


**Product:** [MACH104-16TX PoEP-E](#) 

**Managed 20-port Full Gigabit 19" Switch with PoEP, external PSU**



**Product Description**

20 Port Gigabit Ethernet Industrial Workgroup Switch (16 x GE TX PoEPlus Ports, 4 x GE SFP combo Ports), managed, Software Layer 2 Professional, Store-and-Forward-Switching, fan less Design, IPv6 Ready

**Technical Specifications**

**Product description**

|                         |   |
|-------------------------|---|
| Type:                   | MACH104-16TX-PoEP -E  |
| Description:            | 20 Port Gigabit Ethernet Industrial Workgroup Switch (16 x GE TX PoEPlus Ports, 4 x GE SFP combo Ports), managed, Software Layer 2 Professional, Store-and-Forward-Switching, fan less Design, IPv6 Ready |
| Part Number:            | 942027001   |
| Port type and quantity: | 20 Ports in total; 16x (10/100/1000 BASE-TX, RJ45) PoEPlus and 4 Gigabit Combo Ports (10/100/1000 BASE-TX, RJ45 or 100/1000 BASE-FX, SFP)   |

**More Interfaces**

|                                 |   |
|---------------------------------|---|
| Power supply/signaling contact: | 1 x terminal block 2-pins, contact manually or automatically (max. 1 A, 24 V DC or 24 V AC) |
| 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 - length of cable**

|  |  |
|--|--|
| Twisted pair (TP):                                       | 0-100 m  |
| Single mode fiber (SM) 9/125 µm:                         | see SFP module M-FAST SFP-MM/LC and SFP module M-SFP-SX/LC |
| Single mode fiber (LH) 9/125 µm (long haul transceiver): | see SFP FO module M-FAST SFP-SM+/LC                        |
| Multimode fiber (MM) 50/125 µm:                          | see SFP module M-FAST SFP-MM/LC and SFP module M-SFP-SX/LC |
| Multimode fiber (MM) 62.5/125 µm:                        | see SFP module M-FAST SFP-MM/LC and SFP module M-SFP-SX/LC |

**Network size - cascading**

|  |                                    |
|--|------------------------------------|
| Line - / star topology:                        | any                                |
| Ring structure (HIPER-Ring) quantity switches: | 50 (reconfiguration time 0.3 sec.) |

**Power requirements**

|                             |  |
|-----------------------------|--|
| Operating Voltage:          | 44-57 V DC (min. 52 V DC for PoEPlus)  |
| Power consumption:          | 30 W   |
| Power output in BTU (IT)/h: | 119  |
| Redundancy functions:       | HIPER-Ring, MRP, MSTP, RSTP - IEEE802.1D-2004, MRP and RSTP gleichzeitig, Link Aggregation |

**Software**

|             |  |
|-------------|--|
| 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) |
| Redundancy: | 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, RSTP 802.1D-2004 (IEC62439-1), MSTP (802.1Q), RSTP Guards, RSTP over MRP   |
| 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, Signal Contact, Device Status Indication, LEDs, Syslog, Port Monitoring with Auto-Disable, Link Flap Detection, RMON (1,2,3,9), Port Mirroring 1:1, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog  |
| Configuration:        | AutoConfiguration Adapter ACA11 Limited Support (RS20/30/40, MS20/30), Automatic Configuration Undo (roll-back), BOOTP/DHCP Client with Auto-Configuration, DHCP Server: per Port, 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 |
| Time synchronisation: | PTPv2 Transparent Clock two-step, PTPv2 Boundary Clock, Buffered Real Time Clock, SNTP Client, SNTP Server  |
| Industrial Profiles:  | EtherNet/IP Protocol, PROFINET IO Protocol  |
| Miscellaneous:        | PoE (802.3AF), PoE+ (802.3AT), PoE+ Manual Power Management, Manual Cable Crossing  |

## Ambient conditions

|                                     |          |
|-------------------------------------|----------|
| Operating temperature:              | 0-+50 °C |
| Relative humidity (non-condensing): | 10-95 %  |

## Mechanical construction

|                     |                         |
|---------------------|-------------------------|
| Dimensions (WxHxD): | 448 mm x 44 mm x 345 mm |
| Weight:             | 4500 g                  |
| Mounting:           | 19" control cabinet     |
| Protection class:   | IP20                    |

## Mechanical stability

|                          |   |
|--------------------------|---|
| IEC 60068-2-6 vibration: | 3.5 mm, 5-8.4 Hz, 10 cycles, 1 octave/min; 1 g, 8.4-150 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): | 4 kV contact discharge, 8 kV air discharge                      |
| EN 61000-4-3 electromagnetic field:         | 10 V/m (80-3000 MHz)  |
| EN 61000-4-4 fast transients (burst):       | 2 kV power line, 4 kV data line                                 |
| EN 61000-4-5 surge voltage:                 | power line: 2 kV (line/earth), 1 kV (line/line), 4 kV data line |
| EN 61000-4-6 Conducted Immunity:            | 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 |

## Reliability

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

## Scope of delivery and accessories

|                                  |   |
|----------------------------------|---|
| Accessories to Order Separately: | Fast Ethernet SFP modules, Gigabit Ethernet SFP modules, autoConfiguration Adapter ACA21-USB, terminal cable, Industrial Hivision Network Management software |
| Scope of delivery:               | Device, terminal block for signal contact, 2 brackets with fasteningscrews (pre-assembled), housing feet - stick-on, non-heating appliance cable - Euro model |

## Further Instructions

|                        |   |
|------------------------|---|
| Product Documentation: | <a href="https://www.doc.hirschmann.com">https://www.doc.hirschmann.com</a>   |
| Certificates:          | <a href="https://www.doc.hirschmann.com/certificates.html">https://www.doc.hirschmann.com/certificates.html</a>           |
| Software Download:     | <a href="https://hirschmann-support.belden.com/en-US/downloads">https://hirschmann-support.belden.com/en-US/downloads</a> |

## History

|                      |  |
|----------------------|--|
| Update and Revision: | Revision Number: 0.152 Revision Date: 03-14-2024 |
|----------------------|--|

## Variants

| Item #    | Type                |
|-----------|---------------------|
| 942027001 | MACH104-16TX PoEP-E |

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