ETM-4S-SC **9208-ETM-4S-ST**	4 RJ45 ports & 4 singlemode fibre optic port with SC or ST style connector, 20Km
9208-ETM-4L-SC **9208-ETM-4L-ST**	4 RJ45 ports & 4 singlemode fibre optic port with SC or ST style connector, 60Km

Special, mixed or long haul (up to 120km) fibre transceivers are available for special order.

TRANSMITTER OPTICAL CHARACTERISTICS:

PARAMETER	RATING	MIN.	TYP.	MAX	UNIT	NOTE
Optical Transmit Power	-M- -S- -L-	-19 -15 -3	- - -	-14 -7 2	dBm	Average
Extinction Ratio	-M-, -S- -L-	8.2 10	- -	- -	dB	P1/P0
Output Centre Wavelength	-M-, -S-, -L-	1260	1310	1360	nm	
Spectral Width (-20dB)	-M- -S- -L-	- - -	- - -	80 7.7 4	nm	
Rise/Fall time (10% - 90%)	All models	-	-	2	ns	
Relative Intensity Noise	-	-	-	-117	dB/Hz	
Output Eye	Compliant with Bellcore TR-NWT-000253 and ITU-T G.957/OC3					

RECEIVER OPTICAL CHARACTERISTICS:

PARAMETER	RATING	MIN.	TYP.	MAX	UNIT	NOTE
Wavelength Operation	All models	1200	-	1600	nm	
Sensitivity	-M- -S- -L-	- - -	- - -	-32 -21 -36	dBm	Note 2
Saturation Input Power	All models	-3	-	-	dBm	Note 2
Signal Detect - Asserted	-M- -S- -L-			-32 -31 -36	dBm	
Signal Detect - Deasserted	All models	-45	-	-	dBm	
Signal Detect - Hysteresis	All models	1	-	6	dB	

Notes:
1). The distance rating is for reference only. The actual transmission distance will depend on the system setup, and the power budget should be used for distance estimation.
2). Minimum sensitivity and saturation levels measured at 10^{-10} BER for 2^{23-1} PRBS

For distances of from 60-120km consult MTL for special fibre options