HIRSCHMANN
A BELDEN BRAND

Product: MACH4002-48G+3X-L3P

48-port Gigabit Backbone Router with 10G Uplinks, 4 media slots, L3P

Product Description

MACH4000, modular, managed Industrial Backbone-Router, Layer 3 Switch with Software Professional .

Technical Specifications

Product description

Description:	MACH 4000, modular, managed Industrial Backbone-Router, Layer 3 Switch with Software Professional .
Part Number:	943878301
Port type and quantity:	up to 48 Gigabit-ETHERNET and 3x 10Gigabit-ETHERNET ports, thereof up to 16 Gigabit-ETHERNET ports via media modules practicable, 3x 10Gigabit XFP sockets and 16 Gigabit TP (10/100/1000Mbit/s) ports are integral installed

Product Life Cycle

Availability:	Limited
Last Order Date:	2022-06-30
Last Delivery Date:	2023-06-30

More Interfaces

Power supply/signaling contact:	1 x plug-in terminal block, 4-pin, 2 x egresses manual or automatic switchable (1 A at max. 60 V DC or max. 30 V)
V.24 interface:	1 x RJ11 socket, serial interface for device configuration
USB interface:	1 x USB to connect auto-configuration adapter ACA21-USB

Network size - cascadibility

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

Power requirements

Operating Voltage:	power supply unit M4-S-xx or M4-Power Chassis with power supply unit please order separately
Power consumption:	125 W (without media modules)
Redundancy functions:	redundant 24 V power supply by M4-Power basic device, redundant signal contact

Software

Switching:	Traffic Shaping, Disable Learning (hub functionality), Independent VLAN Learning, Fast Aging, Static Unicast/Multicast Address Entries, QoS / Port Prioritization (802.1D/p), TOS/DSCP Prioritization, CoS Queue Management, Egress Broadcast Limiter per Port, Flow Control (802.3X), VLAN (802.1Q), Protocol-based VLAN, GARP VLAN Registration Protocol (GVRP), Double VLAN Tagging (QinQ), Voice VLAN, GARP Multicast Registration Protocol (GMRP), IGMP Snooping/Querier (v1/v2/v3)
Redundancy:	Advanced Ring Configuration for MRP, HIPER-Ring (Manager), HIPER-Ring (Ring Switch), HIPER-Ring over Link Aggregation, 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, VRRP, VRRP Tracking, HiVRRP (VRRP enhancements)
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, 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, Ingress MAC-based ACL, Ingress IPv4-based ACL, Ingress VLAN-based ACL, Access to Management restricted by VLAN, HTTPS Certificate Management, Restricted Management Access, Appropriate Use Banner, SNMP Logging, Local User Management, Remote Authentication via RADIUS
Time synchronisation:	Buffered Real Time Clock, SNTP Client, SNTP Server
Industrial Profiles:	EtherNet/IP Protocol, PROFINET IO Protocol
Miscellaneous:	PoE (802.3AF), Manual Cable Crossing
Routing:	Full Wire-Speed Routing, Port-based Router Interfaces, VLAN-based Router Interfaces, Net-directed Broadcasts, OSPFv2, RIP v1/v2, ICMP Router Discovery (IRDP), Equal Cost Multiple Path (ECMP), Proxy ARP, Static Route Tracking
Multicast routing:	DVMRP, IGMP v1/v2/v3, PIM-DM (RFC3973), PIM-SM / SSM (RFC4601)

Ambient conditions

Operating temperature:	0-+60 °C
Relative humidity (non-condensing):	10-95 %

Mechanical construction

Dimensions (WxHxD):	480 mm x 88 mm x 435 mm
Weight:	7.5 kg
Mounting:	19" control cabinet
Protection class:	IP20

Mechanical stability

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
IEC 60068-2-27 shock:	15 g, 11 ms duration, 18 shocks

EMC interference immunity

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)

EMC emitted immunity

EN 55022:	EN 55022 Class A
FCC CFR47 Part 15:	FCC 47CFR Part 15, Class A

Approvals

Safety of industrial control equipment:	cUL 508
Safety of information technology equipment:	cUL 60950-1
Shipbuilding:	DNV
Railway norm:	EN 50121-4

Reliability

Guarantee:	60 months (please refer to the terms of guarantee for detailed information)

Scope of delivery and accessories

Accessories to Order Separately:	SFP transceiver (100/1000MBit/s), Power supply unit, auto-configuration adapter (ACA21-USB), network management with Industrial HiVision
Scope of delivery:	device, terminal block, operating manual, fan M4-AIR installed

Further Instructions

Product Documentation:	https://www.doc.hirschmann.com
Certificates:	https://www.doc.hirschmann.com/certificates.html

History

Update and Revision:	Revision Number: 0.145 Revision Date: 07-05-2023

Variants

Item #	Type
943878301	MACH4002-48G+3X-L3P

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