




**Product information**  
**MACH4002-24G-L3P**  
**943 916-301**

Name	
Name	MACH4002-24G-L3P
	
	MACH 4000, modular, managed Industrial Backbone-Router, Layer 3 Switch with Software Professional.
Delivery informations	
Availability	available
Product description	
Description	MACH 4000, modular, managed Industrial Backbone-Router, Layer 3 Switch with Software Professional.
Port type and quantity	up to 24 Gigabit-ETHERNET ports, thereof up to 16 Gigabit-ETHERNET ports via media modules practicable, 8 Gigabit combo ports SFP(100/1000Mbit/s) or TP (10/100/1000Mbit/s) are integral installed
Type	MACH4002-24G-L3P
Order No.	943 916-301
More Interfaces	
Power supply/signaling contact	1 plug-in terminal block, 4-pin, 2x 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 to the configuration of devices
USB interface	1USB interface to connect auto-configuration adapter (ACA21-USB)
Network size - cascading	
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	command line interface (CLI), TELNET, BootP, DHCP, DHCP Option 82, HiDiscovery, auto-configuration adapter (ACA21-USB)
Security	port-security (MAC- and IP-addresses), 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

The information published has been compiled as carefully as possible. It is subject to alteration without notice in technical as well as in price related/commercial respect.



<b>IEC 60068-2-6 vibration</b>	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>	
<b>EN 61000-4-2 electrostatic discharge (ESD)</b>	6 kV contact discharge, 8 kV air discharge
<b>EN 61000-4-3 electromagnetic field</b>	10 V/m (80 - 1000 MHz)
<b>EN 61000-4-4 fast transients (burst)</b>	2 kV power line, 1 kV data line
<b>EN 61000-4-5 surge voltage</b>	power line: 2 kV (line/earth), 1 kV (line/line), 1 kV data line
<b>EN 61000-4-6 conducted immunity</b>	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
<b>EMC emitted immunity</b>	
<b>FCC CFR47 Part 15</b>	FCC CFR47 Part 15 Class A
<b>EN 55022</b>	EN 55022 Class A
<b>Approvals</b>	
<b>Safety of industrial control equipment</b>	cUL 508
<b>Shipbuilding</b>	Germanischer Lloyd
<b>Safety of information technology equipment</b>	cUL 60950-1
<b>Railway norm</b>	EN50121-4 (pending)
<b>Scope of delivery and accessories</b>	
<b>Scope of delivery</b>	device, terminal block, operating manual, fan M4-AIR installed
<b>Accessories to order separately</b>	SFP transceiver (100/1000MBit/s), Power supply unit, auto-configuration adapter (ACA21-USB), network management with Industrial HiVision

The information published has been compiled as carefully as possible. It is subject to alteration without notice in technical as well as in price related/commercial respect.