



Product information MACH1000, Fast Ethernet switch 2-20 ports, ports on rear - MAR1120-99TTTTTTMMMMMMMMMMMM99999999ULLPHH09.0.

Industrial Ethernet:Ruggedized Switches:Fast/Gigabit Ethernet Control Cabinet Switches:Fast Ethernet Control Cabinet Switches:with Firmware Release 9:MACH1000, Fast Ethernet switch 2-20 ports, ports on rear	
https://www.e-catalog.beldensolutions.com:443/link/57078-24455-49846-49997-80035-437629-438055/en/MAR1120-99TTTTTTMMMMMMMMMMMM99999999ULLPHH09.0./uistate	
Name	MACH1000, Fast Ethernet switch 2-20 ports, ports on rear
	
	Industrial managed Fast Ethernet Switch, 19" rack mount, fanless design, according to IEEE 802.3, store-and-forward-switching, ports on rear
Delivery informations	
Availability	available
Product description	
Description	Industrial managed Fast Ethernet Switch, 19" rack mount, fanless design, according to IEEE 802.3, store-and-forward-switching, ports on rear
Port type and quantity	Fast-Ethernet ports in total: 16 x ports in total; 6 x Twisted Pair; 10 x Multimode SC;
Type	MAR1120-99TTTTTTMMMMMMMMMMMM99999999ULLPHH09.0.
Order No.	MAR1120-99TTTTTTMMMMMMMMMMMM99999999ULLPHH09.0.
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 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 - cascadiability	
Line - / star topology	Any
Ring structure (HIPER-Ring) quantity switches	100 switches
Power requirements	
Operating voltage	Power supply 1: 24/36/48 VDC; Power supply 2: 24/36/48 VDC
Current consumption at 24 V DC	Power supply 1 and 2: 1400 mA max, if all ports are equipped with fiber
Software	
Management	Dual Software Image Support; TFTP; LLDP (802.1AB); LLDP-MED; SSHv1; SSHv2; V.24; HTTP; HTTPS; Traps; SNMP v1/v2/v3; Telnet
Diagnostics	Management Address Conflict Detection; Address Relearn Detection; MAC Notification; Signal Contact; Device Status Indication; TCPDump; LEDs; Syslog; Port Monitoring with Auto-Disable; Link Flap Detection; Overload Detection; Duplex Mismatch Detection; Link Speed and Duplex Monitoring; RMON (1,2,3,9); Port Mirroring 1:1;Port Mirroring 8:1; Port Mirroring N:1; System Information; Self-Tests on Cold Start; Copper Cable Test; SFP Management; Configuration Check Dialog; Switch Dump
Configuration	AutoConfiguration Adapter ACA11 Limited Support (RS20/30/40, MS20/30); Automatic Configuration Undo (roll-back); Configuration Fingerprint; BOOTP/DHCP Client with Auto-Configuration; DHCP Server: per Port; DHCP Server: Pools per VLAN; DHCP Server: Option 43; AutoConfiguration Adapter ACA21/22 (USB); HiDiscovery; DHCP Relay with Option 82; Command Line Interface (CLI); CLI Scripting; Full-featured MIB Support; Web-based Management; Context-sensitive Help
Security	IP-based Port Security; MAC-based Port Security; Port-based Access Control with 802.1X; Guest/unauthenticated VLAN; RADIUS VLAN Assignment; Multi-Client Authentication per Port; MAC Authentication Bypass; Access to Management restricted by VLAN; HTTPS Certificate Management; Restricted Management Access; Appropriate Use Banner; SNMP Logging; Local User Management; Remote Authentication via RADIUS
Redundancy functions	Advanced Ring Configuration for MRP; HIPER-Ring (Manager); HIPER-Ring (Ring Switch); Fast HIPER-Ring; Link Aggregation with LACP; Media Redundancy Protocol (MRP) (IEC62439-2); Redundant Network Coupling; Sub Ring Manager; RSTP 802.1D-2004 (IEC62439-1); MSTP (802.1Q); RSTP Guards; RSTP over MRP
Filter	PoE (802.3AF); PoE+ (802.3AT); Manual Cable Crossing
Industrial Profiles	EtherNet/IP Protocol; IEC61850 Protocol (MMS Server, Switch Model); PROFINET IO Protocol
Time synchronisation	PTPv2 Transparent Clock two-step; PTPv2 Boundary Clock; Buffered Real Time Clock; SNTP Client; SNTP Server



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Switching	Disable Learning (hub functionality); Independent VLAN Learning; Fast Aging; Static Unicast/Multicast Address Entries; QoS / Port Prioritization (802.1D/p); TOS/DSCP Prioritization; Egress Broadcast Limiter per Port; Flow Control (802.3X); Jumbo Frames; VLAN (802.1Q); GARP VLAN Registration Protocol (GVRP); Double VLAN Tagging (QinQ); Voice VLAN; GARP Multicast Registration Protocol (GMRP); IGMP Snooping/Querier (v1/v2/v3)
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
Mounting	19" control cabinet
Weight	appr. 5 kg
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.; 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

For more information please contact:

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