

**Product:** [BXS40-12TX-EECC-HV-2A](#) 

12x GE TX, 72-110 VDC, -40°C to +70 °C, HiOS 2A



## Product Description

Managed IP40 switch, HiOS software layer 2 advanced, 12 Gigabit Ethernet M12-ports X-coded. suitable for use onboard trains and buses

## Technical Specifications

### Product description

|                         |   |
|-------------------------|---|
| Name:                   | BXS40-12TX-EECC-HV-2A   |
| Description:            | Managed IP40 switch, HiOS software layer 2 advanced, 12 Gigabit Ethernet M12-ports X-coded. suitable for use onboard trains and buses |
| Part Number:            | 942302006   |
| Port type and quantity: | 12 ports in total: 12 x GE  |

### More Interfaces

|                                 |                  |
|---------------------------------|------------------|
| Power supply/signaling contact: | M12 5pin K-coded |
|---------------------------------|------------------|

### Network size - length of cable

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

### Network size - cascading

|                         |     |
|-------------------------|-----|
| Line - / star topology: | any |
|-------------------------|-----|

### Power requirements

|                             |            |
|-----------------------------|------------|
| Operating Voltage:          | 72-110 VDC |
| Power consumption:          | 11.9W      |
| Power output in BTU (IT)/h: | 40.5       |

### 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), GARP VLAN Registration Protocol (GVRP), Voice VLAN, GARP Multicast Registration Protocol (GMRP), 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), TSN 802.1Qbv Support on interfaces 1/1 - 1/3.   |
| Redundancy:           | HIPER-Ring (Ring Switch), HIPER-Ring over Link Aggregation, Link Aggregation with LACP, Link Backup, Media Redundancy Protocol (MRP) (IEC62439-2), MRP over Link Aggregation, Redundant Network Coupling, Sub Ring Manager, RSTP 802.1D-2004 (IEC62439-1), RSTP Guards  |
| Management:           | DNS Client, Dual Software Image Support, TFTP, SFT,SCP, LLDP (802.1AB), LLDP-MED, SSHv2, OPC-UA Server, HTTP, HTTPS, IPv6 Management, Traps, SNMP v1/v2/v3, Telnet  |
| Diagnostics:          | Management Address Conflict Detection,MAC Notification,Signal Contact, Device Status Indication, TCPDump, LEDs, Syslog, Persistent Logging on ACA, Email Notification, 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, Port Mirroring N:2, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog, Switch Dump  |
| Configuration:        | Automatic Configuration Undo (roll-back), Configuration Fingerprint, Text-based Configuration File (XML), Backup config on a remote server when saving, Clear config but keep IP settings, 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, USB-C Management support, Command Line Interface (CLI), CLI Scripting, CLI script handling over ENVN at boot, Full-featured MIB Support, Context-sensitive Help, 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, Multi-Client Authentication per Port, MAC Authentication Bypass, Format options for MAC authentication bypass, DHCP Snooping, IP Source Guard, Dynamic ARP Inspection, Denial-of-Service Prevention, DoS Prevention Drop Counter, LDAP, 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 |
| Time synchronisation: | PTPv2 Transparent Clock two-step, PTPv2 Boundary Clock, BC with Up to 8 Sync / s , 802.1AS, Buffered Real Time Clock, SNTP Client, SNTP Server  |
| Industrial Profiles:  | IEC61850 Protocol (MMS Server, Switch Model),, Modbus TCP   |

|                |  |
|----------------|--|
| Miscellaneous: | Manual Cable Crossing, Port Power Down |
|----------------|--|

## Ambient conditions

|                                     |                             |
|-------------------------------------|-----------------------------|
| Air Pressure (Operation):           | Operating hight max. 3000 m |
| Operating temperature:              | -40-+70 °C                  |
| Storage/transport temperature:      | -40-+85 °C                  |
| Relative humidity (non-condensing): | 1-95 %                      |

## Mechanical construction

|                     |                           |
|---------------------|---------------------------|
| Dimensions (WxHxD): | 282 mm x 143,6 mm x 91 mm |
| Weight:             | 2.15 kg                   |
| Housing:            | Metal                     |
| Mounting:           | Wall                      |
| Protection class:   | IP40                      |

## Mechanical stability

|                          |   |
|--------------------------|---|
| IEC 60068-2-6 vibration: | 3.5 mm, 5-8.4 Hz, 10 cycles, 1 octave/min; 1 g, 8.4-200 Hz, 10 cycles per axis, 1 octave/min operational: 5 Hz ... 150 Hz, 1,0 m/s <sup>2</sup> (rms) non operational: 5 Hz ... 150 Hz, 5,72 m/s <sup>2</sup> (rms) |
| IEC 60068-2-27 shock:    | 15 g, 11 ms duration; vertical: 30 m/s <sup>2</sup> , 30 ms, horizontal: 50 m/s <sup>2</sup> , 30 ms  |

## 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 MHz ... 1000 MHz), 10 V/m (1.4 GHz ... 2.0 GHz), 5 V/m (2.0 GHz ... 2.7 GHz), 3 V/m (2.7 GHz ... 6,0 GHz) |
| EN 61000-4-4 fast transients (burst):       | 2 kV power line, 2 kV data line  |
| EN 61000-4-5 surge voltage:                 | power line/ground ±2 kV, power line/line ±1 kV, data line/ground ±2 kV   |
| EN 61000-4-6 Conducted Immunity:            | 10 V (150 kHz .. 80 MHz)   |

## EMC emitted immunity

|                    |                            |
|--------------------|----------------------------|
| EN 55032:          | EN 55032 Class A           |
| EMV 06:            | Rev. 2.0 - Class S1        |
| FCC CFR47 Part 15: | FCC 47CFR Part 15, Class A |

## Approvals

|                 |  |
|-----------------|--|
| Basis Standard: | CE, FCC, EN 61131-2                          |
| Transportation: | EN 50155, EN 45545 HL3, EN 50121-4, NEMA TS2 |

## Reliability

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

## Scope of delivery and accessories

|                                  |   |
|----------------------------------|---|
| Accessories to Order Separately: | ACA22-M12-C (EEC) Adapter cable M12 5-pin to USB (for configuring BXS devices)                      |
| Scope of delivery:               | Switch, safety instructions, power supply connector, dust cover clips mounted on all M12 connectors |

## 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> |

## History

|                      |   |
|----------------------|---|
| Update and Revision: | Revision Number: 0.91 Revision Date: 08-17-2023 |
|----------------------|---|

## Variants

| Item #    | Type                  |
|-----------|-----------------------|
| 942302006 | BXS40-12TX-EECC-HV-2A |

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