

Product: OCTOPUS 12FE-LV-Trainrouter

Configurator: OS20/24/30/34 - OCTOPUS II configurator



Configurator Description

Specially designed for use at the field level with automation networks, the switches in the OCTOPUS family ensure the highest industrial protection ratings (IP67, IP65 or IP54) regarding mechanical stress, humidity, dirt, dust, shock and vibrations. They are also capable of withstanding heat and cold, while fulfilling the strictest fire prevention requirements. The rugged design of the OCTOPUS switches are ideal for installing directly on machinery, outside of control cabinets and distribution boxes. The switches can be cascaded as often as required – permitting implementation of decentralized networks with short paths to the respective devices to considerably reducing costs for cabling.

Technical Specifications

Product description

| | |
|------------------------|---|
| Type | OCTOPUS 12FE-LV-Trainrouter (Product code: OS20-001200T5T5T5-TBBS999HHNE3SXX.X.XX) |
| Description | Managed IP65 / IP67 switch in accordance with IEEE 802.3, store-and-forward-switching, HiOS Layer 3 Standard , Fast-Ethernet Type , electrical Fast Ethernet uplink-ports , Enhanced (PRP, Fast MRP, HSR, NAT, TSN) |
| Part Number | 942133007 |
| Port type and quantity | 12 ports in total; ; TP-cable, auto-crossing, auto-negotiation, auto-polarity. Uplink ports 10/100BASE-TX M12 "D"-coded, 4-pins ; Local ports 10/100BASE-TX M12 "D"-coded, 4-pin |

More Interfaces

| | |
|--------------------------------|-----------------------------------|
| Power supply/signaling contact | 1 x M12 5-pin connector, A coding |
| V.24 interface | 1 x M12 4-pin socket, A coding |
| USB interface | 1 x M12 5-pin socket, A coding |

Network size - length of cable

| | |
|-------------------|---------|
| Twisted pair (TP) | 0-100 m |
|-------------------|---------|

Network size - cascability

| | |
|---|---|
| Line - / star topology | any |
| Ring structure (HIPER-Ring) quantity switches | MRP, HIPER-Ring max. 50 switches (reconfiguration time 0.3 s), RSTP |

Power requirements

| | |
|----------------------------|-----------------------------|
| Operating Voltage | 2 x 24 VDC (16.8 .. 30 VDC) |
| Power consumption | max. 26 W |
| Power output in BTU (IT)/h | max. 87 |

Software

| | |
|-------------|--|
| Switching | Independent VLAN Learning, Fast Aging, Static Unicast/Multicast Address Entries, QoS / Port Prioritization (802.1D/p), TOS/DSCP Prioritization, Interface Trust Mode, CoS Queue Management, Queue-Shaping / Max. Queue Bandwidth, Flow Control (802.3X), Egress Interface Shaping, Ingress Storm Protection, Jumbo Frames, VLAN (802.1Q), VLAN Unaware Mode, Voice VLAN, IGMP Snooping/Querier per VLAN (v1/v2/v3), Unknown Multicast Filtering, Multiple VLAN Registration Protocol (MVRP), Multiple MAC Registration Protocol (MMRP), Multiple Registration Protocol (MRP) IP Ingress DiffServ Classification and Policing, Protocol-based VLAN, GARP VLAN Registration Protocol (GVRP), MAC-based VLAN, IP subnet-based VLAN, GARP Multicast Registration Protocol (GMRP) |
| Redundancy | Link Aggregation with LACP, Link Backup, Media Redundancy Protocol (MRP) (IEC62439-2), RSTP 802.1D-2004 (IEC62439-1), RSTP Guards HIPER-Ring (Ring Switch), HIPER-Ring over Link Aggregation, MRP over Link Aggregation, Redundant Network Coupling, Sub Ring Manager, MSTP (802.1Q) VRRP, VRRP Tracking, HiVRRP (VRRP enhancements) Fast MRP (IEC62439-2), High Availability Seamless Redundancy Protocol (HSR) (IEC62439-3), Parallel Redundancy Protocol (PRP) (IEC62439-3) |
| Management | Dual Software Image Support, TFTP, SFTP. SCP. LLDP (802.1AB), LLDP-MED, SSHv2, V.24, HTTP, HTTPS, Traps, SNMP v1/v2/v3, Telnet DNS Client |
| Diagnostics | LEDs Management Address Conflict Detection, MAC Notification, Signal Contact, Device Status Indication, TCPDump, LEDs, Syslog, Persistent Logging on ACA, 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, Port Mirroring N:1, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog, Switch Dump, Snapshot Configuration Feature Email Notification, RSPAN, SFLOW, VLAN Mirroring , Address Conflict Detection for routing interfaces |

| | |
|----------------------|--|
| Configuration | Automatic Configuration Undo (roll-back), Configuration Fingerprint, Text-based Configuration File (XML), BOOTP/DHCP Client with Auto-Configuration, DHCP Server: per Port, DHCP Server: Pools per VLAN, 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, Backup config on a remote server when saving, Clear config but keep IP settings, CLI script handling over ENVN at boot, HTML5 based Management |
| Security | MAC-based Port Security, Port-based Access Control with 802.1X, Guest/unauthenticated VLAN, Integrated Authentication Server (IAS), RADIUS VLAN Assignment, Denial-of-Service Prevention, VLAN-based ACL, Ingress VLAN-based ACL, Basic ACL, Access to Management restricted by VLAN, Device Security Indication, Audit Trail, CLI Logging, HTTPS Certificate Management, Restricted Management Access, Appropriate Use Banner, Configurable Password Policy, Configurable Number of Login Attempts, SNMP Logging, Multiple Privilege Levels, Local User Management, Remote Authentication via RADIUS, User Account Locking, Password change on first login RADIUS Policy Assignment, Multi-Client Authentication per Port, MAC Authentication Bypass, DHCP Snooping, Dynamic ARP Inspection, LDAP, Ingress MAC-based ACL, Ingress IPv4-based ACL, Time-based ACL, ACL Flow-based Limiting, Format options for MAC authentication bypass |
| Time synchronisation | PTPv2 Transparent Clock two-step, PTPv2 Boundary Clock, Buffered Real Time Clock, SNTP Client, SNTP Server , 802.1AS |
| Industrial Profiles | EtherNet/IP Protocol, IEC61850 Protocol (MMS Server, Switch Model), ModbusTCP, PROFINET IO Protocol |
| Miscellaneous | Manual Cable Crossing, Port Power Down |
| Presettings | NAT firmware |
| Routing | IP/UDP Helper, Full Wire-Speed Routing, Port-based Router Interfaces, VLAN-based Router Interfaces, Loopback Interface, ICMP Filter, Net-directed Broadcasts, OSPFv2, RIP v1/v2, ICMP Router Discovery (IRDP), Static Unicast Routing, Proxy ARP, Static Route Tracking 1:1 NAT |
| Multicast routing | IGMP v1/v2/v3, IGMP Proxy (Multicast Routing) |

Ambient conditions

| | |
|-------------------------------------|------------|
| Operating temperature | -40-+70 °C |
| Storage/transport temperature | -40-+85 °C |
| Relative humidity (also condensing) | 5-100 % |

Mechanical construction

| | |
|--------------------|-------------------------|
| Dimensions (WxHxD) | 261 mm x 186 mm x 95 mm |
| Weight | 3.5 kg |
| Mounting | Wall mounting |
| Protection class | IP65 / IP67 |

Mechanical stability

| | |
|-------------------------|---|
| IEC 60068-2-6 vibration | 3.5 mm, 3 Hz-9 Hz, 10 cycles, 1 octave/min.; 1 g, 9 Hz-150 Hz, 10 cycles, 1 octave/min 5 Hz - 150 Hz, vertical 7.9 m/s ² , horizontal 5.5 m/s ² |
| IEC 60068-2-27 shock | 15 g, 11 ms duration, 18 shocks Vertical: 3 g, 30 ms duration, horizontal: 5 g, 30 ms duration |

EMC interference immunity

| | |
|--|---|
| EN 61000-4-2 electrostatic discharge (ESD) | 6 kV contact discharge, 8 kV air discharge |
| EN 61000-4-3 electromagnetic field | 20 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 lines: 2 kV (line/earth), 1 kV (line/line), data lines: 2 kV (line/earth) |
| EN 61000-4-6 Conducted Immunity | 10 V (150 kHz-80 MHz) |

EMC emitted immunity

| | |
|-------------------|----------------------------|
| EN 55022 | EN 55032 Class A |
| FCC CFR47 Part 15 | FCC 47CFR Part 15, Class A |

Approvals

| | |
|--|----------------------------------|
| Basis Standard | CE; FCC; EN61131 |
| Safety of industrial control equipment | EN60950-1 |
| Railway norm | EN 50155, EN 45545-2, EN 50121-4 |

Scope of delivery and accessories

| | |
|-------------------|---|
| Scope of delivery | 1 × Device, 1 x connector for power connection, General safety instructions |
|-------------------|---|

© 2021 Belden, Inc

All Rights Reserved.

Although Belden makes every reasonable effort to ensure their accuracy at the time of this publication, information and specifications described here in are subject to error or omission and to change without notice, and the listing of such information and specifications does not ensure product availability.

Belden provides the information and specifications herein on an "ASIS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Belden be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary damages) whatsoever, even if Belden has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

All sales of Belden products are subject to Belden's standard terms and conditions of sale.

Belden believes this product to be in compliance with all applicable environmental programs as listed in the data sheet. The information provided is correct to the best of Belden's knowledge, information and belief at the date of its publication. This information is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. The Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.