



Data sheet MACH1000, 16 ports Full Gigabit Ethernet PoE switch - MAR1042-4C4C4C4C9999SLLHPHH05.0.

Industrial Ethernet:Ruggedized Switches:Fast/Gigabit Ethernet Control Cabinet Switches:PoE Control Cabinet Switches:MACH1000, 16 ports Full Gigabit Ethernet PoE switch

Name		MACH1000, 16 ports Full Gigabit Ethernet PoE switch
		
Delivery informations		
Document created at	09-08-2010	
Availability	available	
Product description		
Description	Ethernet/Fast Ethernet/Gigabit Ethernet switch, Power over Ethernet 4 ports, managed, Industrial Switch 19" rack mount, fanless design	
Port type and quantity	16 x combo ports (10/100/1000BASE TX RJ45 plus related FE/GE-SFP slot)	
Type	MAR1042-4C4C4C4C9999SLLHPHH05.0.	
Order No.	MAR1042-4C4C4C4C9999SLLHPHH05.0.	
More Interfaces		
Power supply/signaling contact	power supply 1: power supply, 2 pin plug-in terminal block, signal contact, 2 pin plug-in terminal block; power supply 2: power supply, 2 pin plug-in terminal block, signal contact, 2 pin plug-in terminal block	
V.24 interface	1 x RJ11 socket	
USB interface	1 x USB to connect the AutoConfiguration Adapter ACA21-USB	
Network size - length of cable		
Twisted pair (TP)	0 m - 100 m	
Multimode fiber (MM) 50/125 µm	cf. Gigabit and Fast Ethernet SFP modules	
Multimode fiber (MM) 62.5/125 µm	cf. Gigabit and Fast Ethernet SFP modules	
Single mode fiber (SM) 9/125 µm	cf. Gigabit and Fast Ethernet SFP modules	
Single mode fiber (LH) 9/125 µm (long haul transceiver)	cf. Gigabit and Fast Ethernet SFP modules	
Network size - cascading		
Line - / star topology	any	
Ring structure (HIPER-Ring) quantity switches	up to 10 ms (10 switches), up to 30 ms (50 switches), up to 40 ms (100 switches), up to 60 ms (200 switches)	
Power requirements		
Operating voltage	power supply 1: 24/36/48 V DC, power supply 2: 24/36/48 V DC	
Current consumption at 24 V DC	power supply 1: 1080 mA max., if all ports are equipped with SFP; power supply 2: 1080 mA max., if all ports are equipped with SFP	
Current consumption at 230 V AC	power supply 1: n/a; power supply 2: n/a	
Power output in Btu (IT) h	90 max (350 PoE option)	
Software		
Management	Serial interface, web-interface, SNMP V1/V2, HiVision file transfer SW HTTP/TFTP	
Diagnostics	LEDs, log-file, syslog, signal contact, RMON, port mirroring, topology discovery 802.1AB, cable diagnostic (TX), disable learning	
Configuration	Command line interface (CLI), TELNET, BootP, DHCP, DHCP option 82, HiDiscovery, auto-configuration adapter (ACA21-USB), DHCP server per port	
Security	Port Security (IP und MAC), SNMP V3, SSH, Authentication (802.1x), Radius Authentication for SNMPv3 (Web)	
Redundancy functions	HIPER-Ring, Fast HIPER-Ring, MRP (IEC-ring functionality), RSTP 802.1w, MRP and RSTP in parallel, link aggregation, multiple rings	
Filter	QoS 4 classes, prioritisation (IEEE 802.1D/p), VLAN (IEEE 802.1Q), multicast (IGMP snooping/querier), multicast detection unknown multicast, broadcast-, unicast-, multicast limiter, fast aging, GMRP IEEE 802.1D	
Industrial Profiles	EtherNet/IP and PROFINET (2.2 PDEV, GSDML Stand-alone generator, automatic device exchange) profiles included, configuration and diagnostic via automation software tools like e.g. STEP7, or Control Logix	
Time synchronisation	SNTP Server, PTP / IEEE 1588, realtime clock with energy buffer	
Flow control	Flow Control 802.3x, Port Priority 802.1D/p, Priority (TOS/DIFFSERV), Prio (MAC/IP), Prio Mapping (TOS Layer2), Traffic Shaping (Unicast, Multicast, Broadcast) Ingress / Egress	
Ambient conditions		
Operating temperature	0 °C - 60 °C	
Storage/transport temperature	-40 °C - 85 °C	



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Relative humidity (non-condensing)	5 % - 95 %
MTBF	119540
Protective paint on PCB	No
Mechanical construction	
Dimensions (W x H x D)	445 mm x 44 mm x 345 mm
Mounting	19" control cabinet
Weight	5600 gram
Protection class	IP30
Mechanical stability	
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.; 0.7g, 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.
EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	8 kV contact discharge, 15 kV air discharge
EN 61000-4-3 electromagnetic field	35 V/m (80-2700 MHz); 1 kHz, 80% AM
EN 61000-4-4 fast transients (burst)	4 kV power line, 4 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1 kV data line IEEE1613; power line 5 kV (line/earth)
EN 61000-4-6 conducted immunity	30 V, 50 Hz continuous; 300 V, 50 Hz 1 s
EN 61000-4-16 mains frequency voltage	30 V, 50 Hz continuous; 300 V, 50 Hz 1 s
EMC emitted immunity	
FCC CFR47 Part 15	FCC 47 CFR Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Safety of industrial control equipment	cUL 508 (pending)
Hazardous locations	cUL 1604 Class1 Div 2 (pending)
Shipbuilding	Germanischer Lloyd (pending)
Railway norm	EN 50121-4, EN50155 (pending), NEMA TS
Substation	IEC 61850-3, IEEE 1613
Transportation	EN 50121-4, EN50155 (pending), NEMA TS
Scope of delivery and accessories	
Scope of delivery	device, operating manual