



technical datasheet

## 9205/9208-ETM Series

Ethernet Managed Switches

- 5 or 8 port managed switch with up to 4 fibre optic ports (multimode or singlemode)
- 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 Surveillance



The 9205-ETM and 9208-ETM series are 5 and 8 port industrial Ethernet managed switches that are designed to be rugged, reliable, real-time and secure. They combine compact DIN rail packaging, protected circuitry and powerful software to keep your system going even in the toughest conditions.

### PRODUCT HIGHLIGHTS

- 5 or 8 port industrial Ethernet managed switch with up to 4 fibre optic ports (multimode or singlemode)
- 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 metal packaging
- DIN rail or direct panel mounting in multiple positions

### REAL-TIME SECURE PERFORMANCE

- Redundant Ring or Rapid 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

EPS9205-ETM DRAFT

**COOPER** Crouse-Hinds

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## SPECIFICATION

### ETHERNET PERFORMANCE

- 5 or 8 Ethernet ports with up to 4 fibre
- Ethernet switch type managed
- Store and forward wire speed switching
- Ethernet protocols supported all IEEE 802.3
- RJ45 ports (shielded) 10/100BaseTX
- RJ45 speed (10M or 100M) 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) typ. 50 or 62.5/125µm (SC or ST)
- Fibre singlemode (sm) typ. 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 1500 VRMS 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 0.5 Amp

### POWER INPUT

- Input power (typical - all ports active at 100Mbps) (Max. 7W)
  - 3.6W (5-port without fibre)
  - 4.3W (8-port without fibre)
  - 5.6W (5-port with 2 fibre)
  - 6.3W (8-port with 2 fibre)
- 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 IEC60068-2-6

### STANDARDS COMPLIANCE

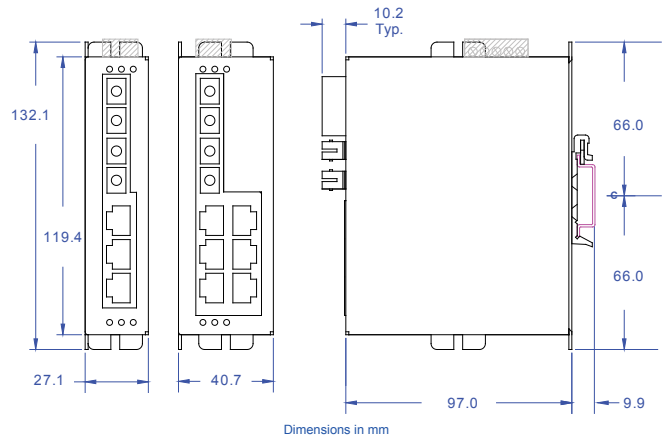
- Electrical safety UL508/CSA C22.2/14; EN61010-1,CE
- EMI emissions FCC part 15, ICES-003; EN6100-6-4, CE
- EMC immunity IEC61000-6-2, CE

- 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 - Aluminum with IP30 protection
- Weight: 0.23kg (8oz) for 9205-ETM  
0.28kg (10oz) for 9208-ETM
- Dimensions - see mechanical drawing

### MECHANICAL



### ORDERING INFORMATION

<b>9205-ETM</b>	5 RJ45 10/100 ports
<b>9205-ETM-2M-SC</b> <b>9205-ETM-2M-ST</b>	3 RJ45 ports & 2 multimode fibre optic port with SC or ST style connector, 4km
<b>9205-ETM-2S-SC</b> <b>9205-ETM-2S-ST</b>	3 RJ45 ports & 2 singlemode fibre optic port with SC or ST style connector, 20km
<b>9205-ETM-2L-SC</b> <b>9205-ETM-2L-ST</b>	3 RJ45 ports & 2 singlemode fibre optic port with SC or ST style connector, 60km
<b>9208-ETM</b>	8 RJ45 10/100 ports
<b>9208-ETM-2M-SC</b> <b>9208-ETM-2M-ST</b>	6 RJ45 ports & 2 multimode fibre optic port with SC or ST style connector, 4km
<b>9208-ETM-2S-SC</b> <b>9208-ETM-2S-ST</b>	6 RJ45 ports & 2 singlemode fibre optic port with SC or ST style connector, 20km
<b>9208-ETM-2L-SC</b> <b>9208-ETM-2L-ST</b>	6 RJ45 ports & 2 singlemode fibre optic port with SC or ST style connector, 60km

Note: See 9208-ETM-4x datasheet for variants with 4 fibre ports

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



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<b>TRANSMITTER OPTICAL CHARACTERISTICS:</b>						
<b>PARAMETER</b>	<b>RATING</b>	<b>MIN.</b>	<b>TYP.</b>	<b>MAX</b>	<b>UNIT</b>	<b>NOTE</b>
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					
<b>RECEIVER OPTICAL CHARACTERISTICS:</b>						
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

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