



technical datasheet

9205/8/9-ET/ETX

Ethernet Unmanaged Switches

- Slim packaging fits on your DIN-rail
- High performance and value
- Truly industrial hardened design
- Plug & play saves you time and money



The 9205/8/9-ET/ETX are 5 and 8/9 port industrial Ethernet switches that provide advanced performance that enables you to achieve real-time deterministic operation. These ruggedised switches are hardened to provide superior reliability. They require no user setup and immediately start operating as soon as you power them up.

MTL switches are designed to make your job easier, ensuring your system will keep running for many years to come. Don't trust your critical communications to so-called industrial hardware from commercial switch manufacturers. MTL switches give you proven assurance that your system will keep running for years to come.

PRODUCT HIGHLIGHTS

- Slim packaging fits on your DIN-rail
- High performance and value
- Truly industrial hardened design
- Plug & play saves you time and money

REAL-TIME ETHERNET PERFORMANCE

- Fast wire-speed switching
- Intelligent message routing - No collisions!
- Ideal for any system

PLUG & PLAY SIMPLICITY

- Auto-sensing for speed and duplex
- Auto-mdi/mdix-crossover works with straight or crossed cables
- Auto-polarity corrects for crossed signals

TROUBLE FREE OPERATION

- Ultra-reliable 1,000,000+ hours MTBF
- Dual power inputs with industrial spike protection
- DIN-rail or direct panel mounting
- UL/CSA (CUL), CE, hazardous locations (Zone 2) and maritime rated
- -40 to +85°C operating range (ET models)

EPS9205/8/9-ET/ETX DRAFT

**COOPER** Crouse-Hinds

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SPECIFICATION

ETHERNET PERFORMANCE

- Unmanaged with 5, 8 or 9 Ethernet ports
- Store & forward wire-speed switching
- Automatic address learning, aging and migration
- Full duplex operation with flow control (no collisions)
- All IEEE 802.3 Ethernet protocols supported
- 1024 MAC addresses supported
- Memory bandwidth 3.2Gbps
- Typical latency (varies on load)
 - 100Mbps: 5µs + frame time
 - 10Mbps: 16µs + frame time
- Ethernet isolation 1500VRMS 1 minute

ETHERNET PORTS

- Shielded RJ45 ports for 10/100BaseTX
 - Auto-negotiation for 10 or 100Mbps
 - Auto- MDI/MDIX-crossover for either cable type
- Auto-polarity corrects for crossed +/- signals
- Fibre optic port speed 100BaseFX (100Mbps)
- Fibre duplex operation: Full duplex
- Fibre wavelength: 1300nm center (typical)
- Fibre max. distance (full duplex) (see web for details)
 - -M- 4km for multimode 50 or 62.5/125µm
 - -S- 20km for singlemode 9 or 10/125µm
 - -L- 60km (long haul) or more (contact MTL)

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)

POWER INPUT

- Power input voltage: 10-30VDC
- Redundant input terminals
- Input power (typical - all ports active at 100Mbps)
- 2.0W (5-port without fibre)
 - 3.0W (5-port including 1 fibre)
 - 4.0W (8-port without fibre)
 - 5.0W (9-port including 1 fibre)
- Transient protection: 15,000 watts peak
- Spike protection: 5,000 watts (10 times for 10µs)

ENVIRONMENTAL

- Operating temperature
 - 9205-ETX models: -10 to +60°C
 - 9208/9-ETX models: -40 to +60°C
 - 920X-ET models: -40 to +85°C* (cold startup at -40°C)
- Storage temperature: -40 to +85°C
- Humidity (non-condensing) 5 to 95% RH
- Vibration and shock: IEC60068-2-6

* Continuous operation at maximum operating temperature may reduce product life.

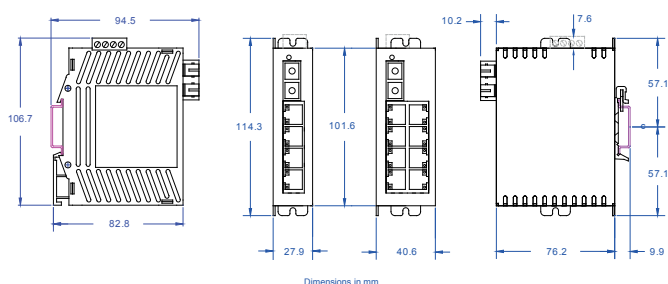
STANDARDS COMPLIANCE

- Electrical safety - UL508/CSA C22.2/14, EN61010-1, CE
- EMC - FCC part 15, ICES-003, EN55022, EN61000-6, CE
- Hazardous locations: UL1604/CSA C22.2/213 (Class 1, Div. 2); EN60079-15 (Zone 2, Category 3), CE (ATEX)
- Maritime rated for marine & offshore per ABS
- Eye safety (fibre models) - IEC60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11

PHYSICAL

- DIN-rail or direct panel mounting
- Ingress protection: IP30
- Case: UL94V0 Lexan (ETX) or Aluminium (ET)
- Weight:
 - 0.11kg (4oz) – 9205-ETX
 - 0.17kg (6oz) – 9205-ET
 - 0.23kg (8oz) – 9208/9-ET
- Dimensions – see mechanical diagram below

MECHANICAL



ORDERING INFORMATION

9205-ET	5 port Ethernet unmanaged switch
9205-ET-M-SC 9205-ET-M-ST	5 port Ethernet unmanaged switch multimode fibre port - SC or ST connector for up to 4km
9205-ET-S-SC 9205-ET-S-ST	5 port Ethernet unmanaged switch singlemode fibre port - SC or ST connector for up to 20km
9205-ET-L-SC 9205-ET-L-ST	5 port Ethernet unmanaged switch singlemode fibre port - SC or ST connector - long haul for up to 60km
9205-ETX	5 port Ethernet unmanaged switch with Lexan case and limited temperature range
9205-ETX-M-SC 9205-ETX-M-ST	5 port Ethernet unmanaged switch multimode fibre port - SC or ST connector for up to 4km
9205-ETX-S-SC 9205-ETX-S-ST	5 port Ethernet unmanaged switch singlemode fibre port - SC or ST connector for up to 20km
9205-ETX-L-SC 9205-ETX-L-ST	5 port Ethernet unmanaged switch singlemode fibre port - SC or ST connector - long haul for up to 60km
9208-ET	8 port Ethernet unmanaged switch
9209-ET-M-SC 9209-ET-M-ST	9 port Ethernet unmanaged switch multimode fibre port - SC or ST connector for up to 4km
9209-ET-S-SC 9209-ET-S-ST	9 port Ethernet unmanaged switch singlemode fibre port - SC or ST connector for up to 20km
9209-ET-L-SC 9209-ET-L-ST	9 port Ethernet unmanaged switch singlemode fibre port - SC or ST connector - long haul for up to 60km

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

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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9205/8/9-ET/ETX DRAFT

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:						
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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