technical datasheet

9205-ET-4P

5 port Ethernet PoE switch

- Four fully IEEE-compliant PoE ports
- Slim packaging fits on your DIN rail
- Plug & play saves you time and money
- Truly industrial rated for any application

The 9205-ET-4P combines the ultra-reliability of a 5 port MTL industrial Ethernet switch with four industrial PoE sourcing outputs. Simply power this switch with 48 VDC to source the PoE lines. The four PoE ports automatically sense and support both PoE and non-PoE (traditional) Ethernet devices. Alternatively, power this switch with 10-30VDC and it functions as a robust 5 port industrial switch that is PoE future-ready.

Like a true fieldbus, Power over Ethernet combines all the advantages of Ethernet (speed and openness) with power in the same cable to simplify system wiring, reduce maintenance time and save you money. At the heart of Power over Ethernet are standard Ethernet (802.3) and PoE (802.3af) making it truly open. Power over Ethernet is "Every bus" because it passes any and all Ethernet message packets regardless of origin or protocol. Power over Ethernet works with Modbus/TCP, Profinet, Ethernet/IP, … (the list is endless). Power over Ethernet works with PoE devices as well as non-PoE devices. It can even deliver standard +24VDC to your field mounted devices – even non-Ethernet devices.

PRODUCT HIGHLIGHTS

- Four fully IEEE-compliant PoE ports
- Slim packaging fits on your DIN rail
- Plug & play saves you time and money
- Truly industrial rated for any application

IEE 802.3AF COMPLIANT POE PORTS

- Power Sourcing Equipment (PSE) operation
- Auto-detection of PD (powered devices)
- Over-temperature and over-current detection
- Over and under-voltage detection

REAL-TIME NETWORK OPERATION

- Intelligent message routing - No collisions!
- Supports all standard IEEE 802.3 protocols

TRUE PLUG & PLAY SIMPLICITY

- Auto-sensing for speed and duplex
- Auto-mdi/mdix-crossover and auto-polarity
- Automatic PoE power management

TROUBLE FREE OPERATION

- Truly industrial -40 to +75°C operation
- Dual power inputs with surge protection
- DIN rail or direct panel mounting
- UL / CSA (CUL), CE, Hazardous Locations (Zone 2) and Maritime rated

NETWORKING FEATURES

- Store and forward wire speed switching – no delays
- Automatic address learning, aging and migration
- Full-Duplex operation with flow control (no collisions!)
- Auto crossover (MDI/MDIX) and auto polarity

SPECIFICATION

ETHERNET PERFORMANCE

- Ethernet switch ports 5 total with 4 PoE (PSE)
- Unmanaged, store and forward, wire speed
- Ethernet protocols supported all IEEE 802.3
- RJ45 ports (shielded) 10/100BaseTX
- RJ45 speed (10 or 100Mbps) auto-negotiation
- RJ45 MDI/MDIX auto-crossover and TD/RD auto-polarity
- Ethernet isolation 1500 VRMS 1 minute
- Fibre optic port speed / 100BaseF (100Mbps) full duplex
- Fibre optic port wavelength 1300 nm (others available)
- 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) 4km (mm), 20km (sm) or 60km (long haul) or more
- Typical latency for 100Mbps ports 5µs + frame time; varies on load
- MAC addresses and bandwidth 1024 and 3.2Gbps

POWER INPUT AND POE OUTPUT

- Power input with reverse polarity protection; 10-30VDC with no PoE output; 45-56VDC for PoE output
- Switch power consumption (typ.all ports active at 100 Mbps); 2.0W (5-port without fibre) + PoE; 3.0W (5-port with 1 fibre) + PoE
- PoE power consumption up to 15.4W per port
- RJ45 pin assignments for PoE: TX/V- (3, 6); RX/V+ (1, 2)
- Power input transient protection 15,000 watts peak
- Power input spike Protection 5,000 watts (10 times for 10µS)
- PoE operation - auto power management
- PoE disconnect mode - DC disconnect
- PoE auto-detection per IEEE 802.3af
- PoE protection - over-temperature, over-current, over/under-voltage and transient

ETHERNET COMPLIANCE

- IEEE 802.3af (Power over Ethernet)
- IEEE 802.3 (10Mbps Ethernet for legacy devices)
- IEEE 802.3u (100Mbps Ethernet for newer devices)
- IEEE 802.3x (Full-Duplex with Flow Control)

ENVIRONMENTAL

- Operating temperature range:
  -40 to +75°C* (cold startup @ -40°C)
- Storage temperature range: -40 to +85°C
- Humidity (non-condensing): 5 to 95% RH
- Vibration, shock and freefall: IEC60068-2-6, -27 & -32

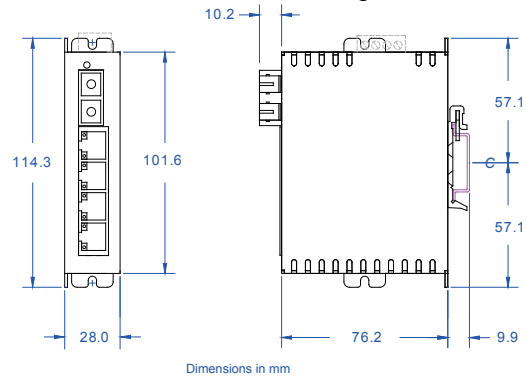
** Continuous operation at maximum operating temperature may reduce product life.*

STANDARDS COMPLIANCE

- Electrical safety - UL508 / CSA C22.2/14; EN61010-1, CE
- EMI emissions - FCC part 15, ICES-003; EN61000-6-4, CE
- EMC immunity - EN61000-6-2, CE
- Hazardous locations: UL1604/CSA C22.2/213 (Class 1, Div. 2); EN60079-15 (Zone 2, Category 3), CE (ATEX)
- Marine and offshore rated per ABS
- Eye safety (fibre models) IEC60825-1, Class 1; FDA 21 CFR1040.10 and 1040.11

PHYSICAL

- DIN rail or direct panel mounting
- Lexan case with IP30 protection
- Dimensions - see mechanical diagram



Dimensions in mm

- Weight (approximate) 0.17Kg (6oz)

MECHANICAL

ORDERING INFORMATION

9205-ET-4P	5 RJ45 10/100 Ethernet ports including 4 PoE (PSE) ports
9205-ET-4P-M-SC 9205-ET-4P-M-ST (special order)	4 RJ45 PoE (PSE) ports and 1 multimode fibre port with SC or ST style connector for up to 4km
9205-ET-4P-S-SC 9205-ET-4P-S-ST (special order)	4 RJ45 PoE (PSE) ports and 1 singlemode fibre port with SC or ST style connector for up to 20km
9205-ET-4P-L-SC 9205-ET-4P-L-ST (special order)	4 RJ45 PoE (PSE) ports and 1 singlemode fibre port with SC or ST style connector 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.

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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