



## MS4128-L3P

Industrial Networking:Industrial Ethernet:MICE:Switches

### Product description

Description	Power MICE, modular, managed Industrial ETHERNET Switch, Layer 3 Switch with Software Professional. Ethernet (10 Mbit/s) and Fast-ETHERNET (100 Mbit/s) and Gigabit-ETHERNET (1000 Mbit/s)
Port type and quantity	up to 28 ports above media modules practicable, 4 X 1000 BASE-SX with SFP modules or 4 x 10/100/1000 BASE-TX and 24 Fast ETHERNET (100 Mbit/s) ports (with MB-2T)
Type	MS4128-L3P
Order No.	943 009-301

### More Interfaces

Power supply/signaling contact	2 plug-in terminal blocks, 4-pin
V.24 interface	1 x RJ11 socket
USB interface	1 USB interface to connect auto-configuration adapter (ACA21-USB)

### Network size - cascability

Line - / star topology	any
Ring structure (HIPER-Ring) quantity switches	50 (reconfiguration time < 50 ms typ. at LWL)

### Power requirements

Operating voltage	24 V DC (-25% to +30%)
Current consumption at 24 V DC	630 mA (without media modules)
Power consumption	15 W (without media modules)

### Service

Management	serial interface, web interface, SNMP V1/V2/V3, HiVision, file transfer SW HTTP/TFTP
Diagnostics	LEDs (power, link status, data, 100 Mbit/s, auto-negotiation, full-duplex, error, redundancy management, ring-port, LED-test), signal contact, syslog, logfile, RMON, port mirroring, Topology Discovery IEEE 802.1AB (LLDP)
Configuration	command line interface (CLI), TELNET, BootP, DHCP, DHCP Option 82, HiDiscovery, auto-configuration adapter (ACA21-USB)
Security	port-security (MAC- and IP-adresses), access control to agent (VLAN/IP) authentication 802.1x, SSH, SSL, SNMP V3
Other services	QoS 8 classes, prioritisation (IEEE 802.1D/p), VLAN (IEEE 802.1Q), multicast (IGMP snooping/querier), broadcastlimiter, flow control IEEE 802.3x, SNTP (Simple Network Time Protocol), TOS (Type of Service) Diff.-Serv (DSCP), TOS-Prio-Mapping, protocol based VLANs (IP, nonIP Traffic), Traffic Shaping
Prepared for	MSTP-802.1s static routing, VRRP router redundancy; layer 3 - ACL, HiVRRP router redundancy < 500 ms
Dynamic routing	RIP V1/2, OSPF
Multicast routing	Multicast routing DVMRP/PIM DM

### Redundancy

Redundancy functions	HIPER-Ring (ring structure), RSTP IEEE 802.1w (rapid spanning tree protocol), redundant network/ring coupling (master/receiver functionality), dual homing (master/receiver functionality), redundant 24 V power supply
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### Ambient conditions

Operating temperature	0 °C to +60 °C
Storage/transport temperature	-25 °C to +70 °C
Relative humidity (non-condensing)	10% to 95%

MTBF	24.2 years; MIL-HDBK 217F: Gb 25 °C
<b>Mechanical construction</b>	
Dimensions (W x H x D)	315 mm x 134 mm x 140 mm
Mounting	DIN Rail
Weight	2,2 kg
Protection class	IP 20
<b>Mechanical stability</b>	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks
IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7 g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1 g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min
<b>EMC interference immunity</b>	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1 kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
<b>EMC emitted immunity</b>	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
<b>Approvals</b>	
Safety of industrial control equipment	cUL 508
Hazardous locations	cUL 1604 Class 1 Div 2
Germanischer Lloyd	Germanischer Lloyd
Railway norm	EN50121-4
<b>Scope of delivery and accessories</b>	
Scope of delivery	device, 2 terminal blocks, operating manual
Accessories to order separately	rail power supply RPS 30, RPS 80 EEC or RPS 120 EEC, terminal cable, HiVision network management, auto-configuration adapter (ACA21-USB), 19" installation frame, labels ML-MS2/MM, additional backplane MB-2T