HIRSCHMANN
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Product Bulletin

BOBCAT Switches

Next-Generation Compact Managed Switches

With up to 24 ports and various configuration options – including fast Ethernet speeds up to 2.5 Gigabit – the Hirschmann BOBCAT Managed Switches offer a compact, yet powerful solution for the IIoT.

- **High-port density** for connection of an increased number of network devices
- **Simultaneously support multiple services** on one network through TSN technology
- **Prepare for future network growth** with increased bandwidth and speed capabilities

Key Features

- Up to 24 ports for high-port density in a compact housing
- Supports up to 240 W across 8 PoE/PoE+ ports without load sharing to ensure maximum power output
- Robust industrial design for extreme environmental conditions, including wide temperature ranges and power needs (12, 24 or 48 V)
- Real-time TSN Ethernet support for precise data transmission
- Advanced security features, including wire-speed access control lists (ACL) and automatic denial-of-service (DoS) prevention
- Increased bandwidth capabilities, supporting tri-speed fiber SFP slots with 100 Mbit/s, 1 Gbit/s and 2.5 Gbit/s speeds

The Hirschmann BOBCAT Switches offer enhanced flexibility and interoperability for simple maintenance and future-proof operation due to tri-speed SFP ports and downwards compatibility for existing infrastructure.

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Your Benefits

The Hirschmann BOBCAT Switches, including high-port count variants, are designed to meet rising bandwidth needs, enabling more connected devices on the network through a compact, yet powerful solution. With real-time communication using TSN, the switches maximize performance and security, even under demanding conditions.

These managed switches also allow for expanded bandwidth capabilities with the option to adjust the SFPs from 1 to 2.5 Gigabit – requiring no change to the appliance.

Enhanced network security is another critical component of any future-facing network. The Hirschmann BOBCAT Switches support HiOS software and feature several compelling security elements, including IEEE 802.1x port-based access control, varying privilege levels, configurable password policies, security status monitor and audit trails.

Applications

The Hirschmann BOBCAT Switches are an ideal solution for classic automation applications that require real-time communication, advanced security, low latency, and the simultaneous synchronization of data and information to control operations.

In addition, the high-port density options support a growing number of network devices, while the PoE option can power the growing demand of energy-hungry devices, such as pan-tilt-zoom cameras or wireless access points. The appliance is best for engineers, system integrators and machine builders looking for a powerful and future-proof device.

Markets

With advanced security and real-time communication features, the compact managed switches are an essential appliance relevant to many industrial markets, including automotive, manufacturing, machine building, water management, and oil and gas.

The Hirschmann BOBCAT Switches are also applicable in transportation and power management applications, helping to deliver critical real-time information, like deterministic signaling and energy flow. With trackside approval according to EN50121, the switches can also be deployed in transportation, mass transit systems, and railway and train stations.

The high bandwidth and port count, combined with a ruggedized design, are ideal for airports and seaports as well.

The Hirschmann BOBCAT Switches are a cost-effective and high-performance solution that enables increased bandwidth and improved network reliability.

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Technical Information

Product Description Switch				
Type	**BRS2**	**BRS3**	**BRS4**	**BRS5**
Description	Managed, Industrial Ethernet Switch DIN Rail, fanless design, up to 24 ports and up to 4 fiber ports			
Port Type and Quantity	Fast Ethernet with up to 3 SC/ST fiber ports or 4 SFP ports	Fast Ethernet with up to 4 dual-speed 100/1000 Mbit/s SFP ports	All Gigabit with up to 4 dual-speed 100/1000 Mbit/s SFP ports	All Gigabit with up to 4 tri-speed 100/1000/2500 Mbit/s SFP ports
Additional Interfaces				
Local Management and Device Replacement	USB-C			
Digital Input	1 x plug-in terminal block, 2-pin			
Power over Ethernet				
Port Type and Quantity*	8 ports*; PoE/PoE+ (IEEE 802.3af/at) 90 W/24 V or 240 W/54 V			
Power Requirements				
Operating Voltage*	12 - 48 V DC or 24-48 V DC and 24 V AC (redundant); 24 V DC or 48/54 V DC (redundant) for PoE variants			
Power Consumption	5 up to 20 W (plus PoE power consumption)			
Mechanical Construction				
Dimensions (W x H x D) mm	71/87/123 mm* x 140 mm x 110 mm metal housing 57/73/109 mm* x 138 mm x 109 mm PC-ABS housing			
Housing	PC-ABS or metal			
Weight	380 g up to 1050 g (PC-ABS); 870 g up to 1620 g (metal)			
Protection class	IP30 (PC-ABS), IP30 (metal housing), IP40 (metal housing)			
Software				
Supported HiOS Software Levels	Layer 2 Standard (L2S) or Layer 2 Advanced (L2A)			
Software Layer 2				
Management	Dual Software Image Support, TFTP, SFTP, SCP, LLDP (802.1AB), LLDP-MED, SSHv2, HTTP, HTTPS, Traps, SNMP v1/v2/v3, Telnet, IPv6 Management			
Diagnostics	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, 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, USB-C Management support, Command Line Interface (CLI), CLI Scripting, CLI script handling over ENVM 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, Denial-of-Service Prevention, DoS Prevention Drop Counter, 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			
Redundancy Functions	HIPER-Ring (Ring Switch), Link Aggregation with LACP, Link Backup, Media Redundancy Protocol (MRP) (IEC62439-2), Redundant Network Coupling, RSTP 802.1D-2004 (IEC62439-1), RSTP Guards			
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)			
Standardized Real-Time Ethernet	TSN, Time Sensitive Network (later software release)			
Time Synchronization	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	EtherNet/IP Protocol, IEC61850 Protocol (MMS Server, Switch Model), Modbus TCP, PROFINET Protocol			
Miscellaneous	Digital IO Management, Manual Cable Crossing, Port Power Down PoE (802.3af), PoE+ (802.3at), PoE+ Manual Power Management, PoE Fast Startup			
Information	Please note that the feature set available at product launch can be different.			
Ambient Conditions				
Operating Temperature	0 °C to 60 °C, or -40 °C to +70 °C, optional conformal coating			
Relative Humidity (non-condensing)	1% to 95%			
Approvals Configurable				
Safety of Industrial Control Equipment*	EN 62368-1, UL 61010-2-201 & CSA C22.2 NO. 61010-2-201:18*			
Ship*	DNVGL*, Bureau Veritas*, Lloyd's Register*			
Hazardous Locations*	UL 121201 & CSA C22.2 NO. 213-17 *, ATEX Ex ec **, IECEx Ex ec **			
Substation	IEC 61850-3*			
Transportation*	NEMA TS2, EN50121-4***			
Accessories				
Device Replacement and Logging	ACA22-USB-C (EEC)			

* Depending on the selected variant
**Approvals pending
*** Variants with temperature range T, E or G

NOTE: These are the prominent technical specifications. For complete technical specifications visit: catalog.belden.com

BOBCAT Rail Switch Configurations

B	R	S	5	2	-	0	0	1	2	2	Q	2	Q	-	S	P	C	Z	9	9	H	H	S	E	S	X	X	.	X	.

Design

BRS2 = 100 Mbit/s Ports
BRS3 = 100/1000 Mbit/s Ports
BRS4 = 1000 Mbit/s Ports
BRS5 = 1000/2500 Mbit/s Ports

Hardware Type

0 = Standard
2 = PoE/PoE+ support

Number of Fast Ethernet Ports

00 = 0 x 100 Mbit/s Ports
05 = 5 x 100 Mbit/s Ports
08 = 8 x 100 Mbit/s Ports
10 = 10 x 100 Mbit/s Ports
12 = 12 x 100 Mbit/s Ports
20 = 20 x 100 Mbit/s Ports
04 = 4 x 100 Mbit/s Ports
06 = 6 x 100 Mbit/s Ports
09 = 9 x 100 Mbit/s Ports
11 = 11 x 100 Mbit/s Ports
16 = 16 x 100 Mbit/s Ports
24 = 24 x 100 Mbit/s Ports

Number of Gigabit Ethernet Ports

00 = 0 x 1000 Mbit/s Ports
08 = 8 x 1000 Mbit/s Ports
16 = 16 x 1000 Mbit/s Ports
24 = 24 x 1000 Mbit/s Ports
12 = 8 x 1000 Mbit/s Ports + 4 x 2500 Mbit/s Ports
20 = 16 x 1000 Mbit/s Ports + 4 x 2500 Mbit/s Ports
24 = 20 x 1000 Mbit/s Ports + 4 x 2500 Mbit/s Ports
04 = 4 x 1000 Mbit/s Ports
12 = 12 x 1000 Mbit/s Ports
20 = 20 x 1000 Mbit/s Ports

Type 1 Uplink Ports

99 = None
2T = 2 x TX (1000 Mbit/s)
M2 = 1 x Multimode SC (100 Mbit/s)
S2 = 1 x Singlemode SC (100 Mbit/s)
E2 = 1 x Singlemode + SC (100 Mbit/s)
G2 = 1 x Singlemode LH + SC (100 Mbit/s)
NN = 2 x Multimode ST (100 Mbit/s)
UU = 2 x Singlemode ST (100 Mbit/s)
LL = 2 x Singlemode LH SC (100 Mbit/s)
ZZ = 2 x SFP Slot (100 Mbit/s)
Z6 = 1 x SFP Slot (100 Mbit/s)
QT = 2 x TX (2500 Mbit/s)
M4 = 1 x Multimode ST (100 Mbit/s)
S4 = 1 x Singlemode ST (100 Mbit/s)
L2 = 1 x Singlemode LH/SC (100 Mbit/s)
MM = 2 x Multimode SC (100 Mbit/s)
VV = 2 x Singlemode SC (100 Mbit/s)
EE = 2 x Singlemode + SC (100 Mbit/s)
GG = 2 x Singlemode LH + SC (100 Mbit/s)
OO = 2 x SFP Slot (100/1000 Mbit/s)
2Q = 2 x SFP Slot (100/1000/2500 Mbit/s)

Type 2 Uplink Ports

99 = None
QT = 2 x TX (2500 Mbit/s)
M4 = 1 x Multimode ST (100 Mbit/s)
S4 = 1 x Singlemode ST (100 Mbit/s)
L2 = 1 x Singlemode LH SC (100 Mbit/s)
ZZ = 2 x SFP Slot (100 Mbit/s)
Z6 = 1 x SFP Slot (100 Mbit/s)
2T = 2 x TX (1000 Mbit/s)
M2 = 1 x Multimode SC (100 Mbit/s)
S2 = 1 x Singlemode SC (100 Mbit/s)
E2 = 1 x Singlemode + SC (100 Mbit/s)
G2 = 1 x Singlemode LH + SC (100 Mbit/s)
OO = 2 x SFP Slot (100/1000 Mbit/s)
2Q = 2 x SFP Slot (100/1000/2500 Mbit/s)

Temperature Range

S = 0 °C to +60 °C
T = -40 °C to +70 °C
G = -40 °C to +70 °C, conformal coating , glued
C = 0 °C to +60 °C, conformal coating
E = -40 °C to +70 °C, conformal coating

Voltage Range

T = 2 x 12 - 24 V DC
U = 2 x 24 V DC (PoE variants)
F = 2 x 24 - 48 V DC + 24 V AC
P = 2 x 48 V DC (PoE variants) / 54 V DC (PoE+ variants)

Housing

C = IP30
D = IP30 metal
E = IP40 metal

Approvals Part 1

Z = CE, FCC, EN 61131-2, EN 62368-1
Y = CE, FCC, EN 61131-2, EN 62368-1, cUL 61010-2-201
X = CE, FCC, EN 61131-2, EN 62368-1, cUL 61010-2-201, cUL 121201
V = CE, FCC, EN 61131-2, EN 62368-1, IEC 61850-3
U = CE, FCC, EN 61131-2, EN 62368-1, DNVGL
S = CE, FCC, EN 61131-2, EN 62368-1, DNVGL + extended ship approval
W = CE, FCC, EN 61131-2, EN 62368-1, ATEX, IECEx
T = CE, FCC, EN 61131-2, EN 62368-1, EN 50121-4

Approvals Part 2

9 = None
Y = cUL 61010-2-201
W = ATEX, IECEx
X = cUL 61010-2-201, cUL 121201
S = DNVGL + extended ship approval
V = IEC 61850-3
U = DNVGL
T = EN 50121-4

Software Packages

9 = No software packages

OEM Type

HH = Standard

Technology

S = Standard

Software Configuration

E = Hirschmann Standard Configuration

Software Version

S = HiOS Layer 2 Standard
A = HiOS Layer 2 Advanced

Software Release

XX.X. = Current Software Release