


Data sheet

MACH1000, Fast Ethernet switch 2-24 ports - MAR1020-99TTTTTTMMMMMMMMMMMM99999999UGGHPHH05.0.

Industrial Ethernet:Ruggedized Switches:Fast/Gigabit Ethernet Control Cabinet Switches:Fast Ethernet Control Cabinet Switches:MACH1000, Fast Ethernet switch 2-24 ports	
Name	MACH1000, Fast Ethernet switch 2-24 ports
	
Delivery informations	
Document created at	09-08-2010
Availability	available
Product description	
Description	Ethernet/Fast Ethernet-switch according to IEEE 802.3, managed, industrial switch 19" cabinet mount, store-and-forward-switching, fanless design, software layer 2 professional
Port type and quantity	Fast-Ethernet ports in total: 16 x ports in total; 6 x Twisted Pair; 10 x Multimode SC;
Type	MAR1020-99TTTTTTMMMMMMMMMMMM99999999UGGHPHH05.0.
Order No.	MAR1020-99TTTTTTMMMMMMMMMMMM99999999UGGHPHH05.0.
More interfaces	
Power supply/signaling contact	Power supply 1: power supply 3-pin spring clip, signal contact 2-pin spring clip; Power supply 2: power supply 3-pin spring clip, signal contact 2-pin spring clip
V.24 interface	1 x RJ11 socket
USB interface	1 x to connect auto-configuration adapter ACA21-USB
Network size - length of cable	
Twisted pair (TP)	0 m - 100 m
Multimode fiber (MM) 50/125 µm	0 - 5000 m, 8 dB Link Budget at 1300 nm, A = 1 dB/km, 3 dB reserve, B = 800 MHz x km
Multimode fiber (MM) 62.5/125 µm	0 - 4000 m, 11 dB Link Budget at 1300 nm, A = 1 dB/km, 3 dB reserve, B = 500 MHz x km
Network size - cascading	
Line - / star topology	Any
Ring structure (HIPER-Ring) quantity switches	100 switches
Power requirements	
Operating voltage	Power supply 1: 120/250 VDC, 110/230 VAC; Power supply 2: 120/250 VDC, 110/230 VAC
Current consumption at 230 V AC	Power supply 1 and 2: 150 mA (35W) max, if all ports are equipped with fiber
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, Configuration Check, cable diagnostic (TX), disable learning
Configuration	Command line interface (CLI), TELNET, BootP, DHCP, DHCP option 82, HiDiscovery, auto-configuration adapter (ACA21-USB), watchdog configuration
Security	Port security (IP und MAC), SNMP V3, SSH, authentication (802.1x), radius authentication for SNMPv3 (web)
Redundancy functions	HIPER-ring (ring structure), MRP (IEC-ring functionality), RSTP 802.1D-2004, redundant network/ring coupling, MRP and RSTP in parallel, link aggregation, redundant 24 V power supply
Filter	QoS 4 classes, port prioritisierung (IEEE 802.1D/p), VLAN (IEEE 802.1Q), shared VLAN learning, Multicast (IGMP Snooping/Querier), Multicast Detection unknown Multicast, Broadcastlimiter, Fast Aging, Multicast 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, 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	-40 °C - 85 °C
Storage/transport temperature	-40 °C - 85 °C
Relative humidity (non-condensing)	10 % - 95 %
Protective paint on PCB	No
Mechanical construction	
Dimensions (W x H x D)	445 mm x 44 mm x 308 mm



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Mounting	19" control cabinet
Weight	appr. 5 kg
Protection class	IP30
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 schocks
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.; 1g, 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); 1kHz, 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 IEC61000-4-5: power line 5kV (line/earth)
EN 61000-4-6 conducted immunity	2,5 kV (line/earth), 1 kV (line/line) (1MHz)
EN 61000-4-16 mains frequency voltage	30V, 50Hz continuous; 300V, 50Hz 1s
EMC emitted immunity	
FCC CFR47 Part 15	FCC CFR47 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)
Germanischer Lloyd	Germanischer Lloyd (in preparation)
Substation	IEC 61850-3; IEEE 1613
Transportation	EN 50121-4, NEMA TS
Scope of delivery and accessories	
Scope of delivery	Device, operating manual