




**Product information**  
**OCTOPUS 16M (GM)**  
**943 912-011**

<b>Name</b>	
OCTOPUS 16M (GM)	
	
Managed IP67 switch in accordance with IEEE 802.3, store and forward switching mode, Layer 2 Software Professional, ETHERNET (10 Mbit/s) and Fast-ETHERNET (100 Mbit/s)	
<b>Delivery informations</b>	
<b>Availability</b>	available
<b>Product description</b>	
<b>Description</b>	Managed IP67 switch in accordance with IEEE 802.3, store and forward switching mode, Layer 2 Software Professional, ETHERNET (10 Mbit/s) and Fast-ETHERNET (100 Mbit/s)
<b>Port type and quantity</b>	16 x 10/100 BASE-TX, M12 D coding, 4-pole, 2-pair TP cable auto-crossing, auto-negotiation, auto-polarity
<b>Type</b>	OCTOPUS 16M (GM)
<b>Order No.</b>	943 912-011
<b>More Interfaces</b>	
<b>Power supply/signaling contact</b>	1 M12 A coding 5-pin connector
<b>V.24 interface</b>	1 M12 A coding 4-pin socket
<b>USB interface</b>	1 M12 A coding 5-pin socket
<b>Network size - length of cable</b>	
<b>Twisted pair (TP)</b>	0 - 100 m
<b>Network size - cascability</b>	
<b>Line - / star topology</b>	Any
<b>Ring structure (HIPER-Ring) quantity switches</b>	50 (reconfiguration time <0,3 sec.)
<b>Power requirements</b>	
<b>Operating voltage</b>	9.6 to 60 V DC
<b>Power consumption</b>	max. 9.5 W
<b>Current consumption at 24 V DC</b>	380 mA
<b>Service</b>	
<b>Management</b>	Serial interface, Web interface, SNMP V1/V2/V3 (HiVision/Industrial HiVision)
<b>Diagnostics</b>	LEDs (power 1, power 2, link status, data, redundancy manager, error) cable tester, signalling contact (24 V DC/ A), RMON (statistics, history, alarms, events), SysLog support, port mirroring
<b>Configuration</b>	Command Line Interface (CLI scripting), auto-configuration adapter (ACA21-M12), TELNET, BootP, DHCP Option 82, HiDiscovery
<b>Security</b>	Port security (MAC and IP address), SNMPv3, SSHv3 SNMP access settings (VLAN/IP), IEEE 802.1X authentication
<b>Other services</b>	4 QoS queues, user priority (IEEE 802.1D/p), VLAN (IEEE 802.1Q), unknown multicast filtering, multicast support (IGMP Snooping/Querier, GMRP), broadcast limiter per port, ingress and egress packet limiter, Flow Control IEEE 802.3x, LLDP (topology discovery IEEE 802.1AB), Link Aggregation (IEEE 802.3ad), buffered real-time clock, PTP support (Precision Time Protocol) (IEEE 1588 client), SNTP support (Simple Network Time Protocol, client/server)
<b>Redundancy</b>	
<b>Redundancy functions</b>	HIPER-Ring (ring topology), RSTP (Rapid Spanning Tree Protocol, IEEE 802.1w), redundant network/ring coupling, redundant 24 V power supply
<b>Ambient conditions</b>	
<b>Operating temperature</b>	-40 °C to +70 °C
<b>Storage/transport temperature</b>	-40 °C to +85 °C
<b>MTBF</b>	17.8 years; MIL-HDBK 217F: Gb 25 °C
<b>Mechanical construction</b>	
<b>Dimensions (W x H x D)</b>	261 mm x 189 mm x 70 mm
<b>Mounting</b>	Wall mounting

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>Weight</b>	1900 g
<b>Protection class</b>	IP 67
<b>Mechanical stability</b>	
<b>IEC 60068-2-27 shock</b>	15 g, 11 ms duration, 18 shocks
<b>IEC 60068-2-6 vibration</b>	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.
<b>EMC interference immunity</b>	
<b>EN 61000-4-2 electrostatic discharge (ESD)</b>	4 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: 2kV (linie/earth), 1 kV (linie/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>Germanischer Lloyd</b>	GL
<b>Employment in vehicles</b>	E1
<b>Electronic mechanisms on rail-mounted vehicles</b>	-
<b>Scope of delivery and accessories</b>	
<b>Scope of delivery</b>	description and operating instructions, OCTOPUS M12-MiniPower adapter 943 944-001
<b>Accessories to order separately</b>	auto configuration adapter (ACA21-M12) order no. 943 931-001; modem cable, shielded M12 4-pins on Sub-D 9-pins order no. 943 902-001; field assembleable M12-connector EM12S OCTOPUS order no. 934 445-001; patchcords EM12S 001Lxxxx OCTOPUS order no. 934 578-xxx; crossing M12 to RJ45 EF12RJ45 OCTOPUS order no. 934 498-001; OCTOPUS dust cover set (25 pieces) order no. 942 057-001
<b>Note</b>	Please note that some recommended accessory parts only support a temperature range from -25°C to +70°C and might limit the possible operating conditions for the entire system. Specially designed connector types with protection class IP67 and extended temperature range are available on request. Furthermore unsealed accessories like RJ45 adapters or terminal access cables are certainly not suitable inside IP67 areas.