



## Data sheet MACH4002-48+4G-L3P - MACH4002-48+4G-L3P

### Industrial Ethernet:Backbone Switches:Chassis:MACH4002-48+4G-L3P

Name MACH4002-48+4G-L3P



#### Delivery informations

Document created at 09-08-2010  
Availability available

#### Product description

Description MACH 4000, modular, managed Industrial Backbone-Router, Layer 3 Switch with Software Professional.  
Port type and quantity up to 48 Fast-ETHERNET and 4 Gigabit-ETHERNET ports, thereof up to 32 Fast-ETHERNET ports via media modules practicable, 4 Gigabit Combo ports and 16 x 10/100Mbit/s Fast-ETHERNET ports are integral installed  
Type MACH4002-48+4G-L3P  
Order No. 943 859-301

#### More Interfaces

Power supply/signaling contact 1 plug-in terminal block, 4-pin, 2x egresses manual or automatic switchable (1A at 240 V DC)  
V.24 interface 1 x RJ11 socket, serial interface to the configuration of devices  
USB interface 1USB interface to connect auto-configuration adapter (ACA21-USB)

#### Network size - cascadability

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 70 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 comand 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  
Routing 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 802.1D/w (rapid spanning tree protocol), redundant network/ring coupling (master/slave functionality), redundant 24 V power supply by M4-Power basic device, redundant signal contact, link aggregation dynamic and static (max. 7 trunks, 8 ports/trunk, LACP)

#### Ambient conditions

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

#### Mechanical construction

Dimensions (W x H x D) 480 mm x 88 mm x 435 mm  
Mounting 19" control cabinet  
Weight 7.5 kg  
Protection class IP 20

#### Mechanical stability

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



Industrial Ethernet:Backbone Switches:Chassis:MACH4002-48+4G-L3P	
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 (E175531)
Germanischer Lloyd	GL
Safety of information technology equipment	cUL 60950 (E168643)
Railway norm	EN 50121-4:2000, electromagnetic compatibility along the route (> 10m)
<b>Scope of delivery and accessories</b>	
Scope of delivery	device, terminal block, operating manual, fan M4-AIR installed
Accessories to order separately	SFP transceiver (100/1000MBit/s), Power supply unit, auto-configuration adapter (ACA21-USB), network management with Industrial HiVision